



Appendix F.3

Field Activities Report Beaver Dam Mine Project - November 8, 2018
Completed for the Updated 2021 Beaver Dam Mine EIS



November 8, 2018

Reference No. 088664-20

James Millard
Manager Environment and Permitting
Atlantic Gold Corporation
6749 Moose River Road, RR#2
Middle Musquodoboit NS B0N 1X0

Via email: jmillard@atlanticgoldcorporation.com

Dear Mr. Millard:

Re: Field Activities Report - Beaver Dam Mine Project, Marinette, Nova Scotia

1. Introduction

GHD Limited (GHD) is pleased to provide this report on GHD's field activities completed for the proposed Beaver Dam Mine Project, Marinette, Nova Scotia (Site) during the period of March 29 and June 27, 2018. The monitoring well drilling, installation and associated groundwater investigation was undertaken to assist with data collection to support the ongoing Environmental Assessment (EA) process for the Site.

The monitoring well drilling and installation program consisted of drilling 49 nested monitoring wells. The following letter report details of the monitoring well drilling and installation program, the associated groundwater level monitoring, hydraulic conductivity (k) testing and groundwater quality sampling program. This data and data generated from the ongoing monitoring program will be used for impact assessment and input data for the groundwater and surface water modelling efforts.

2. Site Description

The Beaver Dam Mine Project is located on Beaver Dam Mines Rd. in Marinette, Halifax Regional Municipality (Halifax County), Nova Scotia. The Beaver Dam Mine site will be developed on approximately 145 hectares (ha) of land owned by the Northern Timber Nova Scotia Corporation (Northern Timber). Access to the land for mining purposes will likely be granted by a lease agreement between Northern Timber and Atlantic Gold. Project facilities will occupy approximately 150 ha of this property as shown on Figure 1.

The Beaver Dam Mine Project will consist of the following facilities, including the open pit mine, the waste rock storage area, the crusher site, and supporting buildings and infrastructure. The processing of ore from Beaver Dam gold deposit will occur at the existing Touquoy plant upon completion of mining ore from the Touquoy deposit.



3. Monitoring Well Installation

The drilling program was completed from March 29, 2018 to May 7, 2018 and consisted of drilling and installation of 49 nested monitoring wells as follows:

MW-01A/B/C

MW-02A/B

MW-03A/B/C

MW-04A/B

MW-05A/B/C/D

MW-07A/B/C/D

MW-09A/B/C/D

MW-11A/B/C

MW-12A/B

MW-14A/B/C

MW-16A/B

MW-17A/B/C

MW-18A/B/C

MW-19A/B/C

MW-20A/B

MW-21A/B/C

MW-22A/B/C

Alan Deal, P.Geo, supervised the monitoring well design and overall program. Richard Hollett, B.A, C.Tech provided oversight and direction in the field on behalf of GHD. The monitoring wells were installed by two drill rigs (CME 55 track mount and CME 75 track mount) operated by Logan Geotech Incorporated of Stewiacke, NS. Monitoring wells were installed in an HQ sized borehole. Monitoring well materials consisted of 50 mm diameter PVC threaded pipe and #20 slot PVC well screen. The pipe and screen arrived at the Site factory-wrapped in plastic. These materials were handled only with disposable nitrile gloves after being unwrapped. Silica sand was placed around the screen to a level approximately 0.3 metres above the screen. A bentonite seal was placed above the sand pack to prevent surface runoff from entering the monitoring wells and affecting groundwater conditions. Each monitoring well was capped with a locking J plug and protected with an aboveground protector.



At each nested location, one shallow monitoring well (A) was drilled to intercept the water table or the first saturated conditions encountered. A second, deeper monitoring well (B) was also installed at every monitoring well nest, typically in competent bedrock. A series of deeper wells were installed at a depth of approximately 30.0 m bgs at MW-01C, MW-03C, MW-05D, MW-07D, MW-09D, MW-11C, MW-14C, MW-17C, MW-18C, MW-19C, MW-21C, and MW-22C. These wells are designed to assess more regional groundwater flow patterns in the deeper bedrock and determine the relationship between shallow and deep groundwater. Finally, three additional wells were installed at depths of approximately 60 m bgs at MW-05C, MW-07C, and MW-09C in order to determine deep bedrock conditions in the immediate vicinity of the proposed open pit mine.

The location of the monitoring wells are presented on Figure 1. Table 1 is a summary of the well completion details including coordinates for northings and eastings, ground surface elevation and screen intervals. Monitoring well logs containing information on stratigraphy, rock quality designation (RQD), and monitoring well construction details are included in Attachment 1. Representative photos taken during the drilling program are attached as Attachment 2.

All monitoring locations were surveyed by WSP and supplied in UTM NAD83 CSRS coordinates with elevations provided in both CGVD28 and CGVD2013. Atlantic Mining has used the CGVD28 datum in the past and all elevations of monitoring location data are reported as such.

Biweekly synoptic monitoring of surface water and groundwater elevations began on July 5, 2018. Groundwater elevations were also measured during other investigation tasks (described below). Water levels measured in all available monitoring wells and surface water monitoring locations at the Site are provided in Attachment 3.

4. Well Development

Following installation of the monitoring wells, the newly drilled monitoring wells were developed using dedicated Waterra tubing and an attached foot valve. The purging procedure is intended to promote the collection of representative groundwater samples. Monitoring well development consisted of purging groundwater from the wells in order to remove any water introduced into the borehole during drilling. Well development also removed any silt or clay fines from the wells in order to minimize sediment inside the monitoring well's screen.

5. Hydraulic Conductivity Testing

GHD completed a series of test to determine the hydraulic conductivity of the overburden and bedrock encountered during the investigation.

From May 28, 2018 to June 21, 2018, GHD completed single well response tests or "slug" tests in the newly installed monitoring wells, with the exception of two 60 m deep monitoring wells (MW-07C and MW-09C), as they recovered too slowly.



The slug tests were completed by measuring the static water level in the well, installing a pressure transducer in the well to record changes in the water level and then introducing a solid “slug” of known volume into the well. This caused an instantaneous rise in the water level in the well, which then began to recover or “fall” back to the static water level. Once the recovery was at least 90 percent complete, GHD removed the slug. This caused an instantaneous drop in the water level in the well, which then began to recover or “rise” back to the static water level. Once recovery was complete, GHD removed the transducer and downloaded the data. Data were entered into AQTESOLV, which was used to estimate the hydraulic conductivity of the material surrounding the monitoring well screen.

Table 2 provides a summary of the results of the slug tests. The hydraulic conductivities calculated ranged from 1.1×10^{-6} m/sec (MW-18C) to 3.8×10^{-2} cm/sec (MW-19A).

Logan and GHD completed packer tests in the core holes drilled for MW-05C, MW-07C, and MW-09C from May 10 through May 17, 2018. A total of thirty (30) tests (10 per well) were carried out during this period. Table 3 provides a summary of the hydraulic conductivities values derived from the packer tests. The hydraulic conductivities calculated ranged from 7.2×10^{-8} cm/sec to 2.1×10^{-4} cm/sec.

The packer tests were carried out following the Lugeon test method, which consists of isolating a section of the previously drilled borehole using inflatable packers, and injecting water in the rock mass under five (5) steady pressure levels that each last for a period of 10 minutes. The pressure levels successively correspond to 33%, 66%, 100%, 66% and 33% of the maximum test pressure. The maximum test pressure was determined based on the depth of the test, the overburden pressure and the quality of the bedrock. Based on the measured water absorptions during each of the five periods, the type of water flow within the rock mass and its associated hydraulic conductivity were determined.

6. Groundwater and Surface Water Quality Monitoring Program

The groundwater monitoring and sampling program were completed to assess groundwater conditions at the Site prior to commencement of construction activities. All surface water and groundwater samples were submitted to Maxxam Analytics (Maxxam), in Bedford, Nova Scotia for laboratory analysis.. Laboratory certificates are included as Attachment 4.

Surface water samples were collected monthly from October 2014 to August 2015. Seven samples were collected (SW-1, SW-2A, SW-4A, SW-5, SW-6A, SW-9, and SW-10) for the Beaver Dam Mine Site to characterize surface water quality on Site. Prior to sample collection GHD measured the surface water temperature, conductivity, total dissolved solids, dissolved oxygen, and pH. Table 4 provides the surface water quality data.

Groundwater samples were collected from all the newly installed wells from June 18, 2018 to June 27, 2018. A second round of groundwater samples were collected September 12 and 21, 2018. Prior to sample collection, the depth to groundwater was measured using an electronic water level meter. GHD calculated the volume of standing water in each well. The wells were purged using an inertial pump. During purging, GHD measured stabilization parameters (temperature, pH, and conductivity) at 5 L



increments for the shallow wells (A), and 10 L increments for the intermediate/deep wells (B and D). Purging was considered complete when the following stabilization criteria were achieved in three successive measurements:

| Parameter | Units | Stabilization Criteria |
|-----------------------|----------------|------------------------|
| pH | Standard units | +/- 1 |
| Specific Conductivity | µS/cm | +/- 10% |
| Temperature | °C | +/- 10% |

If the monitoring well went dry, it was allowed to recover until a sufficient volume of groundwater accumulated in the well to permit sample collection.

Prior to sample collection, GHD personnel donned a new pair of disposable nitrile gloves. Laboratory supplied sample bottles were filled directly from the inertial pump tubing. Samples collected for metals analysis were filtered in the field using a 45-micron in-line filter. One blind field duplicate sample was collected for approximately every ten investigative samples. Immediately after sample collection was complete the samples were placed on ice in a cooler.

Groundwater quality data are tabulated in Table 5. The results are not compared to any guidelines or other criteria as the data is baseline only and will be used for future comparisons to compliance values set out in the IA and later to Canada Council of the Ministers of Environment (CCME) and/or Metal Mining Effluent Regulations (MMER) values.

7. Closing

A monitoring well drilling, installation, and groundwater sampling program completed for the proposed Beaver Dam Mine Project in Marinette, Nova Scotia during the period of March 29 and June 27, 2018 to assist with data collection to support the ongoing EA process for the Site.

The drilling program was completed during the period of March 29 and May 7, 2018, GHD staff oversaw the drilling and installation of 49 nested monitoring wells on the proposed Beaver Dam Mine property. The drill rigs (CME 55 track mount and CME 75 track mount) were supplied and operated by Logan Geotech Incorporated of Stewiacke, Nova Scotia.

Fifty-one groundwater samples including five field duplicate samples were collected from the on-Site monitoring wells in June 2018. A second round of groundwater samples was collected in September 2018. The groundwater samples were submitted to the Maxxam for laboratory analysis based on analytical parameters/test requirements typically established by NSE for this type of industrial site.



We trust this report meets your requirements. Should any questions arise, please do not hesitate to contact the undersigned.

Sincerely,

GHD

A handwritten signature in blue ink, appearing to read 'Peter Oram', written in a cursive style.

Peter Oram, P.Ge.
Senior Environmental Specialist/Hydrogeologist

JR/tj/1

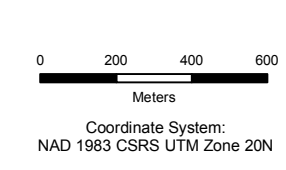
Encl.

A handwritten signature in blue ink, appearing to read 'Alan Deal', written in a cursive style.

Alan Deal, P.Ge.
Senior Hydrogeologist



Source: GHD, Leading Edge Geomatics (Aerial 2015); Service Nova Scotia/ Service Layer Credits: © 2018 Microsoft Corporation © 2018 DigitalGlobe ©CNES (2018) Distribution Airbus DS



ATLANTIC MINING NS CORP
 BEAVER DAM MINE
 GROUND WATER MONITORING PROGRAM

088664-20
 Nov 7, 2018

MONITORING LOCATIONS

FIGURE 1

Table 1: Well Completion Details
Beaver Dam Mine Project Field Activities Report
Marinette, Nova Scotia

| Well_ID | UTM Zone 20 NAD83 CSRS | | Installation Date | Unit | Well Depth | | Ground Surface Elevation (m AMSL) | Stick-up (m ags) | Top of Casing Elevation (m AMSL) | Top of Screen Interval | | Bottom of Screen Interval | |
|---------|------------------------|-------------|-------------------|--------------|------------|----------|-----------------------------------|------------------|----------------------------------|------------------------|----------|---------------------------|----------|
| | Easting | Northing | | | (m bgs) | (m AMSL) | | | | (m bgs) | (m AMSL) | (m bgs) | (m AMSL) |
| MW-01A | 520942.252 | 4990095.110 | 1-May-18 | Shallow | 6.30 | 144.13 | 150.429 | 1.121 | 151.550 | 1.83 | 148.599 | 6.3 | 144.129 |
| MW-01B | 520943.031 | 4990093.660 | 4-May-18 | Intermediate | 15.30 | 135.31 | 150.610 | 0.994 | 151.604 | 12.24 | 138.370 | 15.3 | 135.310 |
| MW-01C | 520944.122 | 4990092.462 | 4-May-18 | Deep | 30.06 | 120.59 | 150.647 | 1.129 | 151.776 | 27.1 | 123.547 | 30.2 | 120.497 |
| MW-02A | 520728.778 | 4989595.501 | 7-May-18 | Shallow | 4.72 | 146.69 | 151.410 | 1.064 | 152.474 | 1.7 | 149.730 | 4.7 | 146.690 |
| MW-02B | 520730.397 | 4989594.708 | 7-May-18 | Intermediate | 15.60 | 135.84 | 151.441 | 1.093 | 152.534 | 12.5 | 138.941 | 15.6 | 135.891 |
| MW-03A | 521823.117 | 4989220.163 | 1-May-18 | Shallow | 6.32 | 160.10 | 166.421 | 1.015 | 167.436 | 3.3 | 163.141 | 6.3 | 160.101 |
| MW-03B | 521823.540 | 4989222.229 | 1-May-18 | Intermediate | 15.32 | 151.05 | 166.374 | 1.014 | 167.388 | 12.3 | 154.104 | 15.3 | 151.054 |
| MW-03C | 521824.051 | 4989223.934 | 2-May-18 | Deep | 30.30 | 136.03 | 166.334 | 1.007 | 167.341 | 27.3 | 139.084 | 30.3 | 136.034 |
| MW-04A | 522649.993 | 4989640.335 | 3-Apr-18 | Shallow | 5.96 | 158.70 | 164.655 | 0.853 | 165.508 | 2.9 | 161.735 | 6.0 | 158.695 |
| MW-04B | 522649.439 | 4989639.523 | 3-Apr-18 | Intermediate | 15.53 | 149.16 | 164.687 | 0.869 | 165.556 | 12.5 | 152.197 | 15.5 | 149.157 |
| MW-05A | 521746.140 | 4990210.163 | 25-Apr-18 | Shallow | 6.10 | 134.76 | 140.855 | 0.826 | 141.681 | 1.5 | 139.355 | 6.1 | 134.755 |
| MW-05B | 521747.858 | 4990208.591 | 24-Apr-18 | Intermediate | 15.57 | 125.32 | 140.894 | 0.944 | 141.838 | 12.5 | 128.374 | 15.6 | 125.324 |
| MW-05C | 521745.609 | 4990207.042 | 23-Apr-18 | Intermediate | 60.43 | 80.52 | 140.947 | 0.993 | 141.940 | 57.4 | 83.567 | 60.4 | 80.517 |
| MW-05D | 521742.062 | 4990206.839 | 1-May-18 | Deep | 30.48 | 110.87 | 141.346 | 1.012 | 142.358 | 27.4 | 113.916 | 30.5 | 110.866 |
| MW-07A | 522676.986 | 4990257.899 | 9-Apr-18 | Shallow | 7.49 | 122.97 | 130.461 | 0.928 | 131.389 | 4.4 | 126.021 | 7.5 | 122.971 |
| MW-07B | 522677.763 | 4990256.675 | 6-Apr-18 | Intermediate | 15.49 | 115.11 | 130.600 | 0.943 | 131.543 | 12.4 | 118.160 | 15.5 | 115.110 |
| MW-07C | 522676.908 | 4990255.360 | 19-Apr-18 | Intermediate | 60.96 | 69.63 | 130.588 | 0.989 | 131.577 | 57.9 | 72.678 | 61.0 | 69.628 |
| MW-07D | 522674.898 | 4990259.556 | 14-May-18 | | 30.48 | | 130.256 | 1.040 | 131.296 | 27.2 | 103.026 | 30.5 | 99.776 |
| MW-09A | 522024.415 | 4990682.566 | 13-Apr-18 | Shallow | 7.14 | 126.75 | 133.894 | 1.075 | 134.969 | 4.1 | 129.804 | 7.1 | 126.754 |
| MW-09B | 522022.788 | 4990682.720 | 13-Apr-18 | Intermediate | 15.39 | 118.36 | 133.748 | 1.040 | 134.788 | 12.3 | 121.408 | 15.4 | 118.358 |
| MW-09C | 522022.547 | 4990680.996 | 12-Apr-18 | Intermediate | 63.37 | 70.42 | 133.791 | 0.950 | 134.741 | 60.3 | 73.461 | 63.4 | 70.421 |
| MW-09D | 522023.739 | 4990684.215 | 2-May-18 | Deep | 30.48 | 103.23 | 133.705 | 1.046 | 134.751 | 27.43 | 106.275 | 30.48 | 103.225 |
| MW-11A | 522324.169 | 4990130.598 | 3-Apr-18 | Shallow | 6.09 | 141.75 | 147.844 | 0.933 | 148.777 | 3.04 | 144.804 | 6.09 | 141.754 |
| MW-11B | 522325.095 | 4990132.870 | 5-Apr-18 | Intermediate | 15.24 | 132.48 | 147.718 | 0.783 | 148.501 | 12.19 | 135.528 | 15.24 | 132.478 |
| MW-11C | 522323.713 | 4990132.377 | 4-Apr-18 | Deep | 26.01 | 121.79 | 147.795 | 0.744 | 148.539 | 22.96 | 124.835 | 26.01 | 121.785 |
| MW-12A | 521711.672 | 4991000.037 | 15-Apr-18 | Shallow | 6.10 | 141.80 | 147.903 | 0.652 | 148.555 | 0.91 | 146.993 | 6.1 | 141.803 |
| MW-12B | 521710.995 | 4990999.179 | 15-Apr-18 | Deep | 25.83 | 121.99 | 147.815 | 0.721 | 148.536 | 22.78 | 125.035 | 25.83 | 121.985 |
| MW-14A | 523253.265 | 4989830.507 | 26-Apr-18 | Shallow | 6.10 | 131.30 | 137.404 | 0.977 | 138.381 | 1.5 | 135.904 | 6.1 | 131.304 |
| MW-14B | 523253.939 | 4989828.780 | 26-Apr-18 | Deep | 26.04 | 111.40 | 137.442 | 1.049 | 138.491 | 22.99 | 114.452 | 26.04 | 111.402 |
| MW-14C | 523254.933 | 4989827.886 | 26-Apr-18 | VERY Deep | 41.15 | 96.34 | 137.486 | 0.819 | 138.305 | 38.1 | 99.386 | 41.15 | 96.336 |
| MW-16A | 522898.761 | 4990744.060 | 20-Apr-18 | Shallow | 7.14 | 146.60 | 153.744 | 1.068 | 154.812 | 3.5 | 150.244 | 7.14 | 146.604 |
| MW-16B | 522898.057 | 4990742.630 | 20-Apr-18 | Intermediate | 15.24 | 138.53 | 153.768 | 1.033 | 154.801 | 12.19 | 141.578 | 15.24 | 138.528 |
| MW-17A | 524121.346 | 4990324.445 | 26-Apr-18 | Shallow | 4.57 | 149.94 | 154.508 | 0.941 | 155.449 | 0.76 | 153.748 | 4.57 | 149.938 |
| MW-17B | 524123.059 | 4990323.426 | 25-Apr-18 | Shallow | 9.17 | 145.24 | 154.409 | 1.056 | 155.465 | 6.12 | 148.289 | 9.17 | 145.239 |
| MW-17C | 524124.712 | 4990324.229 | 25-Apr-18 | Intermediate | 15.44 | 138.92 | 154.355 | 0.894 | 155.249 | 12.45 | 141.905 | 15.44 | 138.915 |

Table 1: Well Completion Details
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Marinette, Nova Scotia

| Well_ID | UTM Zone 20 NAD83 CSRS | | Installation Date | Unit | Well Depth | | Ground Surface Elevation (m AMSL) | Stick-up (m ags) | Top of Casing Elevation (m AMSL) | Top of Screen Interval | | Bottom of Screen Interval | |
|---------|------------------------|-------------|-------------------|--------------|------------|----------|-----------------------------------|------------------|----------------------------------|------------------------|----------|---------------------------|----------|
| | Easting | Northing | | | (m bgs) | (m AMSL) | | | | (m bgs) | (m AMSL) | (m bgs) | (m AMSL) |
| MW-18A | 523118.888 | 4991142.236 | 20-Apr-18 | Shallow | 7.62 | 139.87 | 147.493 | 0.971 | 148.464 | 4.57 | 142.923 | 7.62 | 139.873 |
| MW-18B | 523120.436 | 4991141.883 | 24-Apr-18 | Intermediate | 15.77 | 131.73 | 147.496 | 0.835 | 148.331 | 12.72 | 134.776 | 15.77 | 131.726 |
| MW-18C | 523121.844 | 4991141.264 | 25-Apr-18 | Shallow | 35.05 | 112.26 | 147.313 | 1.146 | 148.459 | 1.5 | 145.813 | 35.05 | 112.263 |
| MW-19A | 520765.986 | 4991427.087 | 4-May-18 | Shallow | 4.72 | 128.87 | 133.590 | 0.971 | 134.561 | 0.61 | 132.980 | 4.72 | 128.870 |
| MW-19B | 520764.377 | 4991426.125 | 4-May-18 | Intermediate | 15.37 | 118.25 | 133.619 | 0.967 | 134.586 | 12.32 | 121.299 | 15.37 | 118.249 |
| MW-19C | 520762.233 | 4991425.291 | 7-May-18 | Deep | 30.30 | 103.39 | 133.692 | 0.881 | 134.573 | 27.25 | 106.442 | 30.3 | 103.392 |
| MW-20A | 520263.534 | 4990264.985 | 7-May-18 | Shallow | 7.62 | 144.49 | 152.106 | 1.165 | 153.271 | 4.57 | 147.536 | 7.62 | 144.486 |
| MW-20B | 520263.490 | 4990263.750 | 7-May-18 | Intermediate | 15.27 | 136.92 | 152.194 | 1.013 | 153.207 | 12.22 | 139.974 | 15.27 | 136.924 |
| MW-21A | 521749.236 | 4987642.034 | 7-May-18 | Shallow | 6.35 | 152.22 | 158.566 | 0.920 | 159.486 | 3.3 | 155.266 | 6.35 | 152.216 |
| MW-21B | 521747.935 | 4987641.733 | 3-May-18 | Intermediate | 15.42 | 143.10 | 158.518 | 0.988 | 159.506 | 12.37 | 146.148 | 15.42 | 143.098 |
| MW-21C | 521749.207 | 4987639.956 | 2-May-18 | Deep | 30.48 | 127.90 | 158.384 | 1.007 | 159.391 | 27.43 | 130.954 | 30.48 | 127.904 |
| MW-22A | 524377.001 | 4988520.078 | 25-Apr-18 | Shallow | 6.55 | 132.58 | 139.130 | 0.900 | 140.030 | 3.51 | 135.620 | 6.55 | 132.580 |
| MW-22B | 524377.199 | 4988521.744 | 27-Apr-18 | Intermediate | 15.55 | 123.60 | 139.148 | 0.987 | 140.135 | 12.5 | 126.648 | 15.55 | 123.598 |
| MW-22C | 524377.504 | 4988523.209 | 1-May-18 | Deep | 29.03 | 110.10 | 139.129 | 0.965 | 140.094 | 25.98 | 113.149 | 29.03 | 110.099 |
| SW-1 | 523246.710 | 4990047.232 | | | | | 125.308 | 1.770 | 127.078 | | | | |
| SW-1A | 523321.000 | 4989964.000 | | | | | | | | | | | |
| SW-2A | 521821.700 | 4991319.756 | | | | | 129.205 | -0.236 | 128.969 | | | | |
| SW-4A | 521343.751 | 4991071.233 | | | | | 129.343 | -0.018 | 129.325 | | | | |
| SW-5 | 522696.387 | 4990229.101 | | | | | 130.874 | -0.353 | 130.521 | | | | |
| SW-10 | 522176.584 | 4990321.015 | | | | | 134.168 | -0.316 | 133.852 | | | | |
| SW-13 | 522769.824 | 4990261.347 | | | | | 129.170 | -0.450 | 128.720 | | | | |
| SW-14 | 522677.366 | 4990219.104 | | | | | 131.709 | -0.188 | 131.521 | | | | |
| SW-15 | 521434.000 | 4990457.000 | | | | | | | | | | | |
| SW-16 | 521570.917 | 4990336.002 | | | | | 138.069 | -0.253 | 137.816 | | | | |
| SW-17 | 521906.952 | 4990205.472 | | | | | 139.893 | -0.253 | 139.640 | | | | |
| SW-18 | 521637.704 | 4990067.184 | | | | | 146.236 | -0.582 | 145.654 | | | | |
| SW-19 | 520827.905 | 4991473.874 | | | | | 129.133 | 1.337 | 130.470 | | | | |
| SW-21 | 521811.000 | 4989584.000 | | | | | | | | | | | |
| SW-22 | 521113.269 | 4989464.177 | | | | | 152.100 | -0.886 | 151.214 | | | | |
| SW-23 | 522639.881 | 4989067.980 | | | | | 159.839 | -0.170 | 159.669 | | | | |

Table 2: Summary of Single-Well Response Test Results
Beaver Dam Mine Project
Marinette, Nova Scotia

| Well ID | Screened Material (overburden, weathered bedrock, bedrock) | Analytical Method ⁽¹⁾ | Hydraulic Conductivity | |
|-------------------------------------------|---------------------------------------------------------------|----------------------------------|--------------------------------|-------------------------------|
| | | | Falling Head Tests (cm/sec) | Rising Head Tests (cm/sec) |
| Overburden Monitoring Wells | | | | |
| MW-02A | | Bouwer-Rice | 1.8E-03 | 1.7E-03 |
| MW-12A | overburden | Bouwer-Rice | invalid (water in screen) | 8.8E-05 |
| | | Dagan | - | 8.9E-05 |
| MW-14A | overburden | Bouwer-Rice | 9.7E-05 | 6.1E-05 |
| | | Bouwer-Rice | 1.2E-04 | 9.4E-05 |
| MW-17A | overburden | Bouwer-Rice | 6.7E-04 | 2.1E-04 |
| MW-16A | overburden/weathered bedrock/bedrock - graywacke | Bouwer-Rice | 7.2E-04 | 4.9E-04 |
| MW-18C | overburden/weathered bedrock - graywacke | Bouwer-Rice | 1.5E-06 | 1.1E-06 |
| MW-19A | overburden | Bouwer-Rice | invalid (water in screen) | 8.5E-03 |
| | | Springer-Gelhar | - | 1.7E-02 |
| | | Dagan | - | 7.7E-03 |
| | | Bouwer-Rice | invalid (water in screen) | 1.1E-02 |
| | | Springer-Gelhar | - | 3.8E-02 |
| | | Dagan | - | 9.3E-03 |
| Weathered Bedrock Monitoring Wells | | | | |
| MW-05A | weathered bedrock/bedrock - graywacke | Bouwer-Rice | invalid (water in screen) | 2.6E-04 |
| | | Dagan | - | 1.7E-04 |
| | | Bouwer-Rice | invalid (water in screen) | 3.8E-04 |
| | | Dagan | - | 4.4E-04 |
| MW-09A | weathered bedrock/bedrock - graywacke | Bouwer-Rice | 9.8E-05 | 8.3E-05 |
| MW-17B | weathered upper bedrock - greywacke | Bouwer-Rice | 5.0E-03 | 3.5E-03 |
| MW-20A | weathered bedrock/bedrock - greywacke | Bouwer-Rice | 2.6E-03 | 2.8E-03 |
| | | Bouwer-Rice | 3.7E-03 | 4.4E-03 |
| Bedrock Monitoring Wells | | | | |
| MW-01B | bedrock - greywacke | Bouwer-Rice | 2.3E-05 | 2.5E-05 |
| MW-02B | bedrock - granite | Bouwer-Rice | 5.0E-05 | 4.2E-05 |
| MW-03C | bedrock - greywacke | Bouwer-Rice | 5.4E-04 | 3.6E-04 |
| MW-04A | bedrock - greywacke | Bouwer-Rice | 1.0E-02 | - |
| | | Springer-Gelhar | - | 1.6E-02 |
| MW-04B | bedrock - greywacke | Bouwer-Rice | 2.0E-03 | 1.4E-03 |
| MW-05B | bedrock - greywacke | Bouwer-Rice | 9.6E-04 | 8.2E-04 |
| MW-05C | bedrock - greywacke | Bouwer-Rice | bad test | 3.4E-06 |
| MW-05D | bedrock - greywacke | Bouwer-Rice | 1.2E-05 | 1.0E-05 |
| MW-07A | bedrock - greywacke | Bouwer-Rice | 5.7E-05 | 3.0E-03 |
| MW-07B | bedrock - greywacke | Bouwer-Rice | 1.3E-05 | 1.2E-05 |
| MW-07D | - | Bouwer-Rice | 3.0E-05 | 2.9E-05 |
| MW-09B | bedrock - greywacke | Bouwer-Rice | 3.0E-06 | 2.3E-06 |
| MW-09D | bedrock - greywacke | Bouwer-Rice | 3.0E-06 | 2.4E-06 |
| MW-11A | bedrock - greywacke | Bouwer-Rice | 2.8E-04 | 4.6E-03 |
| MW-11B | bedrock - greywacke | Bouwer-Rice | 3.2E-05 | 2.4E-05 |
| MW-11C ⁽⁴⁾ | bedrock | - | <10-8 | |
| MW-12B | bedrock - greywacke | Bouwer-Rice | 8.2E-05 | 9.4E-05 |
| MW-14B | bedrock - greywacke | Bouwer-Rice | 7.7E-06 | 4.5E-06 |
| MW-14C | bedrock - greywacke | Bouwer-Rice | 2.7E-05 | 1.6E-05 |
| | | Bouwer-Rice | 5.0E-04 | 2.3E-05 |
| MW-16B | bedrock - greywacke | Bouwer-Rice | 5.1E-05 | 4.1E-05 |
| MW-17C | bedrock - greywacke | Bouwer-Rice | 6.4E-04 | 4.6E-04 |
| MW-18A | bedrock - greywacke | Bouwer-Rice | 4.7E-03 | 3.6E-03 |
| MW-18B | bedrock - greywacke | Bouwer-Rice | 7.0E-05 | 3.7E-05 |
| MW-19C | bedrock - greywacke | Bouwer-Rice | 3.7E-04 | 3.3E-04 |
| MW-21A | bedrock - greywacke | Bouwer-Rice | 3.4E-04 | 3.9E-04 |
| MW-21B | bedrock - greywacke | Bouwer-Rice | 9.3E-05 | 4.5E-05 |
| MW-22B | bedrock - greywacke | Bouwer-Rice | 1.8E-04 | 1.3E-04 |
| MW-22C | bedrock - greywacke | Bouwer-Rice | 5.0E-05 | 4.2E-05 |

Notes:

- Bouwer, H., and R.C. Rice, 1976. A Slug Test Method for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells, Water Resources Research, vol. 12, no. 3, pp.423-428.
- (1) Dagan, G., 1978. A Note on Packer, Slug, and Recovery Tests in Unconfined Aquifers, Water Resources Research, vol. 14, no. 5, pp. 929-934.
- Springer, R.K., and L.W. Gelhar, 1991. Characterization of Large-Scale Aquifer Heterogeneity in Glacial Outwash by Analysis of Slug Tests with Oscillatory Response, Cape Cod, Massachusetts, U.S.G.S. Water Resources Investigation Report 91-4034, pp. 36-40.
- Falling head slug tests are considered invalid when the water level is within the screened interval.
- (2) The Dagan (1978) analytical solution is typically used when the water level is within the screened interval.
- (3) Data was not suitable for analysis or considered anomalous.
- (4) Barometric effects were too large to determine hydraulic conductivity; however, recovery is on the order of several days to weeks (thus $K < 10^{-8}$ cm/sec)

**Table 3: Summary of Packer Test Results
Beaver Dam Mine Project
Marinette, Nova Scotia**

| MW-05C | | | MW-07C | | | MW-09C | | |
|-----------------------------|--------------------------------------|--------------|-----------------------------|--------------------------------------|-------------|-----------------------------|--------------------------------------|-------------|
| Depth of Packers (m) | Hydraulic Conductivity (cm/s) | Type | Depth of Packers (m) | Hydraulic Conductivity (cm/s) | Type | Depth of Packers (m) | Hydraulic Conductivity (cm/s) | Type |
| 0.9 - 4 | 5.0E-05 | laminar | 4.3 - 7.3 | 2.1E-04 | laminar | 7 - 10.1 | 1.3E-05 | laminar |
| 4 - 7 | 8.3E-06 | void-filling | 7.3 - 10.4 | 1.3E-04 | turbulent | 10.1 - 13.1 | 2.7E-05 | laminar |
| 7 - 10.1 | 4.3E-05 | wash-out | 11.6 - 14.6 | 4.6E-05 | turbulent | 13.1 - 16.2 | 5.5E-07 | dilation |
| 10.1 - 13.1 | 3.8E-05 | laminar | 14.6 - 17.7 | 3.3E-07 | turbulent | 16.2 - 19.2 | 1.7E-07 | turbulent |
| 13.1 - 16.2 | 8.2E-05 | turbulent | 17.7 - 20.7 | 7.4E-06 | turbulent | 19.2 - 22.3 | 1.1E-06 | turbulent |
| 16.2 - 19.2 | 1.6E-05 | wash-out | 23.8 - 26.8 | 4.3E-06 | turbulent | 25.3 - 28.3 | 3.5E-07 | laminar |
| 37.5 - 40.5 | 6.8E-07 | turbulent | 29.9 - 32.9 | 4.4E-07 | turbulent | 31.4 - 34.4 | 4.5E-07 | laminar |
| 43.6 - 46.6 | 2.3E-07 | laminar | 42.1 - 45.1 | 2.2E-06 | turbulent | 40.5 - 43.6 | 7.2E-08 | turbulent |
| 46.6 - 49.7 | 7.9E-08 | turbulent | 45.1 - 48.2 | 2.8E-06 | dilatation | 49.7 - 52.7 | 1.2E-06 | dilation |
| 55.8 - 58.8 | 1.0E-06 | turbulent | 54.3 - 57.3 | 2.0E-05 | turbulent | 58.8 - 61.9 | 4.2E-07 | dilation |

**Table 4: Surface Water Quality Data
Beaver Dam Mine Project
Marinette, Nova Scotia**

TABLE 4A: SW-1 General Chemistry Results

| | | CCME FAL | MMER | SW-1 | | | | | | | | | |
|-------------------------------------|--------------|------------------------------|--------------|-------------|--------------|--------------|-------------|-------------|--------------|--------------|-------------|-------------|-------------|
| Sampling Date | | | | 9-Oct-14 | 13-Nov-14 | 18-Dec-14 | 22-Jan-15 | 22-Jan-15 | 29-Apr-15 | 28-May-15 | 30-Jun-15 | 29-Jul-15 | 24-Aug-15 |
| Calculated Parameters | Units | | | | | | | SW-1D (DUP) | | | | | |
| Anion Sum | me/L | | | 0.140 | 0.170 | 0.100 | 0.120 | 0.120 | 0.060 | 0.0900 | 0.0800 | 0.0800 | 0.100 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Calculated TDS | mg/L | | | 14 | 16 | 10 | 12 | 13 | 6 | 8.0 | 9.0 | 10 | 12 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Cation Sum | me/L | | | 0.290 | 0.290 | 0.190 | 0.210 | 0.210 | 0.110 | 0.160 | 0.170 | 0.180 | 0.230 |
| Hardness (CaCO3) | mg/L | | | 5.5 | 5.0 | 3.3 | 3.5 | 3.5 | 1.6 | 2.6 | 2.9 | 3.3 | 4.0 |
| Ion Balance (% Difference) | % | | | 34.9 | 26.1 | 31.0 | 27.3 | 27.3 | 29.4 | 28.0 | 36.0 | 38.5 | 39.4 |
| Langelier Index (@ 20C) | N/A | | | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Langelier Index (@ 4C) | N/A | | | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Nitrate (N) | mg/L | 2.935 | | <0.050 | 0.061 | <0.050 | 0.087 | 0.080 | 0.052 | <0.050 | 0.062 | 0.051 | <0.050 |
| Saturation pH (@ 20C) | N/A | | | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Saturation pH (@ 4C) | N/A | | | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Inorganics | | | | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | | | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Dissolved Chloride (Cl) | mg/L | | | 5.1 | 5.8 | 3.4 | 4.0 | 4.2 | 1.9 | 3.1 | 2.6 | 2.8 | 3.7 |
| Colour | TCU | | | 150 | 160 | 99 | 83 | 100 | 85 | 110 | 170 | 160 | 230 |
| Nitrate + Nitrite | mg/L | | | <0.050 | 0.061 | <0.050 | 0.087 | 0.080 | 0.052 | <0.050 | 0.062 | 0.051 | <0.050 |
| Nitrite (N) | mg/L | 0.06 | | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Nitrogen (Ammonia Nitrogen) | mg/L | Varies⁽¹⁾ | | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | 0.10 | <0.050 | <0.050 | <0.050 |
| Total Organic Carbon (C) | mg/L | | | 13 | 18 | 8.2 | 7.0 | 7.5 | 6.3 | 7.5 | 12 | 12 | 11 (1) |
| Orthophosphate (P) | mg/L | | | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| pH | pH | 6.5-9 | 6-9.5 | 5.55 | 4.59 | 5.23 | 4.87 | 4.91 | 5.19 | 5.85 | 6.00 | 5.57 | 5.59 |
| Reactive Silica (SiO2) | mg/L | | | 2.5 | 3.9 | 2.7 | 3.8 | 4.0 | 1.9 | 1.1 | 2.1 | 2.6 | 3.2 |
| Dissolved Sulphate (SO4) | mg/L | | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Turbidity | NTU | | | 1.1 | 0.64 | 0.59 | 0.62 | 0.69 | 0.76 | 1.1 | 1.2 | 1.1 | 1.2 |
| Conductivity | uS/cm | | | 30 | 33 | 25 | 27 | 27 | 14 | 16 | 17 | 18 | 21 |
| Total Suspended Solids | | | | - | - | - | - | - | - | - | - | - | - |
| Field Parameters | | | | | | | | | | | | | |
| Temperature | °C | | | 15.57 | 8 | 4.2 | 0.16 | - | 3.62 | 19.14 | 19.69 | 19.90 | - |
| Conductivity | µS/cm | | | 39 | 36 | 26.7 | 25 | - | 16 | 22 | 24 | - | - |
| Total Dissolved Solids | g/L | | | 0.031 | 0.035 | - | 0.029 | - | - | - | - | - | - |
| Dissolved Oxygen | mg/L | 5.5-9.5⁽²⁾ | | 9.99 | 14.31 | 13.32 | 37.9 | - | 14.97 | 10.63 | 9.6 | - | - |
| pH | | 6.5-9 | 6-9.5 | 3.97 | 2.63 | 4.1 | 2.89 | - | 6.48 | 5.25 | 5.49 | 5.3 | - |

Notes

CCME FAL - Canadian Council of Ministers of the Environment Water Quality Guidelines for the Protection of Freshwater Aquatic Life (provided for reference)

MMER - Federal Metal Mining Effluent Regulations - guidelines shown represent maximum authorized concentrations in a grab sample (provided for reference)

(1) Ammonia guideline dependent on temperature and pH, e.g., if T = 10°C, guideline for total ammonia-N varies from 83.88 mg/L at pH = 6.0 to 0.02 mg/L at pH = 10 (see CCME Fact Sheet).

(2) Dissolved oxygen - lowest acceptable concentration ranges from 5.5 mg/L for warm water biota at other life stages to 9.5 mg/L for cold water biota at early life stages (see CCME Summary Table).

- denotes not analyzed

NC = not calculated

**Table 4: Surface Water Quality Data
Beaver Dam Mine Project
Marinette, Nova Scotia**

Table 4B: SW-1 Metals Results

| Sampling Date | Units | CCME FAL | MMER | SW-1 | | | | | | | | | |
|-----------------------|-------|----------------------------|------|----------|-----------|-----------|-----------|-------------|-----------|-----------|-----------|-----------|-----------|
| | | | | 9-Oct-14 | 13-Nov-14 | 18-Dec-14 | 22-Jan-15 | 22-Jan-15 | 29-Apr-15 | 28-May-15 | 30-Jun-15 | 29-Jul-15 | 24-Aug-15 |
| Metals | | | | | | | | SW-1D (DUP) | | | | | |
| Total Aluminum (Al) | ug/L | 5 / 100 ⁽¹⁾ | | 330 | 320 | 220 | 200 | 200 | 140 | 190 | 280 | 280 | 400 |
| Total Antimony (Sb) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Arsenic (As) | ug/L | 5.0 | 1000 | 2.7 | 1.5 | 1.3 | <1.0 | <1.0 | <1.0 | 2.6 | 2.5 | 3.7 | 1.3 |
| Total Barium (Ba) | ug/L | | | 5.8 | 5.6 | 3.1 | 3.3 | 3.4 | 1.7 | 2.4 | 3.0 | 3.2 | 4.6 |
| Total Beryllium (Be) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Bismuth (Bi) | ug/L | | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Boron (B) | ug/L | 1500 | | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 |
| Total Cadmium (Cd) | ug/L | 0.04 - 0.37 ⁽²⁾ | | 0.024 | 0.029 | 0.023 | 0.012 | 0.022 | 0.012 | <0.010 | 0.028 | 0.014 | 0.022 |
| Total Calcium (Ca) | ug/L | | | 1200 | 1100 | 780 | 720 | 740 | 350 | 630 | 690 | 790 | 770 |
| Total Chromium (Cr) | ug/L | | | <1.0 | <1.0 | <1.0 | 1.6 | <1.0 | <1.0 | 3.0 | <1.0 | <1.0 | <1.0 |
| Total Cobalt (Co) | ug/L | | | 0.51 | 0.52 | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | 0.53 |
| Total Copper (Cu) | ug/L | 2 - 4 ⁽³⁾ | 600 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Iron (Fe) | ug/L | 300 | | 670 | 630 | 330 | 350 | 340 | 240 | 360 | 580 | 750 | 1000 |
| Total Lead (Pb) | ug/L | 1 - 7 ⁽⁴⁾ | 400 | 0.51 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.54 | <0.50 | 0.57 |
| Total Magnesium (Mg) | ug/L | | | 590 | 560 | 330 | 400 | 410 | 170 | 240 | 290 | 310 | 420 |
| Total Manganese (Mn) | ug/L | | | 79 | 68 | 41 | 51 | 53 | 27 | 31 | 37 | 43 | 58 |
| Total Mercury (Hg) | ug/L | 0.026 | | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | 0.015 | <0.013 | <0.013 | 0.032 |
| Total Molybdenum (Mo) | ug/L | 73 | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Nickel (Ni) | ug/L | 25 - 150 ⁽⁵⁾ | 1000 | <2.0 | <2.0 | <2.0 | <2.0 | 2.6 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Phosphorus (P) | ug/L | | | <100 | <100 | <100 | <100 | <100 | <100 | <100 | 150 | 170 | 140 |
| Total Potassium (K) | ug/L | | | 570 | 550 | 380 | 380 | 370 | 330 | 340 | 170 | 210 | 170 |
| Total Selenium (Se) | ug/L | 1 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Silver (Ag) | ug/L | 0.1 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Sodium (Na) | ug/L | | | 3100 | 3000 | 2100 | 2300 | 2400 | 1200 | 1800 | 1900 | 1900 | 2300 |
| Total Strontium (Sr) | ug/L | | | 11.0 | 10 | 5.8 | 6.3 | 6.6 | 2.9 | 4.6 | 5.9 | 6.3 | 7.4 |
| Total Thallium (Tl) | ug/L | 0.8 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Tin (Sn) | ug/L | | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Titanium (Ti) | ug/L | | | 3.8 | 3.2 | 3.3 | 2.4 | 2.2 | 3.2 | 2.7 | 3.7 | 3.7 | 5.0 |
| Total Uranium (U) | ug/L | 15 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Vanadium (V) | ug/L | | | <2.0 | 2.3 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Zinc (Zn) | ug/L | 30 | 1000 | 5.0 | 5.1 | 7.8 | <5.0 | <5.0 | <5.0 | 6.8 | <5.0 | <5.0 | <5.0 |

Notes

CCME FAL - Canadian Council of Ministers of the Environment Water Quality Guidelines for the Protection of Freshwater Aquatic Life (provided for reference)

MMER - Federal Metal Mining Effluent Regulations - guidelines shown represent maximum authorized concentrations in a grab sample (provided for reference)

(1) Aluminum guideline dependent on pH. Guideline is 5 ug/L if pH <6.5 and 100 ug/L if pH ≥ 6.5 (see CCME Summary Table).

(2) Cadmium guideline (updated for 2014) ($\mu\text{g/L}$) = $10^{(0.83(\log[\text{hardness}]) - 2.46)}$ for hardness between 17-280 mg/L CaCO₃ or a lower limit of 0.04 ug/L for hardness < 17mg/L or an upper limit of 0.37 ug/L for hardness >280 mg/L (see CCME Fact Sheet).

(3) Copper guideline based on sample hardness: copper guideline ($\mu\text{g/L}$) = $e^{0.8545[\ln(\text{hardness})] - 1.465} * 0.2$ for hardness ≥82 to ≤180 mg/L, or a lower limit of 2 $\mu\text{g/L}$ for hardness <82 mg/L and an upper limit of 4 $\mu\text{g/L}$ for hardness >180 mg/L (see CCME Summary Table).

(4) Lead guideline based on sample hardness: lead guideline ($\mu\text{g/L}$) = $e^{1.273[\ln(\text{hardness})] - 4.705}$ for hardness >60 to ≤180 mg/L, or a lower limit of 1 $\mu\text{g/L}$ for hardness <60 mg/L and an upper limit of 7 $\mu\text{g/L}$ for hardness >180 mg/L (see CCME Summary Table).

(5) Nickel guideline based on sample hardness: nickel guideline ($\mu\text{g/L}$) = $e^{0.76[\ln(\text{hardness})] + 1.06}$ for hardness >60 to ≤180 mg/L, or a lower limit of 25 $\mu\text{g/L}$ for hardness <60 mg/L and an upper limit of 150 $\mu\text{g/L}$ for hardness >180 mg/L (see CCME Summary Table).

- denotes not analyzed

**Table 4: Surface Water Quality Data
Beaver Dam Mine Project
Marinette, Nova Scotia**

Table 4C: SW-2A General Chemistry Results

| | | CCME FAL | MMER | SW-2A | | | | | | | | | | |
|-------------------------------------|-------|------------------------------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|-------------|--------------|-------------|-------------|-------------|
| Sampling Date | | | | 9-Oct-14 | 13-Nov-14 | 18-Dec-14 | 18-Dec-14 | 22-Jan-15 | 29-Apr-15 | 28-May-15 | 28-May-15 | 30-Jun-15 | 29-Jul-15 | 24-Aug-15 |
| Calculated Parameters | Units | | | | | | SW-2AD (DUP) | | | | SW-2AD (DUP) | | | |
| Anion Sum | me/L | | | 0.150 | 0.180 | 0.100 | 0.110 | 0.130 | 0.0500 | 0.0900 | 0.0900 | 0.0800 | 0.0800 | 0.100 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Calculated TDS | mg/L | | | 14 | 17 | 10 | 10 | 13 | 6.0 | 7.0 | 7.0 | 8.0 | 9.0 | 12 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Cation Sum | me/L | | | 0.290 | 0.300 | 0.180 | 0.180 | 0.210 | 0.110 | 0.140 | 0.140 | 0.160 | 0.180 | 0.220 |
| Hardness (CaCO3) | mg/L | | | 5.1 | 4.9 | 2.9 | 2.8 | 3.4 | 1.4 | 2.1 | 2.0 | 2.6 | 2.9 | 3.6 |
| Ion Balance (% Difference) | % | | | 31.8 | 25.0 | 28.6 | 24.1 | 23.5 | 37.5 | 21.7 | 21.7 | 33.3 | 38.5 | 37.5 |
| Langelier Index (@ 20C) | N/A | | | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Langelier Index (@ 4C) | N/A | | | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Nitrate (N) | mg/L | 2.935 | | 0.11 | 0.065 | <0.050 | <0.050 | 0.079 | <0.050 | <0.050 | <0.050 | 0.055 | <0.050 | <0.050 |
| Saturation pH (@ 20C) | N/A | | | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Saturation pH (@ 4C) | N/A | | | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Inorganics | | | | | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | | | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Dissolved Chloride (Cl) | mg/L | | | 5.0 | 6.3 | 3.6 | 3.8 | 4.2 | 1.6 | 3.1 | 3.1 | 2.8 | 2.8 | 3.7 |
| Colour | TCU | | | 160 | 160 | 100 | 100 | 110 | 96 | 120 | 120 | 170 | 180 | 230 |
| Nitrate + Nitrite | mg/L | | | 0.11 | 0.065 | <0.050 | <0.050 | 0.079 | <0.050 | <0.050 | <0.050 | 0.055 | <0.050 | <0.050 |
| Nitrite (N) | mg/L | 0.06 | | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Nitrogen (Ammonia Nitrogen) | mg/L | Varies⁽¹⁾ | | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | 0.052 | <0.050 | <0.050 | <0.050 | 0.084 |
| Total Organic Carbon (C) | mg/L | | | 14 | 19 | 8.9 | 9.1 | 7.4 | 5.5 | 7.9 | 8.1 | 12 | 13 | 14 (1) |
| Orthophosphate (P) | mg/L | | | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| pH | pH | 6.5-9 | 6-9.5 | 5.06 | 4.54 | 4.88 | 4.75 | 4.75 | 5.08 | 5.59 | 5.36 | 5.29 | 5.26 | 5.16 |
| Reactive Silica (SiO2) | mg/L | | | 2.7 | 3.9 | 2.8 | 2.7 | 3.7 | 1.9 | 1.1 | 1.1 | 1.9 | 2.6 | 3.2 |
| Dissolved Sulphate (SO4) | mg/L | | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Turbidity | NTU | | | 1.1 | 0.50 | 0.59 | 0.23 | 0.70 | 0.29 | 1.5 | 1.4 | 0.99 | 0.97 | 1.9 |
| Conductivity | uS/cm | | | 31 | 33 | 25 | 25 | 28 | 13 | 16 | 15 | 17 | 19 | 21 |
| Total Suspended Solids | | | | - | - | - | - | - | - | - | - | - | - | - |
| Field Parameters | | | | | | | | | | | | | | |
| Temperature | °C | | | 13.57 | 7.89 | 4.2 | - | 0.27 | 3.34 | 20.64 | - | 18.81 | 21.2 | - |
| Conductivity | µS/cm | | | 38 | 37 | 27.4 | - | 25 | 16 | 23 | - | 24 | - | - |
| Total Dissolved Solids | g/L | | | 0.031 | 0.036 | - | - | 0.03 | - | - | - | - | - | - |
| Dissolved Oxygen | mg/L | 5.5-9.5⁽²⁾ | | 8.97 | 13.07 | 12.88 | - | 36.14 | 15.35 | 9.91 | - | 9.18 | - | - |
| pH | | 6.5-9 | 6-9.5 | 4.09 | 3.08 | 3.75 | - | 3.56 | 6.53 | 4.63 | - | 4.00 | 4.94 | - |

Notes

CCME FAL - Canadian Council of Ministers of the Environment Water Quality Guidelines for the Protection of Freshwater Aquatic Life (provided for reference)

MMER - Federal Metal Mining Effluent Regulations - guidelines shown represent maximum authorized concentrations in a grab sample (provided for reference)

(1) Ammonia guideline dependent on temperature and pH, e.g. , if T = 10°C, guideline for total ammonia-N varies from 83.88 mg/L at pH = 6.0 to 0.02 mg/L at pH = 10 (see CCME Fact Sheet).

(2) Dissolved oxygen - lowest acceptable concentration ranges from 5.5 mg/L for warm water biota at other life stages to 9.5 mg/L for cold water biota at early life stages (see CCME Summary Table).

- denotes not analyzed

NC = not calculated

**Table 4: Surface Water Quality Data
Beaver Dam Mine Project
Marinette, Nova Scotia**

Table 4D: SW-2A Metals Results

| Sampling Date | Units | CCME FAL | MMER | SW-2A | | | | | | | | | | |
|-----------------------|-------|----------------------------|------|----------|-----------|-----------|--------------|-----------|-----------|-----------|--------------|-----------|-----------|-----------|
| | | | | 9-Oct-14 | 13-Nov-14 | 18-Dec-14 | 18-Dec-14 | 22-Jan-15 | 29-Apr-15 | 28-May-15 | 28-May-15 | 30-Jun-15 | 29-Jul-15 | 24-Aug-15 |
| Metals | | | | | | | SW-2AD (DUP) | . | | | SW-2AD (DUP) | | | |
| Total Aluminum (Al) | ug/L | 5 / 100 ⁽¹⁾ | | 330 | 340 | 210 | 210 | 210 | 140 | 190 | 190 | 280 | 300 | 400 |
| Total Antimony (Sb) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Arsenic (As) | ug/L | 5.0 | 1000 | 1.1 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.1 | 1.1 | <1.0 | 1.5 | 1.3 |
| Total Barium (Ba) | ug/L | | | 5.6 | 5.8 | 3.2 | 3.0 | 3.3 | 1.6 | 2.2 | 2.2 | 3.0 | 3.5 | 4.6 |
| Total Beryllium (Be) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Bismuth (Bi) | ug/L | | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Boron (B) | ug/L | 1500 | | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 |
| Total Cadmium (Cd) | ug/L | 0.04 - 0.37 ⁽²⁾ | | 0.026 | 0.028 | 0.017 | 0.017 | 0.013 | <0.010 | 0.013 | 0.013 | 0.012 | 0.017 | 0.022 |
| Total Calcium (Ca) | ug/L | | | 1100 | 1000 | 640 | 590 | 680 | 290 | 470 | 460 | 580 | 620 | 770 |
| Total Chromium (Cr) | ug/L | | | 1.4 | 1.6 | <1.0 | <1.0 | <1.0 | 1.2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Cobalt (Co) | ug/L | | | 0.49 | 0.58 | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | 0.53 |
| Total Copper (Cu) | ug/L | 2 - 4 ⁽³⁾ | 600 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Iron (Fe) | ug/L | 300 | | 740 | 700 | 360 | 350 | 340 | 260 | 410 | 400 | 590 | 820 | 1000 |
| Total Lead (Pb) | ug/L | 1 - 7 ⁽⁴⁾ | 400 | 0.78 | 0.55 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.55 | 0.62 | 0.57 |
| Total Magnesium (Mg) | ug/L | | | 570 | 570 | 320 | 310 | 410 | 160 | 220 | 210 | 280 | 330 | 420 |
| Total Manganese (Mn) | ug/L | | | 77 | 71 | 43 | 42 | 51 | 25 | 27 | 27 | 35 | 40 | 58 |
| Total Mercury (Hg) | ug/L | 0.026 | | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | 0.013 | 0.013 | <0.013 | <0.013 | 0.035 |
| Total Molybdenum (Mo) | ug/L | 73 | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Nickel (Ni) | ug/L | 25 - 150 ⁽⁵⁾ | 1000 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Phosphorus (P) | ug/L | | | <100 | 110 | <100 | <100 | <100 | <100 | <100 | <100 | 150 | 170 | 140 |
| Total Potassium (K) | ug/L | | | 600 | 600 | 370 | 340 | 380 | 330 | 290 | 290 | 160 | 200 | 170 |
| Total Selenium (Se) | ug/L | 1 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Silver (Ag) | ug/L | 0.1 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Sodium (Na) | ug/L | | | 3100 | 3100 | 2100 | 2000 | 2400 | 1200 | 1600 | 1600 | 1900 | 1900 | 2300 |
| Total Strontium (Sr) | ug/L | | | 11.0 | 9.5 | 5.6 | 5.2 | 6.6 | 3.0 | 4.1 | 3.9 | 5.0 | 6.3 | 7.4 |
| Total Thallium (Tl) | ug/L | 0.8 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Tin (Sn) | ug/L | | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Titanium (Ti) | ug/L | | | 4.2 | 3.8 | 2.6 | 2.6 | 2.2 | 3.2 | 2.0 | 2.4 | 3.6 | 4.6 | 5.0 |
| Total Uranium (U) | ug/L | 15 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Vanadium (V) | ug/L | | | <2.0 | 2.5 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Zinc (Zn) | ug/L | 30 | 1000 | 6.9 | 6.2 | 5.5 | 5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |

Notes

CCME FAL - Canadian Council of Ministers of the Environment Water Quality Guidelines for the Protection of Freshwater Aquatic Life (provided for reference)

MMER - Federal Metal Mining Effluent Regulations - guidelines shown represent maximum authorized concentrations in a grab sample (provided for reference)

(1) Aluminum guideline dependent on pH. Guideline is 5 ug/L if pH <6.5 and 100 ug/L if pH ≥ 6.5 (see CCME Summary Table).

(2) Cadmium guideline (updated for 2014) (µg/L) = 10^{(0.83(log[hardness])-2.46)} for hardness between 17-280 mg/L CaCO₃ or a lower limit of 0.04 ug/L for hardness < 17mg/L or an upper limit of 0.37 ug/L for hardness >280 mg/L (see CCME Fact Sheet).

(3) Copper guideline based on sample hardness: copper guideline (µg/L) = e^{0.8545[ln(hardness)]-1.465} * 0.2 for hardness ≥82 to ≤180 mg/L, or a lower limit of 2 µg/L for hardness <82 mg/L and an upper limit of 4 µg/L for hardness >180 mg/L (see CCME Summary Table).

(4) Lead guideline based on sample hardness: lead guideline (µg/L) = e^{1.273[ln(hardness)]-4.705} for hardness >60 to ≤180 mg/L, or a lower limit of 1 µg/L for hardness <60 mg/L and an upper limit of 7 µg/L for hardness >180 mg/L (see CCME Summary Table).

(5) Nickel guideline based on sample hardness: nickel guideline (µg/L) = e^{0.76[ln(hardness)]+1.06} for hardness >60 to ≤180 mg/L, or a lower limit of 25 µg/L for hardness <60 mg/L and an upper limit of 150 µg/L for hardness >180 mg/L (see CCME Summary Table).

- denotes not analyzed

**Table 4: Surface Water Quality Data
Beaver Dam Mine Project
Marinette, Nova Scotia**

Table 4E: SW-4A General Chemistry Results

| | | CCME FAL | MMER | SW-4A | | | | | | | | | |
|-------------------------------------|--------------|------------------------------|--------------|-------------|-------------|--------------|-------------|-----------|--------------|-------------|-------------|-------------|-------------|
| Sampling Date | | | | 9-Oct-14 | 13-Nov-14 | 13-Nov-14 | 18-Dec-14 | 22-Jan-15 | 29-Apr-15 | 28-May-15 | 30-Jun-15 | 29-Jul-15 | 24-Aug-15 |
| Calculated Parameters | Units | | | | | SW-4AD (DUP) | | No Sample | | | | | |
| Anion Sum | me/L | | | 0.150 | 0.180 | 0.180 | 0.110 | | 0.0400 | 0.110 | 0.0700 | 0.0700 | 0.110 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | | | <1.0 | <1.0 | <1.0 | <1.0 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Calculated TDS | mg/L | | | 15 | 16 | 16 | 11 | | 6.0 | 9.0 | 8.0 | 9.0 | 12 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | | | <1.0 | <1.0 | <1.0 | <1.0 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Cation Sum | me/L | | | 0.300 | 0.300 | 0.300 | 0.200 | | 0.120 | 0.180 | 0.170 | 0.190 | 0.230 |
| Hardness (CaCO3) | mg/L | | | 5.9 | 5.6 | 5.6 | 3.5 | | 1.6 | 3.1 | 3.0 | 3.6 | 3.9 |
| Ion Balance (% Difference) | % | | | 33.3 | 25.0 | 25.0 | 29.0 | | 50.0 | 24.1 | 41.7 | 46.2 | 35.3 |
| Langelier Index (@ 20C) | N/A | | | NC | NC | NC | NC | | NC | NC | NC | NC | NC |
| Langelier Index (@ 4C) | N/A | | | NC | NC | NC | NC | | NC | NC | NC | NC | NC |
| Nitrate (N) | mg/L | 2.935 | | 0.093 | 0.062 | <0.050 | <0.050 | | <0.050 | <0.050 | 0.064 | <0.050 | <0.050 |
| Saturation pH (@ 20C) | N/A | | | NC | NC | NC | NC | | NC | NC | NC | NC | NC |
| Saturation pH (@ 4C) | N/A | | | NC | NC | NC | NC | | NC | NC | NC | NC | NC |
| Inorganics | | | | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | | | <5.0 | <5.0 | <5.0 | <5.0 | | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Dissolved Chloride (Cl) | mg/L | | | 5.0 | 6.2 | 6.4 | 3.9 | | 1.3 | 3.8 | 2.2 | 2.6 | 3.7 |
| Colour | TCU | | | 120 | 130 | 130 | 88 | | 100 | 130 | 160 | 170 | 260 |
| Nitrate + Nitrite | mg/L | | | 0.093 | 0.062 | <0.050 | <0.050 | | <0.050 | <0.050 | 0.064 | <0.050 | <0.050 |
| Nitrite (N) | mg/L | 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 | Varies⁽¹⁾ | | <0.050 | <0.050 | <0.050 | <0.050 | | 0.073 | 0.092 | <0.050 | <0.050 | <0.050 |
| Total Organic Carbon (C) | mg/L | | | 9.3 | 16 | 16 | 8.2 | | 5.5 | 9.7 | 12 | 18 | 14 (1) |
| Orthophosphate (P) | mg/L | | | <0.010 | <0.010 | <0.010 | <0.010 | | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| pH | pH | 6.5-9 | 6-9.5 | 5.57 | 4.76 | 4.71 | 4.96 | | 5.14 | 5.74 | 5.42 | 5.09 | 4.93 |
| Reactive Silica (SiO2) | mg/L | | | 3.4 | 3.5 | 3.6 | 2.9 | | 2.5 | 1.5 | 2.0 | 2.3 | 3.0 |
| Dissolved Sulphate (SO4) | mg/L | | | <2.0 | <2.0 | <2.0 | <2.0 | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Turbidity | NTU | | | 1.4 | 0.68 | 0.65 | 0.80 | | 0.38 | 1.4 | 1.3 | 0.81 | 1.0 |
| Conductivity | uS/cm | | | 29 | 31 | 31 | 24 | | 15 | 18 | 17 | 19 | 21 |
| Total Suspended Solids | | | | - | - | - | - | | - | - | - | - | - |
| Field Parameters | | | | | | | | | | | | | |
| Temperature | °C | | | 10.85 | 8.98 | - | 5.1 | | 5.98 | 22.45 | 20.72 | 22.4 | - |
| Conductivity | µS/cm | | | 34 | 35 | - | 24.9 | | 31 | 27 | 32 | - | - |
| Total Dissolved Solids | g/L | | | 0.03 | 0.033 | - | - | | - | - | - | - | - |
| Dissolved Oxygen | mg/L | 5.5-9.5⁽²⁾ | | 7.11 | 10.4 | - | 7.82 | | 13.48 | 7.88 | 6.8 | - | - |
| pH | | 6.5-9 | 6-9.5 | 4.27 | 3.71 | - | 3.75 | | 6.56 | 5.34 | 5.34 | 4.92 | - |

Notes

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MMER - Federal Metal Mining Effluent Regulations - guidelines shown represent maximum authorized concentrations in a grab sample (provided for reference)

(1) Ammonia guideline dependent on temperature and pH, e.g., if T = 10°C, guideline for total ammonia-N varies from 83.88 mg/L at pH = 6.0 to 0.02 mg/L at pH = 10 (see CCME Fact Sheet).

(2) Dissolved oxygen - lowest acceptable concentration ranges from 5.5 mg/L for warm water biota at other life stages to 9.5 mg/L for cold water biota at early life stages (see CCME Summary Table).

- denotes not analyzed

NC = not calculated

Table 4: Surface Water Quality Data
Beaver Dam Mine Project

Table 4F: SW-4A Metals Results

| Sampling Date | Units | CCME FAL | MMER | SW-4A | | | | | | | | | |
|-----------------------|-------|----------------------------|------|----------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | | | 9-Oct-14 | 13-Nov-14 | 13-Nov-14 | 18-Dec-14 | 22-Jan-15 | 29-Apr-15 | 28-May-15 | 30-Jun-15 | 29-Jul-15 | 24-Aug-15 |
| Metals | | | | | | SW-4AD (DUP) | | No Sample | | | | | |
| Total Aluminum (Al) | ug/L | 5 / 100 ⁽¹⁾ | | 250 | 300 | 310 | 220 | | 130 | 240 | 300 | 350 | 390 |
| Total Antimony (Sb) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Arsenic (As) | ug/L | 5.0 | 1000 | 5.8 | 2.9 | 2.8 | 2.0 | | 1.1 | 7.3 | 5.4 | 5.6 | 5.6 |
| Total Barium (Ba) | ug/L | | | 3.4 | 4.6 | 4.4 | 3.2 | | 1.7 | 2.8 | 2.8 | 3.7 | 3.4 |
| Total Beryllium (Be) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Bismuth (Bi) | ug/L | | | <2.0 | <2.0 | <2.0 | <2.0 | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Boron (B) | ug/L | 1500 | | <50 | <50 | <50 | <50 | | <50 | <50 | <50 | <50 | <50 |
| Total Cadmium (Cd) | ug/L | 0.04 - 0.37 ⁽²⁾ | | 0.015 | 0.024 | 0.025 | 0.044 | | 0.012 | 0.013 | 0.016 | 0.014 | 0.021 |
| Total Calcium (Ca) | ug/L | | | 1500 | 1300 | 1300 | 810 | | 350 | 780 | 710 | 860 | 930 |
| Total Chromium (Cr) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Cobalt (Co) | ug/L | | | 0.43 | 0.53 | 0.59 | <0.40 | | <0.40 | 0.42 | <0.40 | 0.63 | 0.48 |
| Total Copper (Cu) | ug/L | 2 - 4 ⁽³⁾ | 600 | <2.0 | <2.0 | <2.0 | <2.0 | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Iron (Fe) | ug/L | 300 | | 690 | 540 | 540 | 320 | | 160 | 580 | 650 | 840 | 1100 |
| Total Lead (Pb) | ug/L | 1 - 7 ⁽⁴⁾ | 400 | 0.54 | <0.50 | <0.50 | <0.50 | | <0.50 | <0.50 | 0.52 | 0.56 | 0.55 |
| Total Magnesium (Mg) | ug/L | | | 540 | 590 | 590 | 350 | | 170 | 280 | 290 | 360 | 370 |
| Total Manganese (Mn) | ug/L | | | 53 | 58 | 58 | 41 | | 20 | 37 | 32 | 42 | 51 |
| Total Mercury (Hg) | ug/L | 0.026 | | <0.013 | <0.013 | <0.013 | <0.013 | | <0.013 | 0.015 | <0.013 | <0.013 | 0.028 |
| Total Molybdenum (Mo) | ug/L | 73 | | <2.0 | <2.0 | <2.0 | <2.0 | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Nickel (Ni) | ug/L | 25 - 150 ⁽⁵⁾ | 1000 | <2.0 | <2.0 | <2.0 | <2.0 | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Phosphorus (P) | ug/L | | | <100 | 100 | 100 | <100 | | <100 | <100 | 140 | 150 | 150 |
| Total Potassium (K) | ug/L | | | 450 | 500 | 520 | 480 | | 290 | 280 | 140 | 180 | 200 |
| Total Selenium (Se) | ug/L | 1 | | <1.0 | <1.0 | <1.0 | <1.0 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Silver (Ag) | ug/L | 0.1 | | <0.10 | <0.10 | <0.10 | <0.10 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Sodium (Na) | ug/L | | | 3200 | 3100 | 3200 | 2300 | | 1300 | 1900 | 1900 | 1700 | 2200 |
| Total Strontium (Sr) | ug/L | | | 10 | 9.1 | 9.2 | 5.7 | | 2.8 | 5.1 | 5.0 | 6.4 | 7.2 |
| Total Thallium (Tl) | ug/L | 1 | | <0.10 | <0.10 | <0.10 | <0.10 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Tin (Sn) | ug/L | | | <2.0 | <2.0 | <2.0 | <2.0 | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Titanium (Ti) | ug/L | | | 5 | 3.7 | 3.9 | 2.3 | | 2.4 | 4.7 | 3.8 | 3.8 | 4.9 |
| Total Uranium (U) | ug/L | 15 | | <0.10 | <0.10 | <0.10 | <0.10 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Vanadium (V) | ug/L | | | <2.0 | 2.9 | 2.8 | <2.0 | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Zinc (Zn) | ug/L | 30 | 1000 | 19 | 7.8 | 6.9 | 12 | | <5.0 | 7.5 | <5.0 | <5.0 | 6.0 |

Notes

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MMER - Federal Metal Mining Effluent Regulations - guidelines shown represent maximum authorized concentrations in a grab sample (provided for reference)

(1) Aluminum guideline dependent on pH. Guideline is 5 ug/L if pH <6.5 and 100 ug/L if pH ≥ 6.5 (see CCME Summary Table).

(2) Cadmium guideline (updated for 2014) (µg/L) = 10^{(0.83(log[hardness])-2.46)} for hardness between 17-280 mg/L CaCO₃ or a lower limit of 0.04 ug/L for hardness < 17mg/L or an upper limit of 0.37 ug/L for hardness >280 mg/L (see CCME Fact Sheet).

(3) Copper guideline based on sample hardness: copper guideline (µg/L) = e^{0.8545[ln(hardness)]-1.465} * 0.2 for hardness ≥82 to ≤180 mg/L, or a lower limit of 2 µg/L for hardness <82 mg/L and an upper limit of 4 µg/L for hardness >180 mg/L (see CCME Summary Table).

(4) Lead guideline based on sample hardness: lead guideline (µg/L) = e^{1.273[ln(hardness)]-4.705} for hardness >60 to ≤180 mg/L, or a lower limit of 1 µg/L for hardness <60 mg/L and an upper limit of 7 µg/L for hardness >180 mg/L (see CCME Summary Table).

(5) Nickel guideline based on sample hardness: nickel guideline (µg/L) = e^{0.76[ln(hardness)]+1.06} for hardness >60 to ≤180 mg/L, or a lower limit of 25 µg/L for hardness <60 mg/L and an upper limit of 150 µg/L for hardness >180 mg/L (see CCME Summary Table).

- denotes not analyzed

**Table 4: Surface Water Quality Data
Beaver Dam Mine Project
Marinette, Nova Scotia**

Table 4G: SW-5 General Chemistry Results

| | | CCME FAL | MMER | SW-5 | | | | | | | | | |
|-------------------------------------|-------|------------------------------|--------------|-------------|-------------|--------------|--------------|--------------|--------------|-----------|-----------|-----------|-----------|
| Sampling Date | | | | 9-Oct-14 | 9-Oct-14 | 13-Nov-14 | 18-Dec-14 | 22-Jan-15 | 29-Apr-15 | 28-May-15 | 30-Jun-15 | 29-Jul-15 | 24-Aug-15 |
| Calculated Parameters | Units | | | | SW-5D (DUP) | | | | | | | | |
| Anion Sum | me/L | | | 0.480 | 0.480 | 0.520 | 0.340 | 0.400 | 0.100 | 0.360 | 0.350 | 0.360 | 0.410 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | | | 14 | 14 | 11 | 6.1 | 8.0 | <1.0 | 7.8 | 9.3 | 11 | 13 |
| Calculated TDS | mg/L | | | 28 | 28 | 33 | 23 | 27 | 12 | 21 | 21 | 21 | 25 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Cation Sum | me/L | | | 0.480 | 0.470 | 0.510 | 0.340 | 0.430 | 0.240 | 0.350 | 0.350 | 0.340 | 0.420 |
| Hardness (CaCO3) | mg/L | | | 16 | 16 | 17 | 10 | 14 | 7.3 | 11 | 12 | 12 | 15 |
| Ion Balance (% Difference) | % | | | 0.00 | 1.05 | 0.970 | 0.00 | 3.61 | 41.2 | 1.41 | 0.00 | 2.86 | 1.20 |
| Langelier Index (@ 20C) | N/A | | | (2.56) | (2.54) | -2.74 | -3.79 | -3.17 | NC | -3.22 | -3.00 | -2.84 | -2.55 |
| Langelier Index (@ 4C) | N/A | | | (2.81) | (2.80) | -2.99 | -4.04 | -3.42 | NC | -3.48 | -3.26 | -3.09 | -2.80 |
| Nitrate (N) | mg/L | 2.935 | | 0.10 | 0.15 | 0.051 | 0.094 | 0.096 | 0.870 | <0.050 | 0.063 | <0.050 | 0.055 |
| Saturation pH (@ 20C) | N/A | | | 9.43 | 9.46 | 9.52 | 10.0 | 9.77 | NC | 9.84 | 9.76 | 9.66 | 9.50 |
| Saturation pH (@ 4C) | N/A | | | 9.69 | 9.71 | 9.77 | 10.3 | 10.0 | NC | 10.1 | 10.0 | 9.92 | 9.75 |
| Inorganics | | | | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | | | 14 | 14 | 11 | 6.1 | 8.0 | <5.0 | 7.8 | 9.3 | 11 | 13 |
| Dissolved Chloride (Cl) | mg/L | | | 4.0 | 4.1 | 5.2 | 4.0 | 5.0 | 1.5 | 3.4 | 1.9 | 1.7 | 2.2 |
| Colour | TCU | | | 22 | 23 | 26 | 30 | 23 | 28 | 27 | 23 | 24 | 37 |
| Nitrate + Nitrite | mg/L | | | 0.10 | 0.15 | 0.051 | 0.094 | 0.096 | 0.087 | <0.050 | 0.063 | <0.050 | 0.055 |
| Nitrite (N) | mg/L | 0.06 | | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Nitrogen (Ammonia Nitrogen) | mg/L | Varies⁽¹⁾ | | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | 0.052 | <0.050 | <0.050 |
| Total Organic Carbon (C) | mg/L | | | 4.1 | 4.3 | 3.5 | 4.0 | 3.1 | 3.5 | 3.6 | 4.1 | 5.3 | 4.3 |
| Orthophosphate (P) | mg/L | | | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | 0.011 | <0.010 | <0.010 | 0.011 |
| pH | pH | 6.5-9 | 6-9.5 | 6.88 | 6.92 | 6.78 | 6.23 | 6.60 | 6.14 | 6.62 | 6.76 | 6.83 | 6.95 |
| Reactive Silica (SiO2) | mg/L | | | 1.8 | 1.8 | 3.1 | 3.0 | 3.1 | 2.3 | <0.50 | 0.92 | 0.77 | 2.5 |
| Dissolved Sulphate (SO4) | mg/L | | | 3.5 | 3.6 | 7.0 | 4.6 | 4.4 | 2.5 | 5.0 | 5.0 | 4.5 | 3.6 |
| Turbidity | NTU | | | 0.44 | 0.81 | 1.4 | 6.2 | 2.4 | 0.69 | 1.2 | 0.83 | 0.91 | 1.2 |
| Conductivity | uS/cm | | | 48 | 47 | 49 | 35 | 45 | 28 | 34 | 35 | 32 | 40 |
| Total Suspended Solids | | | | - | - | - | - | - | - | - | - | - | - |
| Field Parameters | | | | | | | | | | | | | |
| Temperature | °C | | | 13.98 | - | 7.76 | 4.6 | 1.75 | 2.7 | 20.84 | 20.51 | 22.4 | - |
| Conductivity | µS/cm | | | 53 | - | 49 | 35.7 | 36 | 27 | 40 | 40 | - | - |
| Total Dissolved Solids | g/L | | | 0.044 | - | 0.048 | - | 0.041 | - | - | - | - | - |
| Dissolved Oxygen | mg/L | 5.5-9.5⁽²⁾ | | 8.26 | - | 15.04 | 13.08 | 39.05 | 14.95 | 8.59 | 9.13 | - | - |
| pH | | 6.5-9 | 6-9.5 | 5.46 | - | 4.61 | 5.94 | 4.8 | 6.67 | 6.56 | 6.34 | 6.39 | - |

Notes

CCME FAL - Canadian Council of Ministers of the Environment Water Quality Guidelines for the Protection of Freshwater Aquatic Life (provided for reference)

MMER - Federal Metal Mining Effluent Regulations - guidelines shown represent maximum authorized concentrations in a grab sample (provided for reference)

(1) Ammonia guideline dependent on temperature and pH, e.g., if T = 10°C, guideline for total ammonia-N varies from 83.88 mg/L at pH = 6.0 to 0.02 mg/L at pH = 10 (see CCME Fact Sheet).

(2) Dissolved oxygen - lowest acceptable concentration ranges from 5.5 mg/L for warm water biota at other life stages to 9.5 mg/L for cold water biota at early life stages (see CCME Summary Table).

- denotes not analyzed

NC = not calculated

**Table 4: Surface Water Quality Data
Beaver Dam Mine Project
Marinette, Nova Scotia**

Table 4H: SW-5 Metals Results

| Sampling Date | Units | CCME FAL | MMER | SW-5 | | | | | | | | | |
|-----------------------|-------|----------------------------|------|----------|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | | | 9-Oct-14 | 9-Oct-14 SW-5D (DUP) | 13-Nov-14 | 18-Dec-14 | 22-Jan-15 | 29-Apr-15 | 28-May-15 | 30-Jun-15 | 29-Jul-15 | 24-Aug-15 |
| Total Aluminum (Al) | ug/L | 5 / 100 ⁽¹⁾ | | 28 | 29 | 100 | 460 | 210 | 98 | 61 | 45 | 43 | 52 |
| Total Antimony (Sb) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Arsenic (As) | ug/L | 5.0 | 1000 | 29 | 30 | 15 | 17 | 22 | 15 | 41 | 32 | 20 | 47 |
| Total Barium (Ba) | ug/L | | | 4.5 | 4.6 | 5.5 | 6.1 | 6.1 | 4.6 | 4.4 | 3.6 | 4.1 | 4.5 |
| Total Beryllium (Be) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Bismuth (Bi) | ug/L | | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Boron (B) | ug/L | 1500 | | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 |
| Total Cadmium (Cd) | ug/L | 0.04 - 0.37 ⁽²⁾ | | <0.010 | 0.016 | <0.010 | 0.010 | 0.011 | 0.018 | <0.010 | <0.010 | <0.010 | <0.010 |
| Total Calcium (Ca) | ug/L | | | 5000 | 4900 | 5300 | 3000 | 4100 | 2200 | 3500 | 3600 | 3800 | 4500 |
| Total Chromium (Cr) | ug/L | | | <1.0 | <1.0 | <1.0 | 1.1 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Cobalt (Co) | ug/L | | | <0.40 | <0.40 | <0.40 | <0.40 | 0.44 | 0.61 | <0.40 | <0.40 | <0.40 | <0.40 |
| Total Copper (Cu) | ug/L | 2 - 4 ⁽³⁾ | 600 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Iron (Fe) | ug/L | 300 | | 400 | 400 | 470 | 730 | 680 | 560 | 880 | 530 | 610 | 750 |
| Total Lead (Pb) | ug/L | 1 - 7 ⁽⁴⁾ | 400 | <0.50 | <0.50 | <0.50 | 0.57 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Total Magnesium (Mg) | ug/L | | | 940 | 920 | 970 | 640 | 780 | 430 | 600 | 640 | 720 | 870 |
| Total Manganese (Mn) | ug/L | | | 60 | 59 | 28 | 25 | 150 | 200 | 65 | 50 | 45 | 97 |
| Total Mercury (Hg) | ug/L | 0.026 | | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | 0.015 | <0.013 | <0.013 | 0.027 |
| Total Molybdenum (Mo) | ug/L | 73 | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Nickel (Ni) | ug/L | 25 - 150 ⁽⁵⁾ | 1000 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Phosphorus (P) | ug/L | | | <100 | <100 | <100 | <100 | <100 | <100 | <100 | 140 | 170 | 150 |
| Total Potassium (K) | ug/L | | | 730 | 710 | 1000 | 720 | 740 | 480 | 670 | 580 | 350 | 450 |
| Total Selenium (Se) | ug/L | 1 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Silver (Ag) | ug/L | 0.1 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Sodium (Na) | ug/L | | | 2700 | 2700 | 2900 | 2200 | 2700 | 1400 | 1700 | 1800 | 1500 | 2000 |
| Total Strontium (Sr) | ug/L | | | 28.0 | 27 | 26 | 15 | 21 | 11 | 18 | 20 | 25 | 27 |
| Total Thallium (Tl) | ug/L | 0.8 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Tin (Sn) | ug/L | | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Titanium (Ti) | ug/L | | | <2.0 | <2.0 | 3.2 | 14 | 4.2 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Uranium (U) | ug/L | 15 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Vanadium (V) | ug/L | | | <2.0 | <2.0 | 3.1 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Zinc (Zn) | ug/L | 30 | 1000 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | 5.4 | <5.0 | <5.0 | <5.0 | <5.0 |

Notes

- CCME FAL - Canadian Council of Ministers of the Environment Water Quality Guidelines for the Protection of Freshwater Aquatic Life (provided for reference)
- MMER - Federal Metal Mining Effluent Regulations - guidelines shown represent maximum authorized concentrations in a grab sample (provided for reference)
- (1) Aluminum guideline dependent on pH. Guideline is 5 ug/L if pH <6.5 and 100 ug/L if pH ≥ 6.5 (see CCME Summary Table).
- (2) Cadmium guideline (updated for 2014) (µg/L) = $10^{(0.83(\log[\text{hardness}]) - 2.46)}$ for hardness between 17-280 mg/L CaCO₃ or a lower limit of 0.04 ug/L for hardness < 17mg/L or an upper limit of 0.37 ug/L for hardness >280 mg/L (see CCME Fact Sheet).
- (3) Copper guideline based on sample hardness: copper guideline (µg/L) = $e^{0.8545[\ln(\text{hardness})] - 1.465} * 0.2$ for hardness ≥82 to ≤180 mg/L, or a lower limit of 2 µg/L for hardness <82 mg/L and an upper limit of 4 µg/L for hardness >180 mg/L (see CCME Summary Table).
- (4) Lead guideline based on sample hardness: lead guideline (µg/L) = $e^{1.273[\ln(\text{hardness})] - 4.705}$ for hardness >60 to ≤180 mg/L, or a lower limit of 1 µg/L for hardness <60 mg/L and an upper limit of 7 µg/L for hardness >180 mg/L (see CCME Summary Table).

**Table 4: Surface Water Quality Data
Beaver Dam Mine Project
Marinette, Nova Scotia**

Table 4I: SW-6A General Chemistry Results

| | | CCME FAL | MMER | SW-6A | | | | | | | | | |
|-------------------------------------|--------------|------------------------------|--------------|-------------|--------------|--------------|--------------|-----------|--------------|-------------|--------------|-------------|-------------|
| Sampling Date | | | | 9-Oct-14 | 13-Nov-14 | 18-Dec-14 | 22-Jan-15 | 29-Apr-15 | 28-May-15 | 30-Jun-15 | 30-Jun-15 | 29-Jul-15 | 24-Aug-15 |
| Calculated Parameters | Units | | | | | | | No Sample | | | SW-6AD (DUP) | | |
| Anion Sum | me/L | | | 0.130 | 0.160 | 0.110 | 0.120 | | 0.0700 | 0.0700 | 0.0700 | 0.0700 | 0.100 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | | | <1.0 | <1.0 | <1.0 | <1.0 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Calculated TDS | mg/L | | | 13 | 15 | 11 | 12 | | 7.0 | 7.0 | 7.0 | 8.0 | 12 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | | | <1.0 | <1.0 | <1.0 | <1.0 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Cation Sum | me/L | | | 0.240 | 0.270 | 0.190 | 0.210 | | 0.140 | 0.170 | 0.160 | 0.170 | 0.240 |
| Hardness (CaCO3) | mg/L | | | 4.5 | 5.0 | 3.5 | 3.9 | | 2.5 | 2.8 | 2.8 | 3.2 | 4.4 |
| Ion Balance (% Difference) | % | | | 29.7 | 25.6 | 26.7 | 27.3 | | 33.3 | 41.7 | 39.1 | 41.7 | 41.2 |
| Langelier Index (@ 20C) | N/A | | | NC | NC | NC | NC | | NC | NC | NC | NC | NC |
| Langelier Index (@ 4C) | N/A | | | NC | NC | NC | NC | | NC | NC | NC | NC | NC |
| Nitrate (N) | mg/L | 2.935 | | 0.080 | <0.050 | <0.050 | <0.050 | | <0.050 | 0.053 | 0.059 | <0.050 | <0.050 |
| Saturation pH (@ 20C) | N/A | | | NC | NC | NC | NC | | NC | NC | NC | NC | NC |
| Saturation pH (@ 4C) | N/A | | | NC | NC | NC | NC | | NC | NC | NC | NC | NC |
| Inorganics | | | | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | | | <5.0 | <5.0 | <5.0 | <5.0 | | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Dissolved Chloride (Cl) | mg/L | | | 4.3 | 5.8 | 3.8 | 4.2 | | 2.5 | 2.2 | 2.2 | 2.4 | 3.5 |
| Colour | TCU | | | 80 | 99 | 87 | 82 | | 88 | 140 | 130 | 140 | 220 |
| Nitrate + Nitrite | mg/L | | | 0.080 | <0.050 | <0.050 | <0.050 | | <0.050 | 0.053 | 0.059 | <0.050 | <0.050 |
| Nitrite (N) | mg/L | 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 | Varies⁽¹⁾ | | <0.050 | <0.050 | <0.050 | <0.050 | | <0.050 | 0.22 | <0.050 | <0.050 | <0.050 |
| Total Organic Carbon (C) | mg/L | | | 9.1 | 13 | 8.1 | 8.9 | | 7.3 | 10 | 11 | 13 | 12 (1) |
| Orthophosphate (P) | mg/L | | | <0.010 | <0.010 | <0.010 | <0.010 | | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| pH | pH | 6.5-9 | 6-9.5 | 5.73 | 5.05 | 5.13 | 5.09 | | 5.76 | 5.79 | 5.64 | 5.50 | 5.37 |
| Reactive Silica (SiO2) | mg/L | | | 3.3 | 3.5 | 2.8 | 3.4 | | 1.1 | 1.3 | 1.2 | 1.6 | 2.7 |
| Dissolved Sulphate (SO4) | mg/L | | | <2.0 | <2.0 | <2.0 | <2.0 | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Turbidity | NTU | | | 0.30 | 0.69 | 0.42 | 0.44 | | 0.43 | 0.65 | 1.1 | 0.49 | 0.54 |
| Conductivity | uS/cm | | | 25 | 28 | 24 | 25 | | 16 | 16 | 16 | 16 | 20 |
| Total Suspended Solids | | | | - | - | - | - | | - | - | - | - | - |
| Field Parameters | | | | | | | | | | | | | |
| Temperature | °C | | | 10.98 | 8.04 | 4.6 | 1.15 | | 17.4 | 18.09 | - | 20.4 | - |
| Conductivity | µS/cm | | | 31 | 32 | 25.7 | 23 | | 34 | 22 | - | - | - |
| Total Dissolved Solids | g/L | | | 0.028 | 0.032 | - | 0.027 | | - | - | - | - | - |
| Dissolved Oxygen | mg/L | 5.5-9.5⁽²⁾ | | 8.88 | 14.49 | 12.01 | 42.34 | | 10.89 | 9.17 | - | - | - |
| pH | | 6.5-9 | 6-9.5 | 3.56 | 3.43 | 4.49 | 3.98 | | 5.72 | 8.73 | - | 5.02 | - |

Notes

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MMER - Federal Metal Mining Effluent Regulations - guidelines shown represent maximum authorized concentrations in a grab sample (provided for reference)

(1) Ammonia guideline dependent on temperature and pH, e.g., if T = 10°C, guideline for total ammonia-N varies from 83.88 mg/L at pH = 6.0 to 0.02 mg/L at pH = 10 (see CCME Fact Sheet).

(2) Dissolved oxygen - lowest acceptable concentration ranges from 5.5 mg/L for warm water biota at other life stages to 9.5 mg/L for cold water biota at early life stages (see CCME Summary Table).

- denotes not analyzed

NC = not calculated

**Table 4: Surface Water Quality Data
Beaver Dam Mine Project
Marinette, Nova Scotia**

Table 4J: SW-6A Metals Results

| Sampling Date | Units | CCME FAL | MMER | SW-6A | | | | | | | | |
|-----------------------|-------|----------------------------|------|----------|-----------|-----------|-----------|-----------|-----------|--------------|-----------|-----------|
| | | | | 9-Oct-14 | 13-Nov-14 | 18-Dec-14 | 22-Jan-15 | 28-May-15 | 30-Jun-15 | 30-Jun-15 | 29-Jul-15 | 24-Aug-15 |
| Metals | | | | | | | | | | SW-6AD (DUP) | | |
| Total Aluminum (Al) | ug/L | 5 / 100 ⁽¹⁾ | | 220 | 290 | 240 | 250 | 220 | 290 | 39 | 320 | 470 |
| Total Antimony (Sb) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Arsenic (As) | ug/L | 5.0 | 1000 | 4.0 | 1.9 | 1.1 | 1.0 | 3.2 | 3.0 | 130 | 2.8 | 7.6 |
| Total Barium (Ba) | ug/L | | | 3.2 | 4.1 | 3.1 | 3.0 | 2.3 | 2.6 | 5.4 | 3.1 | 3.8 |
| Total Beryllium (Be) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Bismuth (Bi) | ug/L | | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Boron (B) | ug/L | 1500 | | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 |
| Total Cadmium (Cd) | ug/L | 0.04 - 0.37 ⁽²⁾ | | 0.024 | 0.021 | 0.014 | 0.011 | <0.010 | 0.016 | 0.061 | 0.012 | 0.031 |
| Total Calcium (Ca) | ug/L | | | 1000 | 1200 | 790 | 880 | 620 | 670 | 4900 | 770 | 1000 |
| Total Chromium (Cr) | ug/L | | | <1.0 | <1.0 | 1.3 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Cobalt (Co) | ug/L | | | <0.40 | 0.44 | <0.40 | <0.40 | <0.40 | <0.40 | 1.8 | <0.40 | 1.0 |
| Total Copper (Cu) | ug/L | 2 - 4 ⁽³⁾ | 600 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 3.0 | <2.0 | <2.0 |
| Total Iron (Fe) | ug/L | 300 | | 500 | 480 | 330 | 380 | 370 | 550 | 1400 | 750 | 1500 |
| Total Lead (Pb) | ug/L | 1 - 7 ⁽⁴⁾ | 400 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Total Magnesium (Mg) | ug/L | | | 470 | 510 | 360 | 410 | 230 | 270 | 660 | 310 | 430 |
| Total Manganese (Mn) | ug/L | | | 50 | 51 | 39 | 46 | 29 | 33 | 110 | 38 | 100 |
| Total Mercury (Hg) | ug/L | 0.026 | | <0.013 | <0.013 | <0.013 | <0.013 | 0.017 | <0.013 | 0.013 | <0.013 | 0.035 |
| Total Molybdenum (Mo) | ug/L | 73 | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Nickel (Ni) | ug/L | 25 - 150 ⁽⁵⁾ | 1000 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 7.2 | <2.0 | <2.0 |
| Total Phosphorus (P) | ug/L | | | <100 | <100 | <100 | <100 | <100 | 140 | 140 | 160 | 150 |
| Total Potassium (K) | ug/L | | | 340 | 470 | 300 | 300 | 280 | 190 | 640 | 200 | 240 |
| Total Selenium (Se) | ug/L | 1 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Silver (Ag) | ug/L | 0.1 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Sodium (Na) | ug/L | | | 2800 | 3000 | 2200 | 2300 | 1700 | 1800 | 1900 | 1700 | 2200 |
| Total Strontium (Sr) | ug/L | | | 7.1 | 7.7 | 5.9 | 6.1 | 4.4 | 4.8 | 19 | 5.5 | 7.6 |
| Total Thallium (Tl) | ug/L | 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 | | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Titanium (Ti) | ug/L | | | 2.7 | 3.1 | 2.8 | 2.6 | 2.8 | 3.4 | <2.0 | 3.5 | 4.3 |
| Total Uranium (U) | ug/L | 15 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Vanadium (V) | ug/L | | | <2.0 | 2.2 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Zinc (Zn) | ug/L | 30 | 1000 | <5.0 | 5.5 | <5.0 | <5.0 | 5.7 | <5.0 | 13 | <5.0 | <5.0 |

Notes

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MMER - Federal Metal Mining Effluent Regulations - guidelines shown represent maximum authorized concentrations in a grab sample (provided for reference)

(1) Aluminum guideline dependent on pH. Guideline is 5 ug/L if pH < 6.5 and 100 ug/L if pH ≥ 6.5 (see CCME Summary Table).

(2) Cadmium guideline (updated for 2014) (µg/L) = $10^{(0.83(\log[\text{hardness}]) - 2.46)}$ for hardness between 17-280 mg/L CaCO₃ or a lower limit of 0.04 ug/L for hardness < 17mg/L or an upper limit of 0.37 ug/L for hardness >280 mg/L (see CCME Fact Sheet).

(3) Copper guideline based on sample hardness: copper guideline (µg/L) = $e^{0.8545[\ln(\text{hardness})] - 1.465} * 0.2$ for hardness ≥ 82 to ≤ 180 mg/L, or a lower limit of 2 µg/L for hardness < 82 mg/L and an upper limit of 4 µg/L for hardness > 180 mg/L (see CCME Summary Table).

(4) Lead guideline based on sample hardness: lead guideline (µg/L) = $e^{1.273[\ln(\text{hardness})] - 4.705}$ for hardness > 60 to ≤ 180 mg/L, or a lower limit of 1 µg/L for hardness < 60 mg/L and an upper limit of 7 µg/L for hardness > 180 mg/L (see CCME Summary Table).

(5) Nickel guideline based on sample hardness: nickel guideline (µg/L) = $e^{0.76[\ln(\text{hardness})] + 1.06}$ for hardness > 60 to ≤ 180 mg/L, or a lower limit of 25 µg/L for hardness < 60 mg/L and an upper limit of 150 µg/L for hardness > 180 mg/L (see CCME Summary Table).

- denotes not analyzed

**Table 4: Surface Water Quality Data
Beaver Dam Mine Project
Marinette, Nova Scotia**

Table 4K: SW-9 General Chemistry Results

| | | CCME FAL | MMER | SW-9 | | | | | | | | | |
|--------------------------------------------------|-------|------------------------------|--------------|-------------|--------------|--------------|-------------|--------------|--------------|------------|-----------|------------|-----------|
| Sampling Date | | | | 9-Oct-14 | 13-Nov-14 | 18-Dec-14 | 22-Jan-15 | 29-Apr-15 | 28-May-15 | 30-Jun-15 | 29-Jul-15 | 29-Jul-15 | 24-Aug-15 |
| Calculated Parameters | Units | | | | | | | | | | | SW-9 (DUP) | |
| Anion Sum | me/L | | | 0.310 | 0.200 | 0.140 | 0.180 | 0.100 | 0.170 | 0.130 | 0.250 | 0.250 | 0.150 |
| Bicarb. Alkalinity (calc. as CaCO ₃) | mg/L | | | 5.8 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 5.6 | 5.5 | <1.0 |
| Calculated TDS | mg/L | | | 23 | 17 | 12 | 16 | 9 | 13 | 13 | 18 | 18 | 15 |
| Carb. Alkalinity (calc. as CaCO ₃) | mg/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Cation Sum | me/L | | | 0.420 | 0.340 | 0.230 | 0.290 | 0.180 | 0.260 | 0.310 | 0.330 | 0.340 | 0.330 |
| Hardness (CaCO ₃) | mg/L | | | 10 | 6.4 | 4.1 | 5.0 | 2.8 | 4.7 | 7.4 | 8.0 | 8.2 | 7.5 |
| Ion Balance (% Difference) | % | | | 15.1 | 25.9 | 24.3 | 23.4 | 28.6 | 20.9 | 40.9 | 13.8 | 15.3 | 37.5 |
| Langelier Index (@ 20C) | N/A | | | (4.22) | NC | NC | NC | NC | NC | NC | -3.90 | -3.83 | NC |
| Langelier Index (@ 4C) | N/A | | | (4.47) | NC | NC | NC | NC | NC | NC | -4.16 | -4.08 | NC |
| Nitrate (N) | mg/L | 2.935 | | 0.091 | <0.050 | <0.050 | 0.051 | <0.050 | <0.050 | <0.050 | 0.064 | <0.050 | <0.050 |
| Saturation pH (@ 20C) | N/A | | | 10.2 | NC | NC | NC | NC | NC | NC | 10.3 | 10.3 | NC |
| Saturation pH (@ 4C) | N/A | | | 10.4 | NC | NC | NC | NC | NC | NC | 10.5 | 10.5 | NC |
| Inorganics | | | | | | | | | | | | | |
| Total Alkalinity (Total as CaCO ₃) | mg/L | | | 5.8 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | 5.6 | 5.5 | <5.0 |
| Dissolved Chloride (Cl) | mg/L | | | 6.7 | 7.2 | 4.8 | 6.2 | 3.4 | 6.1 | 4.8 | 4.8 | 4.9 | 5.4 |
| Colour | TCU | | | 160 | 140 | 110 | 73 | 82 | 80 | 150 | 130 | 130 | 180 |
| Nitrate + Nitrite | mg/L | | | 0.091 | <0.050 | <0.050 | 0.051 | <0.050 | <0.050 | <0.050 | 0.064 | <0.050 | <0.050 |
| Nitrite (N) | mg/L | 0.06 | | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Nitrogen (Ammonia Nitrogen) | mg/L | Varies⁽¹⁾ | | <0.050 | <0.050 | <0.050 | <0.050 | 0.082 | <0.050 | 0.14 | <0.050 | <0.050 | <0.050 |
| Total Organic Carbon (C) | mg/L | | | 17 | 18 | 8.9 | 7.0 | 6.1 | 6.7 | 12 | 12 | 12 | 11 (1) |
| Orthophosphate (P) | mg/L | | | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| pH | pH | 6.5-9 | 6-9.5 | 5.94 | 4.96 | 5.06 | 5.44 | 5.77 | 6.17 | 6.33 | 6.36 | 6.43 | 6.05 |
| Reactive Silica (SiO ₂) | mg/L | | | 3.2 | 3.1 | 2.4 | 3.5 | 1.6 | 1.5 | 2.2 | 2.7 | 2.6 | 2.3 |
| Dissolved Sulphate (SO ₄) | mg/L | | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Turbidity | NTU | | | 1.5 | 0.74 | 0.49 | 0.77 | 1.0 | 0.72 | 0.99 | 1.0 | 0.93 | 0.82 |
| Conductivity | uS/cm | | | 39 | 35 | 27 | 32 | 19 | 29 | 29 | 30 | 30 | 29 |
| Total Suspended Solids | | | | - | - | - | - | - | - | - | - | - | - |
| Field Parameters | | | | | | | | | | | | | |
| Temperature | °C | | | 16.03 | 7.84 | 4 | 0.07 | 2.72 | 20.69 | 18.96 | 20.3 | - | - |
| Conductivity | µS/cm | | | 47 | 36 | 28.2 | 26 | 20 | 34 | 34 | - | - | - |
| Total Dissolved Solids | g/L | | | 0.037 | 0.037 | - | 0.033 | - | - | - | - | - | - |
| Dissolved Oxygen | mg/L | 5.5-9.5⁽²⁾ | | 9.82 | 12.85 | 12.34 | 21.9 | 15.27 | 10.89 | 9.9 | - | - | - |
| pH | | 6.5-9 | 6-9.5 | 4.90 | 3.17 | 4.66 | 3.68 | 6.6 | 5.72 | 8.04 | 6.14 | - | - |

Notes

CCME FAL - Canadian Council of Ministers of the Environment Water Quality Guidelines for the Protection of Freshwater Aquatic Life (provided for reference)

MMER - Federal Metal Mining Effluent Regulations - guidelines shown represent maximum authorized concentrations in a grab sample (provided for reference)

(1) Ammonia guideline dependent on temperature and pH, e.g., if T = 10°C, guideline for total ammonia-N varies from 83.88 mg/L at pH = 6.0 to 0.02 mg/L at pH = 10 (see CCME Fact Sheet).

(2) Dissolved oxygen - lowest acceptable concentration ranges from 5.5 mg/L for warm water biota at other life stages to 9.5 mg/L for cold water biota at early life stages (see CCME Summary Table).

- denotes not analyzed

NC = not calculated

Table 4: Surface Water Quality Data
Beaver Dam Mine Project
Marinette, Nova Scotia

Table 4L: SW-9 Metals Results

| Sampling Date | Units | CCME FAL | MMER | SW-9 | | | | | | | | | |
|-----------------------|-------|----------------------------|------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------------------|-----------|
| | | | | 9-Oct-14 | 13-Nov-14 | 18-Dec-14 | 22-Jan-15 | 29-Apr-15 | 28-May-15 | 30-Jun-15 | 29-Jul-15 | 29-Jul-15 SW-1 (DUP) | 24-Aug-15 |
| Total Aluminum (Al) | ug/L | 5 / 100 ⁽¹⁾ | | 410 | 330 | 310 | 210 | 160 | 170 | 280 | 260 | 270 | 320 |
| Total Antimony (Sb) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Arsenic (As) | ug/L | 5.0 | 1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Barium (Ba) | ug/L | | | 6.6 | 5.7 | 3.5 | 3.4 | 2.1 | 2.4 | 3.3 | 3.4 | 3.3 | 4.2 |
| Total Beryllium (Be) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Bismuth (Bi) | ug/L | | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Boron (B) | ug/L | 1500 | | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 |
| Total Cadmium (Cd) | ug/L | 0.04 - 0.37 ⁽²⁾ | | 0.024 | 0.025 | 0.019 | 0.010 | 0.014 | <0.010 | 0.014 | <0.010 | <0.010 | 0.015 |
| Total Calcium (Ca) | ug/L | | | 2300 | 1400 | 890 | 1100 | 640 | 1100 | 1700 | 1800 | 1900 | 1700 |
| Total Chromium (Cr) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.3 | <1.0 |
| Total Cobalt (Co) | ug/L | | | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 |
| Total Copper (Cu) | ug/L | 2 - 4 ⁽³⁾ | 600 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Iron (Fe) | ug/L | 300 | | 620 | 500 | 280 | 290 | 220 | 210 | 440 | 490 | 510 | 580 |
| Total Lead (Pb) | ug/L | 1 - 7 ⁽⁴⁾ | 400 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Total Magnesium (Mg) | ug/L | | | 1100 | 700 | 450 | 530 | 300 | 480 | 740 | 830 | 840 | 810 |
| Total Manganese (Mn) | ug/L | | | 140 | 75 | 51 | 51 | 36 | 34 | 57 | 56 | 60 | 76 |
| Total Mercury (Hg) | ug/L | 0.026 | | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | 0.013 | <0.013 | <0.013 | 0.013 | 0.032 |
| Total Molybdenum (Mo) | ug/L | 73 | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Nickel (Ni) | ug/L | 25 - 150 ⁽⁵⁾ | 1000 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Phosphorus (P) | ug/L | | | <100 | <100 | <100 | <100 | <100 | <100 | 150 | 160 | 170 | 160 |
| Total Potassium (K) | ug/L | | | 640 | 530 | 340 | 350 | 300 | 270 | 200 | 210 | 240 | 180 |
| Total Selenium (Se) | ug/L | 1 | | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Silver (Ag) | ug/L | 0.1 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Sodium (Na) | ug/L | | | 4000 | 3900 | 2900 | 3900 | 2400 | 3500 | 3100 | 3300 | 3500 | 3500 |
| Total Strontium (Sr) | ug/L | | | 10 | 7.7 | 5.0 | 5.6 | 2.8 | 4.2 | 5.9 | 6.5 | 5.9 | 6.6 |
| Total Thallium (Tl) | ug/L | 0.8 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Tin (Sn) | ug/L | | | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Titanium (Ti) | ug/L | | | 4.8 | 4.1 | 3.5 | 2.8 | 3.1 | 3.0 | 3.1 | 3.6 | 4.9 | 4.3 |
| Total Uranium (U) | ug/L | 15 | | 0.11 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.12 | 0.13 | 0.11 |
| Total Vanadium (V) | ug/L | | | <2.0 | 2.3 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Zinc (Zn) | ug/L | 30 | 1000 | 5.2 | 7.5 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |

Notes

CCME FAL - Canadian Council of Ministers of the Environment Water Quality Guidelines for the Protection of Freshwater Aquatic Life (provided for reference)

MMER - Federal Metal Mining Effluent Regulations - guidelines shown represent maximum authorized concentrations in a grab sample (provided for reference)

(1) Aluminum guideline dependent on pH. Guideline is 5 ug/L if pH <6.5 and 100 ug/L if pH ≥ 6.5 (see CCME Summary Table).

(2) Cadmium guideline (updated for 2014) (µg/L) = $10^{(0.83(\log[\text{hardness}]) - 2.46)}$ for hardness between 17-280 mg/L CaCO₃ or a lower limit of 0.04 ug/L for hardness < 17mg/L or an upper limit of 0.37 ug/L for hardness >280 mg/L (see CCME Fact Sheet).

(3) Copper guideline based on sample hardness: copper guideline (µg/L) = $e^{0.8545[\ln(\text{hardness})] - 1.465} * 0.2$ for hardness ≥82 to ≤180 mg/L, or a lower limit of 2 µg/L for hardness <82 mg/L and an upper limit of 4 µg/L for hardness >180 mg/L (see CCME Summary Table).

(4) Lead guideline based on sample hardness: lead guideline (µg/L) = $e^{1.273[\ln(\text{hardness})] - 4.705}$ for hardness >60 to ≤180 mg/L, or a lower limit of 1 µg/L for hardness <60 mg/L and an upper limit of 7 µg/L for hardness >180 mg/L (see CCME Summary Table).

(5) Nickel guideline based on sample hardness: nickel guideline (µg/L) = $e^{0.76[\ln(\text{hardness})] + 1.06}$ for hardness >60 to ≤180 mg/L, or a lower limit of 25 µg/L for hardness <60 mg/L and an upper limit of 150 µg/L for hardness >180 mg/L (see CCME Summary Table).

- denotes not analyzed

**Table 4: Surface Water Quality Data
Beaver Dam Mine Project
Marinette, Nova Scotia**

Table 4M: SW-10 General Chemistry Results

| | | CCME FAL | MMER | SW-10 | | | |
|-------------------------------------|-------|------------------------------|--------------|-----------|-----------|-----------|-------------|
| Sampling Date | | | | 30-Jun-15 | 29-Jul-15 | 24-Aug-15 | 24-Aug-15 |
| Calculated Parameters | Units | | | | | | SW-10 (DUP) |
| Anion Sum | me/L | | | 0.450 | 0.580 | 0.770 | 0.780 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | | | 8.0 | 11 | 25 | 25 |
| Calculated TDS | mg/L | | | 32 | 39 | 55 | 55 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | | | <1.0 | <1.0 | <1.0 | <1.0 |
| Cation Sum | me/L | | | 0.450 | 0.510 | 0.960 | 0.960 |
| Hardness (CaCO3) | mg/L | | | 15 | 20 | 30 | 30 |
| Ion Balance (% Difference) | % | | | 0.00 | 6.42 | 11.0 | 10.3 |
| Langelier Index (@ 20C) | N/A | | | -3.05 | -3.09 | -2.67 | -2.60 |
| Langelier Index (@ 4C) | N/A | | | -3.31 | -3.35 | -2.92 | -2.85 |
| Nitrate (N) | mg/L | 2.935 | | 0.060 | 0.070 | <0.050 | <0.050 |
| Saturation pH (@ 20C) | N/A | | | 9.70 | 9.46 | 8.91 | 8.91 |
| Saturation pH (@ 4C) | N/A | | | 9.96 | 9.71 | 9.16 | 9.16 |
| Inorganics | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | | | 8.0 | 11 | 25 | 25 |
| Dissolved Chloride (Cl) | mg/L | | | 2.9 | 2.2 | 2.9 | 3.1 |
| Colour | TCU | | | 9.4 | <5.0 | 100 | 110 |
| Nitrate + Nitrite | mg/L | | | 0.060 | 0.070 | <0.050 | <0.050 |
| Nitrite (N) | mg/L | 0.06 | | <0.010 | <0.010 | <0.010 | <0.010 |
| Nitrogen (Ammonia Nitrogen) | mg/L | Varies⁽¹⁾ | | <0.050 | <0.050 | 0.10 | 0.19 |
| Total Organic Carbon (C) | mg/L | | | 2.1 | 1.8 | 7.6 | 7.4 |
| Orthophosphate (P) | mg/L | | | <0.010 | 0.012 | 0.064 | 0.064 |
| pH | pH | 6.5-9 | 6-9.5 | 6.65 | 6.37 | 6.24 | 6.31 |
| Reactive Silica (SiO2) | mg/L | | | 4.7 | 6.0 | 7.0 | 7.0 |
| Dissolved Sulphate (SO4) | mg/L | | | 9.6 | 14 | 8.8 | 8.9 |
| Turbidity | NTU | | | 1.0 | <0.10 | 10 | 8.3 |
| Conductivity | uS/cm | | | 46 | 54 | 75 | 76 |
| Total Suspended Solids | | | | - | - | - | - |
| Field Parameters | | | | | | | |
| Temperature | °C | | | 14.14 | 17.6 | - | - |
| Conductivity | µS/cm | | | 51 | - | - | - |
| Total Dissolved Solids | g/L | | | - | - | - | - |
| Dissolved Oxygen | mg/L | 5.5-9.5⁽²⁾ | | 11.8 | - | - | - |
| pH | | 6.5-9 | 6-9.5 | 6.55 | 5.88 | - | - |

Notes

CCME FAL - Canadian Council of Ministers of the Environment Water Quality Guidelines for the Protection of Freshwater Aquatic Life (provided for reference)

MMER - Federal Metal Mining Effluent Regulations - guidelines shown represent maximum authorized

(1) Ammonia guideline dependent on temperature and pH, e.g. , if T = 10°C, guideline for total ammonia-N varies from 83.88 mg/L at pH = 6.0 to 0.02 mg/L at pH = 10 (see CCME Fact Sheet).

(2) Dissolved oxygen - lowest acceptable concentration ranges from 5.5 mg/L for warm water biota at other life stages to 9.5 mg/L for cold water biota at early life stages (see CCME Summary Table).

- denotes not analyzed

NC = not calculated

(4) Lead guideline based on sample hardness: lead guideline (µg/L) = $e^{1.273[\ln(\text{hardness})]-4.705}$ for hardness >60 to ≤180 mg/L, or a lower limit of 1 µg/L for hardness <60 mg/L and an upper limit of 7 µg/L for hardness >180 mg/L (see CCME Summary Table).

(5) Nickel guideline based on sample hardness: nickel guideline (µg/L) = $e^{0.76[\ln(\text{hardness})]+1.06}$ for hardness >60 to ≤180 mg/L, or a lower limit of 25 µg/L for hardness <60 mg/L and an upper limit of 150 µg/L for hardness >180 mg/L (see CCME Summary Table).

- denotes not analyzed

**Table 4: Surface Water Quality Data
Beaver Dam Mine Project
Marinette, Nova Scotia**

Table 4N: SW-10 Metals Results

| | | CCME FAL | MMER | SW-10 | | | |
|-----------------------|-------|----------------------------|------|-----------|-----------|-----------|-------------|
| Sampling Date | | | | 30-Jun-15 | 29-Jul-16 | 24-Aug-15 | 24-Aug-15 |
| Metals | Units | | | | | | SW-10 (DUP) |
| Total Aluminum (Al) | ug/L | 5 / 100 ⁽¹⁾ | | 39 | 28 | 220 | 210 |
| Total Antimony (Sb) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Arsenic (As) | ug/L | 5.0 | 1000 | 130 | 36 | 380 | 370 |
| Total Barium (Ba) | ug/L | | | 5.4 | 7.3 | 7.1 | 6.9 |
| Total Beryllium (Be) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Bismuth (Bi) | ug/L | | | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Boron (B) | ug/L | 1500 | | <50 | <50 | <50 | <50 |
| Total Cadmium (Cd) | ug/L | 0.04 - 0.37 ⁽²⁾ | | 0.061 | 0.10 | 0.011 | <0.010 |
| Total Calcium (Ca) | ug/L | | | 4900 | 6400 | 10000 | 10000 |
| Total Chromium (Cr) | ug/L | | | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Cobalt (Co) | ug/L | | | 1.8 | 1.4 | 2.2 | 2.3 |
| Total Copper (Cu) | ug/L | 2 - 4 ⁽³⁾ | 600 | 3.0 | 3.6 | <2.0 | <2.0 |
| Total Iron (Fe) | ug/L | 300 | | 1400 | 78 | 6000 | 5900 |
| Total Lead (Pb) | ug/L | 1 - 7 ⁽⁴⁾ | 400 | <0.50 | <0.50 | 1.1 | 1.2 |
| Total Magnesium (Mg) | ug/L | | | 660 | 900 | 1200 | 1200 |
| Total Manganese (Mn) | ug/L | | | 110 | 78 | 290 | 280 |
| Total Mercury (Hg) | ug/L | 0.026 | | <0.013 | <0.013 | 0.025 | 0.028 |
| Total Molybdenum (Mo) | ug/L | 73 | | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Nickel (Ni) | ug/L | 25 - 150 ⁽⁵⁾ | 1000 | 7.2 | 8.7 | 6.2 | 6.1 |
| Total Phosphorus (P) | ug/L | | | 140 | 170 | 140 | 140 |
| Total Potassium (K) | ug/L | | | 640 | 790 | 1000 | 1000 |
| Total Selenium (Se) | ug/L | 1 | | <1.0 | <1.0 | <1.0 | <1.0 |
| Total Silver (Ag) | ug/L | 0.1 | | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Sodium (Na) | ug/L | | | 1900 | 2100 | 2500 | 2400 |
| Total Strontium (Sr) | ug/L | | | 19 | 26 | 33 | 33 |
| Total Thallium (Tl) | ug/L | 0.8 | | <0.10 | <0.10 | <0.10 | <0.10 |
| Total Tin (Sn) | ug/L | | | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Titanium (Ti) | ug/L | | | <2.0 | <2.0 | 2.8 | 2.9 |
| Total Uranium (U) | ug/L | 15 | | <0.10 | <0.10 | 0.21 | 0.20 |
| Total Vanadium (V) | ug/L | | | <2.0 | <2.0 | <2.0 | <2.0 |
| Total Zinc (Zn) | ug/L | 30 | 1000 | 13 | 19 | <5.0 | <5.0 |

Notes

CCME FAL - Canadian Council of Ministers of the Environment Water Quality Guidelines for the Protection of Freshwater Aquatic Life (provided for reference)

MMER - Federal Metal Mining Effluent Regulations - guidelines shown represent maximum authorized concentrations in a grab sample (provided for reference)

(1) Aluminum guideline dependent on pH. Guideline is 5 ug/L if pH <6.5 and 100 ug/L if pH ≥ 6.5 (see CCME Summary Table).

(2) Cadmium guideline (updated for 2014) (µg/L) = $10^{(0.83(\log[\text{hardness}]) - 2.46)}$ for hardness between 17-280 mg/L CaCO₃ or a lower limit of 0.04 ug/L for hardness < 17mg/L or an upper limit of 0.37 ug/L for hardness >280 mg/L (see CCME Fact Sheet).

(3) Copper guideline based on sample hardness: copper guideline (µg/L) = $e^{0.8545[\ln(\text{hardness})] - 1.465} * 0.2$ for hardness ≥82 to ≤180 mg/L, or a lower limit of 2 µg/L for hardness <82 mg/L and an upper limit of 4 µg/L for hardness >180 mg/L (see CCME Summary Table).

(4) Lead guideline based on sample hardness: lead guideline (µg/L) = $e^{1.273[\ln(\text{hardness})] - 4.705}$ for hardness >60 to ≤180 mg/L, or a lower limit of 1 µg/L for hardness <60 mg/L and an upper limit of 7 µg/L for hardness >180 mg/L (see CCME Summary Table).

(5) Nickel guideline based on sample hardness: nickel guideline (µg/L) = $e^{0.76[\ln(\text{hardness})] + 1.06}$ for hardness >60 to ≤180 mg/L, or a lower limit of 25 µg/L for hardness <60 mg/L and an upper limit of 150 µg/L for hardness >180 mg/L (see CCME Summary Table).

- denotes not analyzed

Table 5: Groundwater Quality Data
 Beaver Dam Mine Project
 Marinette, Nova Scotia

| Sample | | MW-05 | | | | | | MW-07 | | | | | | MW-09 | | | | | | | | |
|-------------------------------------|-------|-----------|-------------------------|-----------|-----------|-----------|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------------------|-----------|-----------|-----------|-----------|-----------|
| | | MW-05A | | | MW-05B | | | MW-05D | | MW-07A | | MW-07B | | MW-07D | | MW-09A | | | MW-09B | | MW-09D | |
| Sampling Date | | 27-Jun-18 | (Field DUP 4) 27-Jun-18 | 12-Sep-18 | 27-Jun-18 | 12-Sep-18 | 12-Sep-18 (Field DUP 2) | 27-Jun-18 | 12-Sep-18 | 27-Jun-18 | 12-Sep-18 | 27-Jun-18 | 12-Sep-18 | 27-Jun-18 | 12-Sep-18 | 18-Jun-18 | 18-Jun-18 (Field DUP 1) | 12-Sep-18 | 18-Jun-18 | 12-Sep-18 | 18-Jun-18 | 12-Sep-18 |
| Parameters | Units | | | | | | | | | | | | | | | | | | | | | |
| Anion Sum | me/L | 0.41 | 0.420 | 0.450 | 0.990 | 1.84 | 1.78 | 1.73 | 1.70 | 2.47 | 2.46 | 7.02 | 6.93 | 2.59 | 2.91 | 0.340 | 0.320 | 0.930 | 2.46 | 2.75 | 2.97 | 4.21 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 11 | 11 | 15 | 37 | 73 | 72 | 66 | 66 | 100 | 100 | 320 | 310 | 110 | 120 | 9.2 | 8.8 | 37 | 71 | 74 | 65 | 79 |
| Calculated TDS | mg/L | 27 | 28 | 30 | 60 | 100 | 100 | 100 | 100 | 150 | 150 | 380 | 370 | 150 | 170 | 30 | 29 | 56 | 150 | 170 | 190 | 260 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | <1.0 | ND | <1.0 | ND | ND | <1.0 | ND | <1.0 | ND | 2.2 | 2.0 | 1.1 | 1.3 | <1.0 | <1.0 | ND | <1.0 | ND | <1.0 | ND |
| Cation Sum | me/L | 0.37 | 0.380 | 0.390 | 0.900 | 1.03 | 1.04 | 1.61 | 1.58 | 2.53 | 2.70 | 6.68 | 6.50 | 2.75 | 2.86 | 0.630 | 0.630 | 0.870 | 2.37 | 2.53 | 2.89 | 4.01 |
| Hardness (CaCO3) | mg/L | 10 | 10 | 11 | 27 | 34 | 35 | 56 | 56 | 93 | 100 | 290 | 280 | 120 | 110 | 25 | 25 | 36 | 72 | 66 | 93 | 120 |
| Ion Balance (% Difference) | % | 5.13 | 5.00 | 7.14 | 4.76 | 28.2 | 26.2 | 3.59 | 3.66 | 1.20 | 4.65 | 2.48 | 3.20 | 3.00 | 0.870 | 29.9 | 32.6 | 3.33 | 1.86 | 4.17 | 1.37 | 2.43 |
| Langelier Index (@ 20C) | N/A | -3.37 | -3.46 | -3.35 | -1.33 | -0.614 | -0.780 | -0.134 | -0.184 | -0.988 | -0.642 | 0.935 | 0.874 | 0.288 | 0.346 | -3.07 | -2.95 | -1.79 | -0.174 | -0.0840 | -0.547 | -0.0610 |
| Langelier Index (@ 4C) | N/A | -3.62 | -3.71 | -3.60 | -1.58 | -0.865 | -1.03 | -0.385 | -0.435 | -1.24 | -0.892 | 0.686 | 0.625 | 0.0380 | 0.0960 | -3.32 | -3.20 | -2.04 | -0.424 | -0.335 | -0.798 | -0.311 |
| Nitrate (N) | mg/L | 0.051 | <0.050 | ND | 0.061 | ND | ND | <0.050 | ND | <0.050 | ND | <0.050 | ND | <0.050 | ND | <0.050 | <0.050 | 0.051 | <0.050 | ND | <0.050 | ND |
| Saturation pH (@ 20C) | N/A | 9.8 | 9.79 | 9.64 | 8.80 | 8.42 | 8.42 | 8.26 | 8.26 | 7.93 | 7.90 | 6.93 | 6.96 | 7.77 | 7.73 | 9.37 | 9.39 | 8.64 | 8.11 | 8.13 | 8.09 | 7.90 |
| Saturation pH (@ 4C) | N/A | 10.1 | 10.0 | 9.89 | 9.05 | 8.68 | 8.67 | 8.51 | 8.51 | 8.18 | 8.15 | 7.18 | 7.21 | 8.02 | 7.98 | 9.62 | 9.64 | 8.89 | 8.36 | 8.38 | 8.34 | 8.15 |
| INORGANICS | | | | | | | | | | | | | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | 11 | 11 | 15 | 37 | 74 | 72 | 66 | 66 | 100 | 100 | 320 | 310 | 110 | 120 | 9.2 | 8.8 | 37 | 72 | 75 | 65 | 80 |
| Dissolved Chloride (Cl) | mg/L | 4.5 | 4.8 | 3.1 | 4.0 | 3.9 | 3.5 | 4.7 | 4.6 | 4.4 | 4.5 | 6.7 | 6.2 | 6.9 | 6.5 | 3.5 | 2.9 | 3.3 | 5.1 | 4.6 | 8.6 | 11 |
| Colour | TCU | <5.0 | <5.0 | ND | <5.0 | ND | ND | <5.0 | ND | 8.0 | 70 | <5.0 | ND | <5.0 | ND | <5.0 | <5.0 | ND | <5.0 | ND | <5.0 | ND |
| Nitrate + Nitrite (N) | mg/L | 0.051 | <0.050 | ND | 0.061 | ND | ND | <0.050 | ND | <0.050 | ND | <0.050 | ND | <0.050 | ND | <0.050 | <0.050 | 0.051 | <0.050 | ND | <0.050 | ND |
| Nitrite (N) | mg/L | <0.010 | <0.010 | ND | <0.010 | ND | ND | <0.010 | ND | <0.010 | ND | <0.010 | ND | <0.010 | ND | <0.010 | 0.021 | ND | <0.010 | ND | <0.010 | ND |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | <0.050 | ND | <0.050 | ND | ND | <0.050 | ND | <0.050 | ND | 0.060 | ND | <0.050 | ND | <0.050 | <0.050 | ND | <0.050 | ND | <0.050 | ND |
| Total Organic Carbon (C) | mg/L | 1.5 | 1.5 | 0.61 | 2.0 | 7.6 | 8.0 | 1.3 | ND | 1.1 | 0.72 | 3.2 | 3.4 | 2.2 | 3.3 | 0.59 | 0.61 | ND | 2.5 | 5.4 | 9.1 | 17 |
| Orthophosphate (P) | mg/L | <0.010 | <0.010 | ND | <0.010 | ND | ND | <0.010 | ND | <0.010 | ND | 0.013 | 0.013 | 0.035 | 0.038 | <0.010 | <0.010 | ND | 0.027 | 0.016 | 0.012 | 0.013 |
| pH | pH | 6.43 | 6.33 | 6.29 | 7.47 | 7.81 | 7.64 | 8.13 | 8.08 | 6.94 | 7.26 | 7.86 | 7.83 | 8.05 | 8.08 | 6.30 | 6.44 | 6.85 | 7.94 | 8.05 | 7.54 | 7.84 |
| Reactive Silica (SiO2) | mg/L | 5.1 | 5.2 | 6.4 | 8.2 | 21 | 20 | 12 | 12 | 21 | 22 | 24 | 24 | 15 | 15 | 5.1 | 5.1 | 8.6 | 9.3 | 9.0 | 12 | 11 |
| Dissolved Sulphate (SO4) | mg/L | 3 | 3.0 | 3.1 | 6.6 | 12 | 11 | 13 | 12 | 13 | 12 | 19 | 22 | 12 | 16 | 2.9 | 2.9 | 4.6 | 42 | 53 | 68 | 110 |
| Turbidity | NTU | 1.5 | 0.77 | 1.8 | 11 | 20 | 24 | 2.2 | 0.40 | 30 | 31 | 4.6 | 8.7 | 9.5 | 5.1 | 0.29 | 0.33 | 2.9 | 6.1 | 36 | 2.4 | 14 |
| Conductivity | uS/cm | 44 | 43 | 47 | 100 | 170 | 170 | 170 | 160 | 240 | 250 | 620 | 620 | 280 | 290 | 30 | 31 | 93 | 230 | 270 | 300 | 430 |
| METALS | | | | | | | | | | | | | | | | | | | | | | |
| Total Aluminum (Al) | ug/L | 8.3 | 8.8 | 14 | 10 | 11 | 6.5 | 29 | 7.4 | <5.0 | ND | 5.7 | 7.2 | 10 | 14 | <5.0 | 81 | 36 | 61 | 11 | 8.9 | ND |
| Total Antimony (Sb) | ug/L | <1.0 | <1.0 | ND | <1.0 | ND | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | <1.0 | ND | <1.0 | ND | <1.0 | ND |
| Total Arsenic (As) | ug/L | <1.0 | <1.0 | ND | 1.0 | 1.4 | 1.3 | <1.0 | ND | 12 | 14 | 39 | 36 | 170 | 170 | 1.0 | <1.0 | 5.5 | 120 | 120 | 140 | 110 |
| Total Barium (Ba) | ug/L | 5.9 | 5.7 | 9.9 | 5.8 | 6.6 | 6.3 | 3.4 | 2.2 | 11 | 9.9 | 13 | 15 | 5.5 | 8.2 | 6.1 | 5.7 | 3.8 | 12 | 14 | 8.9 | 16 |
| Total Beryllium (Be) | ug/L | <1.0 | <1.0 | ND | <1.0 | ND | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | <1.0 | ND | <1.0 | ND | <1.0 | ND |
| Total Bismuth (Bi) | ug/L | <2.0 | <2.0 | ND | <2.0 | ND | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | <2.0 | ND | <2.0 | ND | <2.0 | ND |
| Total Boron (B) | ug/L | <50 | <50 | ND | <50 | ND | ND | <50 | ND | <50 | ND | <50 | ND | <50 | ND | <50 | <50 | ND | <50 | ND | <50 | ND |
| Total Cadmium (Cd) | ug/L | 0.031 | 0.031 | 0.035 | 0.018 | 0.014 | 0.011 | <0.010 | ND | <0.010 | ND | <0.010 | ND | <0.010 | ND | 0.030 | 0.026 | 0.039 | <0.010 | ND | <0.010 | ND |
| Total Calcium (Ca) | ug/L | 2900 | 2900 | 3000 | 9000 | 11000 | 12000 | 18000 | 18000 | 27000 | 28000 | 100000 | 97000 | 38000 | 37000 | 9100 | 9000 | 13000 | 25000 | 23000 | 30000 | 41000 |
| Total Chromium (Cr) | ug/L | <1.0 | <1.0 | ND | <1.0 | ND | ND | <1.0 | ND | 6.2 | ND | <1.0 | ND | <1.0 | ND | <1.0 | <1.0 | ND | <1.0 | ND | <1.0 | ND |
| Total Cobalt (Co) | ug/L | 2.2 | 2.1 | 3.7 | 1.3 | 1.9 | 1.6 | <0.40 | ND | 0.55 | 0.44 | <0.40 | 0.43 | <0.40 | ND | 1.2 | 1.3 | 0.42 | <0.40 | ND | <0.40 | ND |
| Total Copper (Cu) | ug/L | 4.7 | 5.0 | 10 | 4.8 | ND | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | <2.0 | ND | <2.0 | ND | <2.0 | ND |
| Total Iron (Fe) | ug/L | <50 | <50 | 310 | 100 | 340 | 270 | <50 | ND | 5100 | 3900 | <50 | ND | <50 | ND | <50 | <50 | ND | <50 | ND | <50 | ND |
| Total Lead (Pb) | ug/L | <0.50 | <0.50 | ND | <0.50 | ND | ND | <0.50 | ND | <0.50 | ND | <0.50 | ND | <0.50 | ND | <0.50 | <0.50 | ND | <0.50 | ND | <0.50 | ND |
| Total Magnesium (Mg) | ug/L | 770 | 760 | 780 | 1200 | 1400 | 1400 | 2400 | 2400 | 6400 | 7500 | 8600 | 8100 | 5400 | 5300 | 640 | 640 | 900 | 2300 | 1800 | 4100 | 5400 |
| Total Manganese (Mn) | ug/L | 110 | 110 | 290 | 130 | 250 | 240 | 20 | 17 | 530 | 530 | 970 | 1000 | 44 | 38 | 110 | 110 | 35 | 11 | 69 | 46 | 160 |
| Total Molybdenum (Mo) | ug/L | <2.0 | <2.0 | ND | 4.2 | 2.8 | 3.0 | <2.0 | ND | <2.0 | ND | <2.0 | 4.1 | <2.0 | ND | <2.0 | <2.0 | ND | 9.2 | 8.6 | 10 | 15 |
| Total Nickel (Ni) | ug/L | 8.8 | 8.4 | 8.3 | 3.9 | 3.4 | 2.4 | <2.0 | ND | 2.4 | ND | <2.0 | 3.3 | <2.0 | ND | 3.3 | 3.6 | 2.8 | <2.0 | ND | <2.0 | ND |
| Total Phosphorus (P) | ug/L | <100 | <100 | ND | <100 | ND | ND | <100 | ND | <100 | ND | <100 | ND | <100 | ND | <100 | <100 | ND | <100 | ND | <100 | ND |
| Total Potassium (K) | ug/L | 990 | 1000 | 960 | 1400 | 1300 | 1300 | 980 | 1000 | 1800 | 2000 | 3600 | 3300 | 1200 | 1300 | 720 | 670 | 710 | 1700 | 1500 | 1200 | 1400 |
| Total Selenium (Se) | ug/L | <1.0 | <1.0 | ND | <1.0 | ND | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | <1.0 | ND | <1.0 | ND | <1.0 | ND |
| Total Silver (Ag) | ug/L | <0.10 | <0.10 | ND | <0.10 | ND | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND | <0.10 | <0.10 | ND | <0.10 | ND | <0.10 | ND |
| Total Sodium (Na) | ug/L | 3300 | 3300 | 3300 | 7200 | 7000 | 7000 | 11000 | 10000 | 10000 | 11000 | 18000 | 21000 | 9200 | 12000 | 2400 | 2500 | 3200 | 20000 | 27000 | 23000 | 34000 |
| Total Strontium (Sr) | ug/L | 14 | 15 | 15 | 34 | 47 | 48 | 160 | 160 | 140 | 140 | 340 | 320 | 310 | 320 | 14 | 14 | 20 | 340 | 310 | 680 | 890 |
| Total Thallium (Tl) | ug/L | <0.10 | <0.10 | ND | <0.10 | ND | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND | <0.10 | <0.10 | ND | <0.10 | ND | <0.10 | ND |
| Total Tin (Sn) | ug/L | 3.5 | 2.5 | ND | <2.0 | ND | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | <2.0 | ND | <2.0 | ND | <2.0 | ND |
| Total Titanium (Ti) | ug/L | <2.0 | <2.0 | ND | <2.0 | ND | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | <2.0 | ND | <2.0 | ND | <2.0 | ND |
| Total Uranium (U) | ug/L | <0.10 | <0.10 | ND | 0.14 | 0.19 | 0.19 | 0.35 | 0.21 | 0.11 | 0.11 | 2.3 | 2.5 | 0.73 | 0.86 | <0.10 | <0.10 | 0.30 | 6.6 | 8.7 | 3.7 | 3.8 |
| Total Vanadium (V) | ug/L | <2.0 | <2.0 | ND | <2.0 | ND | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | <2.0 | ND | <2.0 | ND | <2.0 | ND |
| Total Zinc (Zn) | ug/L | 30 | 35 | 16 | 8.7 | 8.2 | 5.2 | <5.0 | ND | 9.5 | 5.7 | <5.0 | ND | <5.0 | 5.8 | <5.0 | <5.0 | 7.2 | <5.0 | ND | <5.0 | ND |

**Table 5: Groundwater Quality Data
Beaver Dam Mine Project
Marinette, Nova Scotia**

| Sample | Units | MW-17 | | | | | | MW-18 | | | | | | MW-19 | | | | | | | |
|-------------------------------------|--------------|-----------|-----------|-----------|----------------------------|-----------|-----------|-----------|-----------|-----------|----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | MW-17A | | MW-17B | | MW-17C | | MW-18A | | MW-18B | | MW-18C | | MW-19A | | MW-19B | | MW-19C | | | |
| | | 18-Jun-18 | 12-Sep-18 | 18-Jun-18 | 18-Jun-18 (Field DUP 2) | 12-Sep-18 | 18-Jun-18 | 12-Sep-18 | 27-Jun-18 | 12-Sep-18 | 12-Sep-18 (Field DUP 1) | 27-Jun-18 | 12-Sep-18 | 27-Jun-18 | 12-Sep-18 | 19-Jun-18 | 12-Sep-18 | 19-Jun-18 | 12-Sep-18 | 19-Jun-18 | 12-Sep-18 |
| Parameters | Units | | | | | | | | | | | | | | | | | | | | |
| Anion Sum | me/L | 0.510 | 0.640 | 0.300 | 0.300 | 0.330 | 0.420 | 0.450 | 0.310 | 0.320 | 0.330 | 1.34 | 1.39 | 2.02 | 2.52 | 0.210 | 0.240 | 1.49 | 1.65 | 1.24 | 1.30 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 15 | 23 | 8.3 | 7.4 | 9.3 | 14 | 15 | 5.5 | 6.8 | 7.3 | 45 | 50 | 52 | 56 | <1.0 | 5.3 | 60 | 67 | 37 | 39 |
| Calculated TDS | mg/L | 34 | 42 | 25 | 25 | 26 | 32 | 35 | 23 | 24 | 24 | 84 | 86 | 130 | 160 | 21 | 18 | 88 | 94 | 80 | 83 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | ND | <1.0 | <1.0 | ND | <1.0 | ND | <1.0 | ND | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND |
| Cation Sum | me/L | 0.470 | 0.540 | 0.260 | 0.260 | 0.250 | 0.390 | 0.400 | 0.270 | 0.290 | 0.270 | 1.23 | 1.25 | 1.89 | 2.33 | 0.280 | 0.180 | 1.45 | 1.49 | 1.21 | 1.22 |
| Hardness (CaCO3) | mg/L | 15 | 18 | 6.6 | 6.7 | 6.1 | 12 | 12 | 6.8 | 7.6 | 7.3 | 41 | 30 | 45 | 58 | 5.4 | 4.1 | 59 | 60 | 36 | 36 |
| Ion Balance (% Difference) | % | 4.08 | 8.47 | 7.14 | 7.14 | 13.8 | 3.70 | 5.88 | 6.90 | 4.92 | 10.0 | 4.28 | 5.30 | 3.32 | 3.92 | 14.3 | 14.3 | 1.36 | 5.10 | 1.22 | 3.17 |
| Langelier Index (@ 20C) | N/A | -3.14 | -2.47 | -4.06 | -4.08 | -3.80 | -3.07 | -2.93 | -4.17 | -3.82 | -3.86 | -0.820 | -0.564 | -0.636 | -0.465 | NC | -4.53 | -0.330 | -0.255 | -1.53 | -1.39 |
| Langelier Index (@ 4C) | N/A | -3.40 | -2.72 | -4.31 | -4.33 | -4.06 | -3.33 | -3.18 | -4.42 | -4.07 | -4.11 | -1.07 | -0.815 | -0.886 | -0.715 | NC | -4.78 | -0.581 | -0.506 | -1.78 | -1.64 |
| Nitrate (N) | mg/L | <0.050 | ND | <0.050 | <0.050 | ND | <0.050 | ND | 0.062 | ND | ND | <0.050 | ND | <0.050 | ND | 0.25 | 0.15 | 0.066 | ND | 0.11 | 0.052 |
| Saturation pH (@ 20C) | N/A | 9.42 | 9.17 | 10.2 | 10.2 | 10.1 | 9.59 | 9.57 | 10.3 | 10.2 | 10.1 | 8.52 | 8.61 | 8.44 | 8.32 | NC | 10.6 | 8.23 | 8.18 | 8.68 | 8.64 |
| Saturation pH (@ 4C) | N/A | 9.67 | 9.42 | 10.4 | 10.4 | 10.4 | 9.84 | 9.82 | 10.6 | 10.4 | 10.4 | 8.77 | 8.86 | 8.69 | 8.57 | NC | 10.8 | 8.48 | 8.43 | 8.93 | 8.89 |
| INORGANICS | | | | | | | | | | | | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | 15 | 23 | 8.3 | 7.4 | 9.3 | 14 | 15 | 5.5 | 6.8 | 7.3 | 45 | 50 | 52 | 56 | <5.0 | 5.3 | 61 | 68 | 37 | 39 |
| Dissolved Chloride (Cl) | mg/L | 5.2 | 4.3 | 2.9 | 3.3 | 2.9 | 2.9 | 2.7 | 3.8 | 3.5 | 3.7 | 3.5 | 2.7 | 5.3 | 5.7 | 4.1 | 2.9 | 2.4 | 2.6 | 3.8 | 3.3 |
| Colour | TCU | <5.0 | ND | <5.0 | 5.3 | ND | <5.0 | ND | <5.0 | ND | ND | <5.0 | ND | <5.0 | ND | <5.0 | ND | <5.0 | ND | <5.0 | ND |
| Nitrate + Nitrite (N) | mg/L | <0.050 | ND | <0.050 | <0.050 | ND | <0.050 | ND | 0.062 | ND | ND | <0.050 | ND | <0.050 | ND | 0.25 | 0.15 | 0.066 | ND | 0.15 | 0.063 |
| Nitrite (N) | mg/L | <0.010 | ND | <0.010 | <0.010 | ND | <0.010 | ND | <0.010 | ND | ND | <0.010 | ND | <0.010 | ND | <0.010 | ND | <0.010 | ND | 0.041 | 0.010 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | ND | <0.050 | <0.050 | ND | <0.050 | ND | <0.050 | ND | ND | <0.050 | ND | <0.050 | ND | <0.050 | ND | <0.050 | ND | <0.050 | ND |
| Total Organic Carbon (C) | mg/L | 0.59 | ND | 0.56 | 0.51 | ND | <0.50 | ND | 1.7 | ND | ND | 1.4 | 1.6 | 5.8 | 7.7 | 2.4 | 0.85 | 0.95 | 1.2 | 2.1 | 2.0 |
| Orthophosphate (P) | mg/L | <0.010 | ND | 0.014 | 0.017 | 0.019 | <0.010 | 0.016 | <0.010 | ND | 0.011 | 0.054 | 0.046 | <0.010 | ND | <0.010 | ND | <0.010 | ND | <0.010 | ND |
| pH | pH | 6.28 | 6.70 | 6.10 | 6.12 | 6.34 | 6.51 | 6.64 | 6.18 | 6.34 | 6.28 | 7.70 | 8.04 | 7.81 | 7.86 | 5.85 | 6.06 | 7.90 | 7.93 | 7.15 | 7.26 |
| Reactive Silica (SiO2) | mg/L | 6.9 | 9.7 | 8.6 | 9.1 | 9.5 | 10 | 11 | 5.3 | 6.5 | 6.6 | 11 | 11 | 11 | 11 | 5.9 | 5.1 | 8.9 | 9.0 | 8.8 | 9.3 |
| Dissolved Sulphate (SO4) | mg/L | 2.6 | 2.9 | 2.7 | 2.6 | 2.8 | 2.9 | 3.2 | 4.3 | 3.9 | 3.8 | 17 | 15 | 40 | 59 | 3.5 | 2.2 | 9.8 | 11 | 18 | 20 |
| Turbidity | NTU | 1.6 | 3.3 | 0.49 | 0.90 | 2.1 | 0.74 | 1.0 | 1.1 | 0.23 | 0.45 | 20 | 43 | 18 | 9.3 | 1.3 | 14 | 2.7 | 8.9 | 7.0 | 10 |
| Conductivity | uS/cm | 46 | 64 | 29 | 29 | 31 | 40 | 45 | 35 | 36 | 36 | 130 | 140 | 210 | 260 | 34 | 26 | 140 | 160 | 130 | 140 |
| METALS | | | | | | | | | | | | | | | | | | | | | |
| Total Aluminum (Al) | ug/L | 6.4 | ND | 12 | 11 | 8.7 | <5.0 | ND | 23 | 27 | 23 | 13 | 20 | 16 | 11 | 110 | 50 | 15 | 15 | 37 | ND |
| Total Antimony (Sb) | ug/L | <1.0 | ND | <1.0 | <1.0 | ND | <1.0 | ND | <1.0 | ND | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND |
| Total Arsenic (As) | ug/L | <1.0 | ND | <1.0 | <1.0 | ND | 1.2 | 2.6 | 40 | 26 | 24 | 230 | 230 | 57 | 79 | <1.0 | ND | 8.5 | 6.4 | 3.0 | 3.2 |
| Total Barium (Ba) | ug/L | 10 | 12 | 3.0 | 2.9 | 3.4 | 2.4 | 1.2 | 5.7 | 11 | 6.1 | 4.1 | 8.4 | 6.4 | 9.6 | 7.4 | 12 | 10 | 13 | 7.3 | 7.3 |
| Total Beryllium (Be) | ug/L | <1.0 | ND | <1.0 | <1.0 | ND | <1.0 | ND | <1.0 | ND | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND |
| Total Bismuth (Bi) | ug/L | <2.0 | ND | <2.0 | <2.0 | ND | <2.0 | ND | <2.0 | ND | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND |
| Total Boron (B) | ug/L | <50 | ND | <50 | <50 | ND | <50 | ND | <50 | ND | ND | <50 | ND | <50 | ND | <50 | ND | <50 | ND | <50 | ND |
| Total Cadmium (Cd) | ug/L | 0.039 | 0.046 | 0.033 | 0.037 | 0.018 | <0.010 | 0.012 | 0.028 | 0.023 | 0.022 | <0.010 | ND | <0.010 | ND | 0.084 | 0.026 | <0.010 | ND | 0.010 | ND |
| Total Calcium (Ca) | ug/L | 4900 | 5900 | 1600 | 1600 | 1500 | 3600 | 3500 | 1600 | 1900 | 1900 | 15000 | 11000 | 16000 | 20000 | 1200 | 930 | 21000 | 21000 | 12000 | 12000 |
| Total Chromium (Cr) | ug/L | <1.0 | ND | <1.0 | <1.0 | ND | <1.0 | ND | <1.0 | ND | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND |
| Total Cobalt (Co) | ug/L | 3.0 | 4.3 | <0.40 | <0.40 | ND | <0.40 | ND | 2.2 | 1.0 | 1.1 | <0.40 | ND | <0.40 | ND | 1.2 | 1.1 | <0.40 | ND | 0.94 | 1.2 |
| Total Copper (Cu) | ug/L | 3.7 | 3.5 | <2.0 | <2.0 | ND | <2.0 | ND | 5.1 | 3.6 | 3.6 | <2.0 | ND | <2.0 | ND | <2.0 | 7.9 | <2.0 | ND | <2.0 | 2.1 |
| Total Iron (Fe) | ug/L | <50 | ND | <50 | <50 | ND | <50 | ND | <50 | ND | ND | <50 | ND | <50 | ND | <50 | ND | <50 | ND | <50 | ND |
| Total Lead (Pb) | ug/L | <0.50 | ND | <0.50 | <0.50 | ND | <0.50 | ND | <0.50 | ND | ND | <0.50 | ND | <0.50 | ND | <0.50 | ND | <0.50 | ND | <0.50 | ND |
| Total Magnesium (Mg) | ug/L | 790 | 860 | 630 | 630 | 570 | 670 | 690 | 710 | 660 | 620 | 1200 | 880 | 1400 | 1900 | 600 | 430 | 1500 | 1500 | 1200 | 1200 |
| Total Manganese (Mn) | ug/L | 240 | 340 | 200 | 200 | 7.2 | 20 | 11 | 53 | 48 | 44 | 3.1 | ND | 13 | 72 | 83 | 53 | 7.9 | 21 | 110 | 170 |
| Total Molybdenum (Mo) | ug/L | <2.0 | ND | <2.0 | <2.0 | ND | <2.0 | ND | <2.0 | ND | ND | 4.9 | 5.0 | 4.1 | 5.7 | <2.0 | ND | 15 | 18 | 18 | 15 |
| Total Nickel (Ni) | ug/L | 8.5 | 11 | <2.0 | <2.0 | ND | <2.0 | ND | 6.3 | 4.0 | 3.1 | <2.0 | ND | <2.0 | ND | 2.4 | 3.6 | <2.0 | ND | 4.0 | 4.0 |
| Total Phosphorus (P) | ug/L | <100 | ND | <100 | <100 | ND | <100 | ND | <100 | ND | ND | <100 | ND | <100 | ND | <100 | ND | <100 | ND | <100 | ND |
| Total Potassium (K) | ug/L | 670 | 740 | 410 | 410 | 430 | 440 | 410 | 790 | 690 | 670 | 1500 | 1400 | 1600 | 1800 | 800 | 800 | 1900 | 2300 | 2100 | 2000 |
| Total Selenium (Se) | ug/L | <1.0 | ND | <1.0 | <1.0 | ND | <1.0 | ND | <1.0 | ND | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND |
| Total Silver (Ag) | ug/L | <0.10 | ND | <0.10 | <0.10 | 0.19 | <0.10 | ND | <0.10 | ND | ND | <0.10 | ND | <0.10 | ND | <0.10 | 0.71 | <0.10 | ND | <0.10 | ND |
| Total Sodium (Na) | ug/L | 3400 | 3700 | 2800 | 2700 | 2800 | 3200 | 3600 | 2500 | 2700 | 2500 | 8400 | 14000 | 22000 | 26000 | 3400 | 1700 | 5200 | 5500 | 10000 | 10000 |
| Total Strontium (Sr) | ug/L | 32 | 29 | 19 | 18 | 19 | 18 | 21 | 13 | 12 | 12 | 85 | 150 | 180 | 240 | 8.6 | 10 | 120 | 120 | 71 | 77 |
| Total Thallium (Tl) | ug/L | <0.10 | ND | <0.10 | <0.10 | ND | <0.10 | ND | <0.10 | ND | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND |
| Total Tin (Sn) | ug/L | <2.0 | 2.6 | <2.0 | <2.0 | ND | <2.0 | ND | <2.0 | ND | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND |
| Total Titanium (Ti) | ug/L | <2.0 | ND | <2.0 | <2.0 | ND | <2.0 | ND | <2.0 | ND | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND |
| Total Uranium (U) | ug/L | <0.10 | ND | <0.10 | <0.10 | ND | <0.10 | ND | <0.10 | ND | ND | 1.1 | 1.7 | 1.8 | 1.5 | <0.10 | ND | 2.9 | 3.1 | <0.10 | ND |
| Total Vanadium (V) | ug/L | <2.0 | ND | <2.0 | <2.0 | ND | <2.0 | ND | <2.0 | ND | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | 3.1 | 2.4 | <2.0 | ND |
| Total Zinc (Zn) | ug/L | 12 | 18 | <5.0 | <5.0 | ND | <5.0 | ND | 19 | 8.4 | 8.7 | <5.0 | 9.8 | <5.0 | 5.7 | 9.9 | 5.2 | <5.0 | ND | 7.6 | 12 |

**Table 5: Groundwater Quality Data
Beaver Dam Mine Project
Marinette, Nova Scotia**


| Sample | | MW-20 | | | | | MW-21 | | | | | MW-22 | | | | | | |
|-------------------------------------|-------|-----------|-----------|-------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | MW-20A | | 12-Sep-18 (Field DUP A) | MW-20B | | MW-21A | | MW-21B | | MW-21C | | MW-22A | | MW-22B | | MW-22C | |
| Sampling Date | | 26-Jun-18 | 12-Sep-18 | 12-Sep-18 (Field DUP A) | 26-Jun-18 | 12-Sep-18 | 18-Jun-18 | 12-Sep-18 | 18-Jun-18 | 12-Sep-18 | 18-Jun-18 | 12-Sep-18 | 26-Jun-18 | 12-Sep-18 | 26-Jun-18 | 12-Sep-18 | 26-Jun-18 | 12-Sep-18 |
| Parameters | Units | | | | | | | | | | | | | | | | | |
| Anion Sum | me/L | 0.360 | 0.410 | 1.11 | 2.12 | 2.23 | 0.250 | 0.420 | 0.580 | 0.690 | 1.67 | 1.69 | 0.300 | 0.390 | 1.56 | 0.850 | 2.24 | 2.13 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 7.9 | 12 | 41 | 90 | 96 | 6.5 | 13 | 21 | 26 | 54 | 61 | 5.8 | 11 | 59 | 31 | 94 | 95 |
| Calculated TDS | mg/L | 26 | 31 | 68 | 120 | 120 | 20 | 31 | 40 | 46 | 110 | 110 | 23 | 31 | 94 | 59 | 130 | 120 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | ND | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | 1.0 | ND |
| Cation Sum | me/L | 0.310 | 0.330 | 1.01 | 1.95 | 1.96 | 0.240 | 0.370 | 0.550 | 0.620 | 1.56 | 1.52 | 0.260 | 0.330 | 1.38 | 0.790 | 2.00 | 1.90 |
| Hardness (CaCO3) | mg/L | 7.6 | 8.1 | 40 | 72 | 74 | 7.0 | 7.5 | 18 | 20 | 38 | 43 | 5.5 | 7.4 | 48 | 14 | 52 | 56 |
| Ion Balance (% Difference) | % | 7.46 | 10.8 | 4.72 | 4.18 | 6.44 | 2.04 | 6.33 | 2.65 | 5.34 | 3.41 | 5.30 | 7.14 | 8.33 | 6.12 | 3.66 | 5.66 | 5.71 |
| Langelier Index (@ 20C) | N/A | -4.03 | -3.63 | -1.40 | -0.0410 | -0.0810 | -4.65 | -4.08 | -2.94 | -2.91 | -1.93 | -1.55 | -4.11 | -3.83 | -0.786 | -2.36 | -0.0890 | -0.106 |
| Langelier Index (@ 4C) | N/A | -4.28 | -3.88 | -1.66 | -0.291 | -0.332 | -4.90 | -4.34 | -3.19 | -3.16 | -2.18 | -1.81 | -4.36 | -4.08 | -1.04 | -2.62 | -0.340 | -0.357 |
| Nitrate (N) | mg/L | 0.21 | 0.27 | ND | <0.050 | ND | 0.48 | 0.67 | 0.35 | 0.53 | 0.14 | 0.17 | 0.093 | 0.059 | <0.050 | ND | <0.050 | ND |
| Saturation pH (@ 20C) | N/A | 10.1 | 9.93 | 8.57 | 8.07 | 8.03 | 10.3 | 9.94 | 9.30 | 9.13 | 8.63 | 8.56 | 10.5 | 10.0 | 8.41 | 9.23 | 8.16 | 8.13 |
| Saturation pH (@ 4C) | N/A | 10.4 | 10.2 | 8.83 | 8.32 | 8.28 | 10.5 | 10.2 | 9.56 | 9.38 | 8.88 | 8.81 | 10.7 | 10.3 | 8.66 | 9.48 | 8.41 | 8.38 |
| INORGANICS | | | | | | | | | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | 7.9 | 12 | 41 | 91 | 97 | 6.5 | 13 | 21 | 26 | 54 | 61 | 5.8 | 11 | 60 | 31 | 95 | 96 |
| Dissolved Chloride (Cl) | mg/L | 4.8 | 3.6 | 3.7 | 3.6 | 3.1 | 3.1 | 2.6 | 3.1 | 2.6 | 5.2 | 4.5 | 4.0 | 3.5 | 4.2 | 3.7 | 4.2 | 3.2 |
| Colour | TCU | 5.5 | ND | ND | <5.0 | ND | 8.0 | 5.6 | <5.0 | ND | <5.0 | ND | <5.0 | ND | <5.0 | ND | <5.0 | ND |
| Nitrate + Nitrite (N) | mg/L | 0.21 | 0.27 | ND | <0.050 | ND | 0.48 | 0.67 | 0.35 | 0.53 | 0.14 | 0.18 | 0.093 | 0.059 | <0.050 | ND | <0.050 | ND |
| Nitrite (N) | mg/L | <0.010 | ND | ND | <0.010 | ND | <0.010 | ND | <0.010 | ND | <0.010 | 0.010 | <0.010 | ND | <0.010 | ND | <0.010 | ND |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | ND | ND | 0.054 | ND | <0.050 | ND | <0.050 | ND | <0.050 | ND | <0.050 | ND | <0.050 | ND | <0.050 | ND |
| Total Organic Carbon (C) | mg/L | 1.3 | ND | 1.6 | 0.84 | ND | 2.1 | 2.0 | 1.0 | 1.3 | 4.2 | 2.5 | 1.0 | 0.93 | 1.8 | 2.6 | 1.6 | 0.93 |
| Orthophosphate (P) | mg/L | <0.010 | 0.011 | ND | <0.010 | 0.014 | <0.010 | ND | 0.018 | 0.020 | <0.010 | ND | <0.010 | ND | <0.010 | ND | <0.010 | ND |
| pH | pH | 6.08 | 6.30 | 7.17 | 8.02 | 7.95 | 5.64 | 5.86 | 6.37 | 6.22 | 6.70 | 7.01 | 6.38 | 6.20 | 7.63 | 6.86 | 8.07 | 8.02 |
| Reactive Silica (SiO2) | mg/L | 6.7 | 9.2 | 10 | 12 | 12 | 5.6 | 6.8 | 8.9 | 10 | 15 | 19 | 6.5 | 10 | 14 | 13 | 12 | 12 |
| Dissolved Sulphate (SO4) | mg/L | 2.3 | 2.7 | 8.9 | 9.8 | 9.8 | <2.0 | 2.3 | 2.2 | 2.7 | 21 | 16 | 3.3 | 3.3 | 12 | 5.6 | 10 | 6.1 |
| Turbidity | NTU | 4.9 | 7.9 | 1.0 | 4.7 | 2.5 | 1.1 | 1.7 | 23 | 17 | 7.6 | 1.8 | 2.2 | 2.7 | 1.8 | 2.3 | 6.8 | 1.0 |
| Conductivity | uS/cm | 38 | 41 | 110 | 200 | 200 | 33 | 48 | 61 | 71 | 160 | 170 | 33 | 41 | 150 | 89 | 210 | 200 |
| METALS | | | | | | | | | | | | | | | | | | |
| Total Aluminum (Al) | ug/L | 38 | 18 | 5.7 | 62 | 10 | 430 | 390 | 16 | 26 | 7.5 | ND | 22 | 19 | 23 | 8.6 | 12 | 7.6 |
| Total Antimony (Sb) | ug/L | <1.0 | ND | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND |
| Total Arsenic (As) | ug/L | <1.0 | ND | ND | 7.0 | 10 | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | 1.5 | 1.2 | 5.4 | 5.0 |
| Total Barium (Ba) | ug/L | 4.8 | 4.4 | 4.4 | 11 | 12 | 15 | 19 | 3.5 | 5.8 | 9.7 | 8.2 | 5.0 | 5.3 | 3.6 | 3.9 | 4.7 | 2.9 |
| Total Beryllium (Be) | ug/L | <1.0 | ND | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND |
| Total Bismuth (Bi) | ug/L | <2.0 | ND | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND |
| Total Boron (B) | ug/L | <50 | ND | ND | <50 | ND | <50 | ND | <50 | ND | <50 | ND | <50 | ND | <50 | ND | <50 | ND |
| Total Cadmium (Cd) | ug/L | 0.035 | 0.036 | 0.018 | 0.011 | ND | 0.049 | 0.066 | 0.015 | 0.025 | 0.019 | ND | 0.016 | 0.015 | <0.010 | ND | <0.010 | ND |
| Total Calcium (Ca) | ug/L | 1900 | 2000 | 14000 | 22000 | 22000 | 1500 | 1800 | 4700 | 5800 | 9700 | 10000 | 1000 | 1700 | 14000 | 3900 | 17000 | 18000 |
| Total Chromium (Cr) | ug/L | <1.0 | ND | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND |
| Total Cobalt (Co) | ug/L | 2.8 | ND | ND | <0.40 | ND | 3.7 | 4.2 | <0.40 | 0.46 | 0.51 | 0.65 | 1.8 | 1.2 | 0.43 | 1.1 | <0.40 | ND |
| Total Copper (Cu) | ug/L | 3.0 | 2.1 | 2.0 | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | 9.4 | 6.6 | <2.0 | ND | <2.0 | ND |
| Total Iron (Fe) | ug/L | <50 | ND | ND | <50 | ND | 65 | ND | <50 | ND | <50 | ND | <50 | ND | <50 | ND | <50 | ND |
| Total Lead (Pb) | ug/L | <0.50 | ND | ND | <0.50 | ND | <0.50 | ND | <0.50 | ND | <0.50 | ND | <0.50 | ND | <0.50 | ND | <0.50 | ND |
| Total Magnesium (Mg) | ug/L | 680 | 770 | 1500 | 4500 | 4600 | 780 | 750 | 1500 | 1400 | 3200 | 4300 | 700 | 800 | 3000 | 1000 | 2500 | 2800 |
| Total Manganese (Mn) | ug/L | 150 | 60 | 17 | 100 | 110 | 650 | 540 | 110 | 200 | 180 | 240 | 160 | 160 | 190 | 200 | 15 | 21 |
| Total Molybdenum (Mo) | ug/L | <2.0 | 2.3 | ND | <2.0 | 6.7 | <2.0 | ND | <2.0 | ND | 2.6 | ND | <2.0 | ND | <2.0 | ND | 3.3 | 3.1 |
| Total Nickel (Ni) | ug/L | 6.8 | 2.8 | ND | <2.0 | ND | 2.8 | 2.4 | <2.0 | ND | <2.0 | 3.7 | 8.1 | 6.9 | <2.0 | 4.0 | <2.0 | ND |
| Total Phosphorus (P) | ug/L | <100 | ND | ND | <100 | ND | <100 | ND | <100 | ND | <100 | ND | <100 | ND | <100 | ND | <100 | ND |
| Total Potassium (K) | ug/L | 610 | 670 | 1300 | 1600 | 1800 | 850 | 970 | 1200 | 1100 | 2100 | 1800 | 810 | 870 | 1600 | 1500 | 1100 | 990 |
| Total Selenium (Se) | ug/L | <1.0 | ND | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND | <1.0 | ND |
| Total Silver (Ag) | ug/L | <0.10 | ND | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND |
| Total Sodium (Na) | ug/L | 3200 | 3600 | 4000 | 10000 | 10000 | 1800 | 4400 | 3700 | 4300 | 17000 | 14000 | 3000 | 3700 | 8900 | 11000 | 21000 | 18000 |
| Total Strontium (Sr) | ug/L | 19 | 18 | 78 | 270 | 270 | 15 | 18 | 33 | 43 | 85 | 86 | 15 | 19 | 81 | 44 | 280 | 260 |
| Total Thallium (Tl) | ug/L | <0.10 | ND | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND | <0.10 | ND |
| Total Tin (Sn) | ug/L | <2.0 | ND | 2.3 | 2.1 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND |
| Total Titanium (Ti) | ug/L | <2.0 | ND | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND |
| Total Uranium (U) | ug/L | <0.10 | ND | ND | 0.86 | 0.85 | 0.10 | ND | <0.10 | ND | 0.29 | 0.32 | <0.10 | ND | 0.26 | 0.12 | 0.52 | 0.12 |
| Total Vanadium (V) | ug/L | <2.0 | ND | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND | <2.0 | ND |
| Total Zinc (Zn) | ug/L | 10 | 6.3 | 16 | <5.0 | ND | <5.0 | ND | <5.0 | 6.2 | 6.5 | 7.7 | 16 | 13 | 5.2 | 15 | <5.0 | ND |

Attachment 1 Stratigraphic Logs

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-01A |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 150.368 | START DATE: May 1, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 149.247 | COMPLETION DATE: May 1, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|--------------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----|----|----|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | (ppm) | | | | | (%LEL) | | | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4990095.110 E:520942.252 Elev: CGVD 2013 | | | | | | | | | | | | | | | | | | Stick-up | | -3 |
| | Ground Surface | | | | | | | | | | | | | | | | | | | | 0 |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | | Silica Sand | | 0 |
| | SILTY SAND - brown, trace to some clay, numerous cobbles and boulders | | | | | | | | | | | | | | | | | | PVC Riser | | 1 |
| 1 | WEATHERED BEDROCK - grey greywacke, mechanical breaks, silt and clay in fractures, orange and black staining | | 1 | CS | - | 50 | 0 | | | | | | | | | | | | Bentonite Seal | | 2 |
| | | | | | | | | | | | | | | | | | | | | | 3 |
| 2 | BEDROCK - grey greywacke, some fractures, orange and black staining | | 2 | CS | - | 86 | 40 | | | | | | | | | | | | | | 4 |
| | | | | | | | | | | | | | | | | | | | | | 5 |
| 3 | BEDROCK - grey greywacke, mechanical breaks, numerous fractures, orange and black staining | | | | | | | | | | | | | | | | | | Silica Sand | | 6 |
| | | | | | | | | | | | | | | | | | | | | | 7 |
| 4 | BEDROCK - grey greywacke, mechanical breaks, numerous fractures, orange and black staining | | 3 | CS | - | 100 | 0 | | | | | | | | | | | | | | 8 |
| | | | | | | | | | | | | | | | | | | | | | 9 |
| 5 | BEDROCK - grey greywacke, numerous fractures, no staining | | | | | | | | | | | | | | | | | | PVC "2- Slot" Screen | | 10 |
| | | | | | | | | | | | | | | | | | | | | | 11 |
| 6 | | | | | | | | | | | | | | | | | | | | | 12 |
| | | | | | | | | | | | | | | | | | | | | | 13 |
| | | | | | | | | | | | | | | | | | | | | | 14 |
| | | | | | | | | | | | | | | | | | | | | | 15 |
| | | | | | | | | | | | | | | | | | | | | | 16 |
| | | | | | | | | | | | | | | | | | | | | | 17 |
| | | | | | | | | | | | | | | | | | | | | | 18 |
| | | | | | | | | | | | | | | | | | | | | | 19 |
| | | | | | | | | | | | | | | | | | | | PVC Threaded Well Point | | 20 |
| | | | | | | | | | | | | | | | | | | | | | 21 |


| | | | | |
|-------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

45 Akerley Blvd
Dartmouth, NS
B3B 1J7

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO.: 088664 | BOREHOLE: MW-01B |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 150.422 | START DATE: May 4, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 149.428 | COMPLETION DATE: May 4, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level | | | | | | |
|-----------------------|-------------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|------------------------------------|--------------------|------------------------|--------|----|--|--|--|--|
| | | | | | | | | | (ppm) | | | | | | | | (%LEL) | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4990093.660 E:520943.031 Elev: CGVD 2013 | | | | | | | | | | | | | | | | | | | | | |
| 0 | Ground Surface | | | | | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | | | | | |
| 0.5 | SILTY SAND - brown, trace to some clay, some cobbles and boulders | | 1 | CS | - | 39 | 0 | | | | | | | | | | | | | | | |
| 1.5 | WEATHERED BEDROCK - grey greywacke, mechanical break, silt and clay in fractures, orange and black staining | | 2 | CS | - | 60 | 9 | | | | | | | | | | | | | | | |
| 2.5 | BEDROCK - grey greywacke, some fractures, orange and black staining | | 3 | CS | - | 100 | 63 | | | | | | | | | | | | | | | |
| 4.5 | | | 4 | CS | - | 100 | 78 | | | | | | | | | | | | | | | |
| 7.5 | BEDROCK - grey greywacke, some fractures, no staining | | 5 | CS | - | 100 | 75 | | | | | | | | | | | | | | | |
| 8.5 | | | 6 | CS | - | 100 | 88 | | | | | | | | | | | | | | | |
| 10.5 | | | 7 | CS | - | 100 | 80 | | | | | | | | | | | | | | | |
| 12.5 | | | 8 | CS | - | 100 | 56 | | | | | | | | | | | | | | | |
| 14.5 | | | 9 | CS | - | 100 | 44 | | | | | | | | | | | | | | | |
| 16.5 | | | 10 | CS | - | 100 | 69 | | | | | | | | | | | | | | | |

| | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|--|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m | |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-01C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 150.594 | START DATE: May 4, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 149.465 | COMPLETION DATE: May 4, 2018 |
| BENCHMARK: | | PAGE 1 of 2 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION (ppm) | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|----------------------------------------------------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------------|-----|-----|-----|-----|----------------------------------|----|----|----|----|------------------------------------|--------------------|---------------------------|
| | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| | | | | | | | | | | | | | | | | | | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4990092.462 E:520944.122 Elev: CGVD 2013 Ground Surface | | | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | | | |
| 0.5 | SILTY SAND - brown, trace to some clay, some cobbles and boulders | | | | | | | | | | | | | | | | | | | |
| 1 | BEDROCK - grey greywacke, mechanical breaks, silt and clay in fractures, orange and black staining | 1 | CS | - | 97 | 15 | | | | | | | | | | | | | | |
| 2 | BEDROCK - grey greywacke, some fractures, orange and black staining | 2 | CS | - | 100 | 42 | | | | | | | | | | | | | | |
| 4 | | 3 | CS | - | 100 | 41 | | | | | | | | | | | | | | |
| 5 | BEDROCK - grey greywacke, some fractures, no staining | 4 | CS | - | 100 | 75 | | | | | | | | | | | | | | |
| 7 | | 5 | CS | - | 100 | 80 | | | | | | | | | | | | | | |
| 8 | | 6 | CS | - | 100 | 83 | | | | | | | | | | | | | | |
| 10 | | 7 | CS | - | 100 | 83 | | | | | | | | | | | | | | |
| 11 | | 8 | CS | - | 100 | 80 | | | | | | | | | | | | | | |
| 13 | | 9 | CS | - | 100 | 64 | | | | | | | | | | | | | | |
| 14 | | 10 | CS | - | 100 | 86 | | | | | | | | | | | | | | |

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|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------|----------------------------|----------------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-01C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 150.594 | START DATE: May 4, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 149.465 | COMPLETION DATE: May 4, 2018 |
| BENCHMARK: | | PAGE 2 of 2 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION (ppm) | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|--------------------------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------------|-----|-----|-----|-----|----------------------------------|----|----|----|----|------------------------------------|--------------------|---------------------------|
| | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | 49 | |
| 16 | | 11 | CS | - | 100 | 73 | | | | | | | | | | | | | 50 | |
| 17 | | 12 | CS | - | 100 | 59 | | | | | | | | | | | | | 51 | |
| 18 | | 13 | CS | - | 100 | 51 | | | | | | | | | | | | | 52 | |
| 19 | | 14 | CS | - | 100 | 51 | | | | | | | | | | | | | 53 | |
| 20 | | 15 | CS | - | 100 | 24 | | | | | | | | | | | | | 54 | |
| 21 | | 16 | CS | - | 100 | 54 | | | | | | | | | | | | | 55 | |
| 22 | BEDROCK - grey greywacke, mechanical breaks, some fractures, no staining | 17 | CS | - | 100 | 68 | | | | | | | | | | | | | 56 | |
| 23 | | 18 | CS | - | 100 | 73 | | | | | | | | | | | | | 57 | |
| 24 | BEDROCK - grey greywacke, some fractures, no staining | 19 | CS | - | 100 | 37 | | | | | | | | | | | | | 58 | |
| 25 | | 20 | CS | - | 100 | 63 | | | | | | | | | | | | | 59 | |
| 26 | | | | | | | | | | | | | | | | | | | 60 | |
| 27 | | | | | | | | | | | | | | | | | | | 61 | |
| 28 | | | | | | | | | | | | | | | | | | | 62 | |
| 29 | | | | | | | | | | | | | | | | | | | 63 | |
| 30 | | | | | | | | | | | | | | | | | | | 64 | |

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|------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-02A |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 151.292 | START DATE: May 7, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 150.228 | COMPLETION DATE: May 7, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level | | | | |
|--------------------------|------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|------------------------------------|--------------------|---------------------------|--------|----|--|--|
| | | | | | | | | | (ppm) | | | | | | | | (%LEL) | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4989595.501 E:520728.778 Elev: CGVD 2013 | | | | | | | | | | | | | | | | | | | |
| | Ground Surface | | | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | | | |
| | SILTY SAND - grey, some sand, some cobbles and boulders, wet at 0.6m | | | | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | | | |
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| 3 | | | | | | | | | | | | | | | | | | | | |
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| 4 | | | | | | | | | | | | | | | | | | | | |
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| 5 | | | | | | | | | | | | | | | | | | | | |
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| 6 | | | | | | | | | | | | | | | | | | | | |
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| 9 | | | | | | | | | | | | | | | | | | | | |
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| 10 | | | | | | | | | | | | | | | | | | | | |
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| 11 | | | | | | | | | | | | | | | | | | | | |
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| 12 | | | | | | | | | | | | | | | | | | | | |
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| 13 | | | | | | | | | | | | | | | | | | | | |
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| 14 | | | | | | | | | | | | | | | | | | | | |
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| 15 | | | | | | | | | | | | | | | | | | | | |
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| 16 | | | | | | | | | | | | | | | | | | | | |
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| 17 | | | | | | | | | | | | | | | | | | | | |

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|-------------------------------------------------|----------------|------------------------------|---------------------|
| 45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO.: 088664 | BOREHOLE: MW-02B |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 151.352 | START DATE: May 7, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 150.259 | COMPLETION DATE: May 7, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|----------------|--|--|--|---------------------------|--|--|--|--|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | (ppm) | | | | | (%LEL) | | | | | | | |
| | | | | | | | | | 100 300 500 700 900 | 10 30 50 70 90 | | | | | | | | | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4989594.708 E:520730.397 Elev: CGVD 2013 Ground Surface | | | | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat SILTY SAND - grey, some clay, some cobbles and boulders, wet at 2.03m | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | |
| 6 | BEDROCK - grey granite, some fractures, silt and clay in fractures, orange and black staining | | 1 | CS | - | 92 | 51 | | | | | | | | | | | | | | |
| 7 | BEDROCK - grey with some pinkish granite, highly fractured, orange and black staining | | 2 | CS | - | 100 | 22 | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | |
| 9 | BEDROCK - grey granite, numerous fractures, orange and black staining | | 3 | CS | - | 100 | 44 | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | |
| 11 | BEDROCK - grey granite, some fractures, no staining | | 4 | CS | - | 100 | 41 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | | | |

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|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO.: 088664 | BOREHOLE: MW-03B |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 166.208 | START DATE: May 1, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 165.194 | COMPLETION DATE: May 1, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION (ppm) | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------------|-----|-----|-----|-----|----------------------------------|----|----|-------------------------|----|------------------------------------|--------------------|---------------------------|
| | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4989222.229 E:521823.540 Elev: CGVD 2013 Ground Surface | | | | | | | | | | | | | | | Stick-up | | -4 | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | Silica Sand | | 0 | | |
| 1 | SILTY SAND - brown, trace to some clay, some cobbles and boulders | | | | | | | | | | | | | | | | | 1 | | |
| 2 | BEDROCK - grey greywacke, mechanical breaks, numerous fractures, silt and clay in fractures, orange and black staining, steeply dipping | 1 | CS | - | 91 | 0 | | | | | | | | | | | | 2 | | |
| 3 | | 2 | CS | - | 95 | 0 | | | | | | | | | | | | 3 | | |
| 4 | BEDROCK - grey greywacke, some fractures, orange and black staining, more competent, steeply dipping | 3 | CS | - | 98 | 40 | | | | | | | | | | PVC Riser | | 4 | | |
| 5 | BEDROCK - grey greywacke, some fractures, no staining, more competent, steeply dipping | 4 | CS | - | 100 | 75 | | | | | | | | | | | | 5 | | |
| 6 | BEDROCK - grey greywacke, numerous fractures, no staining, steeply dipping | 6 | CS | - | 100 | 27 | | | | | | | | | | Bentonite Seal | | 6 | | |
| 7 | | 7 | CS | - | 100 | 41 | | | | | | | | | | | | 7 | | |
| 8 | | 8 | CS | - | 100 | 61 | | | | | | | | | | | | 8 | | |
| 9 | | 9 | CS | - | 100 | 59 | | | | | | | | | | | | 9 | | |
| 10 | | 10 | CS | - | 100 | 59 | | | | | | | | | | Silica Sand | | 10 | | |
| 11 | | 11 | CS | - | 100 | 69 | | | | | | | | | | PVC "2- Slot" Screen | | 11 | | |
| 12 | | | | | | | | | | | | | | | | | | 12 | | |
| 13 | | | | | | | | | | | | | | | | | | 13 | | |
| 14 | | | | | | | | | | | | | | | | | | 14 | | |
| 15 | | | | | | | | | | | | | | | | PVC Threaded Well Point | | 15 | | |

| | | | | |
|-------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
| 45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|-------------------------------------------------------|----------------------|------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-03C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 166.161 | START DATE: May 2, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 165.154 | COMPLETION DATE: May 2, 2018 |
| BENCHMARK: | | PAGE 1 of 2 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION (ppm) | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------------|-----|-----|-----|-----|----------------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|
| | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4989223.934 E:521824.051 Elev: CGVD 2013 Ground Surface | | | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | | | |
| 0.5 | SILTY SAND - brown, trace to some clay, some cobbles and boulders at 0.6m | | | | | | | | | | | | | | | | | | | |
| 1.5 | WEATHERED BEDROCK - grey greywacke, mechanical breaks, highly fractured, silt and clay in fractures, orange and black staining | 1 | CS | - | 83 | 0 | | | | | | | | | | | | | | |
| 2.5 | BEDROCK - grey greywacke, highly fractured, orange and black staining, primary bedding at 10° | 2 | CS | - | 92 | 53 | | | | | | | | | | | | | | |
| 3.5 | | 3 | CS | - | 100 | 37 | | | | | | | | | | | | | | |
| 4.5 | BEDROCK - grey greywacke, some fractures, no staining, primary bedding at 15° | 4 | CS | - | 100 | 75 | | | | | | | | | | | | | | |
| 5.5 | | 5 | CS | - | 100 | 76 | | | | | | | | | | | | | | |
| 6.5 | | 6 | CS | - | 100 | 80 | | | | | | | | | | | | | | |
| 7.5 | | 7 | CS | - | 100 | 73 | | | | | | | | | | | | | | |
| 8.5 | | 8 | CS | - | 100 | 73 | | | | | | | | | | | | | | |
| 9.5 | | 9 | CS | - | 100 | 54 | | | | | | | | | | | | | | |
| 10.5 | | 10 | CS | - | 100 | 81 | | | | | | | | | | | | | | |

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|-------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
| 45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-03C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 166.161 | START DATE: May 2, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 165.154 | COMPLETION DATE: May 2, 2018 |
| BENCHMARK: | | PAGE 2 of 2 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|--------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----------------|----|-----|------------------------------------|--------------------|------------------------|
| | | | | | | | | | ppm | | | | | %LEL | | | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 15 | | | | | | | | | | | | | | | | | | 49 | | | |
| 16 | | | 11 | CS | - | 100 | 90 | | | | | | | | | | | 51 | | | |
| 17 | | | 12 | CS | - | 100 | 90 | | | | | | | | | | | 53 | | | |
| 18 | | | 13 | CS | - | 100 | 58 | | | | | | | | | | | 55 | | | |
| 19 | | | 14 | CS | - | 100 | 63 | | | | | | | | | | | 57 | | | |
| 20 | | | 15 | CS | - | 100 | 97 | | | | | | | | | Bentonite Seal | | 59 | | | |
| 21 | | | 16 | CS | - | 100 | 78 | | | | | | | | | | | 61 | | | |
| 22 | | | 17 | CS | - | 100 | 86 | | | | | | | | | | | 63 | | | |
| 23 | | | 18 | CS | - | 100 | 83 | | | | | | | | | | | 65 | | | |
| 24 | | | 19 | CS | - | 100 | 54 | | | | | | | | | | | 67 | | | |
| 25 | | | 20 | CS | - | 100 | 86 | | | | | | | | | | | 69 | | | |
| 26 | | | | | | | | | | | | | | | | | | 71 | | | |
| 27 | | | | | | | | | | | | | | | | | | 73 | | | |
| 28 | | | | | | | | | | | | | | | | | | 75 | | | |
| 29 | | | | | | | | | | | | | | | | | | 77 | | | |
| 30 | | | | | | | | | | | | | | | | | | 79 | | | |
| | | | | | | | | | | | | | | | | | | 81 | | | |
| | | | | | | | | | | | | | | | | | | 83 | | | |
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|------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
| <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|-------------------------------------------------------|----------------------|--------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-04B |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 164.378 | START DATE: April 2, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 163.509 | COMPLETION DATE: April 3, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION (ppm) | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level | | | | | | |
|-----------------------|--------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------------|-----|-----|-----|-----|----------------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|--|----|---|----|----|--|
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | | | | | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4989639.523 E:522649.439 Elev: CGVD 2013 Ground Surface | | | | | | | | | | | | | | | | | | | | | | -4 | | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | | | | | | | 0 | | | |
| 1 | SILTY SAND - grey brown, trace to some clay, some cobbles and boulders | | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| 2 | BEDROCK - grey greywacke, highly fractured, orange and black staining, water bearing zones, slight dip | | 1 | CS | - | 93 | 0 | | | | | | | | | | | | | | | | | 2 | | | |
| 3 | | | 2 | CS | - | 97 | 97 | | | | | | | | | | | | | | | | | | 3 | | |
| 4 | | | 3 | CS | - | 91 | 44 | | | | | | | | | | | | | | | | | | | 4 | |
| 5 | BEDROCK - grey greywacke, minor fractures, orange and black staining, slight dip | | 4 | CS | - | 88 | 88 | | | | | | | | | | | | | | | | | | 5 | | |
| 6 | | | 5 | CS | - | 94 | 82 | | | | | | | | | | | | | | | | | | 6 | | |
| 7 | | | 6 | CS | - | 100 | 100 | | | | | | | | | | | | | | | | | | | 7 | |
| 8 | | | 7 | CS | - | 100 | 96 | | | | | | | | | | | | | | | | | | 8 | | |
| 9 | | | 8 | CS | - | 96 | 75 | | | | | | | | | | | | | | | | | | 9 | | |
| 10 | BEDROCK - grey greywacke, no fractures, quartz vein from 10.03 to 10.54m, slight dip | | 9 | CS | - | 100 | 100 | | | | | | | | | | | | | | | | | | 10 | | |
| 11 | | | 10 | | | | | | | | | | | | | | | | | | | | | | 11 | | |
| 12 | | | 11 | CS | - | 100 | 97 | | | | | | | | | | | | | | | | | | | 12 | |
| 13 | | | 12 | CS | - | 98 | 97 | | | | | | | | | | | | | | | | | | | 13 | |
| 14 | | | 13 | CS | - | 100 | 93 | | | | | | | | | | | | | | | | | | | 14 | |
| 15 | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | |
| 16 | | | | | | | | | | | | | | | | | | | | | | | | | 16 | | |

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|-------------------------------------------------------------------------------------|---------------------------------------------|------------------------------|---------------------|---------------------|
|  | 45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m | |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-05B |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 140.660 | START DATE: April 24, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 139.716 | COMPLETION DATE: April 24, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----|----|----|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | (ppm) | | | | | (%LEL) | | | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4990208.591 E:521747.858 Elev: CGVD 2013 Ground Surface | | | | | | | | | | | | | | | | | | Stick-up | | -4 |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | | Silica Sand | | 0 |
| 0.68 | SILTY SAND - brown, trace to some clay, numerous cobbles and boulders, water at 0.68m | | | | | | | | | | | | | | | | | | | | 1 |
| 1.5 | WEATHERED BEDROCK - grey greywacke, numerous fractures, silt and clay in fractures, orange and black staining | | 1 | CS | - | 89 | 31 | | | | | | | | | | | | | | 2 |
| 2.5 | | | 2 | CS | - | 83 | 17 | | | | | | | | | | | | | | 3 |
| 3.5 | | | 3 | CS | - | 76 | 0 | | | | | | | | | | | | | | 4 |
| 4.5 | | | 4 | | | | | | | | | | | | | | | | | | 5 |
| 5.5 | BEDROCK - grey greywacke, mechanical breaks, highly fractured, orange and black staining, steeply dipping | | 5 | CS | - | 91 | 0 | | | | | | | | | | | | Bentonite Seal | | 6 |
| 6.5 | BEDROCK - grey greywacke, numerous fractures, orange and black staining, steeply dipping | | 6 | CS | - | 98 | 42 | | | | | | | | | | | | | | 7 |
| 7.5 | BEDROCK - grey greywacke, some fractures, minor orange and black staining, steeply dipping | | 7 | CS | - | 100 | 80 | | | | | | | | | | | | PVC Riser | | 8 |
| 8.5 | BEDROCK - grey greywacke, minor fractures, minor orange and black staining, steeply dipping | | 8 | CS | - | 100 | 88 | | | | | | | | | | | | | | 9 |
| 9.5 | | | 9 | CS | - | 100 | 100 | | | | | | | | | | | | | | 10 |
| 10.5 | | | 10 | CS | - | 100 | 91 | | | | | | | | | | | | | | 11 |
| 11.5 | BEDROCK - grey greywacke, some fractures, no staining, steeply dipping | | 11 | CS | - | 100 | 85 | | | | | | | | | | | | | | 12 |
| 12.5 | | | 12 | CS | - | 100 | 59 | | | | | | | | | | | | | | 13 |
| 13.5 | | | | | | | | | | | | | | | | | | | | | 14 |
| 14.32 | BEDROCK - grey greywacke, some fractures, some orange and black staining in fractures from 14.32 to 14.55m, steeply dipping | | | | | | | | | | | | | | | | | | | | 15 |
| 14.55 | | | | | | | | | | | | | | | | | | | | | 16 |
| 15.5 | | | | | | | | | | | | | | | | | | | | | 17 |
| 16.5 | | | | | | | | | | | | | | | | | | | | | 18 |
| 17.5 | | | | | | | | | | | | | | | | | | | | | 19 |
| 18.5 | | | | | | | | | | | | | | | | | | | | | 20 |
| 19.5 | | | | | | | | | | | | | | | | | | | | | 21 |
| 20.5 | | | | | | | | | | | | | | | | | | | | | 22 |
| 21.5 | | | | | | | | | | | | | | | | | | | | | 23 |
| 22.5 | | | | | | | | | | | | | | | | | | | | | 24 |
| 23.5 | | | | | | | | | | | | | | | | | | | | | 25 |
| 24.5 | | | | | | | | | | | | | | | | | | | | | 26 |
| 25.5 | | | | | | | | | | | | | | | | | | | | | 27 |
| 26.5 | | | | | | | | | | | | | | | | | | | | | 28 |
| 27.5 | | | | | | | | | | | | | | | | | | | | | 29 |
| 28.5 | | | | | | | | | | | | | | | | | | | | | 30 |
| 29.5 | | | | | | | | | | | | | | | | | | | | | 31 |
| 30.5 | | | | | | | | | | | | | | | | | | | | | 32 |
| 31.5 | | | | | | | | | | | | | | | | | | | | | 33 |
| 32.5 | | | | | | | | | | | | | | | | | | | | | 34 |
| 33.5 | | | | | | | | | | | | | | | | | | | | | 35 |
| 34.5 | | | | | | | | | | | | | | | | | | | | | 36 |
| 35.5 | | | | | | | | | | | | | | | | | | | | | 37 |
| 36.5 | | | | | | | | | | | | | | | | | | | | | 38 |
| 37.5 | | | | | | | | | | | | | | | | | | | | | 39 |
| 38.5 | | | | | | | | | | | | | | | | | | | | | 40 |
| 39.5 | | | | | | | | | | | | | | | | | | | | | 41 |
| 40.5 | | | | | | | | | | | | | | | | | | | | | 42 |
| 41.5 | | | | | | | | | | | | | | | | | | | | | 43 |
| 42.5 | | | | | | | | | | | | | | | | | | | | | 44 |
| 43.5 | | | | | | | | | | | | | | | | | | | | | 45 |
| 44.5 | | | | | | | | | | | | | | | | | | | | | 46 |
| 45.5 | | | | | | | | | | | | | | | | | | | | | 47 |
| 46.5 | | | | | | | | | | | | | | | | | | | | | 48 |
| 47.5 | | | | | | | | | | | | | | | | | | | | | 49 |
| 48.5 | | | | | | | | | | | | | | | | | | | | | 50 |
| 49.5 | | | | | | | | | | | | | | | | | | | | | 51 |
| 50.5 | | | | | | | | | | | | | | | | | | | | | 52 |
| 51.5 | | | | | | | | | | | | | | | | | | | | | 53 |
| 52.5 | | | | | | | | | | | | | | | | | | | | | 54 |

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|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-05C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 140.762 | START DATE: April 20, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 139.769 | COMPLETION DATE: April 23, 2018 |
| BENCHMARK: | | PAGE 1 of 4 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION (ppm) | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level | | |
|-----------------------|------------------------------------------------------------------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------------|-----|-----|-----|-----|----------------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|--|----|
| | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4990207.042 E:521745.609 Elev: CGVD 2013 Ground Surface | | | | | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | | | | | 0 |
| 1 | SILTY SAND - brown to grey brown, trace to some clay, some cobbles and boulders | | | | | | | | | | | | | | | | | | | | | 1 |
| 2 | WEATHERED BEDROCK - grey greywacke, some fractures, orange and black staining | 1 | CS | - | 58 | 19 | | | | | | | | | | | | | | | | 2 |
| 3 | BEDROCK - grey greywacke, less weathered, no fractures, steeply dipping | 2 | CS | - | 92 | 0 | | | | | | | | | | | | | | | | 3 |
| 4 | BEDROCK - grey greywacke, mechanical breaks, numerous fractures, some orange and black staining, steeply dipping | 3 | CS | - | 88 | 53 | | | | | | | | | | | | | | | | 4 |
| 5 | | 4 | CS | - | 100 | 76 | | | | | | | | | | | | | | | | 5 |
| 6 | | 5 | CS | - | 100 | 68 | | | | | | | | | | | | | | | | 6 |
| 7 | | 6 | CS | - | 100 | 69 | | | | | | | | | | | | | | | | 7 |
| 8 | | 7 | CS | - | 100 | 28 | | | | | | | | | | | | | | | | 8 |
| 9 | BEDROCK - grey greywacke, some fractures, no staining, steeply dipping | 8 | CS | - | 100 | 77 | | | | | | | | | | | | | | | | 9 |
| 10 | | 9 | CS | - | 100 | 92 | | | | | | | | | | | | | | | | 10 |
| 11 | | 10 | CS | - | 100 | 62 | | | | | | | | | | | | | | | | 11 |
| 12 | | | | | | | | | | | | | | | | | | | | | | 12 |
| 13 | | 12 | CS | - | 100 | 96 | | | | | | | | | | | | | | | | 13 |
| 14 | | | | | | | | | | | | | | | | | | | | | | 14 |

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|-------------------------------------------------|-----------------------|-------------------------------------|----------------------------|
| 45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO.: 088664 | BOREHOLE: MW-05C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 140.762 | START DATE: April 20, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 139.769 | COMPLETION DATE: April 23, 2018 |
| BENCHMARK: | | PAGE 2 of 4 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|----------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|
| | | | | | | | | | (ppm) | | | | | (%LEL) | | | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 15 | | | 13 | CS | - | 100 | 20 | | | | | | | | | | | | | | 48 |
| | | | 14 | CS | - | 100 | 0 | | | | | | | | | | | | | | 49 |
| 16 | | | 15 | CS | - | 100 | 21 | | | | | | | | | | | | | | 50 |
| | | | 11 | CS | - | 100 | 100 | | | | | | | | | | | | | | 51 |
| | | | 16 | CS | - | 100 | 26 | | | | | | | | | | | | | | 52 |
| | | | 17 | CS | - | 100 | 41 | | | | | | | | | | | | | | 53 |
| 19 | BEDROCK - grey greywacke, some fractures, no staining, steeply dipping, quartz vein from 19.13 to 19.28m | | 18 | CS | - | 100 | 58 | | | | | | | | | | | | | | 54 |
| | | | 19 | CS | - | 100 | 47 | | | | | | | | | | | | | | 55 |
| | | | 20 | CS | - | 100 | 34 | | | | | | | | | | | | | | 56 |
| | | | 21 | CS | - | 100 | 66 | | | | | | | | | | | | | | 57 |
| | | | 22 | CS | - | 100 | 81 | | | | | | | | | | | | | | 58 |
| | | | 23 | CS | - | 100 | 91 | | | | | | | | | | | | | | 59 |
| | | | 24 | CS | - | 100 | 68 | | | | | | | | | | | | | | 60 |
| | | | 25 | CS | - | 100 | 91 | | | | | | | | | | | | | | 61 |
| | | | 26 | CS | - | 100 | 81 | | | | | | | | | | | | | | 62 |
| | | | 27 | CS | - | 100 | 91 | | | | | | | | | | | | | | 63 |
| | | 28 | CS | - | 100 | 68 | | | | | | | | | | | | | | 64 | |
| | | 29 | CS | - | 100 | 91 | | | | | | | | | | | | | | 65 | |
| | | 30 | CS | - | 100 | 91 | | | | | | | | | | | | | | 66 | |
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|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-05C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 140.762 | START DATE: April 20, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 139.769 | COMPLETION DATE: April 23, 2018 |
| BENCHMARK: | | PAGE 3 of 4 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION (ppm) | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|--------------------------------------------------------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------------|-----|-----|-----|-----|----------------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|
| | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 31 | | 26 | CS | - | 100 | 56 | | | | | | | | | | | | | | |
| 32 | | 27 | CS | - | 100 | 23 | | | | | | | | | | | | | | |
| 33 | | 28 | CS | - | 100 | 0 | | | | | | | | | | | | | | |
| 34 | | 29 | CS | - | 100 | 44 | | | | | | | | | | | | | | |
| 35 | | 30 | CS | - | 100 | 79 | | | | | | | | | | | | | | |
| 36 | | 32 | CS | - | 100 | 26 | | | | | | | | | | | | | | |
| 37 | | 33 | CS | - | 100 | 84 | | | | | | | | | | | | | | |
| 38 | | 34 | CS | - | 100 | 38 | | | | | | | | | | | | | | |
| 39 | | 35 | CS | - | 100 | 32 | | | | | | | | | | | | | | |
| 40 | | 36 | CS | - | 100 | 55 | | | | | | | | | | | | | | |
| 41 | | 37 | CS | - | 100 | 83 | | | | | | | | | | | | | | |
| 42 | | 38 | CS | - | 100 | 83 | | | | | | | | | | | | | | |
| 43 | | 39 | CS | - | 100 | 39 | | | | | | | | | | | | | | |
| 46 | BEDROCK - grey greywacke, mechanical breaks at 46.0m, numerous fractures, no staining, steeply dipping | | | | | | | | | | | | | | | | | | | |

| | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------|----------------------------|----------------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-05C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 140.762 | START DATE: April 20, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 139.769 | COMPLETION DATE: April 23, 2018 |
| BENCHMARK: | | PAGE 4 of 4 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION (ppm) | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|--------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------------|-----|-----|-----|-----|----------------------------------|----|----|----|----------------------|------------------------------------|--------------------|------------------------|
| | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 47 | | 40 | CS | - | 100 | 52 | | | | | | | | | | | | | 153 | |
| 48 | | | | | | | | | | | | | | | | | | | 154 | |
| 49 | | 41 | CS | - | 100 | 46 | | | | | | | | | | | | | 155 | |
| 50 | | | | | | | | | | | | | | | | | | | 156 | |
| 51 | | 42 | CS | - | 100 | 58 | | | | | | | | | | | | | 157 | |
| 52 | | | | | | | | | | | | | | | | | | | 158 | |
| 53 | | 43 | CS | - | 100 | 68 | | | | | | | | | | | | | 159 | |
| 54 | | | | | | | | | | | | | | | | | | | 160 | |
| 55 | | 44 | CS | - | 100 | 83 | | | | | | | | | | | | | 161 | |
| 56 | | | | | | | | | | | | | | | | | | | 162 | |
| 57 | | 45 | CS | - | 100 | 71 | | | | | | | | | | | | | 163 | |
| 58 | | | | | | | | | | | | | | | | | | | 164 | |
| 59 | | 46 | CS | - | 100 | 44 | | | | | | | | | | | | | 165 | |
| 60 | | | | | | | | | | | | | | | | | | | 166 | |
| 61 | | 47 | CS | - | 100 | 69 | | | | | | | | | | | Silica Sand | | 167 | |
| 62 | | | | | | | | | | | | | | | | | | | 168 | |
| | | 48 | CS | - | 100 | 54 | | | | | | | | | | | PVC "2- Slot" Screen | | 169 | |
| | | | | | | | | | | | | | | | | | | | 170 | |
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|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-05D |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 141.180 | START DATE: April 30, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 140.168 | COMPLETION DATE: May 1, 2018 |
| BENCHMARK: | | PAGE 1 of 2 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION (ppm) | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|---------------------------------------------------------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------------|-----|-----|-----|-----|----------------------------------|----|----------------|----|----|------------------------------------|--------------------|------------------------|
| | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4990206.839 E:521742.062 Elev: CGVD 2013 Ground Surface | | | | | | | | | | | | | | | | | -4 | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | Stick-up | | -1 | | | |
| 1 | SILTY SAND - brown, trace to some clay, some cobbles and boulders, wet at 0.61m | | | | | | | | | | | | | | Silica Sand | | 0 | | | |
| 2 | BEDROCK - grey greywacke, numerous fractures, silt and clay in the fractures, orange and black staining | 1 | CS | - | 60 | 0 | | | | | | | | | | | 1 | | | |
| 3 | | 2 | CS | - | 43 | 0 | | | | | | | | | | | 2 | | | |
| 4 | BEDROCK - grey greywacke, some fractures, orange and black staining | 3 | CS | - | 67 | 39 | | | | | | | | | PVC Riser | | 3 | | | |
| 5 | | | | | | | | | | | | | | | | | 4 | | | |
| 6 | | 4 | CS | - | 100 | 61 | | | | | | | | | | | 5 | | | |
| 7 | | | | | | | | | | | | | | | | | 6 | | | |
| 8 | | 6 | CS | - | 100 | 75 | | | | | | | | | | | 7 | | | |
| 9 | | | | | | | | | | | | | | | | | 8 | | | |
| 10 | | 7 | CS | - | 100 | 63 | | | | | | | | | | | 9 | | | |
| 11 | BEDROCK - grey greywacke, broken up and blocky, some fractures, no staining | 8 | CS | - | 100 | 49 | | | | | | | | | | | 10 | | | |
| 12 | BEDROCK - grey greywacke, slightly broken up and blocky, numerous fractures, no staining | 9 | CS | - | 78 | 0 | | | | | | | | | | | 11 | | | |
| 13 | | 10 | CS | - | 100 | 78 | | | | | | | | | | | 12 | | | |
| 14 | | 11 | CS | - | 100 | 10 | | | | | | | | | | | 13 | | | |
| | | 12 | CS | - | 100 | 50 | | | | | | | | | | | 14 | | | |
| | | | | | | | | | | | | | | | Bentonite Seal | | 15 | | | |
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|-------------------------------------------------|----------------|------------------------------|---------------------|--|
| 45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m | |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-05D |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 141.180 | START DATE: April 30, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 140.168 | COMPLETION DATE: May 1, 2018 |
| BENCHMARK: | | PAGE 2 of 2 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION (ppm) | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|-------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------------|-----|-----|-----|-----|----------------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|
| | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 15 | | 13 | CS | - | 100 | 54 | | | | | | | | | | | | | 49 | |
| 16 | | 14 | CS | - | 100 | 76 | | | | | | | | | | | | | 50 | |
| 17 | | 15 | CS | - | 100 | 58 | | | | | | | | | | | | | 51 | |
| 18 | | 16 | CS | - | 100 | 46 | | | | | | | | | | | | | 52 | |
| 19 | | 17 | CS | - | 100 | 39 | | | | | | | | | | | | | 53 | |
| 20 | | 18 | CS | - | 100 | 75 | | | | | | | | | | | | | 54 | |
| 21 | | 19 | CS | - | 100 | 66 | | | | | | | | | | | | | 55 | |
| 22 | BEDROCK - grey greywacke, some fractures, no staining | 20 | CS | - | 100 | 83 | | | | | | | | | | | | | 56 | |
| 23 | | 21 | CS | - | 100 | 85 | | | | | | | | | | | | | 57 | |
| 24 | | 22 | CS | - | 98 | 18 | | | | | | | | | | | | | 58 | |
| 25 | | 23 | CS | - | 97 | 61 | | | | | | | | | | | | | 59 | |
| 26 | | 24 | CS | - | 100 | 61 | | | | | | | | | | | | | 60 | |
| 27 | | | 25 | CS | - | 100 | 61 | | | | | | | | | | | | | 61 |
| 28 | | | 26 | CS | - | 100 | 61 | | | | | | | | | | | | | 62 |
| 29 | | | 27 | CS | - | 100 | 61 | | | | | | | | | | | | | 63 |
| 30 | | | 28 | CS | - | 100 | 61 | | | | | | | | | | | | | 64 |
| | | | 29 | CS | - | 100 | 61 | | | | | | | | | | | | | 65 |

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|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|------------------------|---------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-07A |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: | START DATE: April 9, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: | COMPLETION DATE: April 9, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION (ppm) | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|----------------------------------------------------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------------|-----|-----|-----|-----|----------------------------------|----|----|----|-------------------------|------------------------------------|--------------------|------------------------|
| | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| -1 | Ground Surface | | | | | | | | | | | | | | | | Stick-up | -3 | | |
| 0 | SILTY SAND - brown, trace to some clay, some cobbles and boulders, water at 1.85m | | | | | | | | | | | | | | | | Silica Sand | 0 | | |
| 1 | | | | | | | | | | | | | | | | | | 1 | | |
| 2 | | | | | | | | | | | | | | | | | PVC Riser | 2 | | |
| 3 | | | | | | | | | | | | | | | | | Bentonite Seal | 3 | | |
| 4 | WEATHERED BEDROCK - grey greywacke, numerous fractures, orange and black staining, steeply dipping | 1 | CS | - | 100 | 0 | | | | | | | | | | | | 4 | | |
| 5 | BEDROCK - grey greywacke, numerous fractures, orange and black staining at 3.88m, steeply dipping | 2 | CS | - | 100 | 69 | | | | | | | | | | | | 5 | | |
| 6 | BEDROCK - grey greywacke, numerous fractures, no staining, steeply dipping | 3 | CS | - | 96 | 36 | | | | | | | | | | | | 6 | | |
| 7 | | 4 | CS | - | 100 | 62 | | | | | | | | | | | Silica Sand | 7 | | |
| | | 5 | CS | - | 100 | 46 | | | | | | | | | | | PVC "2- Slot" Screen | 8 | | |
| | | 6 | CS | - | 97 | 62 | | | | | | | | | | | PVC Threaded Well Point | 9 | | |
| | | | | | | | | | | | | | | | | | | 10 | | |
| | | | | | | | | | | | | | | | | | | 11 | | |
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45 Akerley Blvd
Dartmouth, NS
B3B 1J7

LOGGED BY: RH

DAYLIGHTING TO: n/a

GAS METER TYPE: n/a

REVIEWED BY:

EQUIPMENT: CME-75 Trackmount

DRAFTED BY: MG

METHOD: Case and Core

BOREHOLE DIA: 0.10m

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|------------------------|---------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-07B |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: | START DATE: April 6, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: | COMPLETION DATE: April 6, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|
| | | | | | | | | | (ppm) | | | | | (%LEL) | | | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| -1 | Ground Surface | | | | | | | | | | | | | | | | | | | | -1 |
| 0 | ORGANIC - rootmat SILTY SAND - brown, trace to some clay, numerous cobbles and boulders | | | | | | | | | | | | | | | | | | | | 0 |
| 3 | WEATHERED BEDROCK - grey greywacke, soft, numerous fractures containing silt and clay, orange and black staining, steeply dipping | | 1 | CS | - | 68 | 0 | | | | | | | | | | | | | | 3 |
| 4 | BEDROCK - grey greywacke, numerous fractures containing silt and clay, orange and black staining, steeply dipping | | 2 | CS | - | 100 | 26 | | | | | | | | | | | | | | 4 |
| 5 | BEDROCK - grey greywacke, numerous fractures, no staining, very soft at 5.48m, small quartz vein at 5.63m | | 3 | CS | - | 96 | 18 | | | | | | | | | | | | | | 5 |
| 6 | BEDROCK - grey greywacke, numerous fractures, no staining, soft, steeply dipping | | 4 | CS | - | 100 | 36 | | | | | | | | | | | | | | 6 |
| 7 | | | 5 | CS | - | 100 | 25 | | | | | | | | | | | | | | 7 |
| 8 | | | 6 | CS | - | 100 | 33 | | | | | | | | | | | | | | 8 |
| 9 | | | 7 | CS | - | 97 | 67 | | | | | | | | | | | | | | 9 |
| 10 | | | 8 | CS | - | 100 | 30 | | | | | | | | | | | | | | 10 |
| 11 | | | 9 | CS | - | 100 | 65 | | | | | | | | | | | | | | 11 |
| 12 | | | 10 | CS | - | 96 | 48 | | | | | | | | | | | | | | 12 |
| 13 | | | 11 | CS | - | 97 | 41 | | | | | | | | | | | | | | 13 |
| 14 | | | 12 | CS | - | 100 | 34 | | | | | | | | | | | | | | 14 |
| 15 | | | 13 | CS | - | 100 | 50 | | | | | | | | | | | | | | 15 |
| 16 | | | 14 | CS | - | 100 | 36 | | | | | | | | | | | | | | 16 |
| 17 | | | 15 | CS | - | 100 | 85 | | | | | | | | | | | | | | 17 |
| 18 | | | 16 | CS | - | 100 | 37 | | | | | | | | | | | | | | 18 |
| 19 | | | 17 | CS | - | 100 | 44 | | | | | | | | | | | | | | 19 |

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|-------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
| 45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-07C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: | START DATE: April 16, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: | COMPLETION DATE: April 19, 2018 |
| BENCHMARK: | | PAGE 2 of 4 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level | |
|-----------------------|------------------------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|----|
| | | | | | | | | ppm | | | | | %LEL | | | | | | | | |
| | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | | |
| 15 | BEDROCK - grey greywacke, some fractures, no staining, steeply dipping | 17 | CS | - | 100 | 33 | | | | | | | | | | | | | | 48 | |
| | | 18 | CS | - | 98 | 0 | | | | | | | | | | | | | | | 49 |
| | | 19 | CS | - | 100 | 0 | | | | | | | | | | | | | | | 50 |
| | | 20 | CS | - | 100 | 0 | | | | | | | | | | | | | | | 51 |
| | | 21 | CS | - | 100 | 0 | | | | | | | | | | | | | | | 52 |
| | | 22 | CS | - | 100 | 0 | | | | | | | | | | | | | | | 53 |
| | | 23 | CS | - | 100 | 0 | | | | | | | | | | | | | | | 54 |
| | | 24 | CS | - | 100 | 0 | | | | | | | | | | | | | | | 55 |
| | | 25 | CS | - | 100 | 0 | | | | | | | | | | | | | | | 56 |
| | | 26 | CS | - | 100 | 0 | | | | | | | | | | | | | | | 57 |
| | | 27 | CS | - | 100 | 0 | | | | | | | | | | | | | | | 58 |
| | | 28 | CS | - | 97 | 36 | | | | | | | | | | | | | | | 59 |
| | | 29 | CS | - | 96 | 50 | | | | | | | | | | | | | | | 60 |
| | | 30 | CS | - | 100 | 0 | | | | | | | | | | | | | | | 61 |
| | | 31 | CS | - | 95 | 0 | | | | | | | | | | | | | | | 62 |
| | | 32 | CS | - | 88 | 0 | | | | | | | | | | | | | | | 63 |
| | | 33 | CS | - | 95 | 31 | | | | | | | | | | | | | | | 64 |
| | 34 | CS | - | 100 | 14 | | | | | | | | | | | | | | | 65 | |
| | 35 | CS | - | 100 | 0 | | | | | | | | | | | | | | | 66 | |
| | 36 | CS | - | 100 | 46 | | | | | | | | | | | | | | | 67 | |

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|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-07C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: | START DATE: April 16, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: | COMPLETION DATE: April 19, 2018 |
| BENCHMARK: | | PAGE 3 of 4 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION (ppm) | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|------------------------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------------|-----|-----|-----|-----|----------------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|
| | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 31 | BEDROCK - grey greywacke, some fractures, no staining, steeply dipping | 37 | CS | - | 100 | 32 | | | | | | | | | | | | | 101 | |
| 32 | | 38 | CS | - | 100 | 56 | | | | | | | | | | | | | 102 | |
| 33 | | 39 | CS | - | 100 | 46 | | | | | | | | | | | | | 103 | |
| 34 | | 40 | CS | - | 100 | 68 | | | | | | | | | | | | | 104 | |
| 35 | | 41 | CS | - | 100 | 19 | | | | | | | | | | | | | 105 | |
| 36 | | 42 | CS | - | 100 | 14 | | | | | | | | | | | | | 106 | |
| 37 | | 43 | CS | - | 100 | 26 | | | | | | | | | | | | | 107 | |
| 38 | | 44 | CS | - | 98 | 14 | | | | | | | | | | | | | 108 | |
| 39 | | 45 | CS | - | 98 | 0 | | | | | | | | | | | | | 109 | |
| 40 | | 46 | CS | - | 100 | 0 | | | | | | | | | | | | | 110 | |
| 41 | | 47 | CS | - | 100 | 36 | | | | | | | | | | | | | 111 | |
| 42 | 48 | CS | - | 100 | 14 | | | | | | | | | | | | | 112 | | |
| 43 | 49 | CS | - | 100 | 49 | | | | | | | | | | | | | 113 | | |
| 44 | 50 | CS | - | 100 | 13 | | | | | | | | | | | | | 114 | | |
| 45 | 51 | CS | - | 100 | 12 | | | | | | | | | | | | | 115 | | |
| 46 | | | | | | | | | | | | | | | | | | 116 | | |

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|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-07C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: | START DATE: April 16, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: | COMPLETION DATE: April 19, 2018 |
| BENCHMARK: | | PAGE 4 of 4 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|----------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|
| | | | | | | | | | ppm | | | | | %LEL | | | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 47 | BEDROCK - grey greywacke, some fractures, no staining, steeply dipping | CS | 52 | CS | - | 100 | 31 | | | | | | | | | | | | | | 153 |
| 48 | | | 53 | CS | - | 87 | 0 | | | | | | | | | | | | | | 154 |
| 49 | | | 54 | CS | - | 98 | 18 | | | | | | | | | | | | | | 155 |
| 50 | BEDROCK - grey greywacke, some fractures, no staining, steeply dipping, quartz vein from 49.63 to 49.78m | CS | 55 | CS | - | 100 | 73 | | | | | | | | | | | | | | 156 |
| 51 | | | 56 | CS | - | 100 | 80 | | | | | | | | | | | | | | 157 |
| 52 | | | 57 | CS | - | 100 | 42 | | | | | | | | | | | | | | 158 |
| 53 | BEDROCK - grey greywacke, some fractures, steeply dipping, quartz vein throughout (vertical) | CS | 58 | CS | - | 100 | 52 | | | | | | | | | | | | | | 159 |
| 54 | | | 59 | CS | - | 100 | 80 | | | | | | | | | | | | | | 160 |
| 55 | BEDROCK - grey greywacke, some fractures, no staining, steeply dipping | CS | 60 | CS | - | 100 | 23 | | | | | | | | | | | | | | 161 |
| 56 | | | 61 | CS | - | 100 | 39 | | | | | | | | | | | | | | 162 |
| 57 | | | 62 | CS | - | 100 | 36 | | | | | | | | | | | | | | 163 |
| 58 | | | 63 | CS | - | 100 | 14 | | | | | | | | | | | | | | 164 |
| 59 | | | | | | | | | | | | | | | | | | | | | 165 |
| 60 | | | | | | | | | | | | | | | | | | | | | 166 |
| 61 | | | | | | | | | | | | | | | | | | | | | 167 |
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|------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
| <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|--------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-07D |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 131.296 | START DATE: May 14, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 130.256 | COMPLETION DATE: May 14, 2018 |
| BENCHMARK: | | PAGE 2 of 2 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|-------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|--|--|--|--|---------------------------|--|--|--|--|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | 100 300 500 700 900 (ppm) | | | | | 10 30 50 70 90 (%LEL) | | | | | | | |
| 15 | BEDROCK - grey greywacke, not very competent, numerous fractures, no staining | CS | 13 | CS | - | 100 | 37 | | | | | | | | | | | | | | 49 |
| 16 | | | | | | | | | 50 | | | | | | | | | | | | |
| 17 | BEDROCK - grey greywacke, more competent, numerous fractures, no staining | CS | 14 | CS | - | 100 | 22 | | | | | | | | | | | | | | 51 |
| 18 | | | | | | | | | 52 | | | | | | | | | | | | |
| 19 | BEDROCK - grey greywacke, some fractures, no staining | CS | 15 | CS | - | 100 | 64 | | | | | | | | | | | | | | 53 |
| 20 | | | | | | | | | 54 | | | | | | | | | | | | |
| 21 | BEDROCK - grey greywacke, some fractures, no staining | CS | 16 | CS | - | 100 | 34 | | | | | | | | | | | | Bentonite Seal | | 55 |
| 22 | | | | | | | | | 56 | | | | | | | | | | | | |
| 23 | BEDROCK - grey greywacke, some fractures, no staining | CS | 17 | CS | - | 100 | 49 | | | | | | | | | | | | PVC Riser | | 57 |
| 24 | | | | | | | | | 58 | | | | | | | | | | | | |
| 25 | BEDROCK - grey greywacke, some fractures, no staining | CS | 18 | CS | - | 100 | 25 | | | | | | | | | | | | | | 59 |
| 26 | | | | | | | | | 60 | | | | | | | | | | | | |
| 27 | BEDROCK - grey greywacke, some fractures, no staining | CS | 19 | CS | - | 100 | 63 | | | | | | | | | | | | | | 61 |
| 28 | | | | | | | | | 62 | | | | | | | | | | | | |
| 29 | BEDROCK - grey greywacke, some fractures, no staining | CS | 20 | CS | - | 100 | 47 | | | | | | | | | | | | | | 63 |
| 30 | | | | | | | | | 64 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 21 | CS | - | 100 | 66 | | | | | | | | | | | | | | 65 |
| | | | | | | | | | 66 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 22 | CS | - | 100 | 52 | | | | | | | | | | | | | | 67 |
| | | | | | | | | | 68 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 23 | CS | - | 100 | 63 | | | | | | | | | | | | | | 69 |
| | | | | | | | | | 70 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 24 | CS | - | 100 | 47 | | | | | | | | | | | | | | 71 |
| | | | | | | | | | 72 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 25 | CS | - | 100 | 63 | | | | | | | | | | | | | | 73 |
| | | | | | | | | | 74 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 26 | CS | - | 100 | 47 | | | | | | | | | | | | | | 75 |
| | | | | | | | | | 76 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 27 | CS | - | 100 | 63 | | | | | | | | | | | | | | 77 |
| | | | | | | | | | 78 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 28 | CS | - | 100 | 66 | | | | | | | | | | | | | | 79 |
| | | | | | | | | | 80 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 29 | CS | - | 100 | 47 | | | | | | | | | | | | | | 81 |
| | | | | | | | | | 82 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 30 | CS | - | 100 | 52 | | | | | | | | | | | | | | 83 |
| | | | | | | | | | 84 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 31 | CS | - | 100 | 66 | | | | | | | | | | | | | | 85 |
| | | | | | | | | | 86 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 32 | CS | - | 100 | 66 | | | | | | | | | | | | | | 87 |
| | | | | | | | | | 88 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 33 | CS | - | 100 | 66 | | | | | | | | | | | | | | 89 |
| | | | | | | | | | 90 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 34 | CS | - | 100 | 66 | | | | | | | | | | | | | | 91 |
| | | | | | | | | | 92 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 35 | CS | - | 100 | 66 | | | | | | | | | | | | | | 93 |
| | | | | | | | | | 94 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 36 | CS | - | 100 | 66 | | | | | | | | | | | | | | 95 |
| | | | | | | | | | 96 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 37 | CS | - | 100 | 66 | | | | | | | | | | | | | | 97 |
| | | | | | | | | | 98 | | | | | | | | | | | | |
| | BEDROCK - grey greywacke, some fractures, no staining | CS | 38 | CS | - | 100 | 66 | | | | | | | | | | | | | | 99 |
| | | | | | | | | | 100 | | | | | | | | | | | | |

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|-------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

45 Akerley Blvd
Dartmouth, NS
B3B 1J7

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-09A |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: | START DATE: April 13, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: | COMPLETION DATE: April 13, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|------------------------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|
| | | | | | | | | | ppm | | | | | %LEL | | | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| -1 | | | | | | | | | | | | | | | | | | | | | |
| 0 | Ground Surface | | | | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | | | | |
| 0 | SILTY SAND - grey brown, trace to some clay, some cobbles and boulders | | | | | | | | | | | | | | | | | | | | |
| 1 | WEATHERED BEDROCK - grey greywacke, numerous fractures, silt and clay in fractures, orange and black staining, steeply | | 1 | CS | - | 94 | 0 | | | | | | | | | | | | | | |
| 2 | | | 2 | CS | - | 76 | 0 | | | | | | | | | | | | | | |
| 3 | | | 3 | CS | - | 51 | 0 | | | | | | | | | | | | | | |
| 4 | | | 4 | CS | - | 84 | 0 | | | | | | | | | | | | | | |
| 5 | | | 5 | CS | - | 85 | 20 | | | | | | | | | | | | | | |
| 5 | BEDROCK - grey greywacke, numerous fractures, no staining, steeply dipping | | 6 | CS | - | 100 | 24 | | | | | | | | | | | | | | |
| 6 | | | 7 | CS | - | 100 | 32 | | | | | | | | | | | | | | |
| 7 | | | 8 | CS | - | 100 | 69 | | | | | | | | | | | | | | |
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|--|---------------------------------------------|-------------------------------------|----------------------------|----------------------------|
| | 45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m | |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO.: 088664 | BOREHOLE: MW-09B |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: | START DATE: April 12, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: | COMPLETION DATE: April 13, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level | | |
|-----------------------|-------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|----------------|--|--|--|------------------------------------|--------------------|------------------------|--------|--|
| | | | | | | | | | (ppm) | | | | | | | | (%LEL) | |
| | | | | | | | | | 100 300 500 700 900 | 10 30 50 70 90 | | | | | | | | |
| -1 | Ground Surface | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | |
| 0.5 | SILTY SAND - grey brown, trace to some clay, some cobbles and boulders | | 1 | CS | - | 86 | 0 | | | | | | | | | | | |
| 1.5 | WEATHERED BEDROCK - grey greywacke, orange and black staining, clay and silt in fractures | | 2 | CS | - | 87 | 0 | | | | | | | | | | | |
| 2.5 | | | 3 | CS | - | 31 | 0 | | | | | | | | | | | |
| 3.5 | | | 4 | CS | - | 33 | 0 | | | | | | | | | | | |
| 4.5 | | | 5 | CS | - | 58 | 0 | | | | | | | | | | | |
| 6.0 | BEDROCK - grey greywacke, numerous fractures, orange and black staining, steeply dipping | | 6 | CS | - | 100 | 35 | | | | | | | | | | | |
| 7.0 | | | 7 | CS | - | 100 | 0 | | | | | | | | | | | |
| 8.0 | | | 8 | CS | - | 100 | 0 | | | | | | | | | | | |
| 9.0 | | | 9 | CS | - | 100 | 25 | | | | | | | | | | | |
| 10.0 | BEDROCK - grey greywacke, numerous fractures, mechanical breaks, no staining | | 10 | CS | - | 100 | 32 | | | | | | | | | | | |
| 11.0 | | | 11 | CS | - | 100 | 34 | | | | | | | | | | | |
| 12.0 | | | 12 | CS | - | 100 | 0 | | | | | | | | | | | |
| 13.0 | BEDROCK - grey greywacke, numerous fractures, soft, no staining, steeply dipping | | 13 | CS | - | 100 | 11 | | | | | | | | | | | |
| 14.0 | | | 14 | CS | - | 100 | 33 | | | | | | | | | | | |
| 15.0 | | | | | | | | | | | | | | | | | | |
| 16.0 | | | | | | | | | | | | | | | | | | |

| | | | | |
|--|---------------------------------------------|-------------------------------------|----------------------------|----------------------------|
| | 45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m | |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-09C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: | START DATE: April 9, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: | COMPLETION DATE: April 12, 2018 |
| BENCHMARK: | | PAGE 2 of 4 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|-----------------------------------------------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------|--|--|--|--|---------------------------|--|--|--|--|------------------------------------|--------------------|---------------------------|
| | | | | | | | | 100 300 500 700 900 (ppm) | | | | | 10 30 50 70 90 (%LEL) | | | | | | | |
| 16 | BEDROCK - grey greywacke, highly fractured, no staining, steeply dipping | 21 | CS | - | 95 | 0 | | | | | | | | | | | | | 52 | |
| | | 22 | CS | - | 80 | 0 | | | | | | | | | | | | | 53 | |
| 17 | | | 23 | CS | - | 80 | 0 | | | | | | | | | | | | 54 | |
| | | | 24 | CS | - | 100 | 37 | | | | | | | | | | | | 55 | |
| 18 | | | 25 | CS | - | 100 | 40 | | | | | | | | | | | | 56 | |
| | | | 26 | CS | - | 100 | 34 | | | | | | | | | | | | 57 | |
| 19 | | | 27 | CS | - | 100 | 54 | | | | | | | | | | | | 58 | |
| 20 | BEDROCK - grey greywacke, mechanical breaks, numerous fractures, no staining, steeply dipping | 28 | CS | - | 98 | 0 | | | | | | | | | | | | 59 | | |
| | | 29 | CS | - | 100 | 47 | | | | | | | | | | | | | 60 | |
| 21 | | | 30 | CS | - | 100 | 40 | | | | | | | | | | | | 61 | |
| | | | 31 | CS | - | 96 | 42 | | | | | | | | | | | | 62 | |
| 22 | | | 32 | CS | - | 100 | 59 | | | | | | | | | | | | 63 | |
| | | | 33 | CS | - | 100 | 37 | | | | | | | | | | | | 64 | |
| 23 | | | 34 | CS | - | 100 | 17 | | | | | | | | | | | | 65 | |
| | | | 35 | CS | - | 100 | 85 | | | | | | | | | | | | 66 | |
| 24 | | | 36 | CS | - | 98 | 34 | | | | | | | | | | | | 67 | |
| | | | 37 | CS | - | 100 | 68 | | | | | | | | | | | | 68 | |
| 25 | | | 38 | CS | - | 100 | 37 | | | | | | | | | | | | 69 | |
| | | | 39 | CS | - | 100 | 50 | | | | | | | | | | | | 70 | |
| 26 | | | 40 | CS | - | 100 | 41 | | | | | | | | | | | | 71 | |
| | | | 41 | | | | | | | | | | | | | | | | 72 | |

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|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-09C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: | START DATE: April 9, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: | COMPLETION DATE: April 12, 2018 |
| BENCHMARK: | | PAGE 3 of 4 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|-------------------------------------------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------|--|--|--|--|---------------------------|--|--|--|--|------------------------------------|--------------------|------------------------|
| | | | | | | | | 100 300 500 700 900 (ppm) | | | | | 10 30 50 70 90 (%LEL) | | | | | | | |
| 33 | BEDROCK - grey greywacke, numerous fractures, soft, no staining, steeply dipping | 41 | CS | - | 100 | 61 | | | | | | | | | | | | | | |
| 34 | | 42 | CS | - | 96 | 27 | | | | | | | | | | | | | | |
| 35 | | 43 | CS | - | 100 | 75 | | | | | | | | | | | | | | |
| 36 | | 44 | CS | - | 100 | 0 | | | | | | | | | | | | | | |
| 37 | | 45 | CS | - | 93 | 0 | | | | | | | | | | | | | | |
| 38 | | 46 | CS | - | 100 | 80 | | | | | | | | | | | | | | |
| 39 | | 47 | CS | - | 100 | 43 | | | | | | | | | | | | | | |
| 40 | | 48 | CS | - | 100 | 19 | | | | | | | | | | | | | | |
| 41 | BEDROCK - grey greywacke, some fractures, mechanical breaks, no staining, steeply dipping | 49 | CS | - | 100 | 49 | | | | | | | | | | | | | | |
| 42 | | 50 | CS | - | 100 | 61 | | | | | | | | | | | | | | |
| 43 | | 51 | CS | - | 100 | 73 | | | | | | | | | | | | | | |
| 44 | | 52 | CS | - | 91 | 0 | | | | | | | | | | | | | | |
| 45 | | 53 | CS | - | 100 | 59 | | | | | | | | | | | | | | |
| 46 | | 54 | CS | - | 100 | 56 | | | | | | | | | | | | | | |
| 47 | | 55 | CS | - | 100 | 63 | | | | | | | | | | | | | | |
| 48 | | 56 | CS | - | 100 | 66 | | | | | | | | | | | | | | |
| 49 | | 57 | CS | - | 100 | 76 | | | | | | | | | | | | | | |

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|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-09C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: | START DATE: April 9, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: | COMPLETION DATE: April 12, 2018 |
| BENCHMARK: | | PAGE 4 of 4 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION (ppm) | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------------|-----|-----|-----|-----|----------------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|
| | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 50 | BEDROCK - grey greywacke, minor fractures, no staining, slightly dipping, quartzite vein from 50.46 to 50.52m | 58 | CS | - | 100 | 83 | | | | | | | | | | | | | 163 | |
| 51 | | | | | | | | | | | | | | | | | | | 164 | |
| 52 | | | 59 | CS | - | 100 | 68 | | | | | | | | | | | | | 165 |
| 53 | | | 60 | CS | - | 100 | 78 | | | | | | | | | | | | | 166 |
| 54 | | 61 | CS | - | 100 | 86 | | | | | | | | | | | | | 167 | |
| 55 | | 62 | CS | - | 100 | 81 | | | | | | | | | | | | | 168 | |
| 56 | | 63 | CS | - | 100 | 56 | | | | | | | | | | | | | 169 | |
| 57 | BEDROCK - grey greywacke, some fractures, no staining, steeply dipping, light greywhite quartz vein from 58.72 to 58.75m | 64 | CS | - | 100 | 58 | | | | | | | | | | | | | 170 | |
| 58 | | | 65 | CS | - | 100 | 20 | | | | | | | | | | | | 171 | |
| 59 | | | 66 | CS | - | 100 | 41 | | | | | | | | | | | | 172 | |
| 60 | | | | | | | | | | | | | | | | | | | | 173 |
| 61 | | | | | | | | | | | | | | | | | | | 174 | |
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| 64 | | | | | | | | | | | | | | | | | | | 177 | |
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|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-09D |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: | START DATE: May 2, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: | COMPLETION DATE: May 2, 2018 |
| BENCHMARK: | | PAGE 2 of 2 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----|----|----|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | (ppm) | | | | | (%LEL) | | | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 15 | BEDROCK - grey greywacke, mechanical breaks, numerous fractures, no staining, primary bedding at 20° | | 14 | CS | - | 100 | 51 | | | | | | | | | | | | PVC Riser | 50 | |
| 16 | | | | | | | | | 51 | | | | | | | | | | | | |
| 17 | | | | | | | | | 52 | | | | | | | | | | | | |
| 18 | | | | | | | | | 53 | | | | | | | | | | | | |
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| 21 | | | | | | | | | 56 | | | | | | | | | | | | |
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| 23 | | | | | | | | | 58 | | | | | | | | | | | | |
| 24 | | | | | | | | | 59 | | | | | | | | | | | | |
| 25 | BEDROCK - grey greywacke, numerous natural fractures, slightly more competent, primary bedding at 5 | | 15 | CS | - | 100 | 41 | | | | | | | | | | | | Bentonite Seal | 60 | |
| 26 | | | | | | | | | 61 | | | | | | | | | | | | |
| 27 | | | | | | | | | 62 | | | | | | | | | | | | |
| 28 | | | | | | | | | 63 | | | | | | | | | | | | |
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| | | | | | | | | | 69 | | | | | | | | | | | | |
| 31 | | | 16 | CS | - | 100 | 20 | | | | | | | | | | | | Silica Sand | 70 | |
| 32 | | | | | | | | | 71 | | | | | | | | | | | | |
| 33 | | | | | | | | | 72 | | | | | | | | | | | | |
| 34 | | | | | | | | | 73 | | | | | | | | | | | | |
| 35 | | | | | | | | | 74 | | | | | | | | | | | | |
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| 40 | | | | | | | | | 79 | | | | | | | | | | | | |
| 41 | | | 17 | CS | - | 100 | 78 | | | | | | | | | | | | PVC "2- Slot" Screen | 80 | |
| 42 | | | | | | | | | 81 | | | | | | | | | | | | |
| 43 | | | | | | | | | 82 | | | | | | | | | | | | |
| 44 | | | | | | | | | 83 | | | | | | | | | | | | |
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| 48 | | | | | | | | | 87 | | | | | | | | | | | | |
| 49 | | | | | | | | | 88 | | | | | | | | | | | | |
| 50 | | | | | | | | | 89 | | | | | | | | | | | | |
| 51 | | | 18 | CS | - | 100 | 0 | | | | | | | | | | | | PVC Threaded Well Point | 90 | |
| 52 | | | | | | | | | 91 | | | | | | | | | | | | |
| 53 | | | | | | | | | 92 | | | | | | | | | | | | |
| 54 | | | | | | | | | 93 | | | | | | | | | | | | |
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| 59 | | | | | | | | | 98 | | | | | | | | | | | | |
| 60 | | | | | | | | | 99 | | | | | | | | | | | | |
| 61 | | | 19 | CS | - | 100 | 15 | | | | | | | | | | | | | 100 | |
| 62 | | | | | | | | | 101 | | | | | | | | | | | | |
| 63 | | | | | | | | | 102 | | | | | | | | | | | | |
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| 70 | | | | | | | | | 109 | | | | | | | | | | | | |
| 71 | | | 20 | CS | - | 100 | 0 | | | | | | | | | | | | | 110 | |
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| 81 | | | 21 | CS | - | 100 | 0 | | | | | | | | | | | | | 120 | |
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| 91 | | | 22 | CS | - | 100 | 16 | | | | | | | | | | | | | 130 | |
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| 99 | | | 23 | CS | - | 100 | 0 | | | | | | | | | | | | | 140 | |
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| 108 | | | | | | | | | 149 | | | | | | | | | | | | |
| 106 | | | 24 | CS | - | 100 | 0 | | | | | | | | | | | | | 150 | |
| 107 | | | | | | | | | 151 | | | | | | | | | | | | |
| 108 | | | | | | | | | 152 | | | | | | | | | | | | |
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| 113 | | | 25 | CS | - | 100 | 32 | | | | | | | | | | | | | 160 | |
| 114 | | | | | | | | | 161 | | | | | | | | | | | | |
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| 121 | | | 26 | CS | - | 100 | 0 | | | | | | | | | | | | | 170 | |
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| 130 | | | 27 | CS | - | 100 | 32 | | | | | | | | | | | | | 180 | |
| 131 | | | | | | | | | 181 | | | | | | | | | | | | |
| 132 | | | | | | | | | 182 | | | | | | | | | | | | |
| 133 | | | | | | | | | 183 | | | | | | | | | | | | |
| 134 | | | | | | | | | 184 | | | | | | | | | | | | |
| 135 | | | | | | | | | 185 | | | | | | | | | | | | |
| 136 | | | | | | | | | 186 | | | | | | | | | | | | |
| 137 | | | | | | | | | 187 | | | | | | | | | | | | |
| 138 | | | | | | | | | 188 | | | | | | | | | | | | |
| 139 | | | | | | | | | 189 | | | | | | | | | | | | |

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|-------------------------------------------------------------------------------------|-----------------------|-------------------------------------|----------------------------|--|
|  | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m | |

45 Akerley Blvd
Dartmouth, NS
B3B 1J7

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|---------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-11A |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 147.599 | START DATE: April 3, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 146.666 | COMPLETION DATE: April 3, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION (ppm) | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------------|-----|-----|-----|-----|----------------------------------|----|----|-------------------------|----|------------------------------------|--------------------|---------------------------|
| | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4990130.598 E:522324.169 Elev: CGVD 2013 | | | | | | | | | | | | | | | Stick-up | | -3 | | |
| 0 | Ground Surface | | | | | | | | | | | | | | | | | 0 | | |
| | ORGANIC - rootmat | | | | | | | | | | | | | | | Silica Sand | | 1 | | |
| | SILTY SAND - grey brown, trace to some clay, some cobbles and boulders | | | | | | | | | | | | | | | PVC Riser | | 2 | | |
| 1 | | | | | | | | | | | | | | | | | | 3 | | |
| | BEDROCK - grey greywacke, some fractures and weathered rock, orange and black staining, some silt and clay in fractures | 1 | CS | - | 92 | 53 | | | | | | | | | | Bentonite Seal | | 4 | | |
| 2 | | | | | | | | | | | | | | | | | | 5 | | |
| | BEDROCK - grey greywacke, some fractures containing clay and silt, orange and black staining, shallow dip | 2 | CS | - | 93 | 59 | | | | | | | | | | | | 6 | | |
| 3 | | | | | | | | | | | | | | | | | | 7 | | |
| | | | | | | | | | | | | | | | | | | 8 | | |
| 4 | | | | | | | | | | | | | | | | Silica Sand | | 9 | | |
| | | | | | | | | | | | | | | | | | | 10 | | |
| | | | | | | | | | | | | | | | | | | 11 | | |
| | | | | | | | | | | | | | | | | | | 12 | | |
| | | | | | | | | | | | | | | | | | | 13 | | |
| | | | | | | | | | | | | | | | | PVC "2- Slot" Screen | | 14 | | |
| | | | | | | | | | | | | | | | | | | 15 | | |
| | | | | | | | | | | | | | | | | | | 16 | | |
| 5 | | | | | | | | | | | | | | | | | | 17 | | |
| | BEDROCK - grey greywacke, no fractures, shallow dip | | | | | | | | | | | | | | | | | 18 | | |
| | | | | | | | | | | | | | | | | | | 19 | | |
| | | | | | | | | | | | | | | | | PVC Threaded Well Point | | 20 | | |
| 6 | | | | | | | | | | | | | | | | | | 21 | | |

| | | | | |
|-------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
| 45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|---------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-11C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 147.361 | START DATE: April 3, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 146.617 | COMPLETION DATE: April 4, 2018 |
| BENCHMARK: | | PAGE 1 of 2 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----|----|----|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | (ppm) | | | | | (%LEL) | | | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4990132.377 E:522323.713 Elev: CGVD 2013 | | | | | | | | | | | | | | | | | | | | |
| 0 | Ground Surface | | | | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | | | | |
| 0.5 | SILTY SAND - brown, trace to some clay, numerous cobbles and boulders | | | | | | | | | | | | | | | | | | | | |
| 1.5 | WEATHERED BEDROCK - grey greywacke, mechanical breaks | | | | | | | | | | | | | | | | | | | | |
| 2.0 | BEDROCK - grey greywacke, highly fractured, silt and clay in fractures | | 1 | CS | - | 71 | 0 | | | | | | | | | | | | | | |
| 3.5 | BEDROCK - grey greywacke, highly fractured, orange and black staining | | 2 | CS | - | 87 | 0 | | | | | | | | | | | | | | |
| 4.0 | BEDROCK - grey greywacke, silt and clay in fractures with orange and black staining, steeply dipping | | 3 | CS | - | 97 | 29 | | | | | | | | | | | | | | |
| 4.5 | BEDROCK - grey greywacke, silt and clay in fractures with orange and black staining, steeply dipping | | 4 | CS | - | 100 | 65 | | | | | | | | | | | | | | |
| 5.5 | BEDROCK - grey greywacke, some natural fractures, minor orange and black staining, steeply dipping | | 5 | CS | - | 96 | 61 | | | | | | | | | | | | | | |
| 7.0 | BEDROCK - grey greywacke, some natural fractures, minor orange and black staining, steeply dipping | | 6 | CS | - | 96 | 88 | | | | | | | | | | | | | | |
| 8.5 | BEDROCK - grey greywacke, some natural fractures, minor orange and black staining, steeply dipping | | 7 | CS | - | 96 | 76 | | | | | | | | | | | | | | |
| 10.0 | BEDROCK - grey greywacke, some natural fractures, minor orange and black staining, steeply dipping | | 8 | CS | - | 96 | 86 | | | | | | | | | | | | | | |
| 11.5 | BEDROCK - grey greywacke, some natural fractures, minor orange and black staining, steeply dipping | | 9 | CS | - | 98 | 80 | | | | | | | | | | | | | | |
| 13.0 | BEDROCK - grey greywacke, trace quartz veins, minor fractures, steeply dipping | | 10 | CS | - | 98 | 91 | | | | | | | | | | | | | | |

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|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|---------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-11C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 147.361 | START DATE: April 3, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 146.617 | COMPLETION DATE: April 4, 2018 |
| BENCHMARK: | | PAGE 2 of 2 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----|----|----|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | (ppm) | | | | | (%LEL) | | | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 14 | BEDROCK - grey greywacke, minor fractures, steeply dipping, mechanical breaks 14.40 to 15.47m | | 11 | CS | - | 94 | 47 | | | | | | | | | | | | PVC Riser | | 45 |
| 15 | | | | | | | | | | | | | | | | | | | | | |
| 16 | BEDROCK - grey greywacke, mechanical breaks, steeply dipping | | 12 | CS | - | 95 | 15 | | | | | | | | | | | | Bentonite Seal | | 47 |
| 17 | BEDROCK - grey greywacke, quartzite vein from 16.79 to 16.91 m, steeply dipping, no staining | | 13 | CS | - | 90 | 0 | | | | | | | | | | | | | | 48 |
| 18 | BEDROCK - grey greywacke, minor fractures, steeply dipping | | 14 | CS | - | 97 | 43 | | | | | | | | | | | | | | 49 |
| 19 | | | | | | | | | | | | | | | | | | | | | |
| 20 | | | 15 | CS | - | 100 | 35 | | | | | | | | | | | | | | 51 |
| 21 | | | 16 | CS | - | 93 | 19 | | | | | | | | | | | | | | 52 |
| 22 | | | 17 | CS | - | 100 | 59 | | | | | | | | | | | | | | 53 |
| 23 | | | 18 | CS | - | 100 | 57 | | | | | | | | | | | | | | 54 |
| 24 | BEDROCK - grey greywacke, mechanical breaks, steeply dipping | | 19 | CS | - | 98 | 83 | | | | | | | | | | | | Silica Sand | | 55 |
| 25 | BEDROCK - grey greywacke, minor fractures, steeply dipping | | 20 | CS | - | 94 | 0 | | | | | | | | | | | | | | 56 |
| 26 | BEDROCK - grey greywacke, some fractures, steeply dipping, water bearing fracture making water | | 21 | CS | - | 96 | 84 | | | | | | | | | | | | PVC "2- Slot" Screen | | 57 |
| 27 | | | 22 | CS | - | 96 | 46 | | | | | | | | | | | | | | 58 |
| 28 | | | | | | | | | | | | | | | | | | | PVC Threaded Well Point | | 59 |
| | | | | | | | | | | | | | | | | | | | | | 60 |
| | | | | | | | | | | | | | | | | | | | | 61 | |
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| | | | | | | | | | | | | | | | | | | | | 92 | |
| | | | | | | | | | | | | | | | | | | | | 93 | |

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|-------------------------------------------------|----------------|------------------------------|---------------------|
| 45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO.: 088664 | BOREHOLE: MW-12A |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 147.377 | START DATE: April 15, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 146.725 | COMPLETION DATE: April 15, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|----------------|--|--|--|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | (ppm) | | | | | | | |
| | | | | | | | | | 100 300 500 700 900 | 10 30 50 70 90 | | | | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4991000.037 E:521711.672 Elev: CGVD 2013 | | | | | | | | | | | | | | -3 | |
| | Ground Surface | | | | | | | | | | | | | | -2 | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | 0 | |
| | SILTY SAND - grey brown, trace sand, some clay, numerous cobbles and boulders, wet at 1.07m | | | | | | | | | | | | | | 1 | |
| 1 | | | | | | | | | | | | | | | 2 | |
| | | | | | | | | | | | | | | | 3 | |
| 2 | | | | | | | | | | | | | | | 4 | |
| | | | | | | | | | | | | | | | 5 | |
| 3 | | | | | | | | | | | | | | | 6 | |
| | | | | | | | | | | | | | | | 7 | |
| 4 | | | | | | | | | | | | | | | 8 | |
| | | | | | | | | | | | | | | | 9 | |
| 5 | | | | | | | | | | | | | | | 10 | |
| | | | | | | | | | | | | | | | 11 | |
| 6 | | | | | | | | | | | | | | | 12 | |
| | | | | | | | | | | | | | | | 13 | |
| 6 | | | | | | | | | | | | | | | 14 | |
| | | | | | | | | | | | | | | | 15 | |
| 6 | | | | | | | | | | | | | | | 16 | |
| | | | | | | | | | | | | | | | 17 | |
| 6 | | | | | | | | | | | | | | | 18 | |
| | | | | | | | | | | | | | | | 19 | |
| 6 | | | | | | | | | | | | | | | 20 | |
| | | | | | | | | | | | | | | | 21 | |

| | | | | |
|-------------------------------------------------|----------------|------------------------------|---------------------|--|
| 45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m | |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO.: 088664 | BOREHOLE: MW-12B |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 147.358 | START DATE: April 14, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 146.637 | COMPLETION DATE: April 15, 2018 |
| BENCHMARK: | | PAGE 1 of 2 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level | | | | |
|--------------------------|--------------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|------------------------------------|--------------------|---------------------------|--------|----|--|--|
| | | | | | | | | | (ppm) | | | | | | | | (%LEL) | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4990999.179 E:521710.995 Elev: CGVD 2013 | | | | | | | | | | | | | | | | | | | |
| 0 | Ground Surface | | | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | | | |
| 0.5 | SILTY SAND - grey, trace sand, some clay, numerous greywacke boulders/fragments, some boulders, wet at 1.22m | | | | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | |
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| 8 | | | | | | | | | | | | | | | | | | | | |
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| 11 | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |
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|-------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|
|  | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m |

45 Akerley Blvd
Dartmouth, NS
B3B 1J7

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-12B |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 147.358 | START DATE: April 14, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 146.637 | COMPLETION DATE: April 15, 2018 |
| BENCHMARK: | | PAGE 2 of 2 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|-------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|----------------|--|--|--|---------------------------|--|--|--|--|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | (ppm) | | | | | (%LEL) | | | | | | | |
| | | | | | | | | | 100 300 500 700 900 | 10 30 50 70 90 | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | 45 | |
| 15 | | | | | | | | | | | | | | | | | | | | 46 | |
| 16 | | | | | | | | | | | | | | | | | | | | 47 | |
| 17 | | | | | | | | | | | | | | | | | | | | 48 | |
| 18 | | | | | | | | | | | | | | | | | | | | 49 | |
| 19 | | | | | | | | | | | | | | | | | | | | 50 | |
| 20 | | | | | | | | | | | | | | | | | | | | 51 | |
| 21 | BEDROCK - grey greywacke, mechanical breaks, some fractures, no staining, steeply dipping | | 1 | CS | - | 100 | 0 | | | | | | | | | | | | | 52 | |
| 22 | BEDROCK - grey greywacke, some fractures, some black staining, steeply dipping | | 2 | CS | - | 100 | 36 | | | | | | | | | | | | | 53 | |
| 23 | | | | | | | | | | | | | | | | | | | | 54 | |
| 24 | | | | | | | | | | | | | | | | | | | | 55 | |
| 25 | | | | | | | | | | | | | | | | | | | | 56 | |
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|-------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|--|
|  | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m | |

45 Akerley Blvd
Dartmouth, NS
B3B 1J7

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-14A |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 137.203 | START DATE: April 26, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 136.226 | COMPLETION DATE: April 26, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|--------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|----------------|--|--|--|---------------------------|--|--|--|--|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | (ppm) | | | | | (%LEL) | | | | | | | |
| | | | | | | | | | 100 300 500 700 900 | 10 30 50 70 90 | | | | | | | | | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4989830.507 E:523253.265 Elev: CGVD 2013 | | | | | | | | | | | | | | | | | | | | |
| | Ground Surface | | | | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | | | | |
| | SILTY SAND - grey, trace to some clay, some cobbles and boulders, wet at 1.91m | | | | | | | | | | | | | | | | | | | | |
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|---------------------------------------------|----------------|------------------------------|---------------------|
| | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m |
| 45 Akerley Blvd Dartmouth, NS B3B 1J7 | | | |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-14B |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 137.313 | START DATE: April 25, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 136.264 | COMPLETION DATE: April 26, 2018 |
| BENCHMARK: | | PAGE 1 of 2 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level | | | | |
|-----------------------|--------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|------------------------------------|--------------------|------------------------|--------|----|--|--|
| | | | | | | | | | (ppm) | | | | | | | | (%LEL) | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4989828.780 E:523253.939 Elev: CGVD 2013 | | | | | | | | | | | | | | | | | | | |
| 0 | Ground Surface | | | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | | | |
| 1 | SILTY SAND - grey, trace to some clay, some cobbles and boulders, wet at 1.45m | | | | | | | | | | | | | | | | | | | |
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|-------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

45 Akerley Blvd
Dartmouth, NS
B3B 1J7

MONITORING WELL LOG

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|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO.: 088664 | BOREHOLE: MW-14B |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 137.313 | START DATE: April 25, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 136.264 | COMPLETION DATE: April 26, 2018 |
| BENCHMARK: | | PAGE 2 of 2 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|-----------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|
| | | | | | | | | | (ppm) | | | | | (%LEL) | | | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 13 | | | | | | | | | | | | | | | | | | | | | 42 |
| 14 | | | | | | | | | | | | | | | | | | | | | 43 |
| 15 | | | | | | | | | | | | | | | | | | | | | 44 |
| 16 | | | | | | | | | | | | | | | | | | | | | 45 |
| 17 | | | | | | | | | | | | | | | | | | | | | 46 |
| 18 | BEDROCK - grey greywacke, some fractures, no staining, steeply dipping | | 1 | CS | - | 100 | 43 | | | | | | | | | | | | | | 47 |
| 19 | | | | | | | | | | | | | | | | | | | | | 48 |
| 20 | BEDROCK - grey greywacke, mechanical breaks, numerous fractures, no staining, steeply dipping | | 2 | CS | - | 100 | 39 | | | | | | | | | | | | | | 49 |
| 21 | | | | | | | | | | | | | | | | | | | | | 50 |
| 22 | | | | | | | | | | | | | | | | | | | | | 51 |
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|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-14C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 137.127 | START DATE: April 24, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 136.308 | COMPLETION DATE: April 26, 2018 |
| BENCHMARK: | | PAGE 1 of 3 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|----------------|--|--|--|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | (ppm) | | | | | | | |
| | | | | | | | | | 100 300 500 700 900 | 10 30 50 70 90 | | | | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4989827.886 E:523254.933 Elev: CGVD 2013 | | | | | | | | | | | | | -4 | | |
| | Ground Surface | | | | | | | | | | | | | -3 | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | -2 | | |
| | SILTY SAND - grey, trace to some clay, some cobbles and boulders | | | | | | | | | | | | | -1 | | |
| 1 | | | | | | | | | | | | | | 0 | | |
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|-------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|--|
|  | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m | |

45 Akerley Blvd
Dartmouth, NS
B3B 1J7

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-14C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 137.127 | START DATE: April 24, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 136.308 | COMPLETION DATE: April 26, 2018 |
| BENCHMARK: | | PAGE 2 of 3 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----|----|----|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | ppm | | | | | %LEL | | | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 14 | | | | | | | | | | | | | | | | | | 45 | | | |
| 15 | | | | | | | | | | | | | | | | | | 46 | | | |
| 16 | | | | | | | | | | | | | | | | | | 47 | | | |
| 17 | | | | | | | | | | | | | | | | | | 48 | | | |
| 18 | | | | | | | | | | | | | | | | | | 49 | | | |
| 19 | WEATHERED BEDROCK - grey greywacke, highly fractured, no staining, steeply dipping | | 1 | CS | - | 100 | 28 | | | | | | | | | | | 50 | | | |
| 20 | | | 2 | CS | - | 100 | 38 | | | | | | | | | | | 51 | | | |
| 21 | BEDROCK - grey greywacke, some fractures, no staining, steeply dipping | | 3 | CS | - | 100 | 54 | | | | | | | | | | | 52 | | | |
| 22 | | | 4 | CS | - | 100 | 49 | | | | | | | | | | | 53 | | | |
| 23 | | | 5 | CS | - | 100 | 80 | | | | | | | | | | | 54 | | | |
| 24 | | | 6 | SS | | 100 | 56 | | | | | | | | | | | 55 | | | |
| 25 | | | 7 | SS | | 100 | 80 | | | | | | | | | | | 56 | | | |
| 26 | | | 8 | SS | | 100 | 85 | | | | | | | | | | | 57 | | | |
| 27 | | | 9 | SS | | 100 | 56 | | | | | | | | | | | 58 | | | |
| 28 | | | | | | | | | | | | | | | | | | 59 | | | |
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| | | | | | | | | | | | | | | | | | | 88 | | | |
| | | | | | | | | | | | | | | | | | | 89 | | | |
| | | | | | | | | | | | | | | | | | | 90 | | | |
| | | | | | | | | | | | | | | | | | | 91 | | | |
| | | | | | | | | | | | | | | | | | | 92 | | | |
| | | | | | | | | | | | | | | | | | | 93 | | | |
| | | | | | | | | | | | | | | | | | | 94 | | | |

| | | | |
|-------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|
|  | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m |

45 Akerley Blvd
Dartmouth, NS
B3B 1J7

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO.: 088664 | BOREHOLE: MW-14C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 137.127 | START DATE: April 24, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 136.308 | COMPLETION DATE: April 26, 2018 |
| BENCHMARK: | | PAGE 3 of 3 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION (ppm) | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|----------------------------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------------|-----|-----|-----|-----|----------------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|
| | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 29 | BEDROCK - grey greywacke, numerous fractures, no staining, steeply dipping | 10 | SS | | 100 | 42 | | | | | | | | | | | | Bentonite Seal | | 95 |
| 30 | | | | | | | | | | | | | | | | | | | | 96 |
| 31 | | | | | | | | | | | | | | | | | | | | 97 |
| 32 | | | | | | | | | | | | | | | | | | | | 98 |
| 33 | | | | | | | | | | | | | | | | | | | | 99 |
| 34 | | | | | | | | | | | | | | | | | | | | 100 |
| 35 | | | | | | | | | | | | | | | | | | | | 101 |
| 36 | | | | | | | | | | | | | | | | | | | | 102 |
| 37 | | 11 | SS | | 100 | 54 | | | | | | | | | | | | PVC Riser | 103 | |
| 38 | | | | | | | | | | | | | | | | | | | 104 | |
| 39 | | | | | | | | | | | | | | | | | | | 105 | |
| 40 | | | | | | | | | | | | | | | | | | | 106 | |
| 41 | | | | | | | | | | | | | | | | | | | 107 | |
| 42 | | | | | | | | | | | | | | | | | | | 108 | |
| 43 | | | | | | | | | | | | | | | | | | | 109 | |
| 44 | | | | | | | | | | | | | | | | | | | 110 | |
| 45 | | 12 | SS | | 100 | 25 | | | | | | | | | | | | PVC "2- Slot" Screen | 111 | |
| 46 | | | | | | | | | | | | | | | | | | | 112 | |
| 47 | | | | | | | | | | | | | | | | | | | 113 | |
| 48 | | | | | | | | | | | | | | | | | | | 114 | |
| 49 | | | | | | | | | | | | | | | | | | | 115 | |
| 50 | | | | | | | | | | | | | | | | | | | 116 | |
| 51 | | | | | | | | | | | | | | | | | | | 117 | |
| 52 | | | | | | | | | | | | | | | | | | | 118 | |
| 53 | | 13 | SS | | 100 | 82 | | | | | | | | | | | | PVC Threaded Well Point | 119 | |
| 54 | | | | | | | | | | | | | | | | | | | 120 | |
| 55 | | | | | | | | | | | | | | | | | | | 121 | |
| 56 | | | | | | | | | | | | | | | | | | | 122 | |
| 57 | | | | | | | | | | | | | | | | | | | 123 | |
| 58 | | | | | | | | | | | | | | | | | | | 124 | |
| 59 | | | | | | | | | | | | | | | | | | | 125 | |
| 60 | | | | | | | | | | | | | | | | | | | 126 | |
| 61 | | 14 | SS | | 100 | 64 | | | | | | | | | | | | Silica Sand | 127 | |
| 62 | | | | | | | | | | | | | | | | | | | 128 | |
| 63 | | | | | | | | | | | | | | | | | | | 129 | |
| 64 | | | | | | | | | | | | | | | | | | | 130 | |
| 65 | | | | | | | | | | | | | | | | | | | 131 | |
| 66 | | | | | | | | | | | | | | | | | | | 132 | |
| 67 | | | | | | | | | | | | | | | | | | | 133 | |
| 68 | | | | | | | | | | | | | | | | | | | 134 | |
| 69 | | 15 | SS | | 100 | 59 | | | | | | | | | | | | PVC Threaded Well Point | 135 | |
| 70 | | | | | | | | | | | | | | | | | | | 136 | |
| 71 | | | | | | | | | | | | | | | | | | | 137 | |
| 72 | | | | | | | | | | | | | | | | | | | 138 | |
| 73 | | | | | | | | | | | | | | | | | | | 139 | |
| 74 | | | | | | | | | | | | | | | | | | | 140 | |
| 75 | | | | | | | | | | | | | | | | | | | 141 | |
| 76 | | | | | | | | | | | | | | | | | | | 142 | |
| 77 | | 16 | SS | | 100 | 37 | | | | | | | | | | | | PVC Threaded Well Point | 143 | |
| 78 | | | | | | | | | | | | | | | | | | | 144 | |
| 79 | | | | | | | | | | | | | | | | | | | 145 | |
| 80 | | | | | | | | | | | | | | | | | | | 146 | |
| 81 | | | | | | | | | | | | | | | | | | | 147 | |
| 82 | | | | | | | | | | | | | | | | | | | 148 | |
| 83 | | | | | | | | | | | | | | | | | | | 149 | |
| 84 | | | | | | | | | | | | | | | | | | | 150 | |

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|------------------------------------------------------|----------------|------------------------------|---------------------|
| <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO.: 088664 | BOREHOLE: MW-16A |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 153.636 | START DATE: April 20, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 152.568 | COMPLETION DATE: April 20, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level | |
|--------------------------|---------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|--|--|--|--|------------------------------------|--------------------|---------------------------|-----------------------|
| | | | | | | | | | 100 300 500 700 900 (ppm) | | | | | | | | 10 30 50 70 90 (%LEL) |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4990744.060 E:522898.761 Elev: CGVD 2013 | | | | | | | | | | | | | | | | |
| | Ground Surface | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | |
| 0 | SILTY SAND - grey, trace to some clay, some cobbles and boulders, water at 2.36m | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | WEATHERED BEDROCK - grey greywacke, mechanical breaks, orange and black staining | | 1 | CS | - | 100 | 0 | | | | | | | | | | |
| 4 | BEDROCK - grey greywacke, mechanical breaks, numerous fractures, orange and black staining, | | 2 | CS | - | 83 | 0 | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | 3 | CS | - | 100 | 0 | | | | | | | | | | |
| 7 | | | 4 | CS | - | 100 | 24 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

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|--|---------------------------------------------|-------------------------------------|----------------------------|----------------------------|
| | 45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m | |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO.: 088664 | BOREHOLE: MW-16B |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 153.625 | START DATE: April 19, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 152.592 | COMPLETION DATE: April 20, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level | | | | |
|-----------------------|-------------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|------------------------------------|--------------------|------------------------|--------|----|--|--|
| | | | | | | | | | (ppm) | | | | | | | | (%LEL) | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4990742.630 E:522898.057 Elev: CGVD 2013 Ground Surface | | | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | | | |
| 0.5 | SILTY SAND - grey, trace to some clay, numerous cobbles and boulders, wet at 2.36m | | | | | | | | | | | | | | | | | | | |
| 2.5 | BEDROCK - grey greywacke, mechanical breaks, numerous fractures, orange and black staining, steeply dipping | | | | | | | | | | | | | | | | | | | |
| 4.0 | | | 1 | CS | - | 98 | 27 | | | | | | | | | | | | | |
| 5.0 | BEDROCK - grey greywacke, some fractures, no staining, variable dip | | | | | | | | | | | | | | | | | | | |
| 5.5 | | | 2 | CS | - | 100 | 67 | | | | | | | | | | | | | |
| 7.0 | | | 3 | CS | - | 100 | 57 | | | | | | | | | | | | | |
| 8.5 | | | 4 | CS | - | 100 | 70 | | | | | | | | | | | | | |
| 10.0 | | | 5 | CS | - | 100 | 67 | | | | | | | | | | | | | |
| 11.5 | | | 6 | CS | - | 100 | 43 | | | | | | | | | | | | | |
| 13.0 | | | 7 | CS | - | 100 | 77 | | | | | | | | | | | | | |
| 14.5 | | | 8 | CS | - | 100 | 62 | | | | | | | | | | | | | |
| 15.0 | | | | | | | | | | | | | | | | | | | | |
| 16.0 | | | | | | | | | | | | | | | | | | | | |

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|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-17A |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 154.269 | START DATE: April 26, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 153.328 | COMPLETION DATE: April 26, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|-----------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|----------------|--|--|-----------------------------|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | ppm | | | | | | | |
| | | | | | | | | | 100 300 500 700 900 | 10 30 50 70 90 | | | | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4990324.445 E:524121.346 Elev: CGVD 2013 | | | | | | | | | | | | Stick-up | -3 | | |
| 0 | Ground Surface | | | | | | | | | | | | | -1 | | |
| | ORGANIC - rootmat | | | | | | | | | | | | Silica Sand | 0 | | |
| | SILTY SAND - brown to grey, trace to some clay, some cobbles and boulders, wet at 3.25m | | | | | | | | | | | | PVC Riser Bentonite Seal | 1 | | |
| 1 | | | | | | | | | | | | | | 2 | | |
| | | | | | | | | | | | | | Silica Sand | 3 | | |
| 2 | | | | | | | | | | | | | | 4 | | |
| | | | | | | | | | | | | | | 5 | | |
| 3 | | | | | | | | | | | | | PVC "2- Slot" Screen | 6 | | |
| | | | | | | | | | | | | | | 7 | | |
| 4 | | | | | | | | | | | | | | 8 | | |
| | | | | | | | | | | | | | | 9 | | |
| 5 | | | | | | | | | | | | | PVC Threaded Well Point | 10 | | |
| | | | | | | | | | | | | | | 11 | | |
| 6 | | | | | | | | | | | | | | 12 | | |
| | | | | | | | | | | | | | | 13 | | |
| 5 | | | | | | | | | | | | | | 14 | | |
| | | | | | | | | | | | | | | 15 | | |
| 6 | | | | | | | | | | | | | | 16 | | |
| | | | | | | | | | | | | | | 17 | | |
| 6 | | | | | | | | | | | | | | 18 | | |
| | | | | | | | | | | | | | | 19 | | |
| 6 | | | | | | | | | | | | | | 20 | | |
| | | | | | | | | | | | | | | 21 | | |

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|------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
| <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-18A |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 147.288 | START DATE: April 20, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 146.317 | COMPLETION DATE: April 20, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level | |
|--------------------------|-------------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|----------------------------------|------------------------------------|--------------------|---------------------------|----|
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | | | | | 10 |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4991142.236 E:523118.888 Elev: CGVD 2013 | | | | | | | | | | | | | | | | | |
| 0 | Ground Surface | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | |
| 0 | SILTY SAND - grey brown, trace to some clay, some cobbles and boulders, wet at 1.29m | | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | |
| 3 | BEDROCK - grey greywacke, mechanical breaks, numerous fractures, orange and black staining, steeply dipping | | 1 | CS | - | 100 | 13 | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | |
| 5 | | | 2 | CS | - | 100 | 0 | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | |
| 6 | | | 3 | CS | - | 100 | 0 | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | |
| 7 | BEDROCK - grey greywacke, some fractures, orange and black staining, steeply dipping | | 4 | CS | - | 100 | 19 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

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|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-18B |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 147.155 | START DATE: April 24, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 146.320 | COMPLETION DATE: April 24, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|-------------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|----------------|--|--|--|---------------------------|--|----------------|--|----|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | (ppm) | | | | | (%LEL) | | | | | | | |
| | | | | | | | | | 100 300 500 700 900 | 10 30 50 70 90 | | | | | | | | | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4991141.883 E:523120.436 Elev: CGVD 2013 Ground Surface | | | | | | | | | | | | | | | Stick-up | | -4 | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | Silica Sand | | 0 | | | |
| 1 | SILTY SAND - brown, trace to some clay, numerous cobbles and boulders, water at 2.01m | | | | | | | | | | | | | | | | | 1 | | | |
| 2 | | | | | | | | | | | | | | | | | | 2 | | | |
| 3 | | | | | | | | | | | | | | | | | | 3 | | | |
| 4 | BEDROCK - grey greywacke, mechanical breaks, numerous fractures, orange and black staining, steeply dipping | | 1 | CS | - | 89 | 0 | | | | | | | | | | | 4 | | | |
| 5 | | | 2 | CS | - | 97 | 0 | | | | | | | | | Bentonite Seal | | 5 | | | |
| 6 | | | 3 | CS | - | 98 | 0 | | | | | | | | | | | 6 | | | |
| 7 | | | 4 | CS | - | 100 | 32 | | | | | | | | | PVC Riser | | 7 | | | |
| 8 | | | 5 | CS | - | 100 | 37 | | | | | | | | | | | 8 | | | |
| 9 | | | 6 | CS | - | 100 | 22 | | | | | | | | | | | 9 | | | |
| 10 | | | 7 | CS | - | 100 | 33 | | | | | | | | | | | 10 | | | |
| 11 | | | 8 | CS | - | 100 | 32 | | | | | | | | | | | 11 | | | |
| 12 | | | 9 | CS | - | 100 | 0 | | | | | | | | | | | 12 | | | |
| 13 | | | | | | | | | | | | | | | | | | 13 | | | |
| 14 | | | | | | | | | | | | | | | | | | 14 | | | |
| 15 | | | | | | | | | | | | | | | | | | 15 | | | |
| 16 | | | | | | | | | | | | | | | | | | 16 | | | |
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|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-18C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 147.207 | START DATE: April 25, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 146.137 | COMPLETION DATE: April 25, 2018 |
| BENCHMARK: | | PAGE 1 of 2 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|------------------------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|----------------|--|--|--|---------------------------|--|--|--|--|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | ppm | | | | | %LEL | | | | | | | |
| | | | | | | | | | 100 300 500 700 900 | 10 30 50 70 90 | | | | | | | | | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4991141.264 E:523121.844 Elev: CGVD 2013 Ground Surface | | | | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat SILTY SAND - brown, trace to some clay, some cobbles and boulders | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | |
| 4 | BEDROCK - grey greywacke, mechanical breaks, highly fractured, orange and black staining in fractures, steeply dipping | | 1 | CS | - | 100 | 0 | | | | | | | | | | | | | | |
| 5 | | | 2 | CS | - | 100 | 0 | | | | | | | | | | | | | | |
| 6 | | | 3 | CS | - | 100 | 0 | | | | | | | | | | | | | | |
| 7 | BEDROCK - grey greywacke, numerous fractures, no staining, steeply dipping | | 4 | CS | - | 100 | 57 | | | | | | | | | | | | | | |
| 8 | | | 5 | CS | - | 100 | 57 | | | | | | | | | | | | | | |
| 9 | | | 6 | CS | - | 100 | 14 | | | | | | | | | | | | | | |
| 10 | BEDROCK - grey greywacke, mechanical breaks, some fractures, no staining, steeply dipping | | 7 | CS | - | 100 | 10 | | | | | | | | | | | | | | |
| 11 | | | 8 | CS | - | 100 | 13 | | | | | | | | | | | | | | |
| 12 | | | 9 | CS | - | 98 | 13 | | | | | | | | | | | | | | |
| 13 | | | 10 | CS | - | 100 | 26 | | | | | | | | | | | | | | |
| 14 | | | 11 | CS | - | 100 | 15 | | | | | | | | | | | | | | |
| 15 | | | 12 | CS | - | 100 | 23 | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | | |

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|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|----------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO.: 088664 | BOREHOLE: MW-18C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 147.207 | START DATE: April 25, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 146.137 | COMPLETION DATE: April 25, 2018 |
| BENCHMARK: | | PAGE 2 of 2 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION (ppm) | | | | | SOIL VAPOUR CONCENTRATION (%LEL) | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|--------------------------------------------------------------------------|----------------------|-------------|-----------|------------|---------|---------------------------|---------------------------------|-----|-----|-----|-----|----------------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|
| | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 18 | BEDROCK - grey greywacke, mechanical breaks, some fractures, no staining | 13 | CS | - | 100 | 64 | | | | | | | | | | | | | 58 | |
| 19 | | 14 | CS | - | 100 | 67 | | | | | | | | | | | | | 59 | |
| 20 | | 15 | CS | - | 100 | 34 | | | | | | | | | | | | | 60 | |
| 21 | | 16 | CS | - | 100 | 75 | | | | | | | | | | | | | 61 | |
| 22 | | 17 | CS | - | 100 | 10 | | | | | | | | | | | | | 62 | |
| 23 | | 18 | CS | - | 100 | 25 | | | | | | | | | | | | | 63 | |
| 24 | | 19 | CS | - | 100 | 44 | | | | | | | | | | | | | 64 | |
| 25 | | 20 | CS | - | 100 | 47 | | | | | | | | | | | | | 65 | |
| 26 | | 21 | CS | - | 100 | 39 | | | | | | | | | | | | | 66 | |
| 27 | | 22 | CS | - | 100 | 17 | | | | | | | | | | | | | 67 | |
| 28 | | 23 | CS | - | 100 | 20 | | | | | | | | | | | | | 68 | |
| 29 | | 24 | CS | - | 100 | 0 | | | | | | | | | | | | | 69 | |
| 30 | | 25 | CS | - | 100 | 15 | | | | | | | | | | | | | 70 | |
| 31 | | | | | | | | | | | | | | | | | | | 71 | |
| 32 | | | | | | | | | | | | | | | | | | | 72 | |
| 33 | | | | | | | | | | | | | | | | | | | 73 | |
| 34 | | | | | | | | | | | | | | | | | | | 74 | |
| 35 | | | | | | | | | | | | | | | | | | | 75 | |
| 36 | | | | | | | | | | | | | | | | | | | 76 | |
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| | | | | | | | | | | | | | | | | | | 120 | | |

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|-------------------------------------------------|----------------|------------------------------|---------------------|--|
| 45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m | |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO.: 088664 | BOREHOLE: MW-19A |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 133.385 | START DATE: May 4, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 132.414 | COMPLETION DATE: May 4, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|----------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|----------------|--|--|--------------------------------------------|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | ppm | | | | | | | |
| | | | | | | | | | 100 300 500 700 900 | 10 30 50 70 90 | | | | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4991427.087 E:520765.986 Elev: CGVD 2013 | | | | | | | | | | | | Stick-up | -3 | | |
| 0 | Ground Surface | | | | | | | | | | | | Silica Sand PVC Riser Bentonite Seal | 0 | | |
| | ORGANIC - rootmat SILTY SAND - brown, trace to some clay, numerous cobbles and boulders, wet at 0.64m | | | | | | | | | | | | PVC "2- Slot" Screen | 1 | | |
| 1 | | | | | | | | | | | | | Silica Sand | 5 | | |
| 2 | | | | | | | | | | | | | | PVC Threaded Well Point | 15 | |
| 3 | | | | | | | | | | | | | | | 10 | |
| 4 | | | | | | | | | | | | | | | 13 | |
| 5 | | | | | | | | | | | | | | | 16 | |
| 6 | | | | | | | | | | | | | | | 19 | |
| | | | | | | | | | | | | | | | 21 | |



45 Akerley Blvd
Dartmouth, NS
B3B 1J7

LOGGED BY: RH

DAYLIGHTING TO: n/a

GAS METER TYPE: n/a

REVIEWED BY:

EQUIPMENT: CME-75 Trackmount

DRAFTED BY: MG


METHOD: Case and Core

BOREHOLE DIA: 0.10m

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-19B |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 133.410 | START DATE: May 4, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 132.443 | COMPLETION DATE: May 4, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level | | | | |
|-----------------------|------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|------------------------------------|--------------------|------------------------|--------|----|--|--|
| | | | | | | | | | (ppm) | | | | | | | | (%LEL) | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4991426.125 E:520764.377 Elev: CGVD 2013 Ground Surface | | | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat SILTY SAND - brown, trace to some clay, some cobbles and boulders, wet at 0.71m | | | | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |
| 5 | BEDROCK - grey greywacke, some fractures, some silt and clay in fractures, orange and black staining | | 1 | CS | - | 100 | 41 | | | | | | | | | | | | | |
| 6 | BEDROCK - grey greywacke, some fractures, orange and black staining | | 2 | CS | - | 100 | 68 | | | | | | | | | | | | | |
| 7 | | | 3 | CS | - | 100 | 85 | | | | | | | | | | | | | |
| 8 | | | 4 | CS | - | 100 | 61 | | | | | | | | | | | | | |
| 9 | | | 5 | CS | - | 100 | 80 | | | | | | | | | | | | | |
| 10 | BEDROCK - grey greywacke, some fractures, no staining | | 6 | CS | - | 100 | 83 | | | | | | | | | | | | | |
| 11 | | | 7 | CS | - | 100 | 44 | | | | | | | | | | | | | |
| 12 | | | 8 | CS | - | 100 | 76 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | |

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|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------|----------------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO.: 088664 | BOREHOLE: MW-19C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 133.397 | START DATE: May 7, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 132.516 | COMPLETION DATE: May 7, 2018 |
| BENCHMARK: | | PAGE 1 of 2 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level | | | | |
|-----------------------|----------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|------------------------------------|--------------------|------------------------|--------|----|--|--|
| | | | | | | | | | (ppm) | | | | | | | | (%LEL) | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4991425.291 E:520762.233 Elev: CGVD 2013 | | | | | | | | | | | | | | | | | | | |
| 0 | Ground Surface | | | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | | | |
| 0 | SILTY SAND - grey brown, some clay, some cobbles and boulders | | | | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | |
| 4 | | | 1 | CS | - | 63 | 0 | | | | | | | | | | | | | |
| 5 | WEATHERED BEDROCK - grey greywacke, mechanical breaks, highly fractured, orange and black staining | | | | | | | | | | | | | | | | | | | |
| 5 | BEDROCK - grey greywacke, some fractures, silt and clay in fractures, orange and black staining | | 2 | CS | - | 85 | 37 | | | | | | | | | | | | | |
| 6 | BEDROCK - grey greywacke, some fractures, orange and black staining | | | | | | | | | | | | | | | | | | | |
| 7 | BEDROCK - grey greywacke, some fractures, orange and black staining | | 3 | SS | - | 100 | 76 | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | |
| 8 | | | 4 | CS | - | 100 | 64 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | |
| 10 | | | 5 | CS | - | 100 | 63 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | |
| 11 | | | 6 | CS | - | 100 | 93 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |
| 13 | | | 7 | CS | - | 100 | 78 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | |
| 14 | | | 8 | CS | - | 100 | 80 | | | | | | | | | | | | | |

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|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO.: 088664 | BOREHOLE: MW-19C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 133.397 | START DATE: May 7, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 132.516 | COMPLETION DATE: May 7, 2018 |
| BENCHMARK: | | PAGE 2 of 2 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|--------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----|----|-------------------------|------------------------------------|--------------------|------------------------|
| | | | | | | | | | ppm | | | | | %LEL | | | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 15 | | | | | | | | | | | | | | | | | | | | | 49 |
| 16 | | | 9 | CS | - | 100 | 68 | | | | | | | | | | | | | | 50 |
| 17 | | | | | | | | | | | | | | | | | | | | | 51 |
| 18 | | | 10 | CS | - | 100 | 75 | | | | | | | | | | | | | | 52 |
| 19 | | | | | | | | | | | | | | | | | | | | | 53 |
| 20 | | | 11 | CS | - | 100 | 58 | | | | | | | | | | | | Bentonite Seal | | 54 |
| 21 | | | | | | | | | | | | | | | | | | | | | 55 |
| 22 | BEDROCK - grey greywacke, mechanical breaks, some fractures, no staining | | 12 | CS | - | 100 | 51 | | | | | | | | | | | | | | 56 |
| 23 | | | 13 | CS | - | 100 | 54 | | | | | | | | | | | | PVC Riser | | 57 |
| 24 | | | 14 | CS | - | 100 | 75 | | | | | | | | | | | | | | 58 |
| 25 | | | 15 | CS | - | 100 | 69 | | | | | | | | | | | | | | 59 |
| 26 | | | 16 | CS | - | 100 | 64 | | | | | | | | | | | | | | 60 |
| 27 | | | 17 | CS | - | 100 | 95 | | | | | | | | | | | | | | 61 |
| 28 | | | 18 | CS | - | 100 | 81 | | | | | | | | | | | | | | 62 |
| 29 | | | | | | | | | | | | | | | | | | | Silica Sand | | 63 |
| 30 | | | | | | | | | | | | | | | | | | PVC "2- Slot" Screen | | 64 | |
| | | | | | | | | | | | | | | | | | | PVC Threaded Well Point | | 65 | |
| | | | | | | | | | | | | | | | | | | | | 66 | |
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| | | | | |
|--|---------------------------------------------|-------------------------------------|----------------------------|----------------------------|
| | 45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m | |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-20A |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 152.089 | START DATE: May 7, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 150.924 | COMPLETION DATE: May 7, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|
| | | | | | | | | | (ppm) | | | | | (%LEL) | | | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| -1 | UTM Zone 20 NAD83 (GSRs) N:4990264.985 E:520263.534 Elev: CGVD 2013 | | | | | | | | | | | | | | | | | | Stick-up | | -3 |
| 0 | Ground Surface | | | | | | | | | | | | | | | | | | | | -1 |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | | Silica Sand | | 0 |
| 0 | SILTY SAND - grey to , trace to some clay, some cobbles and boulders, wet at 1.37m | | | | | | | | | | | | | | | | | | | | 1 |
| 1 | | | | | | | | | | | | | | | | | | | PVC Riser | | 2 |
| 1 | | | | | | | | | | | | | | | | | | | | | 3 |
| 2 | | | | | | | | | | | | | | | | | | | Bentonite Seal | | 4 |
| 2 | | | | | | | | | | | | | | | | | | | | | 5 |
| 3 | | | | | | | | | | | | | | | | | | | | | 6 |
| 3 | | | | | | | | | | | | | | | | | | | | | 7 |
| 4 | WEATHERED BEDROCK - grey greywacke, mechanical breaks, numerous fractures, silt and clay in fractures, orange and black staining | | 1 | CS | - | 75 | 0 | | | | | | | | | | | | | | 8 |
| 4 | | | 2 | CS | - | 74 | 0 | | | | | | | | | | | | | | 9 |
| 4 | | | 3 | CS | - | 73 | 0 | | | | | | | | | | | | | | 10 |
| 5 | BEDROCK - grey greywacke, some fractures, orange and black staining, primary bedding at 30° | | 4 | CS | - | 100 | 73 | | | | | | | | | | | | Silica Sand | | 11 |
| 5 | | | | | | | | | | | | | | | | | | | | | 12 |
| 6 | | | | | | | | | | | | | | | | | | | PVC "2- Slot" Screen | | 13 |
| 6 | | | | | | | | | | | | | | | | | | | | | 14 |
| 7 | BEDROCK - grey greywacke, trace fractures, no staining, primary bedding 30° | | 5 | CS | - | 100 | 70 | | | | | | | | | | | | PVC Threaded Well Point | | 15 |
| 7 | | | | | | | | | | | | | | | | | | | | | 16 |
| 7 | | | | | | | | | | | | | | | | | | | | | 17 |
| 7 | | | | | | | | | | | | | | | | | | | | | 18 |
| 7 | | | | | | | | | | | | | | | | | | | | | 19 |
| 7 | | | | | | | | | | | | | | | | | | | | | 20 |
| 7 | | | | | | | | | | | | | | | | | | | | | 21 |
| 7 | | | | | | | | | | | | | | | | | | | | | 22 |
| 7 | | | | | | | | | | | | | | | | | | | | | 23 |
| 7 | | | | | | | | | | | | | | | | | | | | | 24 |
| 7 | | | | | | | | | | | | | | | | | | | | | 25 |
| 7 | | | | | | | | | | | | | | | | | | | | | 26 |


| | | | | |
|-------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

45 Akerley Blvd
Dartmouth, NS
B3B 1J7

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-21B |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 158.324 | START DATE: May 2, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 157.336 | COMPLETION DATE: May 3, 2018 |
| BENCHMARK: | | PAGE 1 of 1 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|---------------------------------------------------------------------------------------------------|----------------------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|----------------|--|--|--|---------------------------|--|--|--|--|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | (ppm) | | | | | (%LEL) | | | | | | | |
| | | | | | | | | | 100 300 500 700 900 | 10 30 50 70 90 | | | | | | | | | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4987641.733 E:521747.935 Elev: CGVD 2013 Ground Surface | | | | | | | | | | | | | | | | | | | | |
| 0 | ORGANIC - rootmat SILTY SAND - grey brown, trace to some clay, some cobbles and boulders | | | | | | | | | | | | | | | | | | | | |
| 1 | BEDROCK - grey greywacke, some fractures, orange and black staining | [Detailed Log Description] | 1 | CS | - | 96 | 14 | | | | | | | | | | | | | | |
| 2 | | | 2 | CS | - | 100 | 59 | | | | | | | | | | | | | | |
| 3 | BEDROCK - grey greywacke, some fractures, no staining | [Detailed Log Description] | 3 | CS | - | 100 | 69 | | | | | | | | | | | | | | |
| 4 | | | 4 | CS | - | 100 | 78 | | | | | | | | | | | | | | |
| 5 | | | 5 | CS | - | 100 | 80 | | | | | | | | | | | | | | |
| 6 | BEDROCK - grey greywacke, some fractures, no staining | [Detailed Log Description] | 6 | CS | - | 100 | 93 | | | | | | | | | | | | | | |
| 7 | | | 7 | CS | - | 100 | 98 | | | | | | | | | | | | | | |
| 8 | | | 8 | CS | - | 100 | 76 | | | | | | | | | | | | | | |
| 9 | | | 9 | CS | - | 100 | 78 | | | | | | | | | | | | | | |
| 10 | BEDROCK - grey greywacke, trace fractures, no staining | [Detailed Log Description] | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | | |

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|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|--------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-21C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 158.209 | START DATE: May 16, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 157.202 | COMPLETION DATE: May 16, 2018 |
| BENCHMARK: | | PAGE 2 of 2 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|--------------------------|----------------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----|----|----|------------------------------------|--------------------|---------------------------|
| | | | | | | | | | (ppm) | | | | | (%LEL) | | | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 15 | BEDROCK - grey greywacke, some fractures, no staining 40mm fracture @ 16.967 filled with grey clay and silt | | 10 | CS | | 100 | 85 | | | | | | | | | | | | | | 50 |
| 16 | | | | | | | | | 51 | | | | | | | | | | | | |
| 17 | BEDROCK - grey greywacke, some fractures, orange staining | | 11 | CS | | 100 | 86 | | | | | | | | | | | | | | 52 |
| 18 | | | | | | | | | 53 | | | | | | | | | | | | |
| 19 | | | 12 | CS | | 100 | 88 | | | | | | | | | | | | | | 54 |
| 20 | | | 13 | CS | | 100 | 75 | | | | | | | | | | | | | | 55 |
| 21 | | | 14 | CS | | 100 | 61 | | | | | | | | | | | | | | 56 |
| 22 | | | 15 | CS | | 100 | 91 | | | | | | | | | | | | | | 57 |
| 23 | | | 16 | CS | | 100 | 88 | | | | | | | | | | | | | | 58 |
| 24 | | | 17 | CS | | 100 | 69 | | | | | | | | | | | | | | 59 |
| 25 | | | 18 | CS | | 100 | 64 | | | | | | | | | | | | | | 60 |
| 26 | | | 19 | CS | | 98 | 81 | | | | | | | | | | | | | | 61 |
| 27 | | | 20 | CS | | 100 | 100 | | | | | | | | | | | | | | 62 |
| 28 | | | | | | | | | | | | | | | | | | | | | 63 |
| 29 | | | | | | | | | | | | | | | | | | | | | 64 |
| 30 | | | | | | | | | | | | | | | | | | | | | 65 |
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| | | | | | | | | | | | | | | | | | | | | | 96 |
| | | | | | | | | | | | | | | | | | | | | | 97 |
| | | | | | | | | | | | | | | | | | | | | | 98 |
| | | | | | | | | | | | | | | | | | | | | | 99 |
| | | | | | | | | | | | | | | | | | | | | | 100 |
| | | | | | | | | | | | | | | | | | | | | | 101 |

| | | | | | |
|--|---------------------------------------------|------------------------------|---------------------|---------------------|--|
| | 45 Akerley Blvd Dartmouth, NS B3B 1J7 | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m | | |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-22C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 138.914 | START DATE: April 28, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 137.949 | COMPLETION DATE: May 1, 2018 |
| BENCHMARK: | | PAGE 1 of 2 |


| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|----------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|--|--|--|--|---------------------------|--|--|--|----|------------------------------------|--------------------|------------------------|
| | | | | | | | | | 100 300 500 700 900 (ppm) | | | | | 10 30 50 70 90 (%LEL) | | | | | | | |
| -1 | UTM Zone 20 NAD83 (CSRS) N:4988523.209 E:524377.504 Elev: CGVD 2013 Ground Surface | | | | | | | | | | | | | | | | | -4 | | | |
| 0 | ORGANIC - rootmat | | | | | | | | | | | | | | | | | 0 | | | |
| 1 | SILTY SAND - brown, trace to some clay, some cobbles and boulders, wet at 0.71m | | | | | | | | | | | | | | | | | 1 | | | |
| 2 | BEDROCK - grey greywacke, some fractures, orange and black staining, steeply dipping | | 1 | CS | - | 100 | 25 | | | | | | | | | | | 2 | | | |
| 3 | | | 2 | CS | - | 100 | 46 | | | | | | | | | | | 3 | | | |
| 4 | | | 3 | CS | - | 95 | 60 | | | | | | | | | | | 4 | | | |
| 5 | | | 4 | CS | - | 100 | 50 | | | | | | | | | | | 5 | | | |
| 6 | | | 5 | CS | - | 100 | 88 | | | | | | | | | | | 6 | | | |
| 7 | BEDROCK - grey greywacke, mechanical breaks, some fractures, no staining, steeply dipping | | 6 | CS | - | 100 | 41 | | | | | | | | | | | 7 | | | |
| 8 | BEDROCK - grey greywacke, slightly fractured, no staining, steeply dipping | | 7 | CS | - | 100 | 88 | | | | | | | | | | | 8 | | | |
| 9 | | | 8 | CS | - | 100 | 69 | | | | | | | | | | | 9 | | | |
| 10 | | | 9 | CS | - | 100 | 88 | | | | | | | | | | | 10 | | | |
| 11 | | | 10 | CS | - | 100 | 41 | | | | | | | | | | | 11 | | | |
| 12 | | | | | | | | | | | | | | | | | | 12 | | | |
| 13 | BEDROCK - grey greywacke, some fractures, no staining, steeply dipping | | 10 | CS | - | 100 | 41 | | | | | | | | | | | 13 | | | |
| 14 | | | | | | | | | | | | | | | | | | 14 | | | |

| | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------|---------------------|---------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a | |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | | |
| | DRAFTED BY: MG | METHOD: Case and Core | | BOREHOLE DIA: 0.10m |

MONITORING WELL LOG

| | | |
|--------------------------------------------------------------|-----------------------------|-------------------------------------|
| PROJECT: EIS - Hydrogeologic Assessment and Modelling | REF. NO: 088664 | BOREHOLE: MW-22C |
| LOCATION: Beaver Dam Mines Road | TPC ELEV.: 138.914 | START DATE: April 28, 2018 |
| CLIENT: Atlantic Gold Corporation | GRADE ELEV.: 137.949 | COMPLETION DATE: May 1, 2018 |
| BENCHMARK: | | PAGE 2 of 2 |

| Depth (m) Water Level | STRATIGRAPHY DESCRIPTION | MATERIAL TYPE | NUMBER | SAMPLE TYPE | "N" VALUE | RECOVERY % | RQD (%) | SAMPLE NAME/ LAB ANALYSIS | SOIL VAPOUR CONCENTRATION | | | | | SOIL VAPOUR CONCENTRATION | | | | | COMMENTS AND MONITORING WELL NOTES | SLOTTED PIEZOMETER | Depth (ft) Water Level |
|-----------------------|------------------------------------------------------------------------------------------------------------|---------------|--------|-------------|-----------|------------|---------|---------------------------|---------------------------|-----|-----|-----|-----|---------------------------|----|----|----|----|------------------------------------|--------------------|------------------------|
| | | | | | | | | | (ppm) | | | | | (%LEL) | | | | | | | |
| | | | | | | | | | 100 | 300 | 500 | 700 | 900 | 10 | 30 | 50 | 70 | 90 | | | |
| 15 | BEDROCK - grey greywacke, some fractures, no staining, steeply dipping, quartz vein at 16.23 | CS | 11 | CS | - | 100 | 42 | | | | | | | | | | | | | | 49 |
| 16 | | | 12 | CS | - | 100 | 58 | | | | | | | | | | | | | | 51 |
| 17 | | | 13 | CS | - | 100 | 73 | | | | | | | | | | | | | | 53 |
| 18 | BEDROCK - grey greywacke, trace natural fractures, no staining, steeply dipping | CS | 14 | CS | - | 100 | 81 | | | | | | | | | | | | | | 55 |
| 19 | | | 15 | CS | - | 100 | 86 | | | | | | | | | | | | | | 57 |
| 20 | BEDROCK - grey greywacke, some natural fractures, no staining, steeply dipping | CS | 16 | CS | - | 100 | 88 | | | | | | | | | | | | | | 59 |
| 21 | | | 17 | CS | - | 100 | 97 | | | | | | | | | | | | | | 61 |
| 22 | BEDROCK - grey greywacke, minor fractures, no staining, steeply dipping, quartz veins at 24.74m and 25.15m | CS | 18 | CS | - | 100 | 98 | | | | | | | | | | | | | | 63 |
| 23 | | | 19 | CS | - | 100 | 93 | | | | | | | | | | | | | | 65 |
| 24 | BEDROCK - grey greywacke, no fractures, steeply dipping | CS | 20 | CS | - | 100 | 100 | | | | | | | | | | | | | | 67 |
| 25 | | | | | | | | | | | | | | | | | | | | | 69 |
| 26 | | | | | | | | | | | | | | | | | | | | 71 | |
| 27 | | | | | | | | | | | | | | | | | | | | 73 | |
| 28 | | | | | | | | | | | | | | | | | | | | 75 | |
| 29 | | | | | | | | | | | | | | | | | | | | 77 | |
| 30 | | | | | | | | | | | | | | | | | | | | 79 | |

| | | | |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------|----------------------------|
|  <p>45 Akerley Blvd Dartmouth, NS B3B 1J7</p> | LOGGED BY: RH | DAYLIGHTING TO: n/a | GAS METER TYPE: n/a |
| | REVIEWED BY: | EQUIPMENT: CME-75 Trackmount | |
| | DRAFTED BY: MG | METHOD: Case and Core | BOREHOLE DIA: 0.10m |

Attachment 2

Photographic Log of Drilling Activities



PHOTO 1 - DRILLING ACTIVITIES FOR BEAVER DAM MINE PROJECT



PHOTO 2 - DRILL RIG DURING MOBILIZATION TO "MW16"



ATLANTIC GOLD CORPORATION
MARINETTE, NOVA SCOTIA
BEAVER DAMN MINE PROJECT

PHOTOGRAPHIC LOG

088664-20
Nov 7, 2018

FIGURE 1



PHOTO 3 - ROCK CORES TAKEN FROM MONITORING WELL "MW02B"



PHOTO 4 - ROCK CORES TAKEN FROM MONITORING WELL "MW18B"



ATLANTIC GOLD CORPORATION
 MARINETTE, NOVA SCOTIA
 BEAVER DAMN MINE PROJECT

PHOTOGRAPHIC LOG

088664-20
 Nov 7, 2018

FIGURE 2



PHOTO 5 - VIEW OF STICKUP CASING FOR COMPLETED MONITORING WELLS "MW02"



PHOTO 6 - VIEW OF STICKUP CASING FOR COMPLETED MONITORING WELLS "MW18"



ATLANTIC GOLD CORPORATION
MARINETTE, NOVA SCOTIA
BEAVER DAMN MINE PROJECT

PHOTOGRAPHIC LOG

088664-20
Nov 7, 2018

FIGURE 3

Attachment 3

Surface Water and Groundwater Elevation Data

Attachment 3
Surface Water and Groundwater Elevation Data
Beaver Dam Mine Project
Marinette, Nova Scotia

| Well_ID | UTM Zone 20 NAD83 CSRS | | Installation Date | Unit | Well Depth | | Ground Surface Elevation (m AMSL) | Stick-up (m ags) | Top of Casing Elevation (m AMSL) | Top of Screen Interval | | Bottom of Screen Interval | |
|---------|------------------------|-------------|-------------------|--------------|------------|----------|-----------------------------------|------------------|----------------------------------|------------------------|----------|---------------------------|----------|
| | Easting | Northing | | | (m bgs) | (m AMSL) | | | | (m bgs) | (m AMSL) | (m bgs) | (m AMSL) |
| MW-1A | 520942.252 | 4990095.110 | 1-May-18 | Shallow | 6.30 | 144.13 | 150.429 | 1.121 | 151.550 | 1.83 | 148.599 | 6.3 | 144.129 |
| MW-1B | 520943.031 | 4990093.660 | 4-May-18 | Intermediate | 15.30 | 135.31 | 150.610 | 0.994 | 151.604 | 12.24 | 138.370 | 15.3 | 135.310 |
| MW-1C | 520944.122 | 4990092.462 | 4-May-18 | Deep | 30.06 | 120.59 | 150.647 | 1.129 | 151.776 | 27.1 | 123.547 | 30.2 | 120.497 |
| MW-2A | 520728.778 | 4989595.501 | 7-May-18 | Shallow | 4.72 | 146.69 | 151.410 | 1.064 | 152.474 | 1.7 | 149.730 | 4.7 | 146.690 |
| MW-2B | 520730.397 | 4989594.708 | 7-May-18 | Intermediate | 15.60 | 135.84 | 151.441 | 1.093 | 152.534 | 12.5 | 138.941 | 15.6 | 135.891 |
| MW-03A | 521823.117 | 4989220.163 | 1-May-18 | Shallow | 6.32 | 160.10 | 166.421 | 1.015 | 167.436 | 3.3 | 163.141 | 6.3 | 160.101 |
| MW-03B | 521823.540 | 4989222.229 | 1-May-18 | Intermediate | 15.32 | 151.05 | 166.374 | 1.014 | 167.388 | 12.3 | 154.104 | 15.3 | 151.054 |
| MW-03C | 521824.051 | 4989223.934 | 2-May-18 | Deep | 30.30 | 136.03 | 166.334 | 1.007 | 167.341 | 27.3 | 139.084 | 30.3 | 136.034 |
| MW-04A | 522649.993 | 4989640.335 | 3-Apr-18 | Shallow | 5.96 | 158.70 | 164.655 | 0.853 | 165.508 | 2.9 | 161.735 | 6.0 | 158.695 |
| MW-04B | 522649.439 | 4989639.523 | 3-Apr-18 | Intermediate | 15.53 | 149.16 | 164.687 | 0.869 | 165.556 | 12.5 | 152.197 | 15.5 | 149.157 |
| MW-05A | 521746.140 | 4990210.163 | 25-Apr-18 | Shallow | 6.10 | 134.76 | 140.855 | 0.826 | 141.681 | 1.5 | 139.355 | 6.1 | 134.755 |
| MW-05B | 521747.858 | 4990208.591 | 24-Apr-18 | Intermediate | 15.57 | 125.32 | 140.894 | 0.944 | 141.838 | 12.5 | 128.374 | 15.6 | 125.324 |
| MW-05C | 521745.609 | 4990207.042 | 23-Apr-18 | Intermediate | 15.49 | 125.46 | 140.947 | 0.993 | 141.940 | 12.4 | 128.507 | 15.5 | 125.457 |
| MW-05D | 521742.062 | 4990206.839 | 1-May-18 | Deep | 30.48 | 110.87 | 141.346 | 1.012 | 142.358 | 27.4 | 113.916 | 30.5 | 110.866 |
| MW-07A | 522676.986 | 4990257.899 | 9-Apr-18 | Shallow | 7.49 | 122.97 | 130.461 | 0.928 | 131.389 | 4.4 | 126.021 | 7.5 | 122.971 |
| MW-07B | 522677.763 | 4990256.675 | 6-Apr-18 | Intermediate | 15.49 | 115.11 | 130.600 | 0.943 | 131.543 | 12.4 | 118.160 | 15.5 | 115.110 |
| MW-07C | 522676.908 | 4990255.360 | 19-Apr-18 | Intermediate | 15.49 | 115.10 | 130.588 | 0.989 | 131.577 | 12.4 | 118.148 | 15.5 | 115.098 |
| MW-07D | 522674.898 | 4990259.556 | | | | | 130.256 | 1.040 | 131.296 | | | | 130.256 |
| MW-09A | 522024.415 | 4990682.566 | 13-Apr-18 | Shallow | 7.14 | 126.75 | 133.894 | 1.075 | 134.969 | 4.1 | 129.804 | 7.1 | 126.754 |
| MW-09B | 522022.788 | 4990682.720 | 13-Apr-18 | Intermediate | 15.39 | 118.36 | 133.748 | 1.040 | 134.788 | 12.3 | 121.408 | 15.4 | 118.358 |
| MW-09C | 522022.547 | 4990680.996 | 12-Apr-18 | Intermediate | 15.49 | 118.30 | 133.791 | 0.950 | 134.741 | 12.4 | 121.351 | 15.5 | 118.301 |
| MW-09D | 522023.739 | 4990684.215 | 2-May-18 | Deep | 30.48 | 103.23 | 133.705 | 1.046 | 134.751 | 27.43 | 106.275 | 30.48 | 103.225 |
| MW-11A | 522324.169 | 4990130.598 | 3-Apr-18 | Shallow | 6.09 | 141.75 | 147.844 | 0.933 | 148.777 | 3.04 | 144.804 | 6.09 | 141.754 |
| MW-11B | 522325.095 | 4990132.870 | 5-Apr-18 | Intermediate | 15.24 | 132.48 | 147.718 | 0.783 | 148.501 | 12.19 | 135.528 | 15.24 | 132.478 |
| MW-11C | 522323.713 | 4990132.377 | 4-Apr-18 | Deep | 26.01 | 121.79 | 147.795 | 0.744 | 148.539 | 22.96 | 124.835 | 26.01 | 121.785 |
| MW-12A | 521711.672 | 4991000.037 | 15-Apr-18 | Shallow | 6.10 | 141.80 | 147.903 | 0.652 | 148.555 | 0.91 | 146.993 | 6.1 | 141.803 |
| MW-12B | 521710.995 | 4990999.179 | 15-Apr-18 | Deep | 25.83 | 121.99 | 147.815 | 0.721 | 148.536 | 22.78 | 125.035 | 25.83 | 121.985 |
| MW-14A | 523253.265 | 4989830.507 | 26-Apr-18 | Shallow | 6.10 | 131.30 | 137.404 | 0.977 | 138.381 | 1.5 | 135.904 | 6.1 | 131.304 |
| MW-14B | 523253.939 | 4989828.780 | 26-Apr-18 | Deep | 26.04 | 111.40 | 137.442 | 1.049 | 138.491 | 22.99 | 114.452 | 26.04 | 111.402 |
| MW-14C | 523254.933 | 4989827.886 | 26-Apr-18 | VERY Deep | 41.15 | 96.34 | 137.486 | 0.819 | 138.305 | 38.1 | 99.386 | 41.15 | 96.336 |
| MW-16A | 522898.761 | 4990744.060 | 20-Apr-18 | Shallow | 7.14 | 146.60 | 153.744 | 1.068 | 154.812 | 3.5 | 150.244 | 7.14 | 146.604 |
| MW-16B | 522898.057 | 4990742.630 | 20-Apr-18 | Intermediate | 15.24 | 138.53 | 153.768 | 1.033 | 154.801 | 12.19 | 141.578 | 15.24 | 138.528 |
| MW-17A | 524121.346 | 4990324.445 | 26-Apr-18 | Shallow | 4.57 | 149.94 | 154.508 | 0.941 | 155.449 | 0.76 | 153.748 | 4.57 | 149.938 |
| MW-17B | 524123.059 | 4990323.426 | 25-Apr-18 | Shallow | 9.17 | 145.24 | 154.409 | 1.056 | 155.465 | 6.12 | 148.289 | 9.17 | 145.239 |
| MW-17C | 524124.712 | 4990324.229 | 25-Apr-18 | Intermediate | 15.44 | 138.92 | 154.355 | 0.894 | 155.249 | 12.45 | 141.905 | 15.44 | 138.915 |
| MW-18A | 523118.888 | 4991142.236 | 20-Apr-18 | Shallow | 7.62 | 139.87 | 147.493 | 0.971 | 148.464 | 4.57 | 142.923 | 7.62 | 139.873 |
| MW-18B | 523120.436 | 4991141.883 | 24-Apr-18 | Intermediate | 15.77 | 131.73 | 147.496 | 0.835 | 148.331 | 12.72 | 134.776 | 15.77 | 131.726 |

Attachment 3
Surface Water and Groundwater Elevation Data
Beaver Dam Mine Project
Marinette, Nova Scotia

| Well_ID | UTM Zone 20 NAD83 CSRS | | Installation Date | Unit | Well Depth | | Ground Surface Elevation (m AMSL) | Stick-up (m ags) | Top of Casing Elevation (m AMSL) | Top of Screen Interval | | Bottom of Screen Interval | |
|---------|------------------------|-------------|-------------------|--------------|------------|----------|-----------------------------------|------------------|----------------------------------|------------------------|----------|---------------------------|----------|
| | Easting | Northing | | | (m bgs) | (m AMSL) | | | | (m bgs) | (m AMSL) | (m bgs) | (m AMSL) |
| MW-18C | 523121.844 | 4991141.264 | 25-Apr-18 | Shallow | 6.10 | 141.21 | 147.313 | 1.146 | 148.459 | 1.5 | 145.813 | 6.1 | 141.213 |
| MW-19A | 520765.986 | 4991427.087 | 4-May-18 | Shallow | 4.72 | 128.87 | 133.590 | 0.971 | 134.561 | 0.61 | 132.980 | 4.72 | 128.870 |
| MW-19B | 520764.377 | 4991426.125 | 4-May-18 | Intermediate | 15.37 | 118.25 | 133.619 | 0.967 | 134.586 | 12.32 | 121.299 | 15.37 | 118.249 |
| MW-19C | 520762.233 | 4991425.291 | 7-May-18 | Deep | 30.30 | 103.39 | 133.692 | 0.881 | 134.573 | 27.25 | 106.442 | 30.3 | 103.392 |
| MW-20A | 520263.534 | 4990264.985 | 7-May-18 | Shallow | 7.62 | 144.49 | 152.106 | 1.165 | 153.271 | 4.57 | 147.536 | 7.62 | 144.486 |
| MW-20B | 520263.490 | 4990263.750 | 7-May-18 | Intermediate | 15.27 | 136.92 | 152.194 | 1.013 | 153.207 | 12.22 | 139.974 | 15.27 | 136.924 |
| MW-21A | 521749.236 | 4987642.034 | 7-May-18 | Shallow | 6.35 | 152.22 | 158.566 | 0.920 | 159.486 | 3.3 | 155.266 | 6.35 | 152.216 |
| MW-21B | 521747.935 | 4987641.733 | 3-May-18 | Intermediate | 15.42 | 143.10 | 158.518 | 0.988 | 159.506 | 12.37 | 146.148 | 15.42 | 143.098 |
| MW-21C | 521749.207 | 4987639.956 | 2-May-18 | Deep | 30.48 | 127.90 | 158.384 | 1.007 | 159.391 | 27.43 | 130.954 | 30.48 | 127.904 |
| MW-22A | 524377.001 | 4988520.078 | 25-Apr-18 | Shallow | 6.55 | 132.58 | 139.130 | 0.900 | 140.030 | 3.51 | 135.620 | 6.55 | 132.580 |
| MW-22B | 524377.199 | 4988521.744 | 27-Apr-18 | Intermediate | 15.55 | 123.60 | 139.148 | 0.987 | 140.135 | 12.5 | 126.648 | 15.55 | 123.598 |
| MW-22C | 524377.504 | 4988523.209 | 1-May-18 | Deep | 29.03 | 110.10 | 139.129 | 0.965 | 140.094 | 25.98 | 113.149 | 29.03 | 110.099 |
| SW-1 | 523246.783 | 4990047.378 | | | | | 127.711 | -1.170 | 126.541 | | | | |
| SW-2A | 521821.700 | 4991319.756 | | | | | 129.205 | -0.236 | 128.969 | | | | |
| SW-4A | 521343.751 | 4991071.233 | | | | | 129.343 | -0.018 | 129.325 | | | | |
| SW-5 | 522696.387 | 4990229.101 | | | | | 130.874 | -0.353 | 130.521 | | | | |
| SW-10 | 522176.584 | 4990321.015 | | | | | 134.168 | -0.316 | 133.852 | | | | |
| SW13 | 522769.824 | 4990261.347 | | | | | 129.170 | -0.450 | 128.720 | | | | |
| SW-14 | 522677.366 | 4990219.104 | | | | | 131.709 | -0.188 | 131.521 | | | | |
| SW-15 | 521434.975 | 4990457.303 | | | | | 133.055 | | | | | | |
| SW-16 | 521570.917 | 4990336.002 | | | | | 138.069 | -0.253 | 137.816 | | | | |
| SW-17 | 521906.952 | 4990205.472 | | | | | 139.893 | -0.253 | 139.640 | | | | |
| SW-18 | 521637.704 | 4990067.184 | | | | | 146.236 | -0.582 | 145.654 | | | | |
| SW-21 | 521809.216 | 4989583.858 | | | | | 159.224 | | | | | | |
| SW-22 | 521113.269 | 4989464.177 | | | | | 152.100 | -0.886 | 151.214 | | | | |
| SW-23 | 522639.881 | 4989067.980 | | | | | 159.839 | -0.170 | 159.669 | | | | |
| SW-24 | | | | | | | | | | | | | |

Attachment 4 Laboratory Certificates

Your Project #: 088664
Site Location: BEAVER DAM
Your C.O.C. #: B 171028

Attention: Peter Oram

Conestoga-Rovers and Associates Ltd
45 Akerley Blvd
Dartmouth, NS
B3B 1J7

Report Date: 2014/10/21
Report #: R3195176
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4J1118

Received: 2014/10/14, 14:21

Sample Matrix: Water
Samples Received: 7

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Reference |
|--------------------------------------|-----------------|---------------------------|--------------------------|--------------------------|----------------------|
| Carbonate, Bicarbonate and Hydroxide | 7 | N/A | 2014/10/21 | N/A | SM 22 4500-CO2 D |
| Alkalinity | 7 | N/A | 2014/10/17 | ATL SOP 00013 | EPA 310.2 R1974 m |
| Chloride | 7 | N/A | 2014/10/20 | ATL SOP 00014 | SM 22 4500-Cl- E m |
| Colour | 7 | N/A | 2014/10/20 | ATL SOP 00020 | SM 22 2120C m |
| Conductance - water | 7 | N/A | 2014/10/21 | ATL SOP 00004 | SM 22 2510B m |
| Hardness (calculated as CaCO3) | 7 | N/A | 2014/10/17 | ATL SOP 00048 | SM 22 2340 B |
| Mercury - Total (CVAA,LL) | 7 | 2014/10/17 | 2014/10/17 | ATL SOP 00026 | EPA 245.1 R3 m |
| Metals Water Total MS (1) | 7 | 2014/10/16 | 2014/10/16 | ATL SOP 00058 | EPA 6020A R1 m |
| Ion Balance (% Difference) | 7 | N/A | 2014/10/21 | | Auto Calc. |
| Anion and Cation Sum | 7 | N/A | 2014/10/21 | | Auto Calc. |
| Nitrogen Ammonia - water | 7 | N/A | 2014/10/20 | ATL SOP 00015 | EPA 350.1 R2 m |
| Nitrogen - Nitrate + Nitrite | 7 | N/A | 2014/10/20 | ATL SOP 00016 | USGS SOPINCF0452.2 m |
| Nitrogen - Nitrite | 7 | N/A | 2014/10/20 | ATL SOP 00017 | SM 22 4500-NO2- B m |
| Nitrogen - Nitrate (as N) | 7 | N/A | 2014/10/20 | ATL SOP 00018 | ASTM D3867 |
| pH (2) | 7 | N/A | 2014/10/21 | ATL SOP 00003 | SM 22 4500-H+ B m |
| Phosphorus - ortho | 7 | N/A | 2014/10/17 | ATL SOP 00021 | EPA 365.2 m |
| Sat. pH and Langelier Index (@ 20C) | 7 | N/A | 2014/10/21 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 7 | N/A | 2014/10/21 | ATL SOP 00049 | Auto Calc. |
| Reactive Silica | 7 | N/A | 2014/10/16 | ATL SOP 00022 | EPA 366.0 m |
| Sulphate | 7 | N/A | 2014/10/20 | ATL SOP 00023 | EPA 375.4 R1978 m |
| Total Dissolved Solids (TDS calc) | 7 | N/A | 2014/10/21 | | Auto Calc. |
| Organic carbon - Total (TOC) (3) | 7 | N/A | 2014/10/17 | ATL SOP 00037 | SM 22 5310C m |
| Turbidity | 7 | N/A | 2014/10/20 | ATL SOP 00011 | EPA 180.1 R2 m |

This report shall not be reproduced except in full, without the written approval of the laboratory.
Results relate only to the items tested.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

- (1) New RDLs in effect due to release of NS Contaminated Sites Regulations. Reduced RDL based on MDL study performance. Low level analytical run checks being implemented.
- (2) The APHA Standard Method require 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.

Your Project #: 088664
Site Location: BEAVER DAM
Your C.O.C. #: B 171028

Attention:Peter Oram

Conestoga-Rovers and Associates Ltd
45 Akerley Blvd
Dartmouth , NS
B3B 1J7

Report Date: 2014/10/21
Report #: R3195176
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4J1118
Received: 2014/10/14, 14:21

Encryption Key  Katie Campbell
21 Oct 2014 16:55:16 -03:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Michelle Hill, Project Manager
Email: MHill@maxxam.ca
Phone# (902)420-0203 Ext:289

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B4J1118
Report Date: 2014/10/21

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | XZ3577 | | XZ3578 | XZ3579 | | XZ3580 | XZ3580 | | |
|---------------|-------|------------|----------|------------|------------|-----|------------|--------------|-----|----------|
| Sampling Date | | 2014/10/10 | | 2014/10/10 | 2014/10/10 | | 2014/10/10 | 2014/10/10 | | |
| COC Number | | B 171028 | | B 171028 | B 171028 | | B 171028 | B 171028 | | |
| | Units | SW-1 | QC Batch | SW-2A | SW-4A | RDL | SW-5 | SW-5 Lab-Dup | RDL | QC Batch |

| Calculated Parameters | | | | | | | | | | |
|-------------------------------------|-------|--------|---------|--------|---------|-------|--------|--------|-------|---------|
| Anion Sum | me/L | 0.140 | 3784855 | 0.150 | 0.150 | N/A | 0.480 | | N/A | 3784855 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 3784852 | <1.0 | <1.0 | 1.0 | 14 | | 1.0 | 3784852 |
| Calculated TDS | mg/L | 14 | 3784860 | 14 | 15 | 1.0 | 28 | | 1.0 | 3784860 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 3784852 | <1.0 | <1.0 | 1.0 | <1.0 | | 1.0 | 3784852 |
| Cation Sum | me/L | 0.290 | 3784855 | 0.290 | 0.300 | N/A | 0.480 | | N/A | 3784855 |
| Hardness (CaCO3) | mg/L | 5.5 | 3784853 | 5.1 | 5.9 | 1.0 | 16 | | 1.0 | 3784853 |
| Ion Balance (% Difference) | % | 34.9 | 3784854 | 31.8 | 33.3 | N/A | 0.00 | | N/A | 3784854 |
| Langelier Index (@ 20C) | N/A | NC | 3784858 | NC | NC | | -2.56 | | | 3784858 |
| Langelier Index (@ 4C) | N/A | NC | 3784859 | NC | NC | | -2.81 | | | 3784859 |
| Nitrate (N) | mg/L | <0.050 | 3784856 | 0.11 | 0.093 | 0.050 | 0.10 | | 0.050 | 3784856 |
| Saturation pH (@ 20C) | N/A | NC | 3784858 | NC | NC | | 9.43 | | | 3784858 |
| Saturation pH (@ 4C) | N/A | NC | 3784859 | NC | NC | | 9.69 | | | 3784859 |
| Inorganics | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | <5.0 | 3786534 | <5.0 | <5.0 | 5.0 | 14 | | 5.0 | 3786534 |
| Dissolved Chloride (Cl) | mg/L | 5.1 | 3786536 | 5.0 | 5.0 | 1.0 | 4.0 | | 1.0 | 3786536 |
| Colour | TCU | 150 | 3786543 | 160 | 120 | 25 | 22 | | 5.0 | 3786543 |
| Nitrate + Nitrite | mg/L | <0.050 | 3786546 | 0.11 | 0.093 | 0.050 | 0.10 | | 0.050 | 3786546 |
| Nitrite (N) | mg/L | <0.010 | 3786547 | <0.010 | <0.010 | 0.010 | <0.010 | | 0.010 | 3786547 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 3788334 | <0.050 | <0.050 | 0.050 | <0.050 | <0.050 | 0.050 | 3788334 |
| Total Organic Carbon (C) | mg/L | 13 (1) | 3788537 | 14 (1) | 9.3 (1) | 5.0 | 4.1 | | 0.50 | 3788537 |
| Orthophosphate (P) | mg/L | <0.010 | 3786544 | <0.010 | <0.010 | 0.010 | <0.010 | | 0.010 | 3786544 |
| pH | pH | 5.55 | 3792031 | 5.06 | 5.57 | N/A | 6.88 | | N/A | 3792034 |
| Reactive Silica (SiO2) | mg/L | 2.5 | 3786541 | 2.7 | 3.4 | 0.50 | 1.8 | | 0.50 | 3786541 |
| Dissolved Sulphate (SO4) | mg/L | <2.0 | 3786538 | <2.0 | <2.0 | 2.0 | 3.5 | | 2.0 | 3786538 |
| Turbidity | NTU | 1.1 | 3790888 | 1.1 | 1.4 | 0.10 | 0.44 | | 0.10 | 3790888 |
| Conductivity | uS/cm | 30 | 3792033 | 31 | 29 | 1.0 | 48 | | 1.0 | 3792035 |

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate
 N/A = Not Applicable
 (1) Elevated reporting limit due to sample matrix.

Maxxam Job #: B4J1118
Report Date: 2014/10/21

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | XZ3581 | | XZ3582 | | XZ3583 | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------|-------|------------|-------|------------|-------|----------|
| Sampling Date | | 2014/10/10 | | 2014/10/10 | | 2014/10/10 | | |
| COC Number | | B 171028 | | B 171028 | | B 171028 | | |
| | Units | SW-5D | RDL | SW-6A | RDL | SW-9 | RDL | QC Batch |
| Calculated Parameters | | | | | | | | |
| Anion Sum | me/L | 0.480 | N/A | 0.130 | N/A | 0.310 | N/A | 3784855 |
| Bicarb. Alkalinity (calc. as CaCO ₃) | mg/L | 14 | 1.0 | <1.0 | 1.0 | 5.8 | 1.0 | 3784852 |
| Calculated TDS | mg/L | 28 | 1.0 | 13 | 1.0 | 23 | 1.0 | 3784860 |
| Carb. Alkalinity (calc. as CaCO ₃) | mg/L | <1.0 | 1.0 | <1.0 | 1.0 | <1.0 | 1.0 | 3784852 |
| Cation Sum | me/L | 0.470 | N/A | 0.240 | N/A | 0.420 | N/A | 3784855 |
| Hardness (CaCO ₃) | mg/L | 16 | 1.0 | 4.5 | 1.0 | 10 | 1.0 | 3784853 |
| Ion Balance (% Difference) | % | 1.05 | N/A | 29.7 | N/A | 15.1 | N/A | 3784854 |
| Langelier Index (@ 20C) | N/A | -2.54 | | NC | | -4.22 | | 3784858 |
| Langelier Index (@ 4C) | N/A | -2.80 | | NC | | -4.47 | | 3784859 |
| Nitrate (N) | mg/L | 0.15 | 0.050 | 0.080 | 0.050 | 0.091 | 0.050 | 3784856 |
| Saturation pH (@ 20C) | N/A | 9.46 | | NC | | 10.2 | | 3784858 |
| Saturation pH (@ 4C) | N/A | 9.71 | | NC | | 10.4 | | 3784859 |
| Inorganics | | | | | | | | |
| Total Alkalinity (Total as CaCO ₃) | mg/L | 14 | 5.0 | <5.0 | 5.0 | 5.8 | 5.0 | 3786534 |
| Dissolved Chloride (Cl) | mg/L | 4.1 | 1.0 | 4.3 | 1.0 | 6.7 | 1.0 | 3786536 |
| Colour | TCU | 23 | 5.0 | 80 | 25 | 160 | 25 | 3786543 |
| Nitrate + Nitrite | mg/L | 0.15 | 0.050 | 0.080 | 0.050 | 0.091 | 0.050 | 3786546 |
| Nitrite (N) | mg/L | <0.010 | 0.010 | <0.010 | 0.010 | <0.010 | 0.010 | 3786547 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 0.050 | <0.050 | 0.050 | <0.050 | 0.050 | 3788334 |
| Total Organic Carbon (C) | mg/L | 4.3 | 0.50 | 9.1 | 0.50 | 17 (1) | 5.0 | 3788537 |
| Orthophosphate (P) | mg/L | <0.010 | 0.010 | <0.010 | 0.010 | <0.010 | 0.010 | 3786544 |
| pH | pH | 6.92 | N/A | 5.73 | N/A | 5.94 | N/A | 3792034 |
| Reactive Silica (SiO ₂) | mg/L | 1.8 | 0.50 | 3.3 | 0.50 | 3.2 | 0.50 | 3786541 |
| Dissolved Sulphate (SO ₄) | mg/L | 3.6 | 2.0 | <2.0 | 2.0 | <2.0 | 2.0 | 3786538 |
| Turbidity | NTU | 0.81 | 0.10 | 0.30 | 0.10 | 1.5 | 0.10 | 3790888 |
| Conductivity | uS/cm | 47 | 1.0 | 25 | 1.0 | 39 | 1.0 | 3792035 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Elevated reporting limit due to sample matrix. | | | | | | | | |

Maxxam Job #: B4J1118
Report Date: 2014/10/21

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

MERCURY BY COLD VAPOUR AA (WATER)

| Maxxam ID | | XZ3577 | XZ3578 | XZ3579 | XZ3580 | XZ3581 | XZ3582 | XZ3583 | | |
|----------------------------------|-------|------------|------------|------------|------------|------------|------------|------------|-------|----------|
| Sampling Date | | 2014/10/10 | 2014/10/10 | 2014/10/10 | 2014/10/10 | 2014/10/10 | 2014/10/10 | 2014/10/10 | | |
| COC Number | | B 171028 | B 171028 | B 171028 | B 171028 | B 171028 | B 171028 | B 171028 | | |
| | Units | SW-1 | SW-2A | SW-4A | SW-5 | SW-5D | SW-6A | SW-9 | RDL | QC Batch |
| Metals | | | | | | | | | | |
| Total Mercury (Hg) | ug/L | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | 0.013 | 3788512 |
| RDL = Reportable Detection Limit | | | | | | | | | | |
| QC Batch = Quality Control Batch | | | | | | | | | | |

Maxxam Job #: B4J1118
Report Date: 2014/10/21

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | XZ3577 | XZ3578 | XZ3579 | XZ3580 | XZ3580 | XZ3581 | XZ3582 | | |
|---------------|-------|------------|------------|------------|------------|--------------|------------|------------|-----|----------|
| Sampling Date | | 2014/10/10 | 2014/10/10 | 2014/10/10 | 2014/10/10 | 2014/10/10 | 2014/10/10 | 2014/10/10 | | |
| COC Number | | B 171028 | B 171028 | B 171028 | B 171028 | B 171028 | B 171028 | B 171028 | | |
| | Units | SW-1 | SW-2A | SW-4A | SW-5 | SW-5 Lab-Dup | SW-5D | SW-6A | RDL | QC Batch |

| Metals | | | | | | | | | | |
|-----------------------|------|-------|-------|-------|--------|--------|-------|-------|-------|---------|
| Total Aluminum (Al) | ug/L | 330 | 330 | 250 | 28 | 27 | 29 | 220 | 5.0 | 3785198 |
| Total Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3785198 |
| Total Arsenic (As) | ug/L | 2.7 | 1.1 | 5.8 | 29 | 30 | 30 | 4.0 | 1.0 | 3785198 |
| Total Barium (Ba) | ug/L | 5.8 | 5.6 | 3.4 | 4.5 | 4.6 | 4.6 | 3.2 | 1.0 | 3785198 |
| Total Beryllium (Be) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3785198 |
| Total Bismuth (Bi) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3785198 |
| Total Boron (B) | ug/L | <50 | <50 | <50 | <50 | <50 | <50 | <50 | 50 | 3785198 |
| Total Cadmium (Cd) | ug/L | 0.024 | 0.026 | 0.015 | <0.010 | <0.010 | 0.016 | 0.024 | 0.010 | 3785198 |
| Total Calcium (Ca) | ug/L | 1200 | 1100 | 1500 | 5000 | 5000 | 4900 | 1000 | 100 | 3785198 |
| Total Chromium (Cr) | ug/L | <1.0 | 1.4 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3785198 |
| Total Cobalt (Co) | ug/L | 0.51 | 0.49 | 0.43 | <0.40 | <0.40 | <0.40 | <0.40 | 0.40 | 3785198 |
| Total Copper (Cu) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3785198 |
| Total Iron (Fe) | ug/L | 670 | 740 | 690 | 400 | 400 | 400 | 500 | 50 | 3785198 |
| Total Lead (Pb) | ug/L | 0.51 | 0.78 | 0.54 | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | 3785198 |
| Total Magnesium (Mg) | ug/L | 590 | 570 | 540 | 940 | 930 | 920 | 470 | 100 | 3785198 |
| Total Manganese (Mn) | ug/L | 79 | 77 | 53 | 60 | 59 | 59 | 50 | 2.0 | 3785198 |
| Total Molybdenum (Mo) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3785198 |
| Total Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3785198 |
| Total Phosphorus (P) | ug/L | <100 | <100 | <100 | <100 | <100 | <100 | <100 | 100 | 3785198 |
| Total Potassium (K) | ug/L | 570 | 600 | 450 | 730 | 730 | 710 | 340 | 100 | 3785198 |
| Total Selenium (Se) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3785198 |
| Total Silver (Ag) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 3785198 |
| Total Sodium (Na) | ug/L | 3100 | 3100 | 3200 | 2700 | 2700 | 2700 | 2800 | 100 | 3785198 |
| Total Strontium (Sr) | ug/L | 11 | 11 | 9.9 | 28 | 27 | 27 | 7.1 | 2.0 | 3785198 |
| Total Thallium (Tl) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 3785198 |
| Total Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3785198 |
| Total Titanium (Ti) | ug/L | 3.8 | 4.2 | 5.1 | <2.0 | <2.0 | <2.0 | 2.7 | 2.0 | 3785198 |
| Total Uranium (U) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 3785198 |
| Total Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3785198 |
| Total Zinc (Zn) | ug/L | 5.0 | 6.9 | 19 | <5.0 | <5.0 | <5.0 | <5.0 | 5.0 | 3785198 |

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

Maxxam Job #: B4J1118
Report Date: 2014/10/21

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | XZ3583 | | |
|----------------------------------|-------|------------|-------|----------|
| Sampling Date | | 2014/10/10 | | |
| COC Number | | B 171028 | | |
| | Units | SW-9 | RDL | QC Batch |
| Metals | | | | |
| Total Aluminum (Al) | ug/L | 410 | 5.0 | 3785198 |
| Total Antimony (Sb) | ug/L | <1.0 | 1.0 | 3785198 |
| Total Arsenic (As) | ug/L | <1.0 | 1.0 | 3785198 |
| Total Barium (Ba) | ug/L | 6.6 | 1.0 | 3785198 |
| Total Beryllium (Be) | ug/L | <1.0 | 1.0 | 3785198 |
| Total Bismuth (Bi) | ug/L | <2.0 | 2.0 | 3785198 |
| Total Boron (B) | ug/L | <50 | 50 | 3785198 |
| Total Cadmium (Cd) | ug/L | 0.024 | 0.010 | 3785198 |
| Total Calcium (Ca) | ug/L | 2300 | 100 | 3785198 |
| Total Chromium (Cr) | ug/L | <1.0 | 1.0 | 3785198 |
| Total Cobalt (Co) | ug/L | <0.40 | 0.40 | 3785198 |
| Total Copper (Cu) | ug/L | <2.0 | 2.0 | 3785198 |
| Total Iron (Fe) | ug/L | 620 | 50 | 3785198 |
| Total Lead (Pb) | ug/L | <0.50 | 0.50 | 3785198 |
| Total Magnesium (Mg) | ug/L | 1100 | 100 | 3785198 |
| Total Manganese (Mn) | ug/L | 140 | 2.0 | 3785198 |
| Total Molybdenum (Mo) | ug/L | <2.0 | 2.0 | 3785198 |
| Total Nickel (Ni) | ug/L | <2.0 | 2.0 | 3785198 |
| Total Phosphorus (P) | ug/L | <100 | 100 | 3785198 |
| Total Potassium (K) | ug/L | 640 | 100 | 3785198 |
| Total Selenium (Se) | ug/L | <1.0 | 1.0 | 3785198 |
| Total Silver (Ag) | ug/L | <0.10 | 0.10 | 3785198 |
| Total Sodium (Na) | ug/L | 4000 | 100 | 3785198 |
| Total Strontium (Sr) | ug/L | 10 | 2.0 | 3785198 |
| Total Thallium (Tl) | ug/L | <0.10 | 0.10 | 3785198 |
| Total Tin (Sn) | ug/L | <2.0 | 2.0 | 3785198 |
| Total Titanium (Ti) | ug/L | 4.8 | 2.0 | 3785198 |
| Total Uranium (U) | ug/L | 0.11 | 0.10 | 3785198 |
| Total Vanadium (V) | ug/L | <2.0 | 2.0 | 3785198 |
| Total Zinc (Zn) | ug/L | 5.2 | 5.0 | 3785198 |
| RDL = Reportable Detection Limit | | | | |
| QC Batch = Quality Control Batch | | | | |

Maxxam Job #: B4J1118
Report Date: 2014/10/21

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

GENERAL COMMENTS

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

| | |
|-----------|-------|
| Package 1 | 1.3°C |
|-----------|-------|

Sample XZ3577-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample XZ3578-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample XZ3579-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample XZ3582-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample XZ3583-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Results relate only to the items tested.

Maxxam Job #: B4J1118
Report Date: 2014/10/21

QUALITY ASSURANCE REPORT

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 3785198 | Total Aluminum (Al) | 2014/10/16 | 103 (1) | 80 - 120 | 102 | 80 - 120 | <5.0 | ug/L | 2.5 (2) | 20 | | |
| 3785198 | Total Antimony (Sb) | 2014/10/16 | 99 (1) | 80 - 120 | 99 | 80 - 120 | <1.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Arsenic (As) | 2014/10/16 | 99 (1) | 80 - 120 | 99 | 80 - 120 | <1.0 | ug/L | 0.50 (2) | 20 | | |
| 3785198 | Total Barium (Ba) | 2014/10/16 | 100 (1) | 80 - 120 | 97 | 80 - 120 | <1.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Beryllium (Be) | 2014/10/16 | 99 (1) | 80 - 120 | 100 | 80 - 120 | <1.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Bismuth (Bi) | 2014/10/16 | 100 (1) | 80 - 120 | 98 | 80 - 120 | <2.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Boron (B) | 2014/10/16 | 97 (1) | 80 - 120 | 102 | 80 - 120 | <50 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Cadmium (Cd) | 2014/10/16 | 100 (1) | 80 - 120 | 98 | 80 - 120 | <0.010 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Calcium (Ca) | 2014/10/16 | 102 (1) | 80 - 120 | 102 | 80 - 120 | <100 | ug/L | 0.17 (2) | 20 | | |
| 3785198 | Total Chromium (Cr) | 2014/10/16 | 98 (1) | 80 - 120 | 98 | 80 - 120 | <1.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Cobalt (Co) | 2014/10/16 | 98 (1) | 80 - 120 | 98 | 80 - 120 | <0.40 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Copper (Cu) | 2014/10/16 | 96 (1) | 80 - 120 | 97 | 80 - 120 | <2.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Iron (Fe) | 2014/10/16 | 104 (1) | 80 - 120 | 103 | 80 - 120 | <50 | ug/L | 0.74 (2) | 20 | | |
| 3785198 | Total Lead (Pb) | 2014/10/16 | 102 (1) | 80 - 120 | 102 | 80 - 120 | <0.50 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Magnesium (Mg) | 2014/10/16 | 107 (1) | 80 - 120 | 105 | 80 - 120 | <100 | ug/L | 1.1 (2) | 20 | | |
| 3785198 | Total Manganese (Mn) | 2014/10/16 | NC (1) | 80 - 120 | 101 | 80 - 120 | <2.0 | ug/L | 2.3 (2) | 20 | | |
| 3785198 | Total Molybdenum (Mo) | 2014/10/16 | 100 (1) | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Nickel (Ni) | 2014/10/16 | 99 (1) | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Phosphorus (P) | 2014/10/16 | 106 (1) | 80 - 120 | 104 | 80 - 120 | <100 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Potassium (K) | 2014/10/16 | 104 (1) | 80 - 120 | 101 | 80 - 120 | <100 | ug/L | 0.012 (2) | 20 | | |
| 3785198 | Total Selenium (Se) | 2014/10/16 | 98 (1) | 80 - 120 | 97 | 80 - 120 | <1.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Silver (Ag) | 2014/10/16 | 98 (1) | 80 - 120 | 98 | 80 - 120 | <0.10 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Sodium (Na) | 2014/10/16 | 102 (1) | 80 - 120 | 102 | 80 - 120 | <100 | ug/L | 0.062 (2) | 20 | | |
| 3785198 | Total Strontium (Sr) | 2014/10/16 | 100 (1) | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | 1.2 (2) | 20 | | |
| 3785198 | Total Thallium (Tl) | 2014/10/16 | 98 (1) | 80 - 120 | 98 | 80 - 120 | <0.10 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Tin (Sn) | 2014/10/16 | 102 (1) | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Titanium (Ti) | 2014/10/16 | 105 (1) | 80 - 120 | 104 | 80 - 120 | <2.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Uranium (U) | 2014/10/16 | 103 (1) | 80 - 120 | 101 | 80 - 120 | <0.10 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Vanadium (V) | 2014/10/16 | 99 (1) | 80 - 120 | 101 | 80 - 120 | <2.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Zinc (Zn) | 2014/10/16 | 97 (1) | 80 - 120 | 98 | 80 - 120 | <5.0 | ug/L | NC (2) | 20 | | |
| 3786534 | Total Alkalinity (Total as CaCO3) | 2014/10/17 | 106 | 80 - 120 | 108 | 80 - 120 | <5.0 | mg/L | NC (3) | 25 | | |
| 3786536 | Dissolved Chloride (Cl) | 2014/10/20 | NC | 80 - 120 | 103 | 80 - 120 | <1.0 | mg/L | 0.49 (3) | 25 | 111 | 80 - 120 |

Maxxam Job #: B4J1118
Report Date: 2014/10/21

QUALITY ASSURANCE REPORT(CONT'D)

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------|------------|--------------|-----------|--------------|-----------|---------------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 3786538 | Dissolved Sulphate (SO4) | 2014/10/20 | 98 | 80 - 120 | 105 | 80 - 120 | <2.0 | mg/L | NC (3) | 25 | | |
| 3786541 | Reactive Silica (SiO2) | 2014/10/16 | NC | 80 - 120 | 100 | 80 - 120 | <0.50 | mg/L | 0.56 (3) | 25 | | |
| 3786543 | Colour | 2014/10/20 | | | 105 | 80 - 120 | <5.0 | TCU | 9.8 (3) | 25 | | |
| 3786544 | Orthophosphate (P) | 2014/10/17 | 103 | 80 - 120 | 99 | 80 - 120 | <0.010 | mg/L | NC (3) | 25 | | |
| 3786546 | Nitrate + Nitrite | 2014/10/20 | 102 | 80 - 120 | 102 | 80 - 120 | 0.091 ,RDL=0.050 | mg/L | NC (3) | 25 | | |
| 3786547 | Nitrite (N) | 2014/10/20 | 90 | 80 - 120 | 97 | 80 - 120 | <0.010 | mg/L | NC (3) | 25 | | |
| 3788334 | Nitrogen (Ammonia Nitrogen) | 2014/10/20 | 96 (4) | 80 - 120 | 99 | 80 - 120 | <0.050 | mg/L | NC (5) | 25 | | |
| 3788512 | Total Mercury (Hg) | 2014/10/17 | 84 | 80 - 120 | 94 | 80 - 120 | <0.013 | ug/L | NC (3) | 20 | | |
| 3788537 | Total Organic Carbon (C) | 2014/10/17 | 99 | 80 - 120 | 104 | 80 - 120 | <0.50 | mg/L | NC (3) | 20 | | |
| 3790888 | Turbidity | 2014/10/20 | | | | | <0.10 | NTU | NC (3) | 25 | 96 | 80 - 120 |
| 3792031 | pH | 2014/10/21 | | | | | | | 1.3 (3) | N/A | 101 | 97 - 103 |
| 3792033 | Conductivity | 2014/10/21 | | | 100 | 80 - 120 | 1.1 ,RDL=1.0 | uS/cm | 0.36 (3) | 25 | | |
| 3792034 | pH | 2014/10/21 | | | | | | | 0.67 (3) | N/A | 101 | 97 - 103 |
| 3792035 | Conductivity | 2014/10/21 | | | 99 | 80 - 120 | <1.0 | uS/cm | 0.35 (3) | 25 | | |

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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

(1) Matrix Spike Parent ID [XZ3581-03]

(2) Duplicate Parent ID [XZ3580-03]

(3) Duplicate Parent ID

(4) Matrix Spike Parent ID [XZ3580-01]

(5) Duplicate Parent ID [XZ3580-01]

Maxxam Job #: B4J1118
Report Date: 2014/10/21

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Kevin A. MacDonald

Kevin MacDonald, Inorganics Supervisor

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



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 www.maxxamanalytics.com E-mail: Clientservicesbedford@maxxamanalytics.com

MAXXAM Chain of Custody Record

COC #: **B 171028** Page 1 of 1

This column for lab use only:

Client Code
 Maxxam Job #
B4J1118
 Cooler ID
 Seal Present
 Seal Intact
 Temp 1
 Temp 2
 Temp 3
 Average Temp
 Integrity YES NO
 Integrity / Checklist by *[Signature]*
 Labelled by
 Location / Bin #

INVOICE INFORMATION:
 Company Name: **CRA**
 Contact Name: **PETER ORAM**
 Address: **45 AKERLEY BLVD.**
DARTMOUTH, NS Postal Code **B3B 1J7**
 Email: **poram@craworld.com**
 Ph: **(902)468-1248** Fax: **(902)468-2207**

REPORT INFORMATION (if differs from invoice):
 Company Name:
 Contact Name:
 Address:
 Postal Code:
 Email:
 Ph:
 Fax:

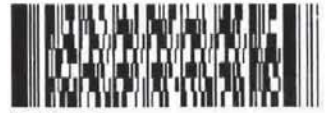
PO #
 Project # / Phase #
088664
 Project Name / Site Location
BEAVER DAM
 Quote
14-161K9
 Site #
 Task Order #
 Sampled by
JEFF PARKS / AMANDA FALEY

TURNAROUND TIME
 Standard
 10 day
 If RUSH Specify Date:
N/A
 Pre-schedule rush work
 Charge for # Jars used but not submitted

Guideline Requirements / Detection Limits / Special Instructions
CCME FRESHWATER AQUATIC LIFE
 cc: **j.parks@craworld.com**
 *Specify Matrix: Surface/Salt/Ground/Tapwater/Sewage/Effluent/
 Potable/NonPotable/Tissue/Soil/Sludge/Metal/Seawater

Field Filtered & Preserved
 Lab Filtration Required
 RCAP-30 Choose Total or Diss Metals
 RCAP-MS Choose Total or Diss Metals
 Total Digest (Default Method) for well water, surface water
 Dissolved for ground water
 Mercury
 Metals & Mercury
 Default Available Digest Method
 Metals Total Digest - for Ocean sediments (HNO3/HF/HClO4)
 Mercury Low level by Cold Vapour AA
 Selenium Low level/Rec'd for CCME
 Pesticidal, Parkinsons, Agricultural
 Hot Water soluble Boron (required for CCME Agricultural)
 BBCA Hydrocarbons (BTEX, C6-C22)
 Hydrocarbons Sol (Petroleum), NS Fuel Oil Spill Policy Low Level BTEX, C6-C22
 NB Potable Water BTEX, VPH, Low level T.E.H.
 TPH Fractionation
 PAH's
 PAH's with Acridine, Quinoline

| Field Sample Identification | Matrix* | Date/Time Sampled | # & type of bottles | Field Filtered & Preserved | Lab Filtration Required | RCAP-30 Choose Total or Diss Metals | RCAP-MS Choose Total or Diss Metals | Total Digest (Default Method) for well water, surface water | Dissolved for ground water | Mercury | Metals & Mercury | Metals Total Digest - for Ocean sediments (HNO3/HF/HClO4) | Mercury Low level by Cold Vapour AA | Selenium Low level/Rec'd for CCME | Pesticidal, Parkinsons, Agricultural | Hot Water soluble Boron (required for CCME Agricultural) | BBCA Hydrocarbons (BTEX, C6-C22) | Hydrocarbons Sol (Petroleum), NS Fuel Oil Spill Policy Low Level BTEX, C6-C22 | NB Potable Water BTEX, VPH, Low level T.E.H. | TPH Fractionation | PAH's | PAH's with Acridine, Quinoline | |
|-----------------------------|---------------|-------------------|------------------------|----------------------------|-------------------------|-------------------------------------|-------------------------------------|-------------------------------------------------------------|----------------------------|---------|------------------|-----------------------------------------------------------|-------------------------------------|-----------------------------------|--------------------------------------|----------------------------------------------------------|----------------------------------|-------------------------------------------------------------------------------|----------------------------------------------|-------------------|-------|--------------------------------|--|
| 1 SW-1 | SURFACE WATER | 10-OCT-14 | 1X50 1X200 1X100 | | | | X | X | | | | | | | | | | | | | | | |
| 2 SW-2A | SURFACE WATER | 10-OCT-14 | 1X50 1X200 1X100 | | | | X | X | | | | | | | | | | | | | | | |
| 3 SW-4A | SURFACE WATER | 10-OCT-14 | 1X50 1X200 1X100 | | | | X | X | | | | | | | | | | | | | | | |
| 4 SW-5 | SURFACE WATER | 10-OCT-14 | 1X50 1X200 1X100 | | | | X | X | | | | | | | | | | | | | | | |
| 5 SW-5D | SURFACE WATER | 10-OCT-14 | 1X50 1X200 1X100 | | | | X | X | | | | | | | | | | | | | | | |
| 6 SW-6A | SURFACE WATER | 10-OCT-14 | 1X50 1X200 1X100 | | | | X | X | | | | | | | | | | | | | | | |
| 7 SW-9 | SURFACE WATER | 10-OCT-14 | 1X50 1X200 1X100 | | | | X | X | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | |



B4J1118

RELINQUISHED BY: (Signature/Print) *[Signature]* / RAUNSA HART Date 14-OCT-14 Time 14:20

RECEIVED BY: (Signature/Print) *[Signature]* / AMYSON WATERS Date Time

[Signature] / JESSICA BARRIBAUT

14 OCT 14 14:21

Your Project #: 088664
Site Location: BEAVER DAM
Your C.O.C. #: B 171028

Attention: Peter Oram

Conestoga-Rovers and Associates Ltd
45 Akerley Blvd
Dartmouth, NS
B3B 1J7

Report Date: 2014/10/24
Report #: R3199243
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B4J1118

Received: 2014/10/14, 14:21

Sample Matrix: Water
Samples Received: 7

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Reference |
|--------------------------------------|-----------------|---------------------------|--------------------------|--------------------------|----------------------|
| Carbonate, Bicarbonate and Hydroxide | 7 | N/A | 2014/10/21 | N/A | SM 22 4500-CO2 D |
| Alkalinity | 7 | N/A | 2014/10/17 | ATL SOP 00013 | EPA 310.2 R1974 m |
| Chloride | 7 | N/A | 2014/10/20 | ATL SOP 00014 | SM 22 4500-Cl- E m |
| Colour | 7 | N/A | 2014/10/20 | ATL SOP 00020 | SM 22 2120C m |
| Conductance - water | 7 | N/A | 2014/10/21 | ATL SOP 00004 | SM 22 2510B m |
| Hardness (calculated as CaCO3) | 7 | N/A | 2014/10/17 | ATL SOP 00048 | SM 22 2340 B |
| Mercury - Total (CVAA,LL) | 7 | 2014/10/17 | 2014/10/17 | ATL SOP 00026 | EPA 245.1 R3 m |
| Metals Water Total MS (1) | 7 | 2014/10/16 | 2014/10/16 | ATL SOP 00058 | EPA 6020A R1 m |
| Ion Balance (% Difference) | 7 | N/A | 2014/10/21 | | Auto Calc. |
| Anion and Cation Sum | 7 | N/A | 2014/10/21 | | Auto Calc. |
| Nitrogen Ammonia - water | 7 | N/A | 2014/10/20 | ATL SOP 00015 | EPA 350.1 R2 m |
| Nitrogen - Nitrate + Nitrite | 7 | N/A | 2014/10/20 | ATL SOP 00016 | USGS SOPINCF0452.2 m |
| Nitrogen - Nitrite | 7 | N/A | 2014/10/20 | ATL SOP 00017 | SM 22 4500-NO2- B m |
| Nitrogen - Nitrate (as N) | 7 | N/A | 2014/10/20 | ATL SOP 00018 | ASTM D3867 |
| pH (2) | 7 | N/A | 2014/10/21 | ATL SOP 00003 | SM 22 4500-H+ B m |
| Phosphorus - ortho | 7 | N/A | 2014/10/17 | ATL SOP 00021 | EPA 365.2 m |
| Sat. pH and Langelier Index (@ 20C) | 7 | N/A | 2014/10/21 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 7 | N/A | 2014/10/21 | ATL SOP 00049 | Auto Calc. |
| Reactive Silica | 7 | N/A | 2014/10/16 | ATL SOP 00022 | EPA 366.0 m |
| Sulphate | 7 | N/A | 2014/10/20 | ATL SOP 00023 | EPA 375.4 R1978 m |
| Total Dissolved Solids (TDS calc) | 7 | N/A | 2014/10/21 | | Auto Calc. |
| Organic carbon - Total (TOC) (3) | 7 | N/A | 2014/10/17 | ATL SOP 00037 | SM 22 5310C m |
| Turbidity | 7 | N/A | 2014/10/20 | ATL SOP 00011 | EPA 180.1 R2 m |

This report shall not be reproduced except in full, without the written approval of the laboratory.
Results relate only to the items tested.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

- (1) New RDLs in effect due to release of NS Contaminated Sites Regulations. Reduced RDL based on MDL study performance. Low level analytical run checks being implemented.
- (2) The APHA Standard Method require 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.

Your Project #: 088664
Site Location: BEAVER DAM
Your C.O.C. #: B 171028


Attention: Peter Oram

Conestoga-Rovers and Associates Ltd
45 Akerley Blvd
Dartmouth, NS
B3B 1J7

Report Date: 2014/10/24
Report #: R3199243
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B4J1118
Received: 2014/10/14, 14:21

Encryption Key  Mari Kenny
24 Oct 2014 15:44:11 -03:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Michelle Hill, Project Manager
Email: MHill@maxxam.ca
Phone# (902)420-0203 Ext:289

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B4J1118
Report Date: 2014/10/24

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | XZ3577 | | XZ3578 | XZ3579 | | XZ3580 | XZ3580 | | |
|---------------|-------|------------|----------|------------|------------|-----|------------|--------------|-----|----------|
| Sampling Date | | 2014/10/10 | | 2014/10/10 | 2014/10/10 | | 2014/10/10 | 2014/10/10 | | |
| COC Number | | B 171028 | | B 171028 | B 171028 | | B 171028 | B 171028 | | |
| | Units | SW-1 | QC Batch | SW-2A | SW-4A | RDL | SW-5 | SW-5 Lab-Dup | RDL | QC Batch |

| Calculated Parameters | | | | | | | | | | |
|-------------------------------------|-------|--------|---------|--------|---------|-------|--------|--------|-------|---------|
| Anion Sum | me/L | 0.140 | 3784855 | 0.150 | 0.150 | N/A | 0.480 | | N/A | 3784855 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 3784852 | <1.0 | <1.0 | 1.0 | 14 | | 1.0 | 3784852 |
| Calculated TDS | mg/L | 14 | 3784860 | 14 | 15 | 1.0 | 28 | | 1.0 | 3784860 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 3784852 | <1.0 | <1.0 | 1.0 | <1.0 | | 1.0 | 3784852 |
| Cation Sum | me/L | 0.290 | 3784855 | 0.290 | 0.300 | N/A | 0.480 | | N/A | 3784855 |
| Hardness (CaCO3) | mg/L | 5.5 | 3784853 | 5.1 | 5.9 | 1.0 | 16 | | 1.0 | 3784853 |
| Ion Balance (% Difference) | % | 34.9 | 3784854 | 31.8 | 33.3 | N/A | 0.00 | | N/A | 3784854 |
| Langelier Index (@ 20C) | N/A | NC | 3784858 | NC | NC | | -2.56 | | | 3784858 |
| Langelier Index (@ 4C) | N/A | NC | 3784859 | NC | NC | | -2.81 | | | 3784859 |
| Nitrate (N) | mg/L | <0.050 | 3784856 | 0.11 | 0.093 | 0.050 | 0.10 | | 0.050 | 3784856 |
| Saturation pH (@ 20C) | N/A | NC | 3784858 | NC | NC | | 9.43 | | | 3784858 |
| Saturation pH (@ 4C) | N/A | NC | 3784859 | NC | NC | | 9.69 | | | 3784859 |
| Inorganics | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | <5.0 | 3786534 | <5.0 | <5.0 | 5.0 | 14 | | 5.0 | 3786534 |
| Dissolved Chloride (Cl) | mg/L | 5.1 | 3786536 | 5.0 | 5.0 | 1.0 | 4.0 | | 1.0 | 3786536 |
| Colour | TCU | 150 | 3786543 | 160 | 120 | 25 | 22 | | 5.0 | 3786543 |
| Nitrate + Nitrite | mg/L | <0.050 | 3786546 | 0.11 | 0.093 | 0.050 | 0.10 | | 0.050 | 3786546 |
| Nitrite (N) | mg/L | <0.010 | 3786547 | <0.010 | <0.010 | 0.010 | <0.010 | | 0.010 | 3786547 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 3788334 | <0.050 | <0.050 | 0.050 | <0.050 | <0.050 | 0.050 | 3788334 |
| Total Organic Carbon (C) | mg/L | 13 (1) | 3788537 | 14 (1) | 9.3 (1) | 5.0 | 4.1 | | 0.50 | 3788537 |
| Orthophosphate (P) | mg/L | <0.010 | 3786544 | <0.010 | <0.010 | 0.010 | <0.010 | | 0.010 | 3786544 |
| pH | pH | 5.55 | 3792031 | 5.06 | 5.57 | N/A | 6.88 | | N/A | 3792034 |
| Reactive Silica (SiO2) | mg/L | 2.5 | 3786541 | 2.7 | 3.4 | 0.50 | 1.8 | | 0.50 | 3786541 |
| Dissolved Sulphate (SO4) | mg/L | <2.0 | 3786538 | <2.0 | <2.0 | 2.0 | 3.5 | | 2.0 | 3786538 |
| Turbidity | NTU | 1.1 | 3790888 | 1.1 | 1.4 | 0.10 | 0.44 | | 0.10 | 3790888 |
| Conductivity | uS/cm | 30 | 3792033 | 31 | 29 | 1.0 | 48 | | 1.0 | 3792035 |

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate
 N/A = Not Applicable
 (1) Elevated reporting limit due to sample matrix.

Maxxam Job #: B4J1118
Report Date: 2014/10/24

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | XZ3581 | | XZ3582 | | XZ3583 | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------|-------|------------|-------|------------|-------|----------|
| Sampling Date | | 2014/10/10 | | 2014/10/10 | | 2014/10/10 | | |
| COC Number | | B 171028 | | B 171028 | | B 171028 | | |
| | Units | SW-5D | RDL | SW-6A | RDL | SW-9 | RDL | QC Batch |
| Calculated Parameters | | | | | | | | |
| Anion Sum | me/L | 0.480 | N/A | 0.130 | N/A | 0.310 | N/A | 3784855 |
| Bicarb. Alkalinity (calc. as CaCO ₃) | mg/L | 14 | 1.0 | <1.0 | 1.0 | 5.8 | 1.0 | 3784852 |
| Calculated TDS | mg/L | 28 | 1.0 | 13 | 1.0 | 23 | 1.0 | 3784860 |
| Carb. Alkalinity (calc. as CaCO ₃) | mg/L | <1.0 | 1.0 | <1.0 | 1.0 | <1.0 | 1.0 | 3784852 |
| Cation Sum | me/L | 0.470 | N/A | 0.240 | N/A | 0.420 | N/A | 3784855 |
| Hardness (CaCO ₃) | mg/L | 16 | 1.0 | 4.5 | 1.0 | 10 | 1.0 | 3784853 |
| Ion Balance (% Difference) | % | 1.05 | N/A | 29.7 | N/A | 15.1 | N/A | 3784854 |
| Langelier Index (@ 20C) | N/A | -2.54 | | NC | | -4.22 | | 3784858 |
| Langelier Index (@ 4C) | N/A | -2.80 | | NC | | -4.47 | | 3784859 |
| Nitrate (N) | mg/L | 0.15 | 0.050 | 0.080 | 0.050 | 0.091 | 0.050 | 3784856 |
| Saturation pH (@ 20C) | N/A | 9.46 | | NC | | 10.2 | | 3784858 |
| Saturation pH (@ 4C) | N/A | 9.71 | | NC | | 10.4 | | 3784859 |
| Inorganics | | | | | | | | |
| Total Alkalinity (Total as CaCO ₃) | mg/L | 14 | 5.0 | <5.0 | 5.0 | 5.8 | 5.0 | 3786534 |
| Dissolved Chloride (Cl) | mg/L | 4.1 | 1.0 | 4.3 | 1.0 | 6.7 | 1.0 | 3786536 |
| Colour | TCU | 23 | 5.0 | 80 | 25 | 160 | 25 | 3786543 |
| Nitrate + Nitrite | mg/L | 0.15 | 0.050 | 0.080 | 0.050 | 0.091 | 0.050 | 3786546 |
| Nitrite (N) | mg/L | <0.010 | 0.010 | <0.010 | 0.010 | <0.010 | 0.010 | 3786547 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 0.050 | <0.050 | 0.050 | <0.050 | 0.050 | 3788334 |
| Total Organic Carbon (C) | mg/L | 4.3 | 0.50 | 9.1 | 0.50 | 17 (1) | 5.0 | 3788537 |
| Orthophosphate (P) | mg/L | <0.010 | 0.010 | <0.010 | 0.010 | <0.010 | 0.010 | 3786544 |
| pH | pH | 6.92 | N/A | 5.73 | N/A | 5.94 | N/A | 3792034 |
| Reactive Silica (SiO ₂) | mg/L | 1.8 | 0.50 | 3.3 | 0.50 | 3.2 | 0.50 | 3786541 |
| Dissolved Sulphate (SO ₄) | mg/L | 3.6 | 2.0 | <2.0 | 2.0 | <2.0 | 2.0 | 3786538 |
| Turbidity | NTU | 0.81 | 0.10 | 0.30 | 0.10 | 1.5 | 0.10 | 3790888 |
| Conductivity | uS/cm | 47 | 1.0 | 25 | 1.0 | 39 | 1.0 | 3792035 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Elevated reporting limit due to sample matrix. | | | | | | | | |

Maxxam Job #: B4J1118
Report Date: 2014/10/24

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

MERCURY BY COLD VAPOUR AA (WATER)

| | | | | | | | | | | |
|----------------------|--------------|-------------|--------------|--------------|-------------|--------------|--------------|-------------|------------|-----------------|
| Maxxam ID | | XZ3577 | XZ3578 | XZ3579 | XZ3580 | XZ3581 | XZ3582 | XZ3583 | | |
| Sampling Date | | 2014/10/10 | 2014/10/10 | 2014/10/10 | 2014/10/10 | 2014/10/10 | 2014/10/10 | 2014/10/10 | | |
| COC Number | | B 171028 | B 171028 | B 171028 | B 171028 | B 171028 | B 171028 | B 171028 | | |
| | Units | SW-1 | SW-2A | SW-4A | SW-5 | SW-5D | SW-6A | SW-9 | RDL | QC Batch |

| | | | | | | | | | | |
|----------------------------------|------|--------|--------|--------|--------|--------|--------|--------|-------|---------|
| Metals | | | | | | | | | | |
| Total Mercury (Hg) | ug/L | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | 0.013 | 3788512 |
| RDL = Reportable Detection Limit | | | | | | | | | | |
| QC Batch = Quality Control Batch | | | | | | | | | | |

Maxxam Job #: B4J1118
Report Date: 2014/10/24

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | XZ3577 | XZ3578 | XZ3579 | XZ3580 | XZ3580 | XZ3581 | XZ3582 | | |
|---------------|-------|------------|------------|------------|------------|--------------|------------|------------|-----|----------|
| Sampling Date | | 2014/10/10 | 2014/10/10 | 2014/10/10 | 2014/10/10 | 2014/10/10 | 2014/10/10 | 2014/10/10 | | |
| COC Number | | B 171028 | B 171028 | B 171028 | B 171028 | B 171028 | B 171028 | B 171028 | | |
| | Units | SW-1 | SW-2A | SW-4A | SW-5 | SW-5 Lab-Dup | SW-5D | SW-6A | RDL | QC Batch |

| Metals | | | | | | | | | | |
|-----------------------|------|-------|-------|-------|--------|--------|-------|-------|-------|---------|
| Total Aluminum (Al) | ug/L | 330 | 330 | 250 | 28 | 27 | 29 | 220 | 5.0 | 3785198 |
| Total Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3785198 |
| Total Arsenic (As) | ug/L | 2.7 | 1.1 | 5.8 | 29 | 30 | 30 | 4.0 | 1.0 | 3785198 |
| Total Barium (Ba) | ug/L | 5.8 | 5.6 | 3.4 | 4.5 | 4.6 | 4.6 | 3.2 | 1.0 | 3785198 |
| Total Beryllium (Be) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3785198 |
| Total Bismuth (Bi) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3785198 |
| Total Boron (B) | ug/L | <50 | <50 | <50 | <50 | <50 | <50 | <50 | 50 | 3785198 |
| Total Cadmium (Cd) | ug/L | 0.024 | 0.026 | 0.015 | <0.010 | <0.010 | 0.016 | 0.024 | 0.010 | 3785198 |
| Total Calcium (Ca) | ug/L | 1200 | 1100 | 1500 | 5000 | 5000 | 4900 | 1000 | 100 | 3785198 |
| Total Chromium (Cr) | ug/L | <1.0 | 1.4 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3785198 |
| Total Cobalt (Co) | ug/L | 0.51 | 0.49 | 0.43 | <0.40 | <0.40 | <0.40 | <0.40 | 0.40 | 3785198 |
| Total Copper (Cu) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3785198 |
| Total Iron (Fe) | ug/L | 670 | 740 | 690 | 400 | 400 | 400 | 500 | 50 | 3785198 |
| Total Lead (Pb) | ug/L | 0.51 | 0.78 | 0.54 | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | 3785198 |
| Total Magnesium (Mg) | ug/L | 590 | 570 | 540 | 940 | 930 | 920 | 470 | 100 | 3785198 |
| Total Manganese (Mn) | ug/L | 79 | 77 | 53 | 60 | 59 | 59 | 50 | 2.0 | 3785198 |
| Total Molybdenum (Mo) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3785198 |
| Total Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3785198 |
| Total Phosphorus (P) | ug/L | <100 | <100 | <100 | <100 | <100 | <100 | <100 | 100 | 3785198 |
| Total Potassium (K) | ug/L | 570 | 600 | 450 | 730 | 730 | 710 | 340 | 100 | 3785198 |
| Total Selenium (Se) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3785198 |
| Total Silver (Ag) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 3785198 |
| Total Sodium (Na) | ug/L | 3100 | 3100 | 3200 | 2700 | 2700 | 2700 | 2800 | 100 | 3785198 |
| Total Strontium (Sr) | ug/L | 11 | 11 | 9.9 | 28 | 27 | 27 | 7.1 | 2.0 | 3785198 |
| Total Thallium (Tl) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 3785198 |
| Total Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3785198 |
| Total Titanium (Ti) | ug/L | 3.8 | 4.2 | 5.1 | <2.0 | <2.0 | <2.0 | 2.7 | 2.0 | 3785198 |
| Total Uranium (U) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 3785198 |
| Total Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3785198 |
| Total Zinc (Zn) | ug/L | 5.0 | 6.9 | 19 | <5.0 | <5.0 | <5.0 | <5.0 | 5.0 | 3785198 |

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

Maxxam Job #: B4J1118
Report Date: 2014/10/24

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | XZ3583 | | |
|----------------------------------|-------|------------|-------|----------|
| Sampling Date | | 2014/10/10 | | |
| COC Number | | B 171028 | | |
| | Units | SW-9 | RDL | QC Batch |
| Metals | | | | |
| Total Aluminum (Al) | ug/L | 410 | 5.0 | 3785198 |
| Total Antimony (Sb) | ug/L | <1.0 | 1.0 | 3785198 |
| Total Arsenic (As) | ug/L | <1.0 | 1.0 | 3785198 |
| Total Barium (Ba) | ug/L | 6.6 | 1.0 | 3785198 |
| Total Beryllium (Be) | ug/L | <1.0 | 1.0 | 3785198 |
| Total Bismuth (Bi) | ug/L | <2.0 | 2.0 | 3785198 |
| Total Boron (B) | ug/L | <50 | 50 | 3785198 |
| Total Cadmium (Cd) | ug/L | 0.024 | 0.010 | 3785198 |
| Total Calcium (Ca) | ug/L | 2300 | 100 | 3785198 |
| Total Chromium (Cr) | ug/L | <1.0 | 1.0 | 3785198 |
| Total Cobalt (Co) | ug/L | <0.40 | 0.40 | 3785198 |
| Total Copper (Cu) | ug/L | <2.0 | 2.0 | 3785198 |
| Total Iron (Fe) | ug/L | 620 | 50 | 3785198 |
| Total Lead (Pb) | ug/L | <0.50 | 0.50 | 3785198 |
| Total Magnesium (Mg) | ug/L | 1100 | 100 | 3785198 |
| Total Manganese (Mn) | ug/L | 140 | 2.0 | 3785198 |
| Total Molybdenum (Mo) | ug/L | <2.0 | 2.0 | 3785198 |
| Total Nickel (Ni) | ug/L | <2.0 | 2.0 | 3785198 |
| Total Phosphorus (P) | ug/L | <100 | 100 | 3785198 |
| Total Potassium (K) | ug/L | 640 | 100 | 3785198 |
| Total Selenium (Se) | ug/L | <1.0 | 1.0 | 3785198 |
| Total Silver (Ag) | ug/L | <0.10 | 0.10 | 3785198 |
| Total Sodium (Na) | ug/L | 4000 | 100 | 3785198 |
| Total Strontium (Sr) | ug/L | 10 | 2.0 | 3785198 |
| Total Thallium (Tl) | ug/L | <0.10 | 0.10 | 3785198 |
| Total Tin (Sn) | ug/L | <2.0 | 2.0 | 3785198 |
| Total Titanium (Ti) | ug/L | 4.8 | 2.0 | 3785198 |
| Total Uranium (U) | ug/L | 0.11 | 0.10 | 3785198 |
| Total Vanadium (V) | ug/L | <2.0 | 2.0 | 3785198 |
| Total Zinc (Zn) | ug/L | 5.2 | 5.0 | 3785198 |
| RDL = Reportable Detection Limit | | | | |
| QC Batch = Quality Control Batch | | | | |

Maxxam Job #: B4J1118
Report Date: 2014/10/24

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

GENERAL COMMENTS

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

| | |
|-----------|-------|
| Package 1 | 1.3°C |
|-----------|-------|

Report re-issued to include the National Excel EDD - 2014/10/24 MK

Sample XZ3577-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample XZ3578-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample XZ3579-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample XZ3582-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample XZ3583-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Results relate only to the items tested.

Maxxam Job #: B4J1118
Report Date: 2014/10/24

QUALITY ASSURANCE REPORT

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 3785198 | Total Aluminum (Al) | 2014/10/16 | 103 (1) | 80 - 120 | 102 | 80 - 120 | <5.0 | ug/L | 2.5 (2) | 20 | | |
| 3785198 | Total Antimony (Sb) | 2014/10/16 | 99 (1) | 80 - 120 | 99 | 80 - 120 | <1.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Arsenic (As) | 2014/10/16 | 99 (1) | 80 - 120 | 99 | 80 - 120 | <1.0 | ug/L | 0.50 (2) | 20 | | |
| 3785198 | Total Barium (Ba) | 2014/10/16 | 100 (1) | 80 - 120 | 97 | 80 - 120 | <1.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Beryllium (Be) | 2014/10/16 | 99 (1) | 80 - 120 | 100 | 80 - 120 | <1.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Bismuth (Bi) | 2014/10/16 | 100 (1) | 80 - 120 | 98 | 80 - 120 | <2.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Boron (B) | 2014/10/16 | 97 (1) | 80 - 120 | 102 | 80 - 120 | <50 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Cadmium (Cd) | 2014/10/16 | 100 (1) | 80 - 120 | 98 | 80 - 120 | <0.010 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Calcium (Ca) | 2014/10/16 | 102 (1) | 80 - 120 | 102 | 80 - 120 | <100 | ug/L | 0.17 (2) | 20 | | |
| 3785198 | Total Chromium (Cr) | 2014/10/16 | 98 (1) | 80 - 120 | 98 | 80 - 120 | <1.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Cobalt (Co) | 2014/10/16 | 98 (1) | 80 - 120 | 98 | 80 - 120 | <0.40 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Copper (Cu) | 2014/10/16 | 96 (1) | 80 - 120 | 97 | 80 - 120 | <2.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Iron (Fe) | 2014/10/16 | 104 (1) | 80 - 120 | 103 | 80 - 120 | <50 | ug/L | 0.74 (2) | 20 | | |
| 3785198 | Total Lead (Pb) | 2014/10/16 | 102 (1) | 80 - 120 | 102 | 80 - 120 | <0.50 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Magnesium (Mg) | 2014/10/16 | 107 (1) | 80 - 120 | 105 | 80 - 120 | <100 | ug/L | 1.1 (2) | 20 | | |
| 3785198 | Total Manganese (Mn) | 2014/10/16 | NC (1) | 80 - 120 | 101 | 80 - 120 | <2.0 | ug/L | 2.3 (2) | 20 | | |
| 3785198 | Total Molybdenum (Mo) | 2014/10/16 | 100 (1) | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Nickel (Ni) | 2014/10/16 | 99 (1) | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Phosphorus (P) | 2014/10/16 | 106 (1) | 80 - 120 | 104 | 80 - 120 | <100 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Potassium (K) | 2014/10/16 | 104 (1) | 80 - 120 | 101 | 80 - 120 | <100 | ug/L | 0.012 (2) | 20 | | |
| 3785198 | Total Selenium (Se) | 2014/10/16 | 98 (1) | 80 - 120 | 97 | 80 - 120 | <1.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Silver (Ag) | 2014/10/16 | 98 (1) | 80 - 120 | 98 | 80 - 120 | <0.10 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Sodium (Na) | 2014/10/16 | 102 (1) | 80 - 120 | 102 | 80 - 120 | <100 | ug/L | 0.062 (2) | 20 | | |
| 3785198 | Total Strontium (Sr) | 2014/10/16 | 100 (1) | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | 1.2 (2) | 20 | | |
| 3785198 | Total Thallium (Tl) | 2014/10/16 | 98 (1) | 80 - 120 | 98 | 80 - 120 | <0.10 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Tin (Sn) | 2014/10/16 | 102 (1) | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Titanium (Ti) | 2014/10/16 | 105 (1) | 80 - 120 | 104 | 80 - 120 | <2.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Uranium (U) | 2014/10/16 | 103 (1) | 80 - 120 | 101 | 80 - 120 | <0.10 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Vanadium (V) | 2014/10/16 | 99 (1) | 80 - 120 | 101 | 80 - 120 | <2.0 | ug/L | NC (2) | 20 | | |
| 3785198 | Total Zinc (Zn) | 2014/10/16 | 97 (1) | 80 - 120 | 98 | 80 - 120 | <5.0 | ug/L | NC (2) | 20 | | |
| 3786534 | Total Alkalinity (Total as CaCO3) | 2014/10/17 | 106 | 80 - 120 | 108 | 80 - 120 | <5.0 | mg/L | NC (3) | 25 | | |
| 3786536 | Dissolved Chloride (Cl) | 2014/10/20 | NC | 80 - 120 | 103 | 80 - 120 | <1.0 | mg/L | 0.49 (3) | 25 | 111 | 80 - 120 |

Maxxam Job #: B4J1118
Report Date: 2014/10/24

QUALITY ASSURANCE REPORT(CONT'D)

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------|------------|--------------|-----------|--------------|-----------|---------------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 3786538 | Dissolved Sulphate (SO4) | 2014/10/20 | 98 | 80 - 120 | 105 | 80 - 120 | <2.0 | mg/L | NC (3) | 25 | | |
| 3786541 | Reactive Silica (SiO2) | 2014/10/16 | NC | 80 - 120 | 100 | 80 - 120 | <0.50 | mg/L | 0.56 (3) | 25 | | |
| 3786543 | Colour | 2014/10/20 | | | 105 | 80 - 120 | <5.0 | TCU | 9.8 (3) | 25 | | |
| 3786544 | Orthophosphate (P) | 2014/10/17 | 103 | 80 - 120 | 99 | 80 - 120 | <0.010 | mg/L | NC (3) | 25 | | |
| 3786546 | Nitrate + Nitrite | 2014/10/20 | 102 | 80 - 120 | 102 | 80 - 120 | 0.091 ,RDL=0.050 | mg/L | NC (3) | 25 | | |
| 3786547 | Nitrite (N) | 2014/10/20 | 90 | 80 - 120 | 97 | 80 - 120 | <0.010 | mg/L | NC (3) | 25 | | |
| 3788334 | Nitrogen (Ammonia Nitrogen) | 2014/10/20 | 96 (4) | 80 - 120 | 99 | 80 - 120 | <0.050 | mg/L | NC (5) | 25 | | |
| 3788512 | Total Mercury (Hg) | 2014/10/17 | 84 | 80 - 120 | 94 | 80 - 120 | <0.013 | ug/L | NC (3) | 20 | | |
| 3788537 | Total Organic Carbon (C) | 2014/10/17 | 99 | 80 - 120 | 104 | 80 - 120 | <0.50 | mg/L | NC (3) | 20 | | |
| 3790888 | Turbidity | 2014/10/20 | | | | | <0.10 | NTU | NC (3) | 25 | 96 | 80 - 120 |
| 3792031 | pH | 2014/10/21 | | | | | | | 1.3 (3) | N/A | 101 | 97 - 103 |
| 3792033 | Conductivity | 2014/10/21 | | | 100 | 80 - 120 | 1.1 ,RDL=1.0 | uS/cm | 0.36 (3) | 25 | | |
| 3792034 | pH | 2014/10/21 | | | | | | | 0.67 (3) | N/A | 101 | 97 - 103 |
| 3792035 | Conductivity | 2014/10/21 | | | 99 | 80 - 120 | <1.0 | uS/cm | 0.35 (3) | 25 | | |

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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

(1) Matrix Spike Parent ID [XZ3581-03]

(2) Duplicate Parent ID [XZ3580-03]

(3) Duplicate Parent ID

(4) Matrix Spike Parent ID [XZ3580-01]

(5) Duplicate Parent ID [XZ3580-01]

Maxxam Job #: B4J1118
Report Date: 2014/10/24

Conestoga-Rovers and Associates Ltd
Client Project #: 088664
Site Location: BEAVER DAM
Sampler Initials: JP

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Kevin A. MacDonald

Kevin MacDonald, Inorganics Supervisor

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
 49 Elizabeth Ave., St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
 90 Esplanade Sydney, NS B1P 1A1 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
 www.maxxamanalytics.com E-mail: Clientservicesbedford@maxxamanalytics.com

MAXXAM Chain of Custody Record

COC #: **B 171028** Page 1 of 1

This column for lab use only:

Client Code _____
 Maxxam Job # **B4J1118**
 Cooler ID _____ Seal Present _____ Seal Intact _____
 Temp 1 **130** Temp 2 _____ Temp 3 _____ Average Temp _____
 Integrity YES **(NO)** Integrity / Checklist by **AM**
 Labelled by _____ Location / Bin # _____

INVOICE INFORMATION:
 Company Name: **CRA**
 Contact Name: **PETER ORAM**
 Address: **45 AKERLEY BLVD.**
DARTMOUTH, NS Postal Code **B3B 1J7**
 Email: **poram@craworld.com**
 Ph: **(902)468-1248** Fax: **(902)468-2207**

REPORT INFORMATION (if differs from invoice):
 Company Name: _____
 Contact Name: _____
 Address: _____
 Postal Code: _____
 Email: _____
 Ph: _____ Fax: _____

PO # _____
 Project # / Phase # **088664**
 Project Name / Site Location **BEAVER DAM**
 Quoto **14-161K9**
 Site # _____
 Task Order # _____
 Sampled by **JEFF PARKS / AMANDA FALEY**

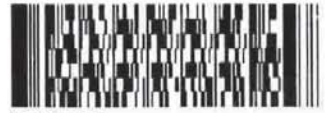
TURNAROUND TIME
 Standard
 10 day
 If RUSH Specify Date: **N/A**
 Pre-schedule rush work: _____
 Charge for # Jars used but not submitted: **0**

Guideline Requirements / Detection Limits / Special Instructions
CCME FRESHWATER AQUATIC LIFE
 cc: **j.parks@craworld.com**
 *Specify Matrix: Surface/Salt/Ground/Tapwater/Sewage/Effluent/
 Potable/NonPotable/Tissue/Soil/Sludge/Metal/Seawater

Field Filtered & Preserved
 Lab Filtration Required
 RCAP-30 Choose Total or Diss Metals
 RCAP-MS Choose Total/Diss Metals
 Total Digest (Default Method) for well water, surface water
 Dissolved for ground water
 Mercury
 Metals & Mercury Default Available Digest Method
 Metals Total Digest - for Ocean sediments (HNO3/HF/HClO4)
 Mercury Low level by Cold Vapour AA
 Selenium Low level/Rec'd for CCME
 Pesticidal, Parkinsons, Agricultural
 Hot Water soluble Boron (required for CCME Agricultural)
 BBCA Hydrocarbons (BTEX, C6-C22)
 Hydrocarbons Sol (Petroleum), NS Fuel Oil Spill Policy Low Level BTEX, C6-C22
 NB Potable Water BTEX, VPH, Low level T.E.H.
 TPH Fractionation
 PAH's
 PAH's with Acridine, Quinoline

| Field Sample Identification | Matrix* | Date/Time Sampled | # & type of bottles | Field Filtered & Preserved | Lab Filtration Required | RCAP-30 Choose Total or Diss Metals | RCAP-MS Choose Total/Diss Metals | Total Digest (Default Method) for well water, surface water | Dissolved for ground water | Mercury | Metals & Mercury Default Available Digest Method | Metals Total Digest - for Ocean sediments (HNO3/HF/HClO4) | Mercury Low level by Cold Vapour AA | Selenium Low level/Rec'd for CCME Pesticidal, Parkinsons, Agricultural | Hot Water soluble Boron (required for CCME Agricultural) | BBCA Hydrocarbons (BTEX, C6-C22) | Hydrocarbons Sol (Petroleum), NS Fuel Oil Spill Policy Low Level BTEX, C6-C22 | NB Potable Water BTEX, VPH, Low level T.E.H. | TPH Fractionation | PAH's | PAH's with Acridine, Quinoline | |
|-----------------------------|---------------|-------------------|------------------------|----------------------------|-------------------------|-------------------------------------|----------------------------------|-------------------------------------------------------------|----------------------------|---------|--------------------------------------------------|-----------------------------------------------------------|-------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------|-------------------------------------------------------------------------------|----------------------------------------------|-------------------|-------|--------------------------------|--|
| 1 SW-1 | SURFACE WATER | 10-OCT-14 | 1X50 1X200 1X100 | | | | X | X | | | | | | | | | | | | | | |
| 2 SW-2A | SURFACE WATER | 10-OCT-14 | 1X50 1X200 1X100 | | | | X | X | | | | | | | | | | | | | | |
| 3 SW-4A | SURFACE WATER | 10-OCT-14 | 1X50 1X200 1X100 | | | | X | X | | | | | | | | | | | | | | |
| 4 SW-5 | SURFACE WATER | 10-OCT-14 | 1X50 1X200 1X100 | | | | X | X | | | | | | | | | | | | | | |
| 5 SW-5D | SURFACE WATER | 10-OCT-14 | 1X50 1X200 1X100 | | | | X | X | | | | | | | | | | | | | | |
| 6 SW-6A | SURFACE WATER | 10-OCT-14 | 1X50 1X200 1X100 | | | | X | X | | | | | | | | | | | | | | |
| 7 SW-9 | SURFACE WATER | 10-OCT-14 | 1X50 1X200 1X100 | | | | X | X | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | |

14 OCT 14 14:21



B4J1118

RELINQUISHED BY: (Signature/Print) **R. Parks** / RAUNSA HART Date **14-OCT-14** Time **14:20**

RECEIVED BY: (Signature/Print) **AMANDA FALEY** / AMANSON WATERS Date _____ Time _____

Jessica Paribault / JESSICA PARIBAULT

Your P.O. #: 20-019340
 Your Project #: 088664-05
 Site Location: ATLANTIC GOLD-BEAVER DAM
 Your C.O.C. #: B 66223

Attention: Jeff Parks

Conestoga-Rovers and Associates Ltd
 45 Akerley Blvd
 Dartmouth, NS
 B3B 1J7

Report Date: 2014/11/24
 Report #: R3231882
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4L5339

Received: 2014/11/14, 10:45

Sample Matrix: Water
 # Samples Received: 7

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Reference |
|--------------------------------------|----------|-------------------|------------------|-------------------|----------------------|
| Carbonate, Bicarbonate and Hydroxide | 7 | N/A | 2014/11/21 | N/A | SM 22 4500-CO2 D |
| Alkalinity | 7 | N/A | 2014/11/24 | ATL SOP 00013 | EPA 310.2 R1974 m |
| Chloride | 7 | N/A | 2014/11/21 | ATL SOP 00014 | SM 22 4500-Cl- E m |
| Colour | 6 | N/A | 2014/11/20 | ATL SOP 00020 | SM 22 2120C m |
| Colour | 1 | N/A | 2014/11/21 | ATL SOP 00020 | SM 22 2120C m |
| Conductance - water | 7 | N/A | 2014/11/20 | ATL SOP 00004 | SM 22 2510B m |
| Hardness (calculated as CaCO3) | 7 | N/A | 2014/11/20 | ATL SOP 00048 | SM 22 2340 B |
| Mercury - Total (CVAA,LL) | 7 | 2014/11/20 | 2014/11/21 | ATL SOP 00026 | EPA 245.1 R3 m |
| Metals Water Total MS (1) | 7 | 2014/11/19 | 2014/11/20 | ATL SOP 00058 | EPA 6020A R1 m |
| Ion Balance (% Difference) | 7 | N/A | 2014/11/24 | | Auto Calc. |
| Anion and Cation Sum | 7 | N/A | 2014/11/21 | | Auto Calc. |
| Nitrogen Ammonia - water | 7 | N/A | 2014/11/20 | ATL SOP 00015 | EPA 350.1 R2 m |
| Nitrogen - Nitrate + Nitrite | 7 | N/A | 2014/11/21 | ATL SOP 00016 | USGS SOPINCF0452.2 m |
| Nitrogen - Nitrite | 7 | N/A | 2014/11/21 | ATL SOP 00017 | SM 22 4500-NO2- B m |
| Nitrogen - Nitrate (as N) | 7 | N/A | 2014/11/21 | ATL SOP 00018 | ASTM D3867 |
| pH (2) | 7 | N/A | 2014/11/20 | ATL SOP 00003 | SM 22 4500-H+ B m |
| Phosphorus - ortho | 7 | N/A | 2014/11/20 | ATL SOP 00021 | EPA 365.2 m |
| Sat. pH and Langelier Index (@ 20C) | 7 | N/A | 2014/11/24 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 7 | N/A | 2014/11/24 | ATL SOP 00049 | Auto Calc. |
| Reactive Silica | 1 | N/A | 2014/11/19 | ATL SOP 00022 | EPA 366.0 m |
| Reactive Silica | 6 | N/A | 2014/11/20 | ATL SOP 00022 | EPA 366.0 m |
| Sulphate | 7 | N/A | 2014/11/21 | ATL SOP 00023 | EPA 375.4 R1978 m |
| Total Dissolved Solids (TDS calc) | 7 | N/A | 2014/11/24 | | Auto Calc. |
| Organic carbon - Total (TOC) (3) | 7 | N/A | 2014/11/19 | ATL SOP 00037 | SM 22 5310C m |
| Turbidity | 7 | N/A | 2014/11/21 | ATL SOP 00011 | EPA 180.1 R2 m |

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

- (1) New RDLs in effect due to release of NS Contaminated Sites Regulations. Reduced RDL based on MDL study performance. Low level analytical run checks being implemented.
- (2) The APHA Standard Method require 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.

Your P.O. #: 20-019340
Your Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your C.O.C. #: B 66223

Attention: Jeff Parks

Conestoga-Rovers and Associates Ltd
45 Akerley Blvd
Dartmouth, NS
B3B 1J7

Report Date: 2014/11/24
Report #: R3231882
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4L5339
Received: 2014/11/14, 10:45

Encryption Key



Rachael Mansfield
24 Nov 2014 15:35:38 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Michelle Hill, Project Manager
Email: MHill@maxxam.ca
Phone# (902)420-0203 Ext:289

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B4L5339
Report Date: 2014/11/24

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | YL6603 | YL6604 | YL6605 | YL6605 | | YL6606 | | |
|------------------------------------------------------------------------------------------------------------------------------------------|-------|------------|------------|------------|---------------|----------|------------|-------|----------|
| Sampling Date | | 2014/11/13 | 2014/11/13 | 2014/11/13 | 2014/11/13 | | 2014/11/13 | | |
| COC Number | | B 66223 | B 66223 | B 66223 | B 66223 | | B 66223 | | |
| | Units | SW-1 | SW-2A | SW-4A | SW-4A Lab-Dup | QC Batch | SW-4AD | RDL | QC Batch |
| Calculated Parameters | | | | | | | | | |
| Anion Sum | me/L | 0.170 | 0.180 | 0.180 | | 3824136 | 0.180 | N/A | 3824136 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | <1.0 | <1.0 | | 3824131 | <1.0 | 1.0 | 3824131 |
| Calculated TDS | mg/L | 16 | 17 | 16 | | 3824140 | 16 | 1.0 | 3824140 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | <1.0 | <1.0 | | 3824131 | <1.0 | 1.0 | 3824131 |
| Cation Sum | me/L | 0.290 | 0.300 | 0.300 | | 3824136 | 0.300 | N/A | 3824136 |
| Hardness (CaCO3) | mg/L | 5.0 | 4.9 | 5.6 | | 3824134 | 5.6 | 1.0 | 3824134 |
| Ion Balance (% Difference) | % | 26.1 | 25.0 | 25.0 | | 3824135 | 25.0 | N/A | 3824135 |
| Langelier Index (@ 20C) | N/A | NC | NC | NC | | 3824138 | NC | | 3824138 |
| Langelier Index (@ 4C) | N/A | NC | NC | NC | | 3824139 | NC | | 3824139 |
| Nitrate (N) | mg/L | 0.061 | 0.065 | 0.062 | | 3824137 | <0.050 | 0.050 | 3824137 |
| Saturation pH (@ 20C) | N/A | NC | NC | NC | | 3824138 | NC | | 3824138 |
| Saturation pH (@ 4C) | N/A | NC | NC | NC | | 3824139 | NC | | 3824139 |
| Inorganics | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | <5.0 | <5.0 | <5.0 | <5.0 | 3827629 | <5.0 | 5.0 | 3827629 |
| Dissolved Chloride (Cl) | mg/L | 5.8 | 6.3 | 6.2 | 5.8 | 3827631 | 6.4 | 1.0 | 3827631 |
| Colour | TCU | 160 | 160 | 130 | 130 | 3827648 | 130 | 25 | 3827648 |
| Nitrate + Nitrite | mg/L | 0.061 | 0.065 | 0.062 | 0.066 | 3827662 | <0.050 | 0.050 | 3827662 |
| Nitrite (N) | mg/L | <0.010 | <0.010 | <0.010 | <0.010 | 3827664 | <0.010 | 0.010 | 3827664 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | <0.050 | <0.050 | | 3829220 | <0.050 | 0.050 | 3829221 |
| Total Organic Carbon (C) | mg/L | 18 | 19 | 16 | | 3828950 | 16 | 0.50 | 3828950 |
| Orthophosphate (P) | mg/L | <0.010 | <0.010 | <0.010 | <0.010 | 3827660 | <0.010 | 0.010 | 3827660 |
| pH | pH | 4.59 | 4.54 | 4.76 | | 3830316 | 4.71 | N/A | 3830316 |
| Reactive Silica (SiO2) | mg/L | 3.9 | 3.9 | 3.5 | 3.6 | 3827642 | 3.6 | 0.50 | 3827642 |
| Dissolved Sulphate (SO4) | mg/L | <2.0 | <2.0 | <2.0 | <2.0 | 3827633 | <2.0 | 2.0 | 3827633 |
| Turbidity | NTU | 0.64 | 0.50 | 0.68 | | 3832636 | 0.65 | 0.10 | 3832636 |
| Conductivity | uS/cm | 33 | 33 | 31 | | 3830317 | 31 | 1.0 | 3830317 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable | | | | | | | | | |

Maxxam Job #: B4L5339
Report Date: 2014/11/24

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | YL6607 | | YL6608 | YL6609 | | |
|----------------------------------------------------------------------------------------------|-------|------------|-------|------------|------------|-------|----------|
| Sampling Date | | 2014/11/13 | | 2014/11/13 | 2014/11/13 | | |
| COC Number | | B 66223 | | B 66223 | B 66223 | | |
| | Units | SW-5 | RDL | SW-6A | SW-9 | RDL | QC Batch |
| Calculated Parameters | | | | | | | |
| Anion Sum | me/L | 0.520 | N/A | 0.160 | 0.200 | N/A | 3824136 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 11 | 1.0 | <1.0 | <1.0 | 1.0 | 3824131 |
| Calculated TDS | mg/L | 33 | 1.0 | 15 | 17 | 1.0 | 3824140 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 1.0 | <1.0 | <1.0 | 1.0 | 3824131 |
| Cation Sum | me/L | 0.510 | N/A | 0.270 | 0.340 | N/A | 3824136 |
| Hardness (CaCO3) | mg/L | 17 | 1.0 | 5.0 | 6.4 | 1.0 | 3824134 |
| Ion Balance (% Difference) | % | 0.970 | N/A | 25.6 | 25.9 | N/A | 3824135 |
| Langelier Index (@ 20C) | N/A | -2.74 | | NC | NC | | 3824138 |
| Langelier Index (@ 4C) | N/A | -2.99 | | NC | NC | | 3824139 |
| Nitrate (N) | mg/L | 0.051 | 0.050 | <0.050 | <0.050 | 0.050 | 3824137 |
| Saturation pH (@ 20C) | N/A | 9.52 | | NC | NC | | 3824138 |
| Saturation pH (@ 4C) | N/A | 9.77 | | NC | NC | | 3824139 |
| Inorganics | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | 11 | 5.0 | <5.0 | <5.0 | 5.0 | 3827629 |
| Dissolved Chloride (Cl) | mg/L | 5.2 | 1.0 | 5.8 | 7.2 | 1.0 | 3827631 |
| Colour | TCU | 26 | 5.0 | 99 | 140 | 25 | 3827648 |
| Nitrate + Nitrite | mg/L | 0.051 | 0.050 | <0.050 | <0.050 | 0.050 | 3827662 |
| Nitrite (N) | mg/L | <0.010 | 0.010 | <0.010 | <0.010 | 0.010 | 3827664 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 0.050 | <0.050 | <0.050 | 0.050 | 3829221 |
| Total Organic Carbon (C) | mg/L | 3.5 | 0.50 | 13 | 18 | 0.50 | 3828950 |
| Orthophosphate (P) | mg/L | <0.010 | 0.010 | <0.010 | <0.010 | 0.010 | 3827660 |
| pH | pH | 6.78 | N/A | 5.05 | 4.96 | N/A | 3830316 |
| Reactive Silica (SiO2) | mg/L | 3.1 | 0.50 | 3.5 | 3.1 | 0.50 | 3827642 |
| Dissolved Sulphate (SO4) | mg/L | 7.0 | 2.0 | <2.0 | <2.0 | 2.0 | 3827633 |
| Turbidity | NTU | 1.4 | 0.10 | 0.69 | 0.74 | 0.10 | 3832636 |
| Conductivity | uS/cm | 49 | 1.0 | 28 | 35 | 1.0 | 3830317 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable | | | | | | | |

Maxxam Job #: B4L5339
Report Date: 2014/11/24

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

MERCURY BY COLD VAPOUR AA (WATER)

| | | | | | | | | | | |
|----------------------|--------------|-------------|--------------|--------------|---------------|-------------|--------------|-------------|------------|-----------------|
| Maxxam ID | | YL6603 | YL6604 | YL6605 | YL6606 | YL6607 | YL6608 | YL6609 | | |
| Sampling Date | | 2014/11/13 | 2014/11/13 | 2014/11/13 | 2014/11/13 | 2014/11/13 | 2014/11/13 | 2014/11/13 | | |
| COC Number | | B 66223 | B 66223 | B 66223 | B 66223 | B 66223 | B 66223 | B 66223 | | |
| | Units | SW-1 | SW-2A | SW-4A | SW-4AD | SW-5 | SW-6A | SW-9 | RDL | QC Batch |

| | | | | | | | | | | |
|----------------------------------|------|--------|--------|--------|--------|--------|--------|--------|-------|---------|
| Metals | | | | | | | | | | |
| Total Mercury (Hg) | ug/L | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | 0.013 | 3831012 |
| RDL = Reportable Detection Limit | | | | | | | | | | |
| QC Batch = Quality Control Batch | | | | | | | | | | |

Maxxam Job #: B4L5339
Report Date: 2014/11/24

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | YL6603 | YL6604 | YL6605 | YL6606 | YL6607 | YL6608 | YL6609 | | |
|---------------|-------|------------|------------|------------|------------|------------|------------|------------|-----|----------|
| Sampling Date | | 2014/11/13 | 2014/11/13 | 2014/11/13 | 2014/11/13 | 2014/11/13 | 2014/11/13 | 2014/11/13 | | |
| COC Number | | B 66223 | B 66223 | B 66223 | B 66223 | B 66223 | B 66223 | B 66223 | | |
| | Units | SW-1 | SW-2A | SW-4A | SW-4AD | SW-5 | SW-6A | SW-9 | RDL | QC Batch |

| Metals | | | | | | | | | | |
|-----------------------|------|-------|-------|-------|-------|--------|-------|-------|-------|---------|
| Total Aluminum (Al) | ug/L | 320 | 340 | 300 | 310 | 100 | 290 | 330 | 5.0 | 3827227 |
| Total Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3827227 |
| Total Arsenic (As) | ug/L | 1.5 | <1.0 | 2.9 | 2.8 | 15 | 1.9 | <1.0 | 1.0 | 3827227 |
| Total Barium (Ba) | ug/L | 5.6 | 5.8 | 4.6 | 4.4 | 5.5 | 4.1 | 5.7 | 1.0 | 3827227 |
| Total Beryllium (Be) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3827227 |
| Total Bismuth (Bi) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3827227 |
| Total Boron (B) | ug/L | <50 | <50 | <50 | <50 | <50 | <50 | <50 | 50 | 3827227 |
| Total Cadmium (Cd) | ug/L | 0.029 | 0.028 | 0.024 | 0.025 | <0.010 | 0.021 | 0.025 | 0.010 | 3827227 |
| Total Calcium (Ca) | ug/L | 1100 | 1000 | 1300 | 1300 | 5300 | 1200 | 1400 | 100 | 3827227 |
| Total Chromium (Cr) | ug/L | <1.0 | 1.6 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3827227 |
| Total Cobalt (Co) | ug/L | 0.52 | 0.58 | 0.53 | 0.59 | <0.40 | 0.44 | <0.40 | 0.40 | 3827227 |
| Total Copper (Cu) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3827227 |
| Total Iron (Fe) | ug/L | 630 | 700 | 540 | 540 | 470 | 480 | 500 | 50 | 3827227 |
| Total Lead (Pb) | ug/L | <0.50 | 0.55 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | 3827227 |
| Total Magnesium (Mg) | ug/L | 560 | 570 | 590 | 590 | 970 | 510 | 700 | 100 | 3827227 |
| Total Manganese (Mn) | ug/L | 68 | 71 | 58 | 58 | 28 | 51 | 75 | 2.0 | 3827227 |
| Total Molybdenum (Mo) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3827227 |
| Total Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3827227 |
| Total Phosphorus (P) | ug/L | <100 | 110 | 100 | 100 | <100 | <100 | <100 | 100 | 3827227 |
| Total Potassium (K) | ug/L | 550 | 600 | 500 | 520 | 1000 | 470 | 530 | 100 | 3827227 |
| Total Selenium (Se) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3827227 |
| Total Silver (Ag) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 3827227 |
| Total Sodium (Na) | ug/L | 3000 | 3100 | 3100 | 3200 | 2900 | 3000 | 3900 | 100 | 3827227 |
| Total Strontium (Sr) | ug/L | 10 | 9.5 | 9.1 | 9.2 | 26 | 7.7 | 7.7 | 2.0 | 3827227 |
| Total Thallium (Tl) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 3827227 |
| Total Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3827227 |
| Total Titanium (Ti) | ug/L | 3.2 | 3.8 | 3.7 | 3.9 | 3.2 | 3.1 | 4.1 | 2.0 | 3827227 |
| Total Uranium (U) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 3827227 |
| Total Vanadium (V) | ug/L | 2.3 | 2.5 | 2.9 | 2.8 | 3.1 | 2.2 | 2.3 | 2.0 | 3827227 |
| Total Zinc (Zn) | ug/L | 5.1 | 6.2 | 7.8 | 6.9 | <5.0 | 5.5 | 7.5 | 5.0 | 3827227 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B4L5339
Report Date: 2014/11/24

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

GENERAL COMMENTS

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

| | |
|-----------|-------|
| Package 1 | 3.3°C |
|-----------|-------|

Sample YL6603-01 : RCAP Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample YL6604-01 : RCAP Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample YL6605-01 : RCAP Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample YL6606-01 : RCAP Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample YL6608-01 : RCAP Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample YL6609-01 : RCAP Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Results relate only to the items tested.

Maxxam Job #: B4L5339
Report Date: 2014/11/24

QUALITY ASSURANCE REPORT

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 3827227 | Total Aluminum (Al) | 2014/11/20 | 98 | 80 - 120 | 100 | 80 - 120 | <5.0 | ug/L | NC (1) | 20 | | |
| 3827227 | Total Antimony (Sb) | 2014/11/20 | 108 | 80 - 120 | 104 | 80 - 120 | <1.0 | ug/L | | | | |
| 3827227 | Total Arsenic (As) | 2014/11/20 | 99 | 80 - 120 | 97 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 3827227 | Total Barium (Ba) | 2014/11/20 | NC | 80 - 120 | 103 | 80 - 120 | <1.0 | ug/L | | | | |
| 3827227 | Total Beryllium (Be) | 2014/11/20 | 104 | 80 - 120 | 103 | 80 - 120 | <1.0 | ug/L | | | | |
| 3827227 | Total Bismuth (Bi) | 2014/11/20 | 101 | 80 - 120 | 103 | 80 - 120 | <2.0 | ug/L | | | | |
| 3827227 | Total Boron (B) | 2014/11/20 | 99 | 80 - 120 | 98 | 80 - 120 | <50 | ug/L | | | | |
| 3827227 | Total Cadmium (Cd) | 2014/11/20 | 99 | 80 - 120 | 98 | 80 - 120 | <0.010 | ug/L | NC (1) | 20 | | |
| 3827227 | Total Calcium (Ca) | 2014/11/20 | NC | 80 - 120 | 92 | 80 - 120 | <100 | ug/L | | | | |
| 3827227 | Total Chromium (Cr) | 2014/11/20 | 96 | 80 - 120 | 96 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 3827227 | Total Cobalt (Co) | 2014/11/20 | 95 | 80 - 120 | 95 | 80 - 120 | <0.40 | ug/L | | | | |
| 3827227 | Total Copper (Cu) | 2014/11/20 | 94 | 80 - 120 | 94 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 3827227 | Total Iron (Fe) | 2014/11/20 | 101 | 80 - 120 | 102 | 80 - 120 | <50 | ug/L | NC (1) | 20 | | |
| 3827227 | Total Lead (Pb) | 2014/11/20 | 97 | 80 - 120 | 98 | 80 - 120 | <0.50 | ug/L | NC (1) | 20 | | |
| 3827227 | Total Magnesium (Mg) | 2014/11/20 | NC | 80 - 120 | 105 | 80 - 120 | <100 | ug/L | | | | |
| 3827227 | Total Manganese (Mn) | 2014/11/20 | 93 | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | | | | |
| 3827227 | Total Molybdenum (Mo) | 2014/11/20 | 104 | 80 - 120 | 103 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 3827227 | Total Nickel (Ni) | 2014/11/20 | 97 | 80 - 120 | 98 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 3827227 | Total Phosphorus (P) | 2014/11/20 | 109 | 80 - 120 | 109 | 80 - 120 | <100 | ug/L | | | | |
| 3827227 | Total Potassium (K) | 2014/11/20 | 106 | 80 - 120 | 109 | 80 - 120 | <100 | ug/L | | | | |
| 3827227 | Total Selenium (Se) | 2014/11/20 | 96 | 80 - 120 | 94 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 3827227 | Total Silver (Ag) | 2014/11/20 | 101 | 80 - 120 | 100 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 3827227 | Total Sodium (Na) | 2014/11/20 | NC | 80 - 120 | 103 | 80 - 120 | <100 | ug/L | | | | |
| 3827227 | Total Strontium (Sr) | 2014/11/20 | NC | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | | | | |
| 3827227 | Total Thallium (Tl) | 2014/11/20 | 100 | 80 - 120 | 101 | 80 - 120 | <0.10 | ug/L | | | | |
| 3827227 | Total Tin (Sn) | 2014/11/20 | 105 | 80 - 120 | 101 | 80 - 120 | <2.0 | ug/L | | | | |
| 3827227 | Total Titanium (Ti) | 2014/11/20 | 101 | 80 - 120 | 101 | 80 - 120 | <2.0 | ug/L | | | | |
| 3827227 | Total Uranium (U) | 2014/11/20 | 108 | 80 - 120 | 105 | 80 - 120 | <0.10 | ug/L | | | | |
| 3827227 | Total Vanadium (V) | 2014/11/20 | 98 | 80 - 120 | 101 | 80 - 120 | 3.5, RDL=2.0 | ug/L | | | | |
| 3827227 | Total Zinc (Zn) | 2014/11/20 | 99 | 80 - 120 | 100 | 80 - 120 | <5.0 | ug/L | 1.7 (1) | 20 | | |
| 3827629 | Total Alkalinity (Total as CaCO3) | 2014/11/24 | 102 (2) | 80 - 120 | 109 | 80 - 120 | <5.0 | mg/L | NC (3) | 25 | | |

Maxxam Job #: B4L5339
Report Date: 2014/11/24

QUALITY ASSURANCE REPORT(CONT'D)

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 3827631 | Dissolved Chloride (Cl) | 2014/11/21 | 100 (2) | 80 - 120 | 103 | 80 - 120 | <1.0 | mg/L | 7.3 (3) | 25 | 107 | 80 - 120 |
| 3827633 | Dissolved Sulphate (SO4) | 2014/11/21 | 105 (2) | 80 - 120 | 96 | 80 - 120 | <2.0 | mg/L | NC (3) | 25 | | |
| 3827642 | Reactive Silica (SiO2) | 2014/11/19 | 99 (2) | 80 - 120 | 103 | 80 - 120 | <0.50 | mg/L | 0.58 (3) | 25 | | |
| 3827648 | Colour | 2014/11/21 | | | 104 | 80 - 120 | <5.0 | TCU | 3.2 (3) | 25 | | |
| 3827660 | Orthophosphate (P) | 2014/11/20 | 90 (2) | 80 - 120 | 97 | 80 - 120 | <0.010 | mg/L | NC (3) | 25 | | |
| 3827662 | Nitrate + Nitrite | 2014/11/21 | 103 (2) | 80 - 120 | 103 | 80 - 120 | <0.050 | mg/L | NC (3) | 25 | | |
| 3827664 | Nitrite (N) | 2014/11/21 | 91 (2) | 80 - 120 | 101 | 80 - 120 | <0.010 | mg/L | NC (3) | 25 | | |
| 3828950 | Total Organic Carbon (C) | 2014/11/19 | 101 | 80 - 120 | 107 | 80 - 120 | <0.50 | mg/L | NC (1) | 20 | | |
| 3829220 | Nitrogen (Ammonia Nitrogen) | 2014/11/20 | 96 | 80 - 120 | 100 | 80 - 120 | <0.050 | mg/L | NC (1) | 25 | | |
| 3829221 | Nitrogen (Ammonia Nitrogen) | 2014/11/21 | 98 | 80 - 120 | 102 | 80 - 120 | <0.050 | mg/L | 14 (1) | 25 | | |
| 3830316 | pH | 2014/11/20 | | | | | | | 0.45 (1) | N/A | 100 | 97 - 103 |
| 3830317 | Conductivity | 2014/11/20 | | | 99 | 80 - 120 | 1.3, RDL=1.0 | uS/cm | 0 (1) | 25 | | |
| 3831012 | Total Mercury (Hg) | 2014/11/21 | 91 | 80 - 120 | 101 | 80 - 120 | <0.013 | ug/L | NC (1) | 20 | | |
| 3832636 | Turbidity | 2014/11/21 | | | | | <0.10 | NTU | 5.6 (1) | 25 | 106 | 80 - 120 |

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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [YL6605-01]

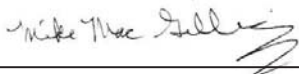
(3) Duplicate Parent ID [YL6605-01]

Maxxam Job #: B4L5339
Report Date: 2014/11/24

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Mike MacGillivray, Scientific Specialist (Inorganics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

This column for lab use only:

Client Code

Maxxam Job #
B4L5339

| | | | | | | |
|-----------|--------------|-------------|--------|--------|--------|--------------|
| Cooler ID | Seal Present | Seal Intact | Temp 1 | Temp 2 | Temp 3 | Average Temp |
| | | | | | | |

Integrity YES NO Integrity / Checklist by *SB*

Labelled by Location / Bin #
50

INVOICE INFORMATION:

Company Name: *CRA*
 Contact Name: *Jeff Parks*
 Address: *Dartmouth, NS*
 Postal Code: *B3B 1J7*
 Email: *jparks@craworld.com*
 Ph: *468-1248* Fax: *468-2207*

REPORT INFORMATION (if differs from invoice):

Company Name: *[Redacted]*
 Contact Name: *[Redacted]*
 Address: *[Redacted]*
 Postal Code: *[Redacted]*
 Email: *[Redacted]*
 Ph: *[Redacted]* Fax: *[Redacted]*

PO # *20-019340*
 Project # / Phase # *088164-05*
 Project Name / Site Location *Atlantic Gold-Beaver Dam*
 Quote *14-161KG*
 Site #
 Task Order #
 Sampled by *AF*

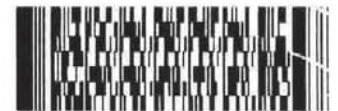
TURNAROUND TIME
 Standard
 10 day
 If RUSH Specify Date:
 Pre-schedule rush work
 Charge for # Jars used but not submitted *1*

Guideline Requirements / Detection Limits / Special Instructions

CCME FWAL

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

| Field Sample Identification | Matrix* | Date/Time Sampled | # & type of bottles | Field Filtered & Preserved* | Lab Filtration Required | RCAP-30 Total or Diss Metals | RCAP-MS Total or Diss Metals | Total Digest (Default Method) for well water, surface water Dissolved for ground water | Metals Water | Mercury | Metals & Mercury Default: Available Digest Method | Metals Total Digest - for Ocean sediments (HNO3/HF/HClO4) | Mercury Low level by Cold Vapour AA | Selenium (low level) Req'd for CCME Residential, Parkslands, Agricultural | Hot Water soluble Boron (required for CCME Agricultural) | RBCA Hydrocarbons (BTEX, C6-C9) | Hydrocarbons Soil (Potable), NS Fuel Oil Soil Policy Low Level BTEX, C6-C9 | MB Potable Water BTEX, VPH, Low level T.E.H. | TPH Fractionation | PAH's | PAH's with Acridine, Quinoline |
|-----------------------------|---------|-------------------|------------------------|-----------------------------|-------------------------|---------------------------------|---------------------------------|----------------------------------------------------------------------------------------------|--------------|---------|------------------------------------------------------|--------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------|-------------------|-------|--------------------------------|
| 1 SW-1 | SW | 13 Nov 14 | 1x50 1x100 1x200 | X | | X | | | X | | | | | | | | | | | | |
| 2 SW-2A | | | | X | | X | | | X | | | | | | | | | | | | |
| 3 SW-4A | | | | X | | X | | | X | | | | | | | | | | | | |
| 4 SW-4AD | | | | X | | X | | | X | | | | | | | | | | | | |
| 5 SW-5 | | | | X | | X | | | X | | | | | | | | | | | | |
| 6 SW-6A | | | | X | | X | | | X | | | | | | | | | | | | |
| 7 SW-9 | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | |



B4L5339

2014 NOV 14 11:25

RELINQUISHED BY: (Signature/Print) *A Facey* Date *14 Nov 14* Time

RECEIVED BY: (Signature/Print) *SARA MASON* Date *14 NOV 14 10:45* Time

Your P.O. #: 20-019340
 Your Project #: 088664-05
 Site Location: ATLANTIC GOLD-BEAVER DAM
 Your C.O.C. #: B 100254

Attention: Jeff Parks

Conestoga-Rovers and Associates Ltd
 45 Akerley Blvd
 Dartmouth, NS
 B3B 1J7

Report Date: 2014/12/31
 Report #: R3275281
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B400693
Received: 2014/12/19, 10:13

Sample Matrix: Water
 # Samples Received: 7

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Reference |
|--------------------------------------|----------|-------------------|------------------|-------------------|----------------------|
| Carbonate, Bicarbonate and Hydroxide | 7 | N/A | 2014/12/30 | N/A | SM 22 4500-CO2 D |
| Alkalinity | 7 | N/A | 2014/12/29 | ATL SOP 00013 | EPA 310.2 R1974 m |
| Chloride | 7 | N/A | 2014/12/30 | ATL SOP 00014 | SM 22 4500-Cl- E m |
| Colour | 7 | N/A | 2014/12/30 | ATL SOP 00020 | SM 22 2120C m |
| Conductance - water | 7 | N/A | 2014/12/30 | ATL SOP 00004 | SM 22 2510B m |
| Hardness (calculated as CaCO3) | 7 | N/A | 2014/12/24 | ATL SOP 00048 | SM 22 2340 B |
| Mercury - Total (CVAA,LL) | 7 | 2014/12/22 | 2014/12/22 | ATL SOP 00026 | EPA 245.1 R3 m |
| Metals Water Total MS (1) | 7 | 2014/12/23 | 2014/12/23 | ATL SOP 00058 | EPA 6020A R1 m |
| Ion Balance (% Difference) | 7 | N/A | 2014/12/31 | | Auto Calc. |
| Anion and Cation Sum | 7 | N/A | 2014/12/30 | | Auto Calc. |
| Nitrogen Ammonia - water | 7 | N/A | 2014/12/29 | ATL SOP 00015 | EPA 350.1 R2 m |
| Nitrogen - Nitrate + Nitrite | 7 | N/A | 2014/12/30 | ATL SOP 00016 | USGS SOPINCF0452.2 m |
| Nitrogen - Nitrite | 7 | N/A | 2014/12/30 | ATL SOP 00017 | SM 22 4500-NO2- B m |
| Nitrogen - Nitrate (as N) | 7 | N/A | 2014/12/31 | ATL SOP 00018 | ASTM D3867 |
| pH (2) | 7 | N/A | 2014/12/30 | ATL SOP 00003 | SM 22 4500-H+ B m |
| Phosphorus - ortho | 7 | N/A | 2014/12/31 | ATL SOP 00021 | EPA 365.2 m |
| Sat. pH and Langelier Index (@ 20C) | 6 | N/A | 2014/12/30 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 20C) | 1 | N/A | 2014/12/31 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 6 | N/A | 2014/12/30 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 1 | N/A | 2014/12/31 | ATL SOP 00049 | Auto Calc. |
| Reactive Silica | 7 | N/A | 2014/12/29 | ATL SOP 00022 | EPA 366.0 m |
| Sulphate | 7 | N/A | 2014/12/30 | ATL SOP 00023 | EPA 375.4 R1978 m |
| Total Dissolved Solids (TDS calc) | 7 | N/A | 2014/12/31 | | Auto Calc. |
| Organic carbon - Total (TOC) (3) | 7 | N/A | 2014/12/30 | ATL SOP 00037 | SM 22 5310C m |
| Turbidity | 7 | N/A | 2014/12/30 | ATL SOP 00011 | EPA 180.1 R2 m |

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

- (1) New RDLs in effect due to release of NS Contaminated Sites Regulations. Reduced RDL based on MDL study performance. Low level analytical run checks being implemented.
- (2) The APHA Standard Method require 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.

Your P.O. #: 20-019340
Your Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your C.O.C. #: B 100254

Attention: Jeff Parks

Conestoga-Rovers and Associates Ltd
45 Akerley Blvd
Dartmouth, NS
B3B 1J7

Report Date: 2014/12/31
Report #: R3275281
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CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4O0693
Received: 2014/12/19, 10:13

Encryption Key



Rachael Mansfield
31 Dec 2014 12:23:06 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Michelle Hill, Project Manager
Email: MHill@maxxam.ca
Phone# (902)420-0203 Ext:289

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B400693
Report Date: 2014/12/31

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | YX9103 | YX9103 | YX9104 | YX9105 | | | YX9106 | | |
|---------------|-------|------------|--------------|------------|------------|-----|----------|------------|-----|----------|
| Sampling Date | | 2014/12/18 | 2014/12/18 | 2014/12/18 | 2014/12/18 | | | 2014/12/18 | | |
| COC Number | | B 100254 | B 100254 | B 100254 | B 100254 | | | B 100254 | | |
| | Units | SW-1 | SW-1 Lab-Dup | SW-2A | SW-4A | RDL | QC Batch | SW-5 | RDL | QC Batch |

| Calculated Parameters | | | | | | | | | | |
|-------------------------------------|-------|--------|--------|--------|--------|-------|---------|--------|-------|---------|
| Anion Sum | me/L | 0.100 | | 0.100 | 0.110 | N/A | 3865872 | 0.340 | N/A | 3865872 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | | <1.0 | <1.0 | 1.0 | 3865868 | 6.1 | 1.0 | 3865868 |
| Calculated TDS | mg/L | 10 | | 10 | 11 | 1.0 | 3865865 | 23 | 1.0 | 3865865 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | | <1.0 | <1.0 | 1.0 | 3865868 | <1.0 | 1.0 | 3865868 |
| Cation Sum | me/L | 0.190 | | 0.180 | 0.200 | N/A | 3865872 | 0.340 | N/A | 3865872 |
| Hardness (CaCO3) | mg/L | 3.3 | | 2.9 | 3.5 | 1.0 | 3865870 | 10 | 1.0 | 3865870 |
| Ion Balance (% Difference) | % | 31.0 | | 28.6 | 29.0 | N/A | 3865871 | 0.00 | N/A | 3865871 |
| Langelier Index (@ 20C) | N/A | NC | | NC | NC | | 3865863 | -3.79 | | 3865863 |
| Langelier Index (@ 4C) | N/A | NC | | NC | NC | | 3865864 | -4.04 | | 3865864 |
| Nitrate (N) | mg/L | <0.050 | | <0.050 | <0.050 | 0.050 | 3865873 | 0.094 | 0.050 | 3865873 |
| Saturation pH (@ 20C) | N/A | NC | | NC | NC | | 3865863 | 10.0 | | 3865863 |
| Saturation pH (@ 4C) | N/A | NC | | NC | NC | | 3865864 | 10.3 | | 3865864 |
| Inorganics | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | <5.0 | <5.0 | <5.0 | <5.0 | 5.0 | 3872171 | 6.1 | 5.0 | 3872171 |
| Dissolved Chloride (Cl) | mg/L | 3.4 | 3.8 | 3.6 | 3.9 | 1.0 | 3872174 | 4.0 | 1.0 | 3872174 |
| Colour | TCU | 99 | 96 | 100 | 88 | 25 | 3872177 | 30 | 5.0 | 3872177 |
| Nitrate + Nitrite | mg/L | <0.050 | 0.066 | <0.050 | <0.050 | 0.050 | 3872180 | 0.094 | 0.050 | 3872180 |
| Nitrite (N) | mg/L | <0.010 | <0.010 | <0.010 | <0.010 | 0.010 | 3872181 | <0.010 | 0.010 | 3872181 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | | <0.050 | <0.050 | 0.050 | 3872510 | <0.050 | 0.050 | 3872510 |
| Total Organic Carbon (C) | mg/L | 8.2 | | 8.9 | 8.2 | 0.50 | 3873222 | 4.0 | 0.50 | 3873222 |
| Orthophosphate (P) | mg/L | <0.010 | <0.010 | <0.010 | <0.010 | 0.010 | 3872178 | <0.010 | 0.010 | 3872178 |
| pH | pH | 5.23 | | 4.88 | 4.96 | N/A | 3872971 | 6.23 | N/A | 3872971 |
| Reactive Silica (SiO2) | mg/L | 2.7 | 2.8 | 2.8 | 2.9 | 0.50 | 3872176 | 3.0 | 0.50 | 3872176 |
| Dissolved Sulphate (SO4) | mg/L | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3872175 | 4.6 | 2.0 | 3872175 |
| Turbidity | NTU | 0.59 | | 0.59 | 0.80 | 0.10 | 3873221 | 6.2 | 0.10 | 3873217 |
| Conductivity | uS/cm | 25 | | 25 | 24 | 1.0 | 3872972 | 35 | 1.0 | 3872972 |

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

Maxxam Job #: B400693
Report Date: 2014/12/31

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | YX9106 | | | YX9107 | YX9107 | YX9108 | YX9109 | | |
|---------------|-------|--------------|-----|----------|------------|---------------|------------|------------|-----|----------|
| Sampling Date | | 2014/12/18 | | | 2014/12/18 | 2014/12/18 | 2014/12/18 | 2014/12/18 | | |
| COC Number | | B 100254 | | | B 100254 | B 100254 | B 100254 | B 100254 | | |
| | Units | SW-5 Lab-Dup | RDL | QC Batch | SW-6A | SW-6A Lab-Dup | SW-9 | SW-2AD | RDL | QC Batch |

| Calculated Parameters | | | | | | | | | | |
|-------------------------------------|-------|-----|-------|---------|--------|--------|--------|--------|-------|---------|
| Anion Sum | me/L | | N/A | 3865872 | 0.110 | | 0.140 | 0.110 | N/A | 3865872 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | | 1.0 | 3865868 | <1.0 | | <1.0 | <1.0 | 1.0 | 3865868 |
| Calculated TDS | mg/L | | 1.0 | 3865865 | 11 | | 12 | 10 | 1.0 | 3865865 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | | 1.0 | 3865868 | <1.0 | | <1.0 | <1.0 | 1.0 | 3865868 |
| Cation Sum | me/L | | N/A | 3865872 | 0.190 | | 0.230 | 0.180 | N/A | 3865872 |
| Hardness (CaCO3) | mg/L | | 1.0 | 3865870 | 3.5 | | 4.1 | 2.8 | 1.0 | 3865870 |
| Ion Balance (% Difference) | % | | N/A | 3865871 | 26.7 | | 24.3 | 24.1 | N/A | 3865871 |
| Langelier Index (@ 20C) | N/A | | | 3865863 | NC | | NC | NC | | 3865863 |
| Langelier Index (@ 4C) | N/A | | | 3865864 | NC | | NC | NC | | 3865864 |
| Nitrate (N) | mg/L | | 0.050 | 3865873 | <0.050 | | <0.050 | <0.050 | 0.050 | 3865873 |
| Saturation pH (@ 20C) | N/A | | | 3865863 | NC | | NC | NC | | 3865863 |
| Saturation pH (@ 4C) | N/A | | | 3865864 | NC | | NC | NC | | 3865864 |
| Inorganics | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | | 5.0 | 3872171 | <5.0 | | <5.0 | <5.0 | 5.0 | 3872171 |
| Dissolved Chloride (Cl) | mg/L | | 1.0 | 3872174 | 3.8 | | 4.8 | 3.8 | 1.0 | 3872174 |
| Colour | TCU | | 5.0 | 3872177 | 87 | | 110 | 100 | 25 | 3872177 |
| Nitrate + Nitrite | mg/L | | 0.050 | 3872180 | <0.050 | | <0.050 | <0.050 | 0.050 | 3872180 |
| Nitrite (N) | mg/L | | 0.010 | 3872181 | <0.010 | | <0.010 | <0.010 | 0.010 | 3872181 |
| Nitrogen (Ammonia Nitrogen) | mg/L | | 0.050 | 3872510 | <0.050 | <0.050 | <0.050 | <0.050 | 0.050 | 3872510 |
| Total Organic Carbon (C) | mg/L | | 0.50 | 3873222 | 8.1 | | 8.9 | 9.1 | 0.50 | 3873222 |
| Orthophosphate (P) | mg/L | | 0.010 | 3872178 | <0.010 | | <0.010 | <0.010 | 0.010 | 3872178 |
| pH | pH | | N/A | 3872971 | 5.13 | 4.97 | 5.06 | 4.75 | N/A | 3872971 |
| Reactive Silica (SiO2) | mg/L | | 0.50 | 3872176 | 2.8 | | 2.4 | 2.7 | 0.50 | 3872176 |
| Dissolved Sulphate (SO4) | mg/L | | 2.0 | 3872175 | <2.0 | | <2.0 | <2.0 | 2.0 | 3872175 |
| Turbidity | NTU | 6.1 | 0.10 | 3873217 | 0.42 | | 0.49 | 0.23 | 0.10 | 3873221 |
| Conductivity | uS/cm | | 1.0 | 3872972 | 24 | 24 | 27 | 25 | 1.0 | 3872972 |

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

Maxxam Job #: B4O0693
Report Date: 2014/12/31

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

MERCURY BY COLD VAPOUR AA (WATER)

| Maxxam ID | | YX9103 | YX9104 | YX9105 | YX9106 | YX9107 | YX9108 | YX9109 | | |
|----------------------------------|-------|------------|------------|------------|------------|------------|------------|------------|-------|----------|
| Sampling Date | | 2014/12/18 | 2014/12/18 | 2014/12/18 | 2014/12/18 | 2014/12/18 | 2014/12/18 | 2014/12/18 | | |
| COC Number | | B 100254 | B 100254 | B 100254 | B 100254 | B 100254 | B 100254 | B 100254 | | |
| | Units | SW-1 | SW-2A | SW-4A | SW-5 | SW-6A | SW-9 | SW-2AD | RDL | QC Batch |
| Metals | | | | | | | | | | |
| Total Mercury (Hg) | ug/L | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | 0.013 | 3868558 |
| RDL = Reportable Detection Limit | | | | | | | | | | |
| QC Batch = Quality Control Batch | | | | | | | | | | |

Maxxam Job #: B400693
Report Date: 2014/12/31

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | YX9103 | YX9104 | YX9105 | YX9106 | YX9107 | YX9108 | YX9109 | | |
|----------------------------------|-------|------------|------------|------------|------------|------------|------------|------------|-------|----------|
| Sampling Date | | 2014/12/18 | 2014/12/18 | 2014/12/18 | 2014/12/18 | 2014/12/18 | 2014/12/18 | 2014/12/18 | | |
| COC Number | | B 100254 | B 100254 | B 100254 | B 100254 | B 100254 | B 100254 | B 100254 | | |
| | Units | SW-1 | SW-2A | SW-4A | SW-5 | SW-6A | SW-9 | SW-2AD | RDL | QC Batch |
| Metals | | | | | | | | | | |
| Total Aluminum (Al) | ug/L | 220 | 210 | 220 | 460 | 240 | 310 | 210 | 5.0 | 3868017 |
| Total Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3868017 |
| Total Arsenic (As) | ug/L | 1.3 | <1.0 | 2.0 | 17 | 1.1 | <1.0 | <1.0 | 1.0 | 3868017 |
| Total Barium (Ba) | ug/L | 3.1 | 3.2 | 3.2 | 6.1 | 3.1 | 3.5 | 3.0 | 1.0 | 3868017 |
| Total Beryllium (Be) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3868017 |
| Total Bismuth (Bi) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3868017 |
| Total Boron (B) | ug/L | <50 | <50 | <50 | <50 | <50 | <50 | <50 | 50 | 3868017 |
| Total Cadmium (Cd) | ug/L | 0.023 | 0.017 | 0.044 | 0.010 | 0.014 | 0.019 | 0.017 | 0.010 | 3868017 |
| Total Calcium (Ca) | ug/L | 780 | 640 | 810 | 3000 | 790 | 890 | 590 | 100 | 3868017 |
| Total Chromium (Cr) | ug/L | <1.0 | <1.0 | <1.0 | 1.1 | 1.3 | <1.0 | <1.0 | 1.0 | 3868017 |
| Total Cobalt (Co) | ug/L | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | 0.40 | 3868017 |
| Total Copper (Cu) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3868017 |
| Total Iron (Fe) | ug/L | 330 | 360 | 320 | 730 | 330 | 280 | 350 | 50 | 3868017 |
| Total Lead (Pb) | ug/L | <0.50 | <0.50 | <0.50 | 0.57 | <0.50 | <0.50 | <0.50 | 0.50 | 3868017 |
| Total Magnesium (Mg) | ug/L | 330 | 320 | 350 | 640 | 360 | 450 | 310 | 100 | 3868017 |
| Total Manganese (Mn) | ug/L | 41 | 43 | 41 | 25 | 39 | 51 | 42 | 2.0 | 3868017 |
| Total Molybdenum (Mo) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3868017 |
| Total Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3868017 |
| Total Phosphorus (P) | ug/L | <100 | <100 | <100 | <100 | <100 | <100 | <100 | 100 | 3868017 |
| Total Potassium (K) | ug/L | 380 | 370 | 480 | 720 | 300 | 340 | 340 | 100 | 3868017 |
| Total Selenium (Se) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3868017 |
| Total Silver (Ag) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 3868017 |
| Total Sodium (Na) | ug/L | 2100 | 2100 | 2300 | 2200 | 2200 | 2900 | 2000 | 100 | 3868017 |
| Total Strontium (Sr) | ug/L | 5.8 | 5.6 | 5.7 | 15 | 5.9 | 5.0 | 5.2 | 2.0 | 3868017 |
| Total Thallium (Tl) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 3868017 |
| Total Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3868017 |
| Total Titanium (Ti) | ug/L | 3.3 | 2.6 | 2.3 | 14 | 2.8 | 3.5 | 2.6 | 2.0 | 3868017 |
| Total Uranium (U) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 3868017 |
| Total Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3868017 |
| Total Zinc (Zn) | ug/L | 7.8 | 5.5 | 12 | <5.0 | <5.0 | <5.0 | 5.0 | 5.0 | 3868017 |
| RDL = Reportable Detection Limit | | | | | | | | | | |
| QC Batch = Quality Control Batch | | | | | | | | | | |

Maxxam Job #: B4O0693
Report Date: 2014/12/31

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

GENERAL COMMENTS

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

| | |
|-----------|-------|
| Package 1 | 5.0°C |
|-----------|-------|

Sample YX9103-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample YX9104-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample YX9105-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample YX9107-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample YX9108-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample YX9109-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Results relate only to the items tested.

Maxxam Job #: B4O0693
Report Date: 2014/12/31

QUALITY ASSURANCE REPORT

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05

Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 3868017 | Total Aluminum (Al) | 2014/12/23 | 103 | 80 - 120 | 103 | 80 - 120 | <5.0 | ug/L | 0.22 (1) | 20 | | |
| 3868017 | Total Antimony (Sb) | 2014/12/23 | 106 | 80 - 120 | 105 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Arsenic (As) | 2014/12/23 | 99 | 80 - 120 | 99 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Barium (Ba) | 2014/12/23 | 97 | 80 - 120 | 98 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Beryllium (Be) | 2014/12/23 | 102 | 80 - 120 | 102 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Bismuth (Bi) | 2014/12/23 | 104 | 80 - 120 | 105 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Boron (B) | 2014/12/23 | 100 | 80 - 120 | 101 | 80 - 120 | <50 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Cadmium (Cd) | 2014/12/23 | 99 | 80 - 120 | 99 | 80 - 120 | <0.010 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Calcium (Ca) | 2014/12/23 | NC | 80 - 120 | 95 | 80 - 120 | <100 | ug/L | 3.3 (1) | 20 | | |
| 3868017 | Total Chromium (Cr) | 2014/12/23 | 96 | 80 - 120 | 98 | 80 - 120 | <1.0 | ug/L | 3.5 (1) | 20 | | |
| 3868017 | Total Cobalt (Co) | 2014/12/23 | 97 | 80 - 120 | 98 | 80 - 120 | <0.40 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Copper (Cu) | 2014/12/23 | 95 | 80 - 120 | 97 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Iron (Fe) | 2014/12/23 | 104 | 80 - 120 | 106 | 80 - 120 | <50 | ug/L | 0.82 (1) | 20 | | |
| 3868017 | Total Lead (Pb) | 2014/12/23 | 98 | 80 - 120 | 99 | 80 - 120 | <0.50 | ug/L | 23 (2,1) | 20 | | |
| 3868017 | Total Magnesium (Mg) | 2014/12/23 | 103 | 80 - 120 | 105 | 80 - 120 | <100 | ug/L | 2.0 (1) | 20 | | |
| 3868017 | Total Manganese (Mn) | 2014/12/23 | 102 | 80 - 120 | 104 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Molybdenum (Mo) | 2014/12/23 | NC | 80 - 120 | 103 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Nickel (Ni) | 2014/12/23 | 98 | 80 - 120 | 101 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Phosphorus (P) | 2014/12/23 | 108 | 80 - 120 | 107 | 80 - 120 | <100 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Potassium (K) | 2014/12/23 | 103 | 80 - 120 | 105 | 80 - 120 | <100 | ug/L | 1.2 (1) | 20 | | |
| 3868017 | Total Selenium (Se) | 2014/12/23 | 97 | 80 - 120 | 95 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Silver (Ag) | 2014/12/23 | 100 | 80 - 120 | 100 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Sodium (Na) | 2014/12/23 | 99 | 80 - 120 | 103 | 80 - 120 | <100 | ug/L | 2.9 (1) | 20 | | |
| 3868017 | Total Strontium (Sr) | 2014/12/23 | 96 | 80 - 120 | 102 | 80 - 120 | <2.0 | ug/L | 7.0 (1) | 20 | | |
| 3868017 | Total Thallium (Tl) | 2014/12/23 | 104 | 80 - 120 | 104 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Tin (Sn) | 2014/12/23 | 105 | 80 - 120 | 105 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Titanium (Ti) | 2014/12/23 | 101 | 80 - 120 | 102 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Uranium (U) | 2014/12/23 | 107 | 80 - 120 | 105 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Vanadium (V) | 2014/12/23 | 98 | 80 - 120 | 99 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 3868017 | Total Zinc (Zn) | 2014/12/23 | 99 | 80 - 120 | 100 | 80 - 120 | <5.0 | ug/L | 2.8 (1) | 20 | | |
| 3868558 | Total Mercury (Hg) | 2014/12/22 | 100 | 80 - 120 | 99 | 80 - 120 | <0.013 | ug/L | NC (1) | 20 | | |
| 3872171 | Total Alkalinity (Total as CaCO3) | 2014/12/29 | 102 (3) | 80 - 120 | 105 | 80 - 120 | <5.0 | mg/L | NC (4) | 25 | | |

Maxxam Job #: B4O0693
Report Date: 2014/12/31

QUALITY ASSURANCE REPORT(CONT'D)

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------|------------|--------------|-----------|--------------|-----------|---------------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 3872174 | Dissolved Chloride (Cl) | 2014/12/30 | 100 (3) | 80 - 120 | 98 | 80 - 120 | <1.0 | mg/L | NC (4) | 25 | 103 | 80 - 120 |
| 3872175 | Dissolved Sulphate (SO4) | 2014/12/30 | 86 (3) | 80 - 120 | 92 | 80 - 120 | <2.0 | mg/L | NC (4) | 25 | | |
| 3872176 | Reactive Silica (SiO2) | 2014/12/29 | 104 (3) | 80 - 120 | 104 | 80 - 120 | <0.50 | mg/L | 1.1 (4) | 25 | | |
| 3872177 | Colour | 2014/12/30 | | | 97 | 80 - 120 | <5.0 | TCU | NC (4) | 25 | | |
| 3872178 | Orthophosphate (P) | 2014/12/31 | 96 (3) | 80 - 120 | 99 | 80 - 120 | <0.010 | mg/L | NC (4) | 25 | | |
| 3872180 | Nitrate + Nitrite | 2014/12/30 | 99 (3) | 80 - 120 | 95 | 80 - 120 | 0.051, RDL=0.050 | mg/L | NC (4) | 25 | | |
| 3872181 | Nitrite (N) | 2014/12/30 | 91 (3) | 80 - 120 | 113 | 80 - 120 | <0.010 | mg/L | NC (4) | 25 | | |
| 3872510 | Nitrogen (Ammonia Nitrogen) | 2014/12/29 | 96 (5) | 80 - 120 | 100 | 80 - 120 | <0.050 | mg/L | NC (6) | 25 | | |
| 3872971 | pH | 2014/12/30 | | | | | | | 3.3 (6) | N/A | 100 | 97 - 103 |
| 3872972 | Conductivity | 2014/12/30 | | | 100 | 80 - 120 | 1.5, RDL=1.0 | uS/cm | 0.40 (6) | 25 | | |
| 3873217 | Turbidity | 2014/12/30 | | | | | <0.10 | NTU | 2.4 (7) | 25 | 96 | 80 - 120 |
| 3873221 | Turbidity | 2014/12/30 | | | | | <0.10 | NTU | NC (1) | 25 | 95 | 80 - 120 |
| 3873222 | Total Organic Carbon (C) | 2014/12/30 | 100 | 80 - 120 | 99 | 80 - 120 | <0.50 | mg/L | NC (1) | 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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

(1) Duplicate Parent ID

(2) Poor RPD due to sample inhomogeneity. < 10 % of compounds in multi-component analysis in violation.

(3) Matrix Spike Parent ID [YX9103-01]

(4) Duplicate Parent ID [YX9103-01]

(5) Matrix Spike Parent ID [YX9107-01]

(6) Duplicate Parent ID [YX9107-01]

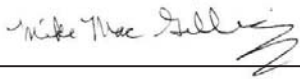
(7) Duplicate Parent ID [YX9106-01]

Maxxam Job #: B4O0693
Report Date: 2014/12/31

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Mike MacGillivray, Scientific Specialist (Inorganics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

This column for lab use only:

Client Code: 16276

Maxxam Job #: B400693

| | | | | | | |
|-----------|--------------|-------------|----------|----------|----------|--------------|
| Cooler ID | Seal Present | Seal Intact | Temp 1 | Temp 2 | Temp 3 | Average Temp |
| | | | | | | |
| | | | <u>4</u> | <u>5</u> | <u>6</u> | |

Integrity YES NO Integrity / Checklist by SM

Labelled by Location / Bin # 4

INVOICE INFORMATION:

Company Name: CRA

Contact Name: Jeff Parks

Address: Dartmouth, NS
Postal Code B3B 1J7

Email: jparks@craworld.com

Ph: 468-1248 Fax: 468-2201

REPORT INFORMATION (if differs from invoice):

Company Name: _____

Contact Name: _____

Address: _____
Postal Code _____

Email: _____

Ph: _____ Fax: _____

PO # 20-019340

Project # / Phase # 083664-05

Project Name / Site Location Atlantic Gold-Beaver Dam

Quote 14-161 KG

Site # _____

Task Order # _____

Sampled by _____

TURNAROUND TIME

Standard

10 day

If RUSH Specify Date: _____

Pre-schedule rush work: _____

Charge for # Jars used but not submitted:

Guideline Requirements / Detection Limits / Special Instructions

CCME FWAL

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

Field Filtered & Preserved

Lab Filtration Required

RCAP-30 Choose Total or Diss Metals

RCAP-MS Choose Total or Diss Metals

Total Digest (Default Method) for well, water, surface water

Disolved for ground water

Mercury

Metals & Mercury Default Available Digest Method

Metals Total Digest - for Ocean sediments (HNO3/HF/HClO4)

Mercury Low level by Cold Vapour AA

Selenium (low level) Rec'd for CCME Residential, Parklands, Agricultural

Hot Water soluble Boron (required for CCME Agricultural)

RECA Hydrocarbons (BTEX, C6-C8)

Hydrocarbons Soil (Potable), NS Fuel Oil Soil Policy Low Level BTEX, C6-C8

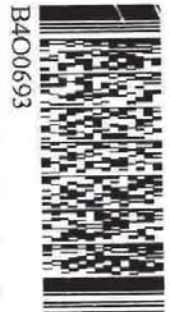
NS Potable Water BTEX, TPH, Low level T.E.H.

TPH Fractionation

PAH's

PAH's with Acridine, Quinoline

| Field Sample Identification | Matrix* | Date/Time Sampled | # & type of bottles | Field Filtered & Preserved | Lab Filtration Required | RCAP-30 | RCAP-MS | Metals Water | Metals Soil | Hydrocarbons |
|-----------------------------|---------|-------------------|------------------------------|----------------------------|-------------------------|---------|---------|--------------|-------------|--------------|
| 1 SW-1 | SW | 18 Dec 14 | 1 X 50 1 X 100 1 X 202 | X | | X | | X | | |
| 2 SW-2A | | | | X | | X | | X | | |
| 3 SW-4A | | | | X | | X | | X | | |
| 4 SW-5 | | | | X | | X | | X | | |
| 5 SW-6A | | | | X | | X | | X | | |
| 6 SW-9 | | | | X | | X | | X | | |
| 7 SW-2AD | | | | X | | X | | X | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |



2014 DEC 19 11:36

RELINQUISHED BY: (Signature/Print) A Facey Date 19 Dec 14 Time _____

RECEIVED BY: (Signature/Print) JRD Joe Doyle Date 19 DEC 19 10:15 Time _____
Sara Mason SARA MASON

Your P.O. #: 20-019340
 Your Project #: 088664-05
 Site Location: ATLANTIC GOLD-BEAVER DAM
 Your C.O.C. #: B 100261

Attention: Jeff Parks

Conestoga-Rovers and Associates Ltd
 45 Akerley Blvd
 Dartmouth, NS
 B3B 1J7

Report Date: 2015/01/30
 Report #: R3317426
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B513234
Received: 2015/01/23, 09:47

Sample Matrix: Water
 # Samples Received: 6

| Analyses | Quantity | Date | Date | Laboratory Method | Reference |
|--------------------------------------|----------|------------|------------|-------------------|----------------------|
| | | Extracted | Analyzed | | |
| Carbonate, Bicarbonate and Hydroxide | 6 | N/A | 2015/01/29 | N/A | SM 22 4500-CO2 D |
| Alkalinity | 6 | N/A | 2015/01/28 | ATL SOP 00013 | EPA 310.2 R1974 m |
| Chloride | 6 | N/A | 2015/01/29 | ATL SOP 00014 | SM 22 4500-Cl- E m |
| Colour | 6 | N/A | 2015/01/28 | ATL SOP 00020 | SM 22 2120C m |
| Conductance - water | 6 | N/A | 2015/01/28 | ATL SOP 00004 | SM 22 2510B m |
| Hardness (calculated as CaCO3) | 6 | N/A | 2015/01/29 | ATL SOP 00048 | SM 22 2340 B |
| Mercury - Total (CVAA,LL) | 6 | 2015/01/30 | 2015/01/30 | ATL SOP 00026 | EPA 245.1 R3 m |
| Metals Water Total MS (1) | 6 | 2015/01/28 | 2015/01/28 | ATL SOP 00058 | EPA 6020A R1 m |
| Ion Balance (% Difference) | 6 | N/A | 2015/01/29 | | Auto Calc. |
| Anion and Cation Sum | 6 | N/A | 2015/01/29 | | Auto Calc. |
| Nitrogen Ammonia - water | 6 | N/A | 2015/01/28 | ATL SOP 00015 | EPA 350.1 R2 m |
| Nitrogen - Nitrate + Nitrite | 6 | N/A | 2015/01/29 | ATL SOP 00016 | USGS SOPINCF0452.2 m |
| Nitrogen - Nitrite | 6 | N/A | 2015/01/28 | ATL SOP 00017 | SM 22 4500-NO2- B m |
| Nitrogen - Nitrate (as N) | 6 | N/A | 2015/01/29 | ATL SOP 00018 | ASTM D3867 |
| pH (2) | 6 | N/A | 2015/01/28 | ATL SOP 00003 | SM 22 4500-H+ B m |
| Phosphorus - ortho | 6 | N/A | 2015/01/28 | ATL SOP 00021 | EPA 365.2 m |
| Sat. pH and Langelier Index (@ 20C) | 6 | N/A | 2015/01/29 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 6 | N/A | 2015/01/29 | ATL SOP 00049 | Auto Calc. |
| Reactive Silica | 6 | N/A | 2015/01/28 | ATL SOP 00022 | EPA 366.0 m |
| Sulphate | 6 | N/A | 2015/01/28 | ATL SOP 00023 | EPA 375.4 R1978 m |
| Total Dissolved Solids (TDS calc) | 6 | N/A | 2015/01/29 | | Auto Calc. |
| Organic carbon - Total (TOC) (3) | 6 | N/A | 2015/01/28 | ATL SOP 00037 | SM 22 5310C m |
| Turbidity | 6 | N/A | 2015/01/29 | ATL SOP 00011 | EPA 180.1 R2 m |

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

- (1) New RDLs in effect due to release of NS Contaminated Sites Regulations. Reduced RDL based on MDL study performance. Low level analytical run checks being implemented.
- (2) The APHA Standard Method require 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.

Your P.O. #: 20-019340
Your Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your C.O.C. #: B 100261

Attention: Jeff Parks

Conestoga-Rovers and Associates Ltd
45 Akerley Blvd
Dartmouth, NS
B3B 1J7

Report Date: 2015/01/30
Report #: R3317426
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B513234
Received: 2015/01/23, 09:47

Encryption Key



Rachael Mansfield
30 Jan 2015 17:01:58 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Michelle Hill, Project Manager
Email: MHill@maxxam.ca
Phone# (902)420-0203 Ext:289

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B513234
Report Date: 2015/01/30

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | ZG7131 | ZG7132 | | | ZG7133 | | ZG7134 | ZG7135 | | |
|---------------|-------|------------|------------|-----|----------|------------|-----|------------|------------|-----|----------|
| Sampling Date | | 2015/01/22 | 2015/01/22 | | | 2015/01/22 | | 2015/01/22 | 2015/01/22 | | |
| COC Number | | B 100261 | B 100261 | | | B 100261 | | B 100261 | B 100261 | | |
| | Units | SW-1 | SW-2A | RDL | QC Batch | SW-5 | RDL | SW-6A | SW-9 | RDL | QC Batch |

| Calculated Parameters | | | | | | | | | | | |
|-------------------------------------|------|-------|-------|-------|---------|-------|-------|--------|-------|-------|---------|
| Anion Sum | me/L | 0.120 | 0.130 | N/A | 3895941 | 0.400 | N/A | 0.120 | 0.180 | N/A | 3895941 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | <1.0 | 1.0 | 3895938 | 8.0 | 1.0 | <1.0 | <1.0 | 1.0 | 3895938 |
| Calculated TDS | mg/L | 12 | 13 | 1.0 | 3895946 | 27 | 1.0 | 12 | 16 | 1.0 | 3895946 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | <1.0 | 1.0 | 3895938 | <1.0 | 1.0 | <1.0 | <1.0 | 1.0 | 3895938 |
| Cation Sum | me/L | 0.210 | 0.210 | N/A | 3895941 | 0.430 | N/A | 0.210 | 0.290 | N/A | 3895941 |
| Hardness (CaCO3) | mg/L | 3.5 | 3.4 | 1.0 | 3895939 | 14 | 1.0 | 3.9 | 5.0 | 1.0 | 3895939 |
| Ion Balance (% Difference) | % | 27.3 | 23.5 | N/A | 3895940 | 3.61 | N/A | 27.3 | 23.4 | N/A | 3895940 |
| Langelier Index (@ 20C) | N/A | NC | NC | | 3895944 | -3.17 | | NC | NC | | 3895944 |
| Langelier Index (@ 4C) | N/A | NC | NC | | 3895945 | -3.42 | | NC | NC | | 3895945 |
| Nitrate (N) | mg/L | 0.087 | 0.079 | 0.050 | 3895942 | 0.096 | 0.050 | <0.050 | 0.051 | 0.050 | 3895942 |
| Saturation pH (@ 20C) | N/A | NC | NC | | 3895944 | 9.77 | | NC | NC | | 3895944 |
| Saturation pH (@ 4C) | N/A | NC | NC | | 3895945 | 10.0 | | NC | NC | | 3895945 |

| Inorganics | | | | | | | | | | | |
|-----------------------------------|-------|--------|--------|-------|---------|--------|-------|--------|--------|-------|---------|
| Total Alkalinity (Total as CaCO3) | mg/L | <5.0 | <5.0 | 5.0 | 3898008 | 8.0 | 5.0 | <5.0 | <5.0 | 5.0 | 3898008 |
| Dissolved Chloride (Cl) | mg/L | 4.0 | 4.2 | 1.0 | 3898009 | 5.0 | 1.0 | 4.2 | 6.2 | 1.0 | 3898009 |
| Colour | TCU | 83 | 110 | 25 | 3898012 | 23 | 5.0 | 82 | 73 | 25 | 3898012 |
| Nitrate + Nitrite | mg/L | 0.087 | 0.079 | 0.050 | 3898014 | 0.096 | 0.050 | <0.050 | 0.051 | 0.050 | 3898014 |
| Nitrite (N) | mg/L | <0.010 | <0.010 | 0.010 | 3898015 | <0.010 | 0.010 | <0.010 | <0.010 | 0.010 | 3898015 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | <0.050 | 0.050 | 3898401 | <0.050 | 0.050 | <0.050 | <0.050 | 0.050 | 3898402 |
| Total Organic Carbon (C) | mg/L | 7.0 | 7.4 | 0.50 | 3900707 | 3.1 | 0.50 | 8.9 | 7.0 | 0.50 | 3900707 |
| Orthophosphate (P) | mg/L | <0.010 | <0.010 | 0.010 | 3898013 | <0.010 | 0.010 | <0.010 | <0.010 | 0.010 | 3898013 |
| pH | pH | 4.87 | 4.75 | N/A | 3900512 | 6.60 | N/A | 5.09 | 5.44 | N/A | 3900512 |
| Reactive Silica (SiO2) | mg/L | 3.8 | 3.7 | 0.50 | 3898011 | 3.1 | 0.50 | 3.4 | 3.5 | 0.50 | 3898011 |
| Dissolved Sulphate (SO4) | mg/L | <2.0 | <2.0 | 2.0 | 3898010 | 4.4 | 2.0 | <2.0 | <2.0 | 2.0 | 3898010 |
| Turbidity | NTU | 0.62 | 0.70 | 0.10 | 3902044 | 2.4 | 0.10 | 0.44 | 0.77 | 0.10 | 3902044 |
| Conductivity | uS/cm | 27 | 28 | 1.0 | 3900514 | 45 | 1.0 | 25 | 32 | 1.0 | 3900514 |

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

Maxxam Job #: B513234
Report Date: 2015/01/30

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | ZG7135 | ZG7136 | | |
|------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------|------------|-------|----------|
| Sampling Date | | 2015/01/22 | 2015/01/22 | | |
| COC Number | | B 100261 | B 100261 | | |
| | Units | SW-9 Lab-Dup | SW-1D | RDL | QC Batch |
| Calculated Parameters | | | | | |
| Anion Sum | me/L | | 0.120 | N/A | 3895941 |
| Bicarb. Alkalinity (calc. as CaCO ₃) | mg/L | | <1.0 | 1.0 | 3895938 |
| Calculated TDS | mg/L | | 13 | 1.0 | 3895946 |
| Carb. Alkalinity (calc. as CaCO ₃) | mg/L | | <1.0 | 1.0 | 3895938 |
| Cation Sum | me/L | | 0.210 | N/A | 3895941 |
| Hardness (CaCO ₃) | mg/L | | 3.5 | 1.0 | 3895939 |
| Ion Balance (% Difference) | % | | 27.3 | N/A | 3895940 |
| Langelier Index (@ 20C) | N/A | | NC | | 3895944 |
| Langelier Index (@ 4C) | N/A | | NC | | 3895945 |
| Nitrate (N) | mg/L | | 0.080 | 0.050 | 3895942 |
| Saturation pH (@ 20C) | N/A | | NC | | 3895944 |
| Saturation pH (@ 4C) | N/A | | NC | | 3895945 |
| Inorganics | | | | | |
| Total Alkalinity (Total as CaCO ₃) | mg/L | | <5.0 | 5.0 | 3898008 |
| Dissolved Chloride (Cl) | mg/L | | 4.2 | 1.0 | 3898009 |
| Colour | TCU | | 100 | 25 | 3898012 |
| Nitrate + Nitrite | mg/L | | 0.080 | 0.050 | 3898014 |
| Nitrite (N) | mg/L | | <0.010 | 0.010 | 3898015 |
| Nitrogen (Ammonia Nitrogen) | mg/L | | <0.050 | 0.050 | 3898402 |
| Total Organic Carbon (C) | mg/L | 7.3 | 7.5 | 0.50 | 3900707 |
| Orthophosphate (P) | mg/L | | <0.010 | 0.010 | 3898013 |
| pH | pH | | 4.91 | N/A | 3900512 |
| Reactive Silica (SiO ₂) | mg/L | | 4.0 | 0.50 | 3898011 |
| Dissolved Sulphate (SO ₄) | mg/L | | <2.0 | 2.0 | 3898010 |
| Turbidity | NTU | 0.80 | 0.69 | 0.10 | 3902044 |
| Conductivity | uS/cm | | 27 | 1.0 | 3900514 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable | | | | | |

Maxxam Job #: B513234
Report Date: 2015/01/30

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

MERCURY BY COLD VAPOUR AA (WATER)

| Maxxam ID | | ZG7131 | ZG7132 | ZG7133 | ZG7134 | ZG7135 | ZG7136 | | |
|----------------------------------|-------|------------|------------|------------|------------|------------|------------|-------|----------|
| Sampling Date | | 2015/01/22 | 2015/01/22 | 2015/01/22 | 2015/01/22 | 2015/01/22 | 2015/01/22 | | |
| COC Number | | B 100261 | B 100261 | B 100261 | B 100261 | B 100261 | B 100261 | | |
| | Units | SW-1 | SW-2A | SW-5 | SW-6A | SW-9 | SW-1D | RDL | QC Batch |
| Metals | | | | | | | | | |
| Total Mercury (Hg) | ug/L | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | 0.013 | 3903361 |
| RDL = Reportable Detection Limit | | | | | | | | | |
| QC Batch = Quality Control Batch | | | | | | | | | |

Maxxam Job #: B513234
Report Date: 2015/01/30

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | ZG7131 | ZG7132 | ZG7133 | ZG7134 | ZG7135 | ZG7136 | | |
|----------------------------------|-------|------------|------------|------------|------------|------------|------------|-------|----------|
| Sampling Date | | 2015/01/22 | 2015/01/22 | 2015/01/22 | 2015/01/22 | 2015/01/22 | 2015/01/22 | | |
| COC Number | | B 100261 | B 100261 | B 100261 | B 100261 | B 100261 | B 100261 | | |
| | Units | SW-1 | SW-2A | SW-5 | SW-6A | SW-9 | SW-1D | RDL | QC Batch |
| Metals | | | | | | | | | |
| Total Aluminum (Al) | ug/L | 200 | 210 | 210 | 250 | 210 | 200 | 5.0 | 3898143 |
| Total Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3898143 |
| Total Arsenic (As) | ug/L | <1.0 | <1.0 | 22 | 1.0 | <1.0 | <1.0 | 1.0 | 3898143 |
| Total Barium (Ba) | ug/L | 3.3 | 3.3 | 6.1 | 3.0 | 3.4 | 3.4 | 1.0 | 3898143 |
| Total Beryllium (Be) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3898143 |
| Total Bismuth (Bi) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3898143 |
| Total Boron (B) | ug/L | <50 | <50 | <50 | <50 | <50 | <50 | 50 | 3898143 |
| Total Cadmium (Cd) | ug/L | 0.012 | 0.013 | 0.011 | 0.011 | 0.010 | 0.022 | 0.010 | 3898143 |
| Total Calcium (Ca) | ug/L | 720 | 680 | 4100 | 880 | 1100 | 740 | 100 | 3898143 |
| Total Chromium (Cr) | ug/L | 1.6 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3898143 |
| Total Cobalt (Co) | ug/L | <0.40 | <0.40 | 0.44 | <0.40 | <0.40 | <0.40 | 0.40 | 3898143 |
| Total Copper (Cu) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3898143 |
| Total Iron (Fe) | ug/L | 350 | 340 | 680 | 380 | 290 | 340 | 50 | 3898143 |
| Total Lead (Pb) | ug/L | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | 3898143 |
| Total Magnesium (Mg) | ug/L | 400 | 410 | 780 | 410 | 530 | 410 | 100 | 3898143 |
| Total Manganese (Mn) | ug/L | 51 | 51 | 150 | 46 | 51 | 53 | 2.0 | 3898143 |
| Total Molybdenum (Mo) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3898143 |
| Total Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.6 | 2.0 | 3898143 |
| Total Phosphorus (P) | ug/L | <100 | <100 | <100 | <100 | <100 | <100 | 100 | 3898143 |
| Total Potassium (K) | ug/L | 380 | 380 | 740 | 300 | 350 | 370 | 100 | 3898143 |
| Total Selenium (Se) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 3898143 |
| Total Silver (Ag) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 3898143 |
| Total Sodium (Na) | ug/L | 2300 | 2400 | 2700 | 2300 | 3900 | 2400 | 100 | 3898143 |
| Total Strontium (Sr) | ug/L | 6.3 | 6.6 | 21 | 6.1 | 5.6 | 6.6 | 2.0 | 3898143 |
| Total Thallium (Tl) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 3898143 |
| Total Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3898143 |
| Total Titanium (Ti) | ug/L | 2.4 | 2.2 | 4.2 | 2.6 | 2.8 | 2.2 | 2.0 | 3898143 |
| Total Uranium (U) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 3898143 |
| Total Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 3898143 |
| Total Zinc (Zn) | ug/L | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | 5.0 | 3898143 |
| RDL = Reportable Detection Limit | | | | | | | | | |
| QC Batch = Quality Control Batch | | | | | | | | | |

Maxxam Job #: B513234
Report Date: 2015/01/30

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

GENERAL COMMENTS

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

| | |
|-----------|-------|
| Package 1 | 4.3°C |
|-----------|-------|

Sample SW-4A was not received.

Sample ZG7131-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample ZG7132-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample ZG7133-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample ZG7134-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample ZG7135-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample ZG7136-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Results relate only to the items tested.

Maxxam Job #: B513234
Report Date: 2015/01/30

QUALITY ASSURANCE REPORT

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 3898008 | Total Alkalinity (Total as CaCO3) | 2015/01/28 | NC | 80 - 120 | 102 | 80 - 120 | <5.0 | mg/L | 0.10 (1) | 25 | | |
| 3898009 | Dissolved Chloride (Cl) | 2015/01/29 | NC | 80 - 120 | 99 | 80 - 120 | <1.0 | mg/L | 0.51 (1) | 25 | 106 | 80 - 120 |
| 3898010 | Dissolved Sulphate (SO4) | 2015/01/28 | 89 | 80 - 120 | 89 | 80 - 120 | <2.0 | mg/L | NC (1) | 25 | | |
| 3898011 | Reactive Silica (SiO2) | 2015/01/28 | NC | 80 - 120 | 105 | 80 - 120 | <0.50 | mg/L | 1.5 (1) | 25 | | |
| 3898012 | Colour | 2015/01/28 | | | 99 | 80 - 120 | <5.0 | TCU | NC (1) | 25 | | |
| 3898013 | Orthophosphate (P) | 2015/01/28 | 95 | 80 - 120 | 99 | 80 - 120 | <0.010 | mg/L | NC (1) | 25 | | |
| 3898014 | Nitrate + Nitrite | 2015/01/29 | 93 | 80 - 120 | 96 | 80 - 120 | <0.050 | mg/L | NC (1) | 25 | | |
| 3898015 | Nitrite (N) | 2015/01/28 | 95 | 80 - 120 | 92 | 80 - 120 | <0.010 | mg/L | NC (1) | 25 | | |
| 3898143 | Total Aluminum (Al) | 2015/01/28 | 107 | 80 - 120 | 106 | 80 - 120 | <5.0 | ug/L | 2.8 (1) | 20 | | |
| 3898143 | Total Antimony (Sb) | 2015/01/28 | 112 | 80 - 120 | 108 | 80 - 120 | <1.0 | ug/L | | | | |
| 3898143 | Total Arsenic (As) | 2015/01/28 | 101 | 80 - 120 | 101 | 80 - 120 | <1.0 | ug/L | | | | |
| 3898143 | Total Barium (Ba) | 2015/01/28 | NC | 80 - 120 | 100 | 80 - 120 | <1.0 | ug/L | | | | |
| 3898143 | Total Beryllium (Be) | 2015/01/28 | 100 | 80 - 120 | 99 | 80 - 120 | <1.0 | ug/L | | | | |
| 3898143 | Total Bismuth (Bi) | 2015/01/28 | 105 | 80 - 120 | 104 | 80 - 120 | <2.0 | ug/L | | | | |
| 3898143 | Total Boron (B) | 2015/01/28 | 98 | 80 - 120 | 96 | 80 - 120 | <50 | ug/L | | | | |
| 3898143 | Total Cadmium (Cd) | 2015/01/28 | 102 | 80 - 120 | 101 | 80 - 120 | <0.010 | ug/L | | | | |
| 3898143 | Total Calcium (Ca) | 2015/01/28 | NC | 80 - 120 | 98 | 80 - 120 | <100 | ug/L | | | | |
| 3898143 | Total Chromium (Cr) | 2015/01/28 | 99 | 80 - 120 | 100 | 80 - 120 | <1.0 | ug/L | | | | |
| 3898143 | Total Cobalt (Co) | 2015/01/28 | 99 | 80 - 120 | 100 | 80 - 120 | <0.40 | ug/L | | | | |
| 3898143 | Total Copper (Cu) | 2015/01/28 | 99 | 80 - 120 | 102 | 80 - 120 | <2.0 | ug/L | | | | |
| 3898143 | Total Iron (Fe) | 2015/01/28 | NC | 80 - 120 | 109 | 80 - 120 | <50 | ug/L | | | | |
| 3898143 | Total Lead (Pb) | 2015/01/28 | 102 | 80 - 120 | 101 | 80 - 120 | <0.50 | ug/L | | | | |
| 3898143 | Total Magnesium (Mg) | 2015/01/28 | NC | 80 - 120 | 109 | 80 - 120 | <100 | ug/L | | | | |
| 3898143 | Total Manganese (Mn) | 2015/01/28 | 102 | 80 - 120 | 103 | 80 - 120 | <2.0 | ug/L | | | | |
| 3898143 | Total Molybdenum (Mo) | 2015/01/28 | 112 | 80 - 120 | 110 | 80 - 120 | <2.0 | ug/L | | | | |
| 3898143 | Total Nickel (Ni) | 2015/01/28 | 101 | 80 - 120 | 103 | 80 - 120 | <2.0 | ug/L | | | | |
| 3898143 | Total Phosphorus (P) | 2015/01/28 | 114 | 80 - 120 | 113 | 80 - 120 | <100 | ug/L | | | | |
| 3898143 | Total Potassium (K) | 2015/01/28 | 112 | 80 - 120 | 112 | 80 - 120 | <100 | ug/L | | | | |
| 3898143 | Total Selenium (Se) | 2015/01/28 | 100 | 80 - 120 | 100 | 80 - 120 | <1.0 | ug/L | | | | |
| 3898143 | Total Silver (Ag) | 2015/01/28 | 107 | 80 - 120 | 104 | 80 - 120 | <0.10 | ug/L | | | | |
| 3898143 | Total Sodium (Na) | 2015/01/28 | NC | 80 - 120 | 107 | 80 - 120 | <100 | ug/L | | | | |

Maxxam Job #: B513234
Report Date: 2015/01/30

QUALITY ASSURANCE REPORT(CONT'D)

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 3898143 | Total Strontium (Sr) | 2015/01/28 | NC | 80 - 120 | 103 | 80 - 120 | <2.0 | ug/L | | | | |
| 3898143 | Total Thallium (Tl) | 2015/01/28 | 106 | 80 - 120 | 104 | 80 - 120 | <0.10 | ug/L | | | | |
| 3898143 | Total Tin (Sn) | 2015/01/28 | 112 | 80 - 120 | 107 | 80 - 120 | <2.0 | ug/L | | | | |
| 3898143 | Total Titanium (Ti) | 2015/01/28 | 105 | 80 - 120 | 105 | 80 - 120 | <2.0 | ug/L | | | | |
| 3898143 | Total Uranium (U) | 2015/01/28 | 113 | 80 - 120 | 110 | 80 - 120 | <0.10 | ug/L | | | | |
| 3898143 | Total Vanadium (V) | 2015/01/28 | 100 | 80 - 120 | 102 | 80 - 120 | <2.0 | ug/L | | | | |
| 3898143 | Total Zinc (Zn) | 2015/01/28 | 100 | 80 - 120 | 102 | 80 - 120 | <5.0 | ug/L | | | | |
| 3898401 | Nitrogen (Ammonia Nitrogen) | 2015/01/28 | 100 | 80 - 120 | 102 | 80 - 120 | <0.050 | mg/L | NC (2,1) | 25 | | |
| 3898402 | Nitrogen (Ammonia Nitrogen) | 2015/01/28 | 99 | 80 - 120 | 99 | 80 - 120 | <0.050 | mg/L | NC (1) | 25 | | |
| 3900512 | pH | 2015/01/28 | | | | | | | 0 (1) | N/A | 100 | 97 - 103 |
| 3900514 | Conductivity | 2015/01/28 | | | 99 | 80 - 120 | 1.2, RDL=1.0 | uS/cm | 0.84 (1) | 25 | | |
| 3900707 | Total Organic Carbon (C) | 2015/01/28 | NC (3) | 80 - 120 | 103 | 80 - 120 | <0.50 | mg/L | 3.7 (4) | 20 | | |
| 3902044 | Turbidity | 2015/01/29 | | | | | <0.10 | NTU | 3.8 (4) | 25 | 101 | 80 - 120 |
| 3903361 | Total Mercury (Hg) | 2015/01/30 | 96 | 80 - 120 | 101 | 80 - 120 | <0.013 | ug/L | NC (1) | 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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

(1) Duplicate Parent ID

(2) Duplicate results exceeded low level duplicate acceptance criteria. This may be due to sample heterogeneity.

(3) Matrix Spike Parent ID [ZG7135-01]

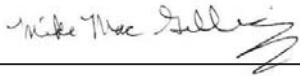
(4) Duplicate Parent ID [ZG7135-01]

Maxxam Job #: B513234
Report Date: 2015/01/30

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Mike MacGillivray, Scientific Specialist (Inorganics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Your P.O. #: 20-019340
 Your Project #: 088664-05
 Site Location: ATLANTIC GOLD-BEAVER DAM
 Your C.O.C. #: B 100289

Attention: Jeff Parks

Conestoga-Rovers and Associates Ltd
 45 Akerley Blvd
 Dartmouth, NS
 B3B 1J7

Report Date: 2015/05/08
 Report #: R3419942
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B579909

Received: 2015/05/01, 11:15

Sample Matrix: Water
 # Samples Received: 5

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Reference |
|--------------------------------------|-----------------|---------------------------|--------------------------|--------------------------|----------------------|
| Carbonate, Bicarbonate and Hydroxide | 5 | N/A | 2015/05/06 | N/A | SM 22 4500-CO2 D |
| Alkalinity | 5 | N/A | 2015/05/05 | ATL SOP 00013 | EPA 310.2 R1974 m |
| Chloride | 5 | N/A | 2015/05/06 | ATL SOP 00014 | SM 22 4500-Cl- E m |
| Colour | 5 | N/A | 2015/05/06 | ATL SOP 00020 | SM 22 2120C m |
| Conductance - water | 5 | N/A | 2015/05/05 | ATL SOP 00004 | SM 22 2510B m |
| Hardness (calculated as CaCO3) | 5 | N/A | 2015/05/07 | ATL SOP 00048 | SM 22 2340 B |
| Mercury - Total (CVAA,LL) | 4 | 2015/05/07 | 2015/05/07 | ATL SOP 00026 | EPA 245.1 R3 m |
| Metals Water Total MS (1) | 5 | 2015/05/05 | 2015/05/06 | ATL SOP 00058 | EPA 6020A R1 m |
| Ion Balance (% Difference) | 5 | N/A | 2015/05/07 | | Auto Calc. |
| Anion and Cation Sum | 5 | N/A | 2015/05/07 | | Auto Calc. |
| Nitrogen Ammonia - water | 5 | N/A | 2015/05/05 | ATL SOP 00015 | EPA 350.1 R2 m |
| Nitrogen - Nitrate + Nitrite | 5 | N/A | 2015/05/07 | ATL SOP 00016 | USGS SOPINCF0452.2 m |
| Nitrogen - Nitrite | 5 | N/A | 2015/05/05 | ATL SOP 00017 | SM 22 4500-NO2- B m |
| Nitrogen - Nitrate (as N) | 5 | N/A | 2015/05/07 | ATL SOP 00018 | ASTM D3867 |
| pH (2) | 5 | N/A | 2015/05/05 | ATL SOP 00003 | SM 22 4500-H+ B m |
| Phosphorus - ortho | 5 | N/A | 2015/05/06 | ATL SOP 00021 | EPA 365.2 m |
| Sat. pH and Langelier Index (@ 20C) | 5 | N/A | 2015/05/07 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 5 | N/A | 2015/05/07 | ATL SOP 00049 | Auto Calc. |
| Reactive Silica | 5 | N/A | 2015/05/06 | ATL SOP 00022 | EPA 366.0 m |
| Sulphate | 5 | N/A | 2015/05/06 | ATL SOP 00023 | EPA 375.4 R1978 m |
| Total Dissolved Solids (TDS calc) | 5 | N/A | 2015/05/07 | | Auto Calc. |
| Organic carbon - Total (TOC) (3) | 1 | N/A | 2015/05/06 | ATL SOP 00037 | SM 22 5310C m |
| Organic carbon - Total (TOC) (3) | 4 | N/A | 2015/05/07 | ATL SOP 00037 | SM 22 5310C m |
| Turbidity | 1 | N/A | 2015/05/06 | ATL SOP 00011 | EPA 180.1 R2 m |
| Turbidity | 4 | N/A | 2015/05/08 | ATL SOP 00011 | EPA 180.1 R2 m |

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) New RDLs in effect due to release of NS Contaminated Sites Regulations. Reduced RDL based on MDL study performance. Low level analytical run checks being implemented.
- (2) The APHA Standard Method require 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.

Your P.O. #: 20-019340
Your Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your C.O.C. #: B 100289

Attention: Jeff Parks

Conestoga-Rovers and Associates Ltd
45 Akerley Blvd
Dartmouth, NS
B3B 1J7

Report Date: 2015/05/08
Report #: R3419942
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B579909
Received: 2015/05/01, 11:15

Encryption Key



Rachael Mansfield
08 May 2015 16:39:28 -03:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Michelle Hill, Project Manager
Email: MHill@maxxam.ca
Phone# (902)420-0203 Ext:289

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B579909
Report Date: 2015/05/08

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | AEZ157 | | AEZ158 | AEZ159 | | | AEZ160 | | |
|-------------------------------------|-------|------------|----------|------------|------------|-------|----------|------------|-------|----------|
| Sampling Date | | 2015/04/29 | | 2015/04/29 | 2015/04/29 | | | 2015/04/29 | | |
| COC Number | | B 100289 | | B 100289 | B 100289 | | | B 100289 | | |
| | Units | SW-1 | QC Batch | SW-2A | SW-4A | RDL | QC Batch | SW-5 | RDL | QC Batch |
| Calculated Parameters | | | | | | | | | | |
| Anion Sum | me/L | 0.0600 | 4006172 | 0.0500 | 0.0400 | N/A | 4006172 | 0.100 | N/A | 4006172 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 4006170 | <1.0 | <1.0 | 1.0 | 4006170 | <1.0 | 1.0 | 4006170 |
| Calculated TDS | mg/L | 6.0 | 4006175 | 6.0 | 6.0 | 1.0 | 4006175 | 12 | 1.0 | 4006175 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 4006170 | <1.0 | <1.0 | 1.0 | 4006170 | <1.0 | 1.0 | 4006170 |
| Cation Sum | me/L | 0.110 | 4006172 | 0.110 | 0.120 | N/A | 4006172 | 0.240 | N/A | 4006172 |
| Hardness (CaCO3) | mg/L | 1.6 | 4006001 | 1.4 | 1.6 | 1.0 | 4006001 | 7.3 | 1.0 | 4006001 |
| Ion Balance (% Difference) | % | 29.4 | 4006171 | 37.5 | 50.0 | N/A | 4006171 | 41.2 | N/A | 4006171 |
| Langelier Index (@ 20C) | N/A | NC | 4006173 | NC | NC | | 4006173 | NC | | 4006173 |
| Langelier Index (@ 4C) | N/A | NC | 4006174 | NC | NC | | 4006174 | NC | | 4006174 |
| Nitrate (N) | mg/L | 0.052 | 4005906 | <0.050 | <0.050 | 0.050 | 4005906 | 0.087 | 0.050 | 4005906 |
| Saturation pH (@ 20C) | N/A | NC | 4006173 | NC | NC | | 4006173 | NC | | 4006173 |
| Saturation pH (@ 4C) | N/A | NC | 4006174 | NC | NC | | 4006174 | NC | | 4006174 |
| Inorganics | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | <5.0 | 4009444 | <5.0 | <5.0 | 5.0 | 4009444 | <5.0 | 5.0 | 4009444 |
| Dissolved Chloride (Cl) | mg/L | 1.9 | 4009446 | 1.6 | 1.3 | 1.0 | 4009446 | 1.5 | 1.0 | 4009446 |
| Colour | TCU | 85 | 4009455 | 96 | 100 | 25 | 4009455 | 28 | 5.0 | 4009455 |
| Nitrate + Nitrite | mg/L | 0.052 | 4009464 | <0.050 | <0.050 | 0.050 | 4009464 | 0.087 | 0.050 | 4009464 |
| Nitrite (N) | mg/L | <0.010 | 4009467 | <0.010 | <0.010 | 0.010 | 4009467 | <0.010 | 0.010 | 4009467 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 4009585 | <0.050 | 0.073 | 0.050 | 4009585 | <0.050 | 0.050 | 4009585 |
| Total Organic Carbon (C) | mg/L | 6.3 | 4011581 | 5.5 | 5.5 | 0.50 | 4013585 | 3.5 | 0.50 | 4013585 |
| Orthophosphate (P) | mg/L | <0.010 | 4009456 | <0.010 | <0.010 | 0.010 | 4009456 | <0.010 | 0.010 | 4009456 |
| pH | pH | 5.19 | 4009555 | 5.08 | 5.14 | N/A | 4009555 | 6.14 | N/A | 4009711 |
| Reactive Silica (SiO2) | mg/L | 1.9 | 4009454 | 1.9 | 2.5 | 0.50 | 4009454 | 2.3 | 0.50 | 4009454 |
| Dissolved Sulphate (SO4) | mg/L | <2.0 | 4009451 | <2.0 | <2.0 | 2.0 | 4009451 | 2.5 | 2.0 | 4009451 |
| Turbidity | NTU | 0.76 | 4015745 | 0.29 | 0.38 | 0.10 | 4015745 | 0.69 | 0.10 | 4012141 |
| Conductivity | uS/cm | 14 | 4009558 | 13 | 15 | 1.0 | 4009558 | 28 | 1.0 | 4009713 |
| RDL = Reportable Detection Limit | | | | | | | | | | |
| QC Batch = Quality Control Batch | | | | | | | | | | |
| N/A = Not Applicable | | | | | | | | | | |

Maxxam Job #: B579909
Report Date: 2015/05/08

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | AEZ160 | | | AEZ161 | | |
|------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------|-------|----------|------------|-------|----------|
| Sampling Date | | 2015/04/29 | | | 2015/04/29 | | |
| COC Number | | B 100289 | | | B 100289 | | |
| | Units | SW-5 Lab-Dup | RDL | QC Batch | SW-9 | RDL | QC Batch |
| Calculated Parameters | | | | | | | |
| Anion Sum | me/L | | N/A | 4006172 | 0.100 | N/A | 4006172 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | | 1.0 | 4006170 | <1.0 | 1.0 | 4006170 |
| Calculated TDS | mg/L | | 1.0 | 4006175 | 9.0 | 1.0 | 4006175 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | | 1.0 | 4006170 | <1.0 | 1.0 | 4006170 |
| Cation Sum | me/L | | N/A | 4006172 | 0.180 | N/A | 4006172 |
| Hardness (CaCO3) | mg/L | | 1.0 | 4006001 | 2.8 | 1.0 | 4006001 |
| Ion Balance (% Difference) | % | | N/A | 4006171 | 28.6 | N/A | 4006171 |
| Langelier Index (@ 20C) | N/A | | | 4006173 | NC | | 4006173 |
| Langelier Index (@ 4C) | N/A | | | 4006174 | NC | | 4006174 |
| Nitrate (N) | mg/L | | 0.050 | 4005906 | <0.050 | 0.050 | 4005906 |
| Saturation pH (@ 20C) | N/A | | | 4006173 | NC | | 4006173 |
| Saturation pH (@ 4C) | N/A | | | 4006174 | NC | | 4006174 |
| Inorganics | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | | 5.0 | 4009444 | <5.0 | 5.0 | 4009444 |
| Dissolved Chloride (Cl) | mg/L | | 1.0 | 4009446 | 3.4 | 1.0 | 4009446 |
| Colour | TCU | | 5.0 | 4009455 | 82 | 25 | 4009455 |
| Nitrate + Nitrite | mg/L | | 0.050 | 4009464 | <0.050 | 0.050 | 4009464 |
| Nitrite (N) | mg/L | | 0.010 | 4009467 | <0.010 | 0.010 | 4009467 |
| Nitrogen (Ammonia Nitrogen) | mg/L | | 0.050 | 4009585 | 0.082 | 0.050 | 4009585 |
| Total Organic Carbon (C) | mg/L | | 0.50 | 4013585 | 6.1 | 0.50 | 4013585 |
| Orthophosphate (P) | mg/L | | 0.010 | 4009456 | <0.010 | 0.010 | 4009456 |
| pH | pH | 6.16 | N/A | 4009711 | 5.77 | N/A | 4009555 |
| Reactive Silica (SiO2) | mg/L | | 0.50 | 4009454 | 1.6 | 0.50 | 4009454 |
| Dissolved Sulphate (SO4) | mg/L | | 2.0 | 4009451 | <2.0 | 2.0 | 4009451 |
| Turbidity | NTU | 0.76 | 0.10 | 4012141 | 1.0 | 0.10 | 4015745 |
| Conductivity | uS/cm | 27 | 1.0 | 4009713 | 19 | 1.0 | 4009558 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable | | | | | | | |

Maxxam Job #: B579909
Report Date: 2015/05/08

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

MERCURY BY COLD VAPOUR AA (WATER)

| Maxxam ID | | AEZ157 | AEZ158 | AEZ159 | AEZ160 | | |
|----------------------------------|--------------|-------------|--------------|--------------|-------------|------------|-----------------|
| Sampling Date | | 2015/04/29 | 2015/04/29 | 2015/04/29 | 2015/04/29 | | |
| COC Number | | B 100289 | B 100289 | B 100289 | B 100289 | | |
| | Units | SW-1 | SW-2A | SW-4A | SW-5 | RDL | QC Batch |
| Metals | | | | | | | |
| Total Mercury (Hg) | ug/L | <0.013 | <0.013 | <0.013 | <0.013 | 0.013 | 4013354 |
| RDL = Reportable Detection Limit | | | | | | | |
| QC Batch = Quality Control Batch | | | | | | | |

Maxxam Job #: B579909
Report Date: 2015/05/08

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | AEZ157 | AEZ158 | AEZ159 | AEZ160 | AEZ161 | | |
|----------------------------------|-------|------------|------------|------------|------------|------------|-------|----------|
| Sampling Date | | 2015/04/29 | 2015/04/29 | 2015/04/29 | 2015/04/29 | 2015/04/29 | | |
| COC Number | | B 100289 | B 100289 | B 100289 | B 100289 | B 100289 | | |
| | Units | SW-1 | SW-2A | SW-4A | SW-5 | SW-9 | RDL | QC Batch |
| Metals | | | | | | | | |
| Total Aluminum (Al) | ug/L | 140 | 140 | 130 | 98 | 160 | 5.0 | 4007953 |
| Total Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4007953 |
| Total Arsenic (As) | ug/L | <1.0 | <1.0 | 1.1 | 15 | <1.0 | 1.0 | 4007953 |
| Total Barium (Ba) | ug/L | 1.7 | 1.6 | 1.7 | 4.6 | 2.1 | 1.0 | 4007953 |
| Total Beryllium (Be) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4007953 |
| Total Bismuth (Bi) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4007953 |
| Total Boron (B) | ug/L | <50 | <50 | <50 | <50 | <50 | 50 | 4007953 |
| Total Cadmium (Cd) | ug/L | 0.012 | <0.010 | 0.012 | 0.018 | 0.014 | 0.010 | 4007953 |
| Total Calcium (Ca) | ug/L | 350 | 290 | 350 | 2200 | 640 | 100 | 4007953 |
| Total Chromium (Cr) | ug/L | <1.0 | 1.2 | <1.0 | <1.0 | <1.0 | 1.0 | 4007953 |
| Total Cobalt (Co) | ug/L | <0.40 | <0.40 | <0.40 | 0.61 | <0.40 | 0.40 | 4007953 |
| Total Copper (Cu) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4007953 |
| Total Iron (Fe) | ug/L | 240 | 260 | 160 | 560 | 220 | 50 | 4007953 |
| Total Lead (Pb) | ug/L | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | 4007953 |
| Total Magnesium (Mg) | ug/L | 170 | 160 | 170 | 430 | 300 | 100 | 4007953 |
| Total Manganese (Mn) | ug/L | 27 | 25 | 20 | 200 | 36 | 2.0 | 4007953 |
| Total Molybdenum (Mo) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4007953 |
| Total Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4007953 |
| Total Phosphorus (P) | ug/L | <100 | <100 | <100 | <100 | <100 | 100 | 4007953 |
| Total Potassium (K) | ug/L | 330 | 330 | 290 | 480 | 300 | 100 | 4007953 |
| Total Selenium (Se) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4007953 |
| Total Silver (Ag) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 4007953 |
| Total Sodium (Na) | ug/L | 1200 | 1200 | 1300 | 1400 | 2400 | 100 | 4007953 |
| Total Strontium (Sr) | ug/L | 2.9 | 3.0 | 2.8 | 11 | 2.8 | 2.0 | 4007953 |
| Total Thallium (Tl) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 4007953 |
| Total Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4007953 |
| Total Titanium (Ti) | ug/L | 3.2 | 3.2 | 2.4 | <2.0 | 3.1 | 2.0 | 4007953 |
| Total Uranium (U) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 4007953 |
| Total Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4007953 |
| Total Zinc (Zn) | ug/L | <5.0 | <5.0 | <5.0 | 5.4 | <5.0 | 5.0 | 4007953 |
| RDL = Reportable Detection Limit | | | | | | | | |
| QC Batch = Quality Control Batch | | | | | | | | |

Maxxam Job #: B579909
Report Date: 2015/05/08

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

GENERAL COMMENTS

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

| | |
|-----------|-------|
| Package 1 | 1.7°C |
|-----------|-------|

Sample AEZ157-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AEZ158-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AEZ159-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AEZ160-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AEZ161-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Results relate only to the items tested.

Maxxam Job #: B579909
Report Date: 2015/05/08

QUALITY ASSURANCE REPORT

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05

Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 4007953 | Total Aluminum (Al) | 2015/05/06 | 100 | 80 - 120 | 100 | 80 - 120 | <5.0 | ug/L | 1.7 (1) | 20 | | |
| 4007953 | Total Antimony (Sb) | 2015/05/06 | 109 | 80 - 120 | 108 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Arsenic (As) | 2015/05/06 | 98 | 80 - 120 | 99 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Barium (Ba) | 2015/05/06 | 103 | 80 - 120 | 102 | 80 - 120 | <1.0 | ug/L | 0.78 (1) | 20 | | |
| 4007953 | Total Beryllium (Be) | 2015/05/06 | 104 | 80 - 120 | 103 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Bismuth (Bi) | 2015/05/06 | 107 | 80 - 120 | 105 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Boron (B) | 2015/05/06 | 108 | 80 - 120 | 103 | 80 - 120 | <50 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Cadmium (Cd) | 2015/05/06 | 103 | 80 - 120 | 102 | 80 - 120 | <0.010 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Calcium (Ca) | 2015/05/06 | 98 | 80 - 120 | 100 | 80 - 120 | <100 | ug/L | 1.1 (1) | 20 | | |
| 4007953 | Total Chromium (Cr) | 2015/05/06 | 97 | 80 - 120 | 98 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Cobalt (Co) | 2015/05/06 | 97 | 80 - 120 | 98 | 80 - 120 | <0.40 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Copper (Cu) | 2015/05/06 | 100 | 80 - 120 | 96 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Iron (Fe) | 2015/05/06 | 102 | 80 - 120 | 104 | 80 - 120 | <50 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Lead (Pb) | 2015/05/06 | 102 | 80 - 120 | 100 | 80 - 120 | <0.50 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Magnesium (Mg) | 2015/05/06 | 102 | 80 - 120 | 103 | 80 - 120 | <100 | ug/L | 2.4 (1) | 20 | | |
| 4007953 | Total Manganese (Mn) | 2015/05/06 | 103 | 80 - 120 | 103 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Molybdenum (Mo) | 2015/05/06 | 103 | 80 - 120 | 102 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Nickel (Ni) | 2015/05/06 | 97 | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Phosphorus (P) | 2015/05/06 | 107 | 80 - 120 | 106 | 80 - 120 | <100 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Potassium (K) | 2015/05/06 | 105 | 80 - 120 | 105 | 80 - 120 | <100 | ug/L | 10 (1) | 20 | | |
| 4007953 | Total Selenium (Se) | 2015/05/06 | 98 | 80 - 120 | 98 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Silver (Ag) | 2015/05/06 | 105 | 80 - 120 | 105 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Sodium (Na) | 2015/05/06 | 103 | 80 - 120 | 104 | 80 - 120 | <100 | ug/L | 0.77 (1) | 20 | | |
| 4007953 | Total Strontium (Sr) | 2015/05/06 | 103 | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | 1.0 (1) | 20 | | |
| 4007953 | Total Thallium (Tl) | 2015/05/06 | 107 | 80 - 120 | 104 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Tin (Sn) | 2015/05/06 | 107 | 80 - 120 | 109 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Titanium (Ti) | 2015/05/06 | 100 | 80 - 120 | 101 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Uranium (U) | 2015/05/06 | 108 | 80 - 120 | 106 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Vanadium (V) | 2015/05/06 | 100 | 80 - 120 | 102 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4007953 | Total Zinc (Zn) | 2015/05/06 | 98 | 80 - 120 | 100 | 80 - 120 | <5.0 | ug/L | NC (1) | 20 | | |
| 4009444 | Total Alkalinity (Total as CaCO3) | 2015/05/05 | 98 | 80 - 120 | 101 | 80 - 120 | <5.0 | mg/L | NC (1) | 25 | | |
| 4009446 | Dissolved Chloride (Cl) | 2015/05/06 | 111 | 80 - 120 | 107 | 80 - 120 | <1.0 | mg/L | 0.56 (1) | 25 | 109 | 80 - 120 |

Maxxam Job #: B579909
Report Date: 2015/05/08

QUALITY ASSURANCE REPORT(CONT'D)

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|------------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 4009451 | Dissolved Sulphate (SO4) | 2015/05/06 | 85 | 80 - 120 | 91 | 80 - 120 | <2.0 | mg/L | NC (1) | 25 | | |
| 4009454 | Reactive Silica (SiO2) | 2015/05/06 | NC | 80 - 120 | 96 | 80 - 120 | <0.50 | mg/L | 2.8 (1) | 25 | | |
| 4009455 | Colour | 2015/05/06 | | | 108 | 80 - 120 | <5.0 | TCU | NC (1) | 25 | | |
| 4009456 | Orthophosphate (P) | 2015/05/06 | 99 | 80 - 120 | 100 | 80 - 120 | <0.010 | mg/L | NC (1) | 25 | | |
| 4009464 | Nitrate + Nitrite | 2015/05/07 | 100 | 80 - 120 | 102 | 80 - 120 | <0.050 | mg/L | NC (1) | 25 | | |
| 4009467 | Nitrite (N) | 2015/05/05 | 101 | 80 - 120 | 100 | 80 - 120 | <0.010 | mg/L | NC (1) | 25 | | |
| 4009555 | pH | 2015/05/05 | | | | | | | 0.13 (1) | N/A | 100 | 97 - 103 |
| 4009558 | Conductivity | 2015/05/05 | | | 107 | 80 - 120 | 1.8, RDL=1.0 | uS/cm | 0.0010 (1) | 25 | | |
| 4009585 | Nitrogen (Ammonia Nitrogen) | 2015/05/05 | 87 | 80 - 120 | 100 | 80 - 120 | <0.050 | mg/L | NC (1) | 25 | | |
| 4009711 | pH | 2015/05/05 | | | | | | | 0.33 (2) | N/A | 100 | 97 - 103 |
| 4009713 | Conductivity | 2015/05/05 | | | 101 | 80 - 120 | 1.0, RDL=1.0 | uS/cm | 1.8 (2) | 25 | | |
| 4011581 | Total Organic Carbon (C) | 2015/05/06 | 105 | 80 - 120 | 103 | 80 - 120 | <0.50 | mg/L | NC (1) | 20 | | |
| 4012141 | Turbidity | 2015/05/06 | | | | | <0.10 | NTU | 9.7 (2) | 25 | 99 | 80 - 120 |
| 4013354 | Total Mercury (Hg) | 2015/05/07 | 101 | 80 - 120 | 97 | 80 - 120 | <0.013 | ug/L | NC (1) | 20 | | |
| 4013585 | Total Organic Carbon (C) | 2015/05/07 | 98 | 80 - 120 | 99 | 80 - 120 | <0.50 | mg/L | NC (1) | 20 | | |
| 4015745 | Turbidity | 2015/05/08 | | | | | <0.10 | NTU | NC (1) | 25 | 103 | 80 - 120 |

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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

(1) Duplicate Parent ID

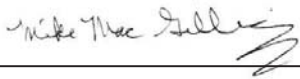
(2) Duplicate Parent ID [AEZ160-01]

Maxxam Job #: B579909
Report Date: 2015/05/08

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Mike MacGillivray, Scientific Specialist (Inorganics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



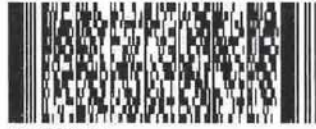
200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
 49 Elizabeth Ave., St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
 90 Esplanade Sydney, NS B1P 1A1 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
 www.maxxamanalytics.com E-mail: Clientservicesbedford@maxxamanalytics.com

MAXXAM Chain of Custody Record

COC #: **B 100289** Page 1 of 1

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------|--|------------------------------------------------------------------------------------------------------------------------|--|---------|-------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------|---------|-----------------------------------------------------------------|------------------------|-----------------------------------------------------------|----------------------------|---------|------------------|--------------------------------|-----------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------------|----------------------------------------------|-------------------|-------|--------------------------------|---|
| This column for lab use only: | | INVOICE INFORMATION: | | | | REPORT INFORMATION (if differs from invoice): | | | | PO # 20-019340 | | TURNAROUND TIME | | | | | | | | | | | | | | | |
| Client Code | | Company Name: <u>CRA</u> | | | | Company Name: | | | | Project # / Phase # <u>088664-05</u> | | Standard <input checked="" type="checkbox"/> | | | | | | | | | | | | | | | |
| Maxxam Job # <u>B579909</u> | | Contact Name: <u>Jeff Parks</u> | | | | Contact Name: | | | | Project Name / Site Location <u>Atlantic Gold-Beaver Dam</u> | | 10 day <input type="checkbox"/> | | | | | | | | | | | | | | | |
| | | Address: <u>Dartmouth, NS</u> | | | | Address: | | | | Quote <u>14-161KG</u> | | If RUSH Specify Date: | | | | | | | | | | | | | | | |
| | | Postal Code: <u>B3B 1J7</u> | | | | Postal Code: | | | | Site # | | Pre-schedule rush work | | | | | | | | | | | | | | | |
| Cooler ID | | Email: <u>j.parks@croworld.com</u> | | | | Email: | | | | Task Order # | | Charge for # Jars used but not submitted | | | | | | | | | | | | | | | |
| Seal Present | | Ph: <u>468-1248</u> Fax: <u>468-2207</u> | | | | Ph: | | | | Sampled by <u>AF + DN</u> | | - | | | | | | | | | | | | | | | |
| Seal Intact | | Guideline Requirements / Detection Limits / Special Instructions | | | | Guideline Requirements / Detection Limits / Special Instructions | | | | | | | | | | | | | | | | | | | | | |
| Temp 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Temp 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Temp 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average Temp | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Integrity | | Integrity / Checklist by | | | | Integrity / Checklist by | | | | | | | | | | | | | | | | | | | | | |
| YES <input type="checkbox"/> | | NO <input checked="" type="checkbox"/> <u>me</u> | | | | NO <input checked="" type="checkbox"/> <u>me</u> | | | | | | | | | | | | | | | | | | | | | |
| Labelled by | | Location / Bin # | | | | Location / Bin # | | | | | | | | | | | | | | | | | | | | | |
| | | *Specify Matrix: Surface/Salt/Ground/Tapwater/Sewage/Effluent/ Potable/NonPotable/Tissue/Soil/Sludge/Metal/Seawater | | | | *Specify Matrix: Surface/Salt/Ground/Tapwater/Sewage/Effluent/ Potable/NonPotable/Tissue/Soil/Sludge/Metal/Seawater | | | | | | | | | | | | | | | | | | | | | |
| | | Field Sample Identification | | Matrix* | Date/Time Sampled | # & type of bottles | Field Filtered & Preserved | Lab Filtration Required | RCAP-30 | Choose for Diss Metals | Choose for Diss Metals | Total Digest Default Method for well water, surface water | Dissolved for ground water | Mercury | Metals & Mercury | Metals Available Digest Method | Metals Total Digest - for Ocean sediments (HNO3/HF/HClO4) | Mercury Low level by Cold Vapour AA | Selenium (low level) Reg'd for CCME Residential, Parklands, Agricultural | Hot Water soluble Boron (required for CCME-Agricultural) | RBCA Hydrocarbons (BTEX, C6-C9) | Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX, C5-C9 | NS Potable Water BTEX, YPH, Low level T.E.H. | TPH Fractionation | PAH's | PAH's with Acridine, Quinoline | |
| | | 1 SW-1 | | SW | 29 Apr 15 | 50, 100, 200 ml | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | 2 SW-2A | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | 3 SW-4A | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | 4 SW-5 | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | 5 SW-9 | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | | 6 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 7 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 9 | | | | | | | | | | | | | | | | | | | | | | | | | |

2015 MAY 1 12:44



B579909

| | | | | | | | |
|-------------------------------------------------------------|--|---------------------------|------|-------------------------------------------------------------------------------------|--|-----------------------------|------|
| RELINQUISHED BY: (Signature/Print) <u>Atacey A Facey</u> | | Date <u>1 May 2015</u> | Time | RECEIVED BY: (Signature/Print) <u>JRD Joe Doyle</u> <u>SBerwick Lee Bostk</u> | | Date <u>15 MAY 11:15</u> | Time |
|-------------------------------------------------------------|--|---------------------------|------|-------------------------------------------------------------------------------------|--|-----------------------------|------|

White: Maxxam Yellow: Mail Pink: Client ATL FCD 00149 / Revision 10

Your P.O. #: 20-019340
 Your Project #: 088664-05
 Site Location: ATLANTIC GOLD-BEAVER DAM
 Your C.O.C. #: B 100296

Attention: Jeff Parks

Conestoga-Rovers and Associates Ltd
 45 Akerley Blvd
 Dartmouth, NS
 B3B 1J7

Report Date: 2015/06/05
 Report #: R3454128
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5A1423
Received: 2015/05/29, 08:37

Sample Matrix: Water
 # Samples Received: 8

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Reference |
|--------------------------------------|-----------------|---------------------------|--------------------------|--------------------------|----------------------|
| Carbonate, Bicarbonate and Hydroxide | 8 | N/A | 2015/06/03 | N/A | SM 22 4500-CO2 D |
| Alkalinity | 8 | N/A | 2015/06/03 | ATL SOP 00013 | EPA 310.2 R1974 m |
| Chloride | 8 | N/A | 2015/06/03 | ATL SOP 00014 | SM 22 4500-Cl- E m |
| Colour | 8 | N/A | 2015/06/03 | ATL SOP 00020 | SM 22 2120C m |
| Conductance - water | 8 | N/A | 2015/06/03 | ATL SOP 00004 | SM 22 2510B m |
| Hardness (calculated as CaCO3) | 1 | N/A | 2015/06/03 | ATL SOP 00048 | SM 22 2340 B |
| Hardness (calculated as CaCO3) | 7 | N/A | 2015/06/05 | ATL SOP 00048 | SM 22 2340 B |
| Mercury - Total (CVAA,LL) | 8 | 2015/06/01 | 2015/06/02 | ATL SOP 00026 | EPA 245.1 R3 m |
| Metals Water Total MS | 1 | 2015/06/02 | 2015/06/02 | ATL SOP 00058 | EPA 6020A R1 m |
| Metals Water Total MS | 7 | 2015/06/03 | 2015/06/04 | ATL SOP 00058 | EPA 6020A R1 m |
| Ion Balance (% Difference) | 8 | N/A | 2015/06/05 | | Auto Calc. |
| Anion and Cation Sum | 1 | N/A | 2015/06/03 | | Auto Calc. |
| Anion and Cation Sum | 7 | N/A | 2015/06/05 | | Auto Calc. |
| Nitrogen Ammonia - water | 8 | N/A | 2015/06/02 | ATL SOP 00015 | EPA 350.1 R2 m |
| Nitrogen - Nitrate + Nitrite | 8 | N/A | 2015/06/04 | ATL SOP 00016 | USGS SOPINCF0452.2 m |
| Nitrogen - Nitrite | 8 | N/A | 2015/06/03 | ATL SOP 00017 | SM 22 4500-NO2- B m |
| Nitrogen - Nitrate (as N) | 8 | N/A | 2015/06/05 | ATL SOP 00018 | ASTM D3867 |
| pH (1) | 8 | N/A | 2015/06/03 | ATL SOP 00003 | SM 22 4500-H+ B m |
| Phosphorus - ortho | 8 | N/A | 2015/06/03 | ATL SOP 00021 | EPA 365.2 m |
| Sat. pH and Langelier Index (@ 20C) | 1 | N/A | 2015/06/04 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 20C) | 7 | N/A | 2015/06/05 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 1 | N/A | 2015/06/04 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 7 | N/A | 2015/06/05 | ATL SOP 00049 | Auto Calc. |
| Reactive Silica | 8 | N/A | 2015/06/03 | ATL SOP 00022 | EPA 366.0 m |
| Sulphate | 8 | N/A | 2015/06/04 | ATL SOP 00023 | EPA 375.4 R1978 m |
| Total Dissolved Solids (TDS calc) | 8 | N/A | 2015/06/05 | | Auto Calc. |
| Organic carbon - Total (TOC) (2) | 8 | N/A | 2015/06/02 | ATL SOP 00037 | SM 22 5310C m |
| Turbidity | 8 | N/A | 2015/06/03 | ATL SOP 00011 | EPA 180.1 R2 m |

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.

Your P.O. #: 20-019340
Your Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your C.O.C. #: B 100296

Attention: Jeff Parks

Conestoga-Rovers and Associates Ltd
45 Akerley Blvd
Dartmouth, NS
B3B 1J7

Report Date: 2015/06/05
Report #: R3454128
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5A1423

Received: 2015/05/29, 08:37

- (1) The APHA Standard Method require 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



Rachael Mansfield

05 Jun 2015 15:49:54 -03:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Michelle Hill, Project Manager

Email: MHill@maxxam.ca

Phone# (902)420-0203 Ext:289

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B5A1423
Report Date: 2015/06/05

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | AIY460 | AIY461 | AIY462 | AIY462 | | AIY463 | | |
|---------------|-------|------------|------------|------------|----------------|----------|------------|-----|----------|
| Sampling Date | | 2015/05/28 | 2015/05/28 | 2015/05/28 | 2015/05/28 | | 2015/05/28 | | |
| COC Number | | B 100296 | B 100296 | B 100296 | B 100296 | | B 100296 | | |
| | Units | SW-1 | SW-2A | SW-2AD | SW-2AD Lab-Dup | QC Batch | SW-4A | RDL | QC Batch |

| Calculated Parameters | | | | | | | | | |
|-------------------------------------|------|--------|--------|--------|--|---------|--------|-------|---------|
| Anion Sum | me/L | 0.0900 | 0.0900 | 0.0900 | | 4043516 | 0.110 | N/A | 4043516 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | <1.0 | <1.0 | | 4043514 | <1.0 | 1.0 | 4043514 |
| Calculated TDS | mg/L | 8.0 | 7.0 | 7.0 | | 4043520 | 9.0 | 1.0 | 4043520 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | <1.0 | <1.0 | | 4043514 | <1.0 | 1.0 | 4043514 |
| Cation Sum | me/L | 0.160 | 0.140 | 0.140 | | 4043516 | 0.180 | N/A | 4043516 |
| Hardness (CaCO3) | mg/L | 2.6 | 2.1 | 2.0 | | 4043502 | 3.1 | 1.0 | 4043502 |
| Ion Balance (% Difference) | % | 28.0 | 21.7 | 21.7 | | 4043515 | 24.1 | N/A | 4043515 |
| Langelier Index (@ 20C) | N/A | NC | NC | NC | | 4043518 | NC | | 4043518 |
| Langelier Index (@ 4C) | N/A | NC | NC | NC | | 4043519 | NC | | 4043519 |
| Nitrate (N) | mg/L | <0.050 | <0.050 | <0.050 | | 4042583 | <0.050 | 0.050 | 4042583 |
| Saturation pH (@ 20C) | N/A | NC | NC | NC | | 4043518 | NC | | 4043518 |
| Saturation pH (@ 4C) | N/A | NC | NC | NC | | 4043519 | NC | | 4043519 |

| Inorganics | | | | | | | | | |
|-----------------------------------|-------|--------|--------|--------|--------|---------|--------|-------|---------|
| Total Alkalinity (Total as CaCO3) | mg/L | <5.0 | <5.0 | <5.0 | <5.0 | 4047788 | <5.0 | 5.0 | 4047788 |
| Dissolved Chloride (Cl) | mg/L | 3.1 | 3.1 | 3.1 | 3.0 | 4047794 | 3.8 | 1.0 | 4047794 |
| Colour | TCU | 110 | 120 | 120 | 120 | 4047803 | 130 | 25 | 4047803 |
| Nitrate + Nitrite | mg/L | <0.050 | <0.050 | <0.050 | <0.050 | 4047812 | <0.050 | 0.050 | 4047812 |
| Nitrite (N) | mg/L | <0.010 | <0.010 | <0.010 | <0.010 | 4047814 | <0.010 | 0.010 | 4047814 |
| Nitrogen (Ammonia Nitrogen) | mg/L | 0.10 | 0.052 | <0.050 | | 4047272 | 0.092 | 0.050 | 4047276 |
| Total Organic Carbon (C) | mg/L | 7.5 | 7.9 | 8.1 | | 4047061 | 9.7 | 0.50 | 4047063 |
| Orthophosphate (P) | mg/L | <0.010 | <0.010 | <0.010 | <0.010 | 4047807 | <0.010 | 0.010 | 4047807 |
| pH | pH | 5.85 | 5.59 | 5.36 | | 4048933 | 5.74 | N/A | 4048933 |
| Reactive Silica (SiO2) | mg/L | 1.1 | 1.1 | 1.1 | 1.1 | 4047800 | 1.5 | 0.50 | 4047800 |
| Dissolved Sulphate (SO4) | mg/L | <2.0 | <2.0 | <2.0 | <2.0 | 4047798 | <2.0 | 2.0 | 4047798 |
| Turbidity | NTU | 1.1 | 1.5 | 1.4 | 1.3 | 4049776 | 1.4 | 0.10 | 4049776 |
| Conductivity | uS/cm | 16 | 16 | 15 | | 4048936 | 18 | 1.0 | 4048936 |

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

Maxxam Job #: B5A1423
Report Date: 2015/06/05

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | AIY464 | | | AIY465 | | AIY466 | AIY466 | | |
|---------------|-------|------------|-----|----------|------------|----------|------------|--------------|-----|----------|
| Sampling Date | | 2015/05/28 | | | 2015/05/28 | | 2015/05/28 | 2015/05/28 | | |
| COC Number | | B 100296 | | | B 100296 | | B 100296 | B 100296 | | |
| | Units | SW-5 | RDL | QC Batch | SW-6A | QC Batch | SW-9 | SW-9 Lab-Dup | RDL | QC Batch |

| Calculated Parameters | | | | | | | | | | |
|--------------------------------------------------|-------|--------|-------|---------|--------|---------|--------|-----|-------|---------|
| Anion Sum | me/L | 0.360 | N/A | 4043516 | 0.0700 | 4043516 | 0.170 | | N/A | 4043516 |
| Bicarb. Alkalinity (calc. as CaCO ₃) | mg/L | 7.8 | 1.0 | 4043514 | <1.0 | 4043514 | <1.0 | | 1.0 | 4043514 |
| Calculated TDS | mg/L | 21 | 1.0 | 4043520 | 7.0 | 4043520 | 13 | | 1.0 | 4043520 |
| Carb. Alkalinity (calc. as CaCO ₃) | mg/L | <1.0 | 1.0 | 4043514 | <1.0 | 4043514 | <1.0 | | 1.0 | 4043514 |
| Cation Sum | me/L | 0.350 | N/A | 4043516 | 0.140 | 4043516 | 0.260 | | N/A | 4043516 |
| Hardness (CaCO ₃) | mg/L | 11 | 1.0 | 4043502 | 2.5 | 4043502 | 4.7 | | 1.0 | 4043502 |
| Ion Balance (% Difference) | % | 1.41 | N/A | 4043515 | 33.3 | 4043515 | 20.9 | | N/A | 4043515 |
| Langelier Index (@ 20C) | N/A | -3.22 | | 4043518 | NC | 4043518 | NC | | | 4043518 |
| Langelier Index (@ 4C) | N/A | -3.48 | | 4043519 | NC | 4043519 | NC | | | 4043519 |
| Nitrate (N) | mg/L | <0.050 | 0.050 | 4042583 | <0.050 | 4042583 | <0.050 | | 0.050 | 4043600 |
| Saturation pH (@ 20C) | N/A | 9.84 | | 4043518 | NC | 4043518 | NC | | | 4043518 |
| Saturation pH (@ 4C) | N/A | 10.1 | | 4043519 | NC | 4043519 | NC | | | 4043519 |
| Inorganics | | | | | | | | | | |
| Total Alkalinity (Total as CaCO ₃) | mg/L | 7.8 | 5.0 | 4047788 | <5.0 | 4047788 | <5.0 | | 5.0 | 4047788 |
| Dissolved Chloride (Cl) | mg/L | 3.4 | 1.0 | 4047794 | 2.5 | 4047794 | 6.1 | | 1.0 | 4047794 |
| Colour | TCU | 27 | 5.0 | 4047803 | 88 | 4047803 | 80 | | 25 | 4047803 |
| Nitrate + Nitrite | mg/L | <0.050 | 0.050 | 4047812 | <0.050 | 4047812 | <0.050 | | 0.050 | 4047812 |
| Nitrite (N) | mg/L | <0.010 | 0.010 | 4047814 | <0.010 | 4047814 | <0.010 | | 0.010 | 4047814 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 0.050 | 4047276 | <0.050 | 4047276 | <0.050 | | 0.050 | 4047276 |
| Total Organic Carbon (C) | mg/L | 3.6 | 0.50 | 4047063 | 7.3 | 4047063 | 6.7 | 6.8 | 0.50 | 4047063 |
| Orthophosphate (P) | mg/L | 0.011 | 0.010 | 4047807 | <0.010 | 4047807 | <0.010 | | 0.010 | 4047807 |
| pH | pH | 6.62 | N/A | 4048933 | 5.76 | 4048933 | 6.17 | | N/A | 4048933 |
| Reactive Silica (SiO ₂) | mg/L | <0.50 | 0.50 | 4047800 | 1.1 | 4047800 | 1.5 | | 0.50 | 4047800 |
| Dissolved Sulphate (SO ₄) | mg/L | 5.0 | 2.0 | 4047798 | <2.0 | 4047798 | <2.0 | | 2.0 | 4047798 |
| Turbidity | NTU | 1.2 | 0.10 | 4049776 | 0.43 | 4049778 | 0.72 | | 0.10 | 4049778 |
| Conductivity | uS/cm | 34 | 1.0 | 4048936 | 16 | 4048936 | 29 | | 1.0 | 4048936 |

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

Maxxam Job #: B5A1423
Report Date: 2015/06/05

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | AIY467 | | |
|----------------------------------------------------------------------------------------------|-------|------------|-------|----------|
| Sampling Date | | 2015/05/28 | | |
| COC Number | | B 100296 | | |
| | Units | SW-10 | RDL | QC Batch |
| Calculated Parameters | | | | |
| Anion Sum | me/L | 0.450 | N/A | 4043516 |
| Bicarb. Alkalinity (calc. as CaCO ₃) | mg/L | 6.8 | 1.0 | 4043514 |
| Calculated TDS | mg/L | 31 | 1.0 | 4043520 |
| Carb. Alkalinity (calc. as CaCO ₃) | mg/L | <1.0 | 1.0 | 4043514 |
| Cation Sum | me/L | 0.430 | N/A | 4043516 |
| Hardness (CaCO ₃) | mg/L | 15 | 1.0 | 4043502 |
| Ion Balance (% Difference) | % | 2.27 | N/A | 4043515 |
| Langelier Index (@ 20C) | N/A | -3.44 | | 4043518 |
| Langelier Index (@ 4C) | N/A | -3.69 | | 4043519 |
| Nitrate (N) | mg/L | 0.074 | 0.050 | 4043600 |
| Saturation pH (@ 20C) | N/A | 9.78 | | 4043518 |
| Saturation pH (@ 4C) | N/A | 10.0 | | 4043519 |
| Inorganics | | | | |
| Total Alkalinity (Total as CaCO ₃) | mg/L | 6.8 | 5.0 | 4047788 |
| Dissolved Chloride (Cl) | mg/L | 3.2 | 1.0 | 4047794 |
| Colour | TCU | 8.8 | 5.0 | 4047803 |
| Nitrate + Nitrite | mg/L | 0.074 | 0.050 | 4047812 |
| Nitrite (N) | mg/L | <0.010 | 0.010 | 4047814 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 0.050 | 4047276 |
| Total Organic Carbon (C) | mg/L | 1.6 | 0.50 | 4047063 |
| Orthophosphate (P) | mg/L | <0.010 | 0.010 | 4047807 |
| pH | pH | 6.34 | N/A | 4048933 |
| Reactive Silica (SiO ₂) | mg/L | 4.0 | 0.50 | 4047800 |
| Dissolved Sulphate (SO ₄) | mg/L | 11 | 2.0 | 4047798 |
| Turbidity | NTU | 0.79 | 0.10 | 4049778 |
| Conductivity | uS/cm | 46 | 1.0 | 4048936 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable | | | | |

Maxxam Job #: B5A1423
Report Date: 2015/06/05

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

MERCURY BY COLD VAPOUR AA (WATER)

| | | | | | | | | | | |
|----------------------|--------------|-------------|-------------------------|--------------|---------------|--------------|-------------|--------------|------------|-----------------|
| Maxxam ID | | AIY460 | AIY460 | AIY461 | AIY462 | AIY463 | AIY464 | AIY465 | | |
| Sampling Date | | 2015/05/28 | 2015/05/28 | 2015/05/28 | 2015/05/28 | 2015/05/28 | 2015/05/28 | 2015/05/28 | | |
| COC Number | | B 100296 | B 100296 | B 100296 | B 100296 | B 100296 | B 100296 | B 100296 | | |
| | Units | SW-1 | SW-1 Lab-Dup | SW-2A | SW-2AD | SW-4A | SW-5 | SW-6A | RDL | QC Batch |

| | | | | | | | | | | |
|------------------------------------------------------------------------------------------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| Metals | | | | | | | | | | |
| Total Mercury (Hg) | ug/L | 0.015 | 0.015 | 0.013 | 0.013 | 0.015 | 0.015 | 0.017 | 0.013 | 4045913 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate | | | | | | | | | | |

| | | | | | |
|----------------------------------------------------------------------|--------------|-------------|--------------|------------|-----------------|
| Maxxam ID | | AIY466 | AIY467 | | |
| Sampling Date | | 2015/05/28 | 2015/05/28 | | |
| COC Number | | B 100296 | B 100296 | | |
| | Units | SW-9 | SW-10 | RDL | QC Batch |
| Metals | | | | | |
| Total Mercury (Hg) | ug/L | 0.013 | <0.013 | 0.013 | 4045913 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch | | | | | |

Maxxam Job #: B5A1423
Report Date: 2015/06/05

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | AIY460 | | AIY461 | AIY462 | AIY463 | AIY464 | AIY465 | | |
|----------------------------------|-------|------------|----------|------------|------------|------------|------------|------------|-------|----------|
| Sampling Date | | 2015/05/28 | | 2015/05/28 | 2015/05/28 | 2015/05/28 | 2015/05/28 | 2015/05/28 | | |
| COC Number | | B 100296 | | B 100296 | B 100296 | B 100296 | B 100296 | B 100296 | | |
| | Units | SW-1 | QC Batch | SW-2A | SW-2AD | SW-4A | SW-5 | SW-6A | RDL | QC Batch |
| Metals | | | | | | | | | | |
| Total Aluminum (Al) | ug/L | 190 | 4045823 | 190 | 190 | 240 | 61 | 220 | 5.0 | 4047400 |
| Total Antimony (Sb) | ug/L | <1.0 | 4045823 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4047400 |
| Total Arsenic (As) | ug/L | 2.6 | 4045823 | 1.1 | 1.1 | 7.3 | 41 | 3.2 | 1.0 | 4047400 |
| Total Barium (Ba) | ug/L | 2.4 | 4045823 | 2.2 | 2.2 | 2.8 | 4.4 | 2.3 | 1.0 | 4047400 |
| Total Beryllium (Be) | ug/L | <1.0 | 4045823 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4047400 |
| Total Bismuth (Bi) | ug/L | <2.0 | 4045823 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4047400 |
| Total Boron (B) | ug/L | <50 | 4045823 | <50 | <50 | <50 | <50 | <50 | 50 | 4047400 |
| Total Cadmium (Cd) | ug/L | <0.010 | 4045823 | 0.013 | 0.013 | 0.013 | <0.010 | <0.010 | 0.010 | 4047400 |
| Total Calcium (Ca) | ug/L | 630 | 4045823 | 470 | 460 | 780 | 3500 | 620 | 100 | 4047400 |
| Total Chromium (Cr) | ug/L | 3.0 | 4045823 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4047400 |
| Total Cobalt (Co) | ug/L | <0.40 | 4045823 | <0.40 | <0.40 | 0.42 | <0.40 | <0.40 | 0.40 | 4047400 |
| Total Copper (Cu) | ug/L | <2.0 | 4045823 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4047400 |
| Total Iron (Fe) | ug/L | 360 | 4045823 | 410 | 400 | 580 | 880 | 370 | 50 | 4047400 |
| Total Lead (Pb) | ug/L | <0.50 | 4045823 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | 4047400 |
| Total Magnesium (Mg) | ug/L | 240 | 4045823 | 220 | 210 | 280 | 600 | 230 | 100 | 4047400 |
| Total Manganese (Mn) | ug/L | 31 | 4045823 | 27 | 27 | 37 | 65 | 29 | 2.0 | 4047400 |
| Total Molybdenum (Mo) | ug/L | <2.0 | 4045823 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4047400 |
| Total Nickel (Ni) | ug/L | <2.0 | 4045823 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4047400 |
| Total Phosphorus (P) | ug/L | <100 | 4045823 | <100 | <100 | <100 | <100 | <100 | 100 | 4047400 |
| Total Potassium (K) | ug/L | 340 | 4045823 | 290 | 290 | 280 | 670 | 280 | 100 | 4047400 |
| Total Selenium (Se) | ug/L | <1.0 | 4045823 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4047400 |
| Total Silver (Ag) | ug/L | <0.10 | 4045823 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 4047400 |
| Total Sodium (Na) | ug/L | 1800 | 4045823 | 1600 | 1600 | 1900 | 1700 | 1700 | 100 | 4047400 |
| Total Strontium (Sr) | ug/L | 4.6 | 4045823 | 4.1 | 3.9 | 5.1 | 18 | 4.4 | 2.0 | 4047400 |
| Total Thallium (Tl) | ug/L | <0.10 | 4045823 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 4047400 |
| Total Tin (Sn) | ug/L | <2.0 | 4045823 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4047400 |
| Total Titanium (Ti) | ug/L | 2.7 | 4045823 | 2.0 | 2.4 | 4.7 | <2.0 | 2.8 | 2.0 | 4047400 |
| Total Uranium (U) | ug/L | <0.10 | 4045823 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 4047400 |
| Total Vanadium (V) | ug/L | <2.0 | 4045823 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4047400 |
| Total Zinc (Zn) | ug/L | 6.8 | 4045823 | <5.0 | <5.0 | 7.5 | <5.0 | 5.7 | 5.0 | 4047400 |
| RDL = Reportable Detection Limit | | | | | | | | | | |
| QC Batch = Quality Control Batch | | | | | | | | | | |

Maxxam Job #: B5A1423
Report Date: 2015/06/05

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | AIY466 | AIY467 | | |
|----------------------------------|-------|------------|------------|-------|----------|
| Sampling Date | | 2015/05/28 | 2015/05/28 | | |
| COC Number | | B 100296 | B 100296 | | |
| | Units | SW-9 | SW-10 | RDL | QC Batch |
| Metals | | | | | |
| Total Aluminum (Al) | ug/L | 170 | 64 | 5.0 | 4047400 |
| Total Antimony (Sb) | ug/L | <1.0 | <1.0 | 1.0 | 4047400 |
| Total Arsenic (As) | ug/L | <1.0 | 60 | 1.0 | 4047400 |
| Total Barium (Ba) | ug/L | 2.4 | 5.6 | 1.0 | 4047400 |
| Total Beryllium (Be) | ug/L | <1.0 | <1.0 | 1.0 | 4047400 |
| Total Bismuth (Bi) | ug/L | <2.0 | <2.0 | 2.0 | 4047400 |
| Total Boron (B) | ug/L | <50 | <50 | 50 | 4047400 |
| Total Cadmium (Cd) | ug/L | <0.010 | 0.049 | 0.010 | 4047400 |
| Total Calcium (Ca) | ug/L | 1100 | 4800 | 100 | 4047400 |
| Total Chromium (Cr) | ug/L | <1.0 | <1.0 | 1.0 | 4047400 |
| Total Cobalt (Co) | ug/L | <0.40 | 1.0 | 0.40 | 4047400 |
| Total Copper (Cu) | ug/L | <2.0 | 3.9 | 2.0 | 4047400 |
| Total Iron (Fe) | ug/L | 210 | 740 | 50 | 4047400 |
| Total Lead (Pb) | ug/L | <0.50 | <0.50 | 0.50 | 4047400 |
| Total Magnesium (Mg) | ug/L | 480 | 680 | 100 | 4047400 |
| Total Manganese (Mn) | ug/L | 34 | 56 | 2.0 | 4047400 |
| Total Molybdenum (Mo) | ug/L | <2.0 | <2.0 | 2.0 | 4047400 |
| Total Nickel (Ni) | ug/L | <2.0 | 7.1 | 2.0 | 4047400 |
| Total Phosphorus (P) | ug/L | <100 | <100 | 100 | 4047400 |
| Total Potassium (K) | ug/L | 270 | 740 | 100 | 4047400 |
| Total Selenium (Se) | ug/L | <1.0 | <1.0 | 1.0 | 4047400 |
| Total Silver (Ag) | ug/L | <0.10 | <0.10 | 0.10 | 4047400 |
| Total Sodium (Na) | ug/L | 3500 | 2000 | 100 | 4047400 |
| Total Strontium (Sr) | ug/L | 4.2 | 19 | 2.0 | 4047400 |
| Total Thallium (Tl) | ug/L | <0.10 | <0.10 | 0.10 | 4047400 |
| Total Tin (Sn) | ug/L | <2.0 | <2.0 | 2.0 | 4047400 |
| Total Titanium (Ti) | ug/L | 3.0 | 2.3 | 2.0 | 4047400 |
| Total Uranium (U) | ug/L | <0.10 | <0.10 | 0.10 | 4047400 |
| Total Vanadium (V) | ug/L | <2.0 | <2.0 | 2.0 | 4047400 |
| Total Zinc (Zn) | ug/L | <5.0 | 16 | 5.0 | 4047400 |
| RDL = Reportable Detection Limit | | | | | |
| QC Batch = Quality Control Batch | | | | | |

Maxxam Job #: B5A1423
Report Date: 2015/06/05

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

GENERAL COMMENTS

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

| | |
|-----------|-------|
| Package 1 | 1.7°C |
|-----------|-------|

Sample AIY460-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AIY461-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AIY462-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AIY463-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AIY465-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AIY466-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Results relate only to the items tested.

Maxxam Job #: B5A1423
Report Date: 2015/06/05

QUALITY ASSURANCE REPORT

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05

Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 4045823 | Total Aluminum (Al) | 2015/06/02 | 111 | 80 - 120 | 108 | 80 - 120 | <5.0 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Antimony (Sb) | 2015/06/02 | 114 | 80 - 120 | 105 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Arsenic (As) | 2015/06/02 | 101 | 80 - 120 | 99 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Barium (Ba) | 2015/06/02 | NC | 80 - 120 | 96 | 80 - 120 | <1.0 | ug/L | 0.23 (1) | 20 | | |
| 4045823 | Total Beryllium (Be) | 2015/06/02 | 104 | 80 - 120 | 101 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Bismuth (Bi) | 2015/06/02 | 100 | 80 - 120 | 104 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Boron (B) | 2015/06/02 | NC | 80 - 120 | 118 | 80 - 120 | <50 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Cadmium (Cd) | 2015/06/02 | 101 | 80 - 120 | 100 | 80 - 120 | <0.010 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Calcium (Ca) | 2015/06/02 | NC | 80 - 120 | 103 | 80 - 120 | <100 | ug/L | 1.7 (1) | 20 | | |
| 4045823 | Total Chromium (Cr) | 2015/06/02 | 98 | 80 - 120 | 98 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Cobalt (Co) | 2015/06/02 | 96 | 80 - 120 | 99 | 80 - 120 | <0.40 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Copper (Cu) | 2015/06/02 | 92 | 80 - 120 | 97 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Iron (Fe) | 2015/06/02 | 103 | 80 - 120 | 105 | 80 - 120 | <50 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Lead (Pb) | 2015/06/02 | 98 | 80 - 120 | 100 | 80 - 120 | <0.50 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Magnesium (Mg) | 2015/06/02 | NC | 80 - 120 | 106 | 80 - 120 | <100 | ug/L | 1.3 (1) | 20 | | |
| 4045823 | Total Manganese (Mn) | 2015/06/02 | 101 | 80 - 120 | 102 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Molybdenum (Mo) | 2015/06/02 | 112 | 80 - 120 | 105 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Nickel (Ni) | 2015/06/02 | 93 | 80 - 120 | 99 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Phosphorus (P) | 2015/06/02 | 110 | 80 - 120 | 109 | 80 - 120 | <100 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Potassium (K) | 2015/06/02 | NC | 80 - 120 | 107 | 80 - 120 | <100 | ug/L | 2.4 (1) | 20 | | |
| 4045823 | Total Selenium (Se) | 2015/06/02 | 99 | 80 - 120 | 98 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Silver (Ag) | 2015/06/02 | 103 | 80 - 120 | 102 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Sodium (Na) | 2015/06/02 | NC | 80 - 120 | 109 | 80 - 120 | <100 | ug/L | 1.8 (1) | 20 | | |
| 4045823 | Total Strontium (Sr) | 2015/06/02 | NC | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | 0.80 (1) | 20 | | |
| 4045823 | Total Thallium (Tl) | 2015/06/02 | 102 | 80 - 120 | 103 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Tin (Sn) | 2015/06/02 | 109 | 80 - 120 | 102 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Titanium (Ti) | 2015/06/02 | 104 | 80 - 120 | 99 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Uranium (U) | 2015/06/02 | 106 | 80 - 120 | 103 | 80 - 120 | <0.10 | ug/L | 2.4 (1) | 20 | | |
| 4045823 | Total Vanadium (V) | 2015/06/02 | 103 | 80 - 120 | 102 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4045823 | Total Zinc (Zn) | 2015/06/02 | 96 | 80 - 120 | 101 | 80 - 120 | <5.0 | ug/L | NC (1) | 20 | | |
| 4045913 | Total Mercury (Hg) | 2015/06/02 | 95 (2) | 80 - 120 | 100 | 80 - 120 | <0.013 | ug/L | NC (3) | 20 | | |

Maxxam Job #: B5A1423
Report Date: 2015/06/05

QUALITY ASSURANCE REPORT(CONT'D)

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 4047061 | Total Organic Carbon (C) | 2015/06/02 | 102 | 80 - 120 | 101 | 80 - 120 | <0.50 | mg/L | 2.3 (1) | 20 | | |
| 4047063 | Total Organic Carbon (C) | 2015/06/02 | NC (4) | 80 - 120 | 100 | 80 - 120 | <0.50 | mg/L | 1.7 (5) | 20 | | |
| 4047272 | Nitrogen (Ammonia Nitrogen) | 2015/06/02 | 92 | 80 - 120 | 90 | 80 - 120 | <0.050 | mg/L | NC (1) | 25 | | |
| 4047276 | Nitrogen (Ammonia Nitrogen) | 2015/06/02 | 91 | 80 - 120 | 95 | 80 - 120 | <0.050 | mg/L | NC (1) | 25 | | |
| 4047400 | Total Aluminum (Al) | 2015/06/04 | 107 | 80 - 120 | 100 | 80 - 120 | <5.0 | ug/L | | | | |
| 4047400 | Total Antimony (Sb) | 2015/06/04 | 102 | 80 - 120 | 103 | 80 - 120 | <1.0 | ug/L | | | | |
| 4047400 | Total Arsenic (As) | 2015/06/04 | 96 | 80 - 120 | 97 | 80 - 120 | <1.0 | ug/L | | | | |
| 4047400 | Total Barium (Ba) | 2015/06/04 | 94 | 80 - 120 | 95 | 80 - 120 | <1.0 | ug/L | | | | |
| 4047400 | Total Beryllium (Be) | 2015/06/04 | 99 | 80 - 120 | 100 | 80 - 120 | <1.0 | ug/L | | | | |
| 4047400 | Total Bismuth (Bi) | 2015/06/04 | 100 | 80 - 120 | 102 | 80 - 120 | <2.0 | ug/L | | | | |
| 4047400 | Total Boron (B) | 2015/06/04 | 112 | 80 - 120 | 115 | 80 - 120 | <50 | ug/L | | | | |
| 4047400 | Total Cadmium (Cd) | 2015/06/04 | 97 | 80 - 120 | 99 | 80 - 120 | <0.010 | ug/L | | | | |
| 4047400 | Total Calcium (Ca) | 2015/06/04 | NC | 80 - 120 | 104 | 80 - 120 | <100 | ug/L | 0.64 (1) | 20 | | |
| 4047400 | Total Chromium (Cr) | 2015/06/04 | 95 | 80 - 120 | 95 | 80 - 120 | <1.0 | ug/L | | | | |
| 4047400 | Total Cobalt (Co) | 2015/06/04 | 95 | 80 - 120 | 97 | 80 - 120 | <0.40 | ug/L | | | | |
| 4047400 | Total Copper (Cu) | 2015/06/04 | 93 | 80 - 120 | 96 | 80 - 120 | <2.0 | ug/L | | | | |
| 4047400 | Total Iron (Fe) | 2015/06/04 | 102 | 80 - 120 | 103 | 80 - 120 | <50 | ug/L | | | | |
| 4047400 | Total Lead (Pb) | 2015/06/04 | 94 | 80 - 120 | 97 | 80 - 120 | <0.50 | ug/L | | | | |
| 4047400 | Total Magnesium (Mg) | 2015/06/04 | 101 | 80 - 120 | 101 | 80 - 120 | <100 | ug/L | 1.8 (1) | 20 | | |
| 4047400 | Total Manganese (Mn) | 2015/06/04 | 96 | 80 - 120 | 98 | 80 - 120 | <2.0 | ug/L | | | | |
| 4047400 | Total Molybdenum (Mo) | 2015/06/04 | 104 | 80 - 120 | 103 | 80 - 120 | <2.0 | ug/L | | | | |
| 4047400 | Total Nickel (Ni) | 2015/06/04 | 94 | 80 - 120 | 98 | 80 - 120 | <2.0 | ug/L | | | | |
| 4047400 | Total Phosphorus (P) | 2015/06/04 | 104 | 80 - 120 | 102 | 80 - 120 | <100 | ug/L | | | | |
| 4047400 | Total Potassium (K) | 2015/06/04 | 101 | 80 - 120 | 101 | 80 - 120 | <100 | ug/L | | | | |
| 4047400 | Total Selenium (Se) | 2015/06/04 | 97 | 80 - 120 | 98 | 80 - 120 | <1.0 | ug/L | | | | |
| 4047400 | Total Silver (Ag) | 2015/06/04 | 101 | 80 - 120 | 102 | 80 - 120 | <0.10 | ug/L | | | | |
| 4047400 | Total Sodium (Na) | 2015/06/04 | NC | 80 - 120 | 99 | 80 - 120 | <100 | ug/L | | | | |
| 4047400 | Total Strontium (Sr) | 2015/06/04 | NC | 80 - 120 | 98 | 80 - 120 | <2.0 | ug/L | | | | |
| 4047400 | Total Thallium (Tl) | 2015/06/04 | 101 | 80 - 120 | 102 | 80 - 120 | <0.10 | ug/L | | | | |
| 4047400 | Total Tin (Sn) | 2015/06/04 | 100 | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | | | | |
| 4047400 | Total Titanium (Ti) | 2015/06/04 | 99 | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | | | | |

Maxxam Job #: B5A1423
Report Date: 2015/06/05

QUALITY ASSURANCE REPORT(CONT'D)

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 4047400 | Total Uranium (U) | 2015/06/04 | 104 | 80 - 120 | 105 | 80 - 120 | <0.10 | ug/L | | | | |
| 4047400 | Total Vanadium (V) | 2015/06/04 | 97 | 80 - 120 | 99 | 80 - 120 | <2.0 | ug/L | | | | |
| 4047400 | Total Zinc (Zn) | 2015/06/04 | 96 | 80 - 120 | 97 | 80 - 120 | <5.0 | ug/L | | | | |
| 4047788 | Total Alkalinity (Total as CaCO3) | 2015/06/03 | 98 (6) | 80 - 120 | 101 | 80 - 120 | <5.0 | mg/L | NC (7) | 25 | | |
| 4047794 | Dissolved Chloride (Cl) | 2015/06/03 | 104 (6) | 80 - 120 | 100 | 80 - 120 | <1.0 | mg/L | NC (7) | 25 | 109 | 80 - 120 |
| 4047798 | Dissolved Sulphate (SO4) | 2015/06/04 | 106 (6) | 80 - 120 | 85 | 80 - 120 | <2.0 | mg/L | NC (7) | 25 | | |
| 4047800 | Reactive Silica (SiO2) | 2015/06/03 | 95 (6) | 80 - 120 | 95 | 80 - 120 | <0.50 | mg/L | NC (7) | 25 | | |
| 4047803 | Colour | 2015/06/03 | | | 105 | 80 - 120 | <5.0 | TCU | NC (7) | 25 | | |
| 4047807 | Orthophosphate (P) | 2015/06/03 | 95 (6) | 80 - 120 | 101 | 80 - 120 | <0.010 | mg/L | NC (7) | 25 | | |
| 4047812 | Nitrate + Nitrite | 2015/06/04 | 95 (6) | 80 - 120 | 96 | 80 - 120 | <0.050 | mg/L | NC (7) | 25 | | |
| 4047814 | Nitrite (N) | 2015/06/03 | 88 (6) | 80 - 120 | 103 | 80 - 120 | <0.010 | mg/L | NC (7) | 25 | | |
| 4048933 | pH | 2015/06/03 | | | | | | | 0.44 (1) | N/A | 101 | 97 - 103 |
| 4048936 | Conductivity | 2015/06/03 | | | 101 | 80 - 120 | <1.0 | uS/cm | 0.45 (1) | 25 | | |
| 4049776 | Turbidity | 2015/06/03 | | | | | <0.10 | NTU | 8.8 (7) | 25 | 104 | 80 - 120 |

Maxxam Job #: B5A1423
Report Date: 2015/06/05

QUALITY ASSURANCE REPORT(CONT'D)

Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 4049778 | Turbidity | 2015/06/03 | | | | | <0.10 | NTU | 1.6 (1) | 25 | 105 | 80 - 120 |

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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [AIY461-03]

(3) Duplicate Parent ID [AIY460-03]

(4) Matrix Spike Parent ID [AIY466-01]

(5) Duplicate Parent ID [AIY466-01]

(6) Matrix Spike Parent ID [AIY462-01]

(7) Duplicate Parent ID [AIY462-01]

Maxxam Job #: B5A1423
Report Date: 2015/06/05

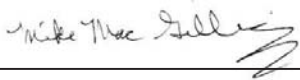
Conestoga-Rovers and Associates Ltd
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Kevin MacDonald, Inorganics Supervisor



Mike MacGillivray, Scientific Specialist (Inorganics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



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MAXXAM Chain of Custody Record

COC #: **B** 100296 Page 1 of 1

This column for lab use only:

Client Code
 Maxxam Job #
 B5A1423
 2015/03/13
 Cooler ID
 Seal Present
 Seal Intact
 Temp 1
 Temp 2
 Temp 3
 Average Temp

INVOICE INFORMATION:
 Company Name: CRA
 Contact Name: Jeff Parks
 Address: Dartmouth, NS
 Postal Code: B3B 1J7
 Email: jparks@world.com
 Ph: 468-1248 Fax: 468-2207

REPORT INFORMATION (if differs from invoice):
 Company Name:
 Contact Name:
 Address:
 Postal Code:
 Email:
 Ph:
 Fax:

PO # 20-019340
 Project # / Phase # 088064-05
 Project Name / Site Location Atlantic Gold-Beaver Dam
 Quote 14-161KG
 Site #
 Task Order #
 Sampled by AF + ZJ

TURNAROUND TIME
 Standard
 10 day
 If RUSH Specify Date:
 Pre-schedule rush work
 Charge for # Jars used but not submitted 1

Integrity YES NO
 Integrity / Checklist by [Signature]
 Labelled by
 Location / Bin #

Guideline Requirements / Detection Limits / Special Instructions
 *Specify Matrix: Surface/Salt/Ground/Tapwater/Sewage/Effluent/
 Potable/NonPotable/Tissue/Soil/Sludge/Metal/Seawater

Field Filtered & Preserved
 Lab Filtration Required
 RCAP-30 Total or Diss Metals
 RCAP-MS Total or Diss Metals
 Total Digest (Default Method) for well water, surface water
 Dissolved for ground water
 Mercury
 Metals & Mercury
 Default Available Digest Method
 Metals Total Digest - for Ocean sediments (HNO3/HF/HClO4)
 Mercury Low level by Cold Vapour AA
 Selenium (low level) Reg'd for CCME Residential, Parklands, Agricultural
 Hot Water soluble Boron
 RBCA Hydrocarbons (BTEX, CS-C32)
 Hydrocarbons Soil (Petroleum) NS Fuel Oil Spill Policy Low Level BTEX, CS-C32
 NB Potable Water BTEX, VPH, Low level T.E.H.
 TPH Fractionation
 PAH's
 PAH's with Acridine, Quinoline

| Field Sample Identification | Matrix* | Date/Time Sampled | # & type of bottles | Field Filtered & Preserved | Lab Filtration Required | RCAP-30 Total or Diss Metals | RCAP-MS Total or Diss Metals | Total Digest (Default Method) for well water, surface water | Dissolved for ground water | Mercury | Metals & Mercury | Default Available Digest Method | Metals Total Digest - for Ocean sediments (HNO3/HF/HClO4) | Mercury Low level by Cold Vapour AA | Selenium (low level) Reg'd for CCME Residential, Parklands, Agricultural | Hot Water soluble Boron | RBCA Hydrocarbons (BTEX, CS-C32) | Hydrocarbons Soil (Petroleum) NS Fuel Oil Spill Policy Low Level BTEX, CS-C32 | NB Potable Water BTEX, VPH, Low level T.E.H. | TPH Fractionation | PAH's | PAH's with Acridine, Quinoline | |
|-----------------------------|---------|-------------------|---------------------|----------------------------|-------------------------|------------------------------|------------------------------|-------------------------------------------------------------|----------------------------|---------|------------------|---------------------------------|-----------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------|-------------------------|----------------------------------|-------------------------------------------------------------------------------|----------------------------------------------|-------------------|-------|--------------------------------|--|
| 1 Sw-1 | SW | 23 May 15 | 3 | X | | X | X | X | | | X | | | | | | | | | | | | |
| 2 Sw-2A | | | | X | | X | X | X | | | X | | | | | | | | | | | | |
| 3 Sw-2A0 | | | | X | | X | X | X | | | X | | | | | | | | | | | | |
| 4 Sw-4A | | | | X | | X | X | X | | | X | | | | | | | | | | | | |
| 5 Sw-5 | | | | X | | X | X | X | | | X | | | | | | | | | | | | |
| 6 Sw-6A | | | | X | | X | X | X | | | X | | | | | | | | | | | | |
| 7 Sw-9 | | | | X | | X | X | X | | | X | | | | | | | | | | | | |
| 8 Sw-10 | | | | X | | X | X | X | | | X | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | |



B5A1423

RELINQUISHED BY: (Signature/Print) [Signature] Zachary Jones Date 5/29/15 Time 8:35

RECEIVED BY: (Signature/Print) [Signature] Joe Park Date 15 MAY 29 8:37

Your P.O. #: 20-019340
 Your Project #: 088664-05
 Site Location: ATLANTIC GOLD-BEAVER DAM
 Your C.O.C. #: 519518-01-01

Attention:Amanda Facey

GHD Limited
 45 Akerley Blvd
 Dartmouth , NS
 B3B 1J7

Report Date: 2015/07/13
 Report #: R3571678
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5C9254
Received: 2015/07/03, 16:20

Sample Matrix: Water
 # Samples Received: 8

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Reference |
|--------------------------------------|-----------------|---------------------------|--------------------------|--------------------------|----------------------|
| Carbonate, Bicarbonate and Hydroxide | 8 | N/A | 2015/07/13 | N/A | SM 22 4500-CO2 D |
| Alkalinity | 8 | N/A | 2015/07/08 | ATL SOP 00013 | EPA 310.2 R1974 m |
| Chloride | 8 | N/A | 2015/07/10 | ATL SOP 00014 | SM 22 4500-Cl- E m |
| Colour | 8 | N/A | 2015/07/10 | ATL SOP 00020 | SM 22 2120C m |
| Conductance - water | 8 | N/A | 2015/07/10 | ATL SOP 00004 | SM 22 2510B m |
| Hardness (calculated as CaCO3) | 8 | N/A | 2015/07/09 | ATL SOP 00048 | SM 22 2340 B |
| Mercury - Total (CVAA,LL) | 8 | 2015/07/07 | 2015/07/08 | ATL SOP 00026 | EPA 245.1 R3 m |
| Metals Water Total MS | 6 | 2015/07/07 | 2015/07/08 | ATL SOP 00058 | EPA 6020A R1 m |
| Metals Water Total MS | 2 | 2015/07/08 | 2015/07/09 | ATL SOP 00058 | EPA 6020A R1 m |
| Ion Balance (% Difference) | 8 | N/A | 2015/07/13 | | Auto Calc. |
| Anion and Cation Sum | 8 | N/A | 2015/07/13 | | Auto Calc. |
| Nitrogen Ammonia - water | 8 | N/A | 2015/07/08 | ATL SOP 00015 | EPA 350.1 R2 m |
| Nitrogen - Nitrate + Nitrite | 8 | N/A | 2015/07/09 | ATL SOP 00016 | USGS SOPINCF0452.2 m |
| Nitrogen - Nitrite | 8 | N/A | 2015/07/10 | ATL SOP 00017 | SM 22 4500-NO2- B m |
| Nitrogen - Nitrate (as N) | 8 | N/A | 2015/07/10 | ATL SOP 00018 | ASTM D3867 |
| pH (1) | 8 | N/A | 2015/07/10 | ATL SOP 00003 | SM 22 4500-H+ B m |
| Phosphorus - ortho | 8 | N/A | 2015/07/10 | ATL SOP 00021 | EPA 365.2 m |
| Sat. pH and Langelier Index (@ 20C) | 8 | N/A | 2015/07/13 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 8 | N/A | 2015/07/13 | ATL SOP 00049 | Auto Calc. |
| Reactive Silica | 8 | N/A | 2015/07/09 | ATL SOP 00022 | EPA 366.0 m |
| Sulphate | 8 | N/A | 2015/07/10 | ATL SOP 00023 | EPA 375.4 R1978 m |
| Total Dissolved Solids (TDS calc) | 8 | N/A | 2015/07/10 | | Auto Calc. |
| Organic carbon - Total (TOC) (2) | 8 | N/A | 2015/07/08 | ATL SOP 00037 | SM 22 5310C m |
| Turbidity | 8 | N/A | 2015/07/13 | ATL SOP 00011 | EPA 180.1 R2 m |

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 require 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.

Your P.O. #: 20-019340
Your Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your C.O.C. #: 519518-01-01

Attention:Amanda Facey

GHD Limited
45 Akerley Blvd
Dartmouth , NS
B3B 1J7

Report Date: 2015/07/13
Report #: R3571678
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5C9254
Received: 2015/07/03, 16:20

Encryption Key



Rachael Mansfield
13 Jul 2015 15:19:30 -03:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Michelle Hill, Project Manager
Email: Mhill@maxxam.ca
Phone# (902)420-0203 Ext:289

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B5C9254
Report Date: 2015/07/13

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | AOE400 | AOE401 | | AOE402 | AOE402 | | |
|------------------------------------------------------------------------------------------------------------------|-------|--------------|--------------|----------|--------------|---------------|-------|----------|
| Sampling Date | | 2015/06/30 | 2015/06/30 | | 2015/06/30 | 2015/06/30 | | |
| COC Number | | 519518-01-01 | 519518-01-01 | | 519518-01-01 | 519518-01-01 | | |
| | Units | SW-1 | SW-2A | QC Batch | SW-4A | SW-4A Lab-Dup | RDL | QC Batch |
| Calculated Parameters | | | | | | | | |
| Anion Sum | me/L | 0.0800 | 0.0800 | 4092060 | 0.0700 | | N/A | 4092060 |
| Bicarb. Alkalinity (calc. as CaCO ₃) | mg/L | <1.0 | <1.0 | 4092057 | <1.0 | | 1.0 | 4092057 |
| Calculated TDS | mg/L | 9.0 | 8.0 | 4092063 | 8.0 | | 1.0 | 4092063 |
| Carb. Alkalinity (calc. as CaCO ₃) | mg/L | <1.0 | <1.0 | 4092057 | <1.0 | | 1.0 | 4092057 |
| Cation Sum | me/L | 0.170 | 0.160 | 4092060 | 0.170 | | N/A | 4092060 |
| Hardness (CaCO ₃) | mg/L | 2.9 | 2.6 | 4092058 | 3.0 | | 1.0 | 4092058 |
| Ion Balance (% Difference) | % | 36.0 | 33.3 | 4092059 | 41.7 | | N/A | 4092059 |
| Langelier Index (@ 20C) | N/A | NC | NC | 4092061 | NC | | | 4092061 |
| Langelier Index (@ 4C) | N/A | NC | NC | 4092062 | NC | | | 4092062 |
| Nitrate (N) | mg/L | 0.062 | 0.055 | 4092065 | 0.064 | | 0.050 | 4092065 |
| Saturation pH (@ 20C) | N/A | NC | NC | 4092061 | NC | | | 4092061 |
| Saturation pH (@ 4C) | N/A | NC | NC | 4092062 | NC | | | 4092062 |
| Inorganics | | | | | | | | |
| Total Alkalinity (Total as CaCO ₃) | mg/L | <5.0 | <5.0 | 4096752 | <5.0 | <5.0 | 5.0 | 4096752 |
| Dissolved Chloride (Cl) | mg/L | 2.6 | 2.8 | 4096766 | 2.2 | 2.7 | 1.0 | 4096766 |
| Colour | TCU | 170 | 170 | 4096770 | 160 | 160 | 25 | 4096770 |
| Nitrate + Nitrite | mg/L | 0.062 | 0.055 | 4096777 | 0.064 | 0.077 | 0.050 | 4096777 |
| Nitrite (N) | mg/L | <0.010 | <0.010 | 4096781 | <0.010 | <0.010 | 0.010 | 4096781 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | <0.050 | 4096184 | <0.050 | | 0.050 | 4096184 |
| Total Organic Carbon (C) | mg/L | 12 | 12 | 4096103 | 12 | | 0.50 | 4096104 |
| Orthophosphate (P) | mg/L | <0.010 | <0.010 | 4096771 | <0.010 | <0.010 | 0.010 | 4096771 |
| pH | pH | 6.00 | 5.29 | 4099822 | 5.42 | | N/A | 4099822 |
| Reactive Silica (SiO ₂) | mg/L | 2.1 | 1.9 | 4096769 | 2.0 | 1.9 | 0.50 | 4096769 |
| Dissolved Sulphate (SO ₄) | mg/L | <2.0 | <2.0 | 4096767 | <2.0 | <2.0 | 2.0 | 4096767 |
| Turbidity | NTU | 1.2 | 0.99 | 4102538 | 1.3 | | 0.10 | 4102538 |
| Conductivity | uS/cm | 17 | 17 | 4099826 | 17 | | 1.0 | 4099826 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate | | | | | | | | |

Maxxam Job #: B5C9254
Report Date: 2015/07/13

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | AOE403 | | AOE404 | | AOE405 | | AOE406 | | |
|---------------|-------|--------------|-----|--------------|----------|--------------|----------|--------------|-----|----------|
| Sampling Date | | 2015/06/30 | | 2015/06/30 | | 2015/06/30 | | 2015/06/30 | | |
| COC Number | | 519518-01-01 | | 519518-01-01 | | 519518-01-01 | | 519518-01-01 | | |
| | Units | SW-5 | RDL | SW-6A | QC Batch | SW-6AD | QC Batch | SW-9 | RDL | QC Batch |

| Calculated Parameters | | | | | | | | | | |
|-------------------------------------|------|-------|-------|--------|---------|--------|---------|--------|-------|---------|
| Anion Sum | me/L | 0.350 | N/A | 0.0700 | 4092060 | 0.0700 | 4092060 | 0.130 | N/A | 4092060 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 9.3 | 1.0 | <1.0 | 4092057 | <1.0 | 4092057 | <1.0 | 1.0 | 4092057 |
| Calculated TDS | mg/L | 21 | 1.0 | 7.0 | 4092063 | 7.0 | 4092063 | 13 | 1.0 | 4092063 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 1.0 | <1.0 | 4092057 | <1.0 | 4092057 | <1.0 | 1.0 | 4092057 |
| Cation Sum | me/L | 0.350 | N/A | 0.170 | 4092060 | 0.160 | 4092060 | 0.310 | N/A | 4092060 |
| Hardness (CaCO3) | mg/L | 12 | 1.0 | 2.8 | 4092058 | 2.8 | 4092058 | 7.4 | 1.0 | 4092058 |
| Ion Balance (% Difference) | % | 0.00 | N/A | 41.7 | 4092059 | 39.1 | 4092059 | 40.9 | N/A | 4092059 |
| Langelier Index (@ 20C) | N/A | -3.00 | | NC | 4092061 | NC | 4092061 | NC | | 4092061 |
| Langelier Index (@ 4C) | N/A | -3.26 | | NC | 4092062 | NC | 4092062 | NC | | 4092062 |
| Nitrate (N) | mg/L | 0.063 | 0.050 | 0.053 | 4092065 | 0.059 | 4092065 | <0.050 | 0.050 | 4092065 |
| Saturation pH (@ 20C) | N/A | 9.76 | | NC | 4092061 | NC | 4092061 | NC | | 4092061 |
| Saturation pH (@ 4C) | N/A | 10.0 | | NC | 4092062 | NC | 4092062 | NC | | 4092062 |

| Inorganics | | | | | | | | | | |
|-----------------------------------|-------|--------|-------|--------|---------|--------|---------|--------|-------|---------|
| Total Alkalinity (Total as CaCO3) | mg/L | 9.3 | 5.0 | <5.0 | 4096752 | <5.0 | 4096782 | <5.0 | 5.0 | 4096782 |
| Dissolved Chloride (Cl) | mg/L | 1.9 | 1.0 | 2.2 | 4096766 | 2.2 | 4096787 | 4.8 | 1.0 | 4096787 |
| Colour | TCU | 23 | 5.0 | 140 | 4096770 | 130 | 4096792 | 150 | 25 | 4096792 |
| Nitrate + Nitrite | mg/L | 0.063 | 0.050 | 0.053 | 4096777 | 0.059 | 4096794 | <0.050 | 0.050 | 4096794 |
| Nitrite (N) | mg/L | <0.010 | 0.010 | <0.010 | 4096781 | <0.010 | 4096799 | <0.010 | 0.010 | 4096799 |
| Nitrogen (Ammonia Nitrogen) | mg/L | 0.052 | 0.050 | 0.22 | 4096184 | <0.050 | 4096184 | 0.14 | 0.050 | 4096184 |
| Total Organic Carbon (C) | mg/L | 4.1 | 0.50 | 10 | 4096104 | 11 | 4096104 | 12 | 0.50 | 4096104 |
| Orthophosphate (P) | mg/L | <0.010 | 0.010 | <0.010 | 4096771 | <0.010 | 4096793 | <0.010 | 0.010 | 4096793 |
| pH | pH | 6.76 | N/A | 5.79 | 4099822 | 5.64 | 4099822 | 6.33 | N/A | 4099822 |
| Reactive Silica (SiO2) | mg/L | 0.92 | 0.50 | 1.3 | 4096769 | 1.2 | 4096789 | 2.2 | 0.50 | 4096789 |
| Dissolved Sulphate (SO4) | mg/L | 5.0 | 2.0 | <2.0 | 4096767 | <2.0 | 4096788 | <2.0 | 2.0 | 4096788 |
| Turbidity | NTU | 0.83 | 0.10 | 0.65 | 4102538 | 1.1 | 4102538 | 0.99 | 0.10 | 4102542 |
| Conductivity | uS/cm | 35 | 1.0 | 16 | 4099826 | 16 | 4099826 | 29 | 1.0 | 4099826 |

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

Maxxam Job #: B5C9254
Report Date: 2015/07/13

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | AOE407 | AOE407 | | |
|------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------|---------------|-------|----------|
| Sampling Date | | 2015/06/30 | 2015/06/30 | | |
| COC Number | | 519518-01-01 | 519518-01-01 | | |
| | Units | SW-10 | SW-10 Lab-Dup | RDL | QC Batch |
| Calculated Parameters | | | | | |
| Anion Sum | me/L | 0.450 | | N/A | 4092060 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 8.0 | | 1.0 | 4092057 |
| Calculated TDS | mg/L | 32 | | 1.0 | 4092063 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | | 1.0 | 4092057 |
| Cation Sum | me/L | 0.450 | | N/A | 4092060 |
| Hardness (CaCO3) | mg/L | 15 | | 1.0 | 4092058 |
| Ion Balance (% Difference) | % | 0.00 | | N/A | 4092059 |
| Langelier Index (@ 20C) | N/A | -3.05 | | | 4092061 |
| Langelier Index (@ 4C) | N/A | -3.31 | | | 4092062 |
| Nitrate (N) | mg/L | 0.060 | | 0.050 | 4092065 |
| Saturation pH (@ 20C) | N/A | 9.70 | | | 4092061 |
| Saturation pH (@ 4C) | N/A | 9.96 | | | 4092062 |
| Inorganics | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | 8.0 | | 5.0 | 4096782 |
| Dissolved Chloride (Cl) | mg/L | 2.9 | | 1.0 | 4096787 |
| Colour | TCU | 9.4 | | 5.0 | 4096792 |
| Nitrate + Nitrite | mg/L | 0.060 | | 0.050 | 4096794 |
| Nitrite (N) | mg/L | <0.010 | | 0.010 | 4096799 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | | 0.050 | 4096184 |
| Total Organic Carbon (C) | mg/L | 2.1 | | 0.50 | 4096104 |
| Orthophosphate (P) | mg/L | <0.010 | | 0.010 | 4096793 |
| pH | pH | 6.65 | 6.72 | N/A | 4099822 |
| Reactive Silica (SiO2) | mg/L | 4.7 | | 0.50 | 4096789 |
| Dissolved Sulphate (SO4) | mg/L | 9.6 | | 2.0 | 4096788 |
| Turbidity | NTU | 1.0 | | 0.10 | 4102542 |
| Conductivity | uS/cm | 46 | 46 | 1.0 | 4099826 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable | | | | | |

Maxxam Job #: B5C9254
Report Date: 2015/07/13

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

MERCURY BY COLD VAPOUR AA (WATER)

| | | | | | | | | | |
|----------------------|--------------|--------------|--------------|-----------------|--------------|----------------------|--------------|------------|-----------------|
| Maxxam ID | | AOE400 | AOE401 | | AOE402 | AOE402 | AOE403 | | |
| Sampling Date | | 2015/06/30 | 2015/06/30 | | 2015/06/30 | 2015/06/30 | 2015/06/30 | | |
| COC Number | | 519518-01-01 | 519518-01-01 | | 519518-01-01 | 519518-01-01 | 519518-01-01 | | |
| | Units | SW-1 | SW-2A | QC Batch | SW-4A | SW-4A Lab-Dup | SW-5 | RDL | QC Batch |

| | | | | | | | | | |
|------------------------------------------------------------------------------------------------------------------|------|--------|--------|---------|--------|--------|--------|-------|---------|
| Metals | | | | | | | | | |
| Total Mercury (Hg) | ug/L | <0.013 | <0.013 | 4094692 | <0.013 | <0.013 | <0.013 | 0.013 | 4094727 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate | | | | | | | | | |

| | | | | | | | |
|----------------------|--------------|--------------|---------------|--------------|--------------|------------|-----------------|
| Maxxam ID | | AOE404 | AOE405 | AOE406 | AOE407 | | |
| Sampling Date | | 2015/06/30 | 2015/06/30 | 2015/06/30 | 2015/06/30 | | |
| COC Number | | 519518-01-01 | 519518-01-01 | 519518-01-01 | 519518-01-01 | | |
| | Units | SW-6A | SW-6AD | SW-9 | SW-10 | RDL | QC Batch |

| | | | | | | | |
|----------------------------------------------------------------------|------|--------|--------|--------|--------|-------|---------|
| Metals | | | | | | | |
| Total Mercury (Hg) | ug/L | <0.013 | <0.013 | <0.013 | <0.013 | 0.013 | 4094727 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch | | | | | | | |

Maxxam Job #: B5C9254
Report Date: 2015/07/13

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | AOE400 | AOE401 | AOE402 | AOE403 | AOE404 | AOE405 | | |
|---------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|-----|----------|
| Sampling Date | | 2015/06/30 | 2015/06/30 | 2015/06/30 | 2015/06/30 | 2015/06/30 | 2015/06/30 | | |
| COC Number | | 519518-01-01 | 519518-01-01 | 519518-01-01 | 519518-01-01 | 519518-01-01 | 519518-01-01 | | |
| | Units | SW-1 | SW-2A | SW-4A | SW-5 | SW-6A | SW-6AD | RDL | QC Batch |

| Metals | | | | | | | | | |
|-----------------------|------|-------|-------|-------|--------|-------|-------|-------|---------|
| Total Aluminum (Al) | ug/L | 280 | 280 | 300 | 45 | 290 | 300 | 5.0 | 4094135 |
| Total Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4094135 |
| Total Arsenic (As) | ug/L | 2.5 | <1.0 | 5.4 | 32 | 3.0 | 3.1 | 1.0 | 4094135 |
| Total Barium (Ba) | ug/L | 3.0 | 3.0 | 2.8 | 3.6 | 2.6 | 2.7 | 1.0 | 4094135 |
| Total Beryllium (Be) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4094135 |
| Total Bismuth (Bi) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4094135 |
| Total Boron (B) | ug/L | <50 | <50 | <50 | <50 | <50 | <50 | 50 | 4094135 |
| Total Cadmium (Cd) | ug/L | 0.028 | 0.012 | 0.016 | <0.010 | 0.016 | 0.015 | 0.010 | 4094135 |
| Total Calcium (Ca) | ug/L | 690 | 580 | 710 | 3600 | 670 | 670 | 100 | 4094135 |
| Total Chromium (Cr) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4094135 |
| Total Cobalt (Co) | ug/L | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | 0.40 | 4094135 |
| Total Copper (Cu) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4094135 |
| Total Iron (Fe) | ug/L | 580 | 590 | 650 | 530 | 550 | 560 | 50 | 4094135 |
| Total Lead (Pb) | ug/L | 0.54 | 0.55 | 0.52 | <0.50 | <0.50 | <0.50 | 0.50 | 4094135 |
| Total Magnesium (Mg) | ug/L | 290 | 280 | 290 | 640 | 270 | 280 | 100 | 4094135 |
| Total Manganese (Mn) | ug/L | 37 | 35 | 32 | 50 | 33 | 34 | 2.0 | 4094135 |
| Total Molybdenum (Mo) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4094135 |
| Total Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4094135 |
| Total Phosphorus (P) | ug/L | 150 | 150 | 140 | 140 | 140 | 150 | 100 | 4094135 |
| Total Potassium (K) | ug/L | 170 | 160 | 140 | 580 | 190 | 190 | 100 | 4094135 |
| Total Selenium (Se) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4094135 |
| Total Silver (Ag) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 4094135 |
| Total Sodium (Na) | ug/L | 1900 | 1900 | 1900 | 1800 | 1800 | 1800 | 100 | 4094135 |
| Total Strontium (Sr) | ug/L | 5.9 | 5.0 | 5.0 | 20 | 4.8 | 5.1 | 2.0 | 4094135 |
| Total Thallium (Tl) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 4094135 |
| Total Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4094135 |
| Total Titanium (Ti) | ug/L | 3.7 | 3.6 | 3.8 | <2.0 | 3.4 | 3.9 | 2.0 | 4094135 |
| Total Uranium (U) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 4094135 |
| Total Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4094135 |
| Total Zinc (Zn) | ug/L | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | 5.0 | 4094135 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B5C9254
Report Date: 2015/07/13

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | AOE406 | AOE407 | | |
|----------------------------------|-------|--------------|--------------|-------|----------|
| Sampling Date | | 2015/06/30 | 2015/06/30 | | |
| COC Number | | 519518-01-01 | 519518-01-01 | | |
| | Units | SW-9 | SW-10 | RDL | QC Batch |
| Metals | | | | | |
| Total Aluminum (Al) | ug/L | 280 | 39 | 5.0 | 4094792 |
| Total Antimony (Sb) | ug/L | <1.0 | <1.0 | 1.0 | 4094792 |
| Total Arsenic (As) | ug/L | <1.0 | 130 | 1.0 | 4094792 |
| Total Barium (Ba) | ug/L | 3.3 | 5.4 | 1.0 | 4094792 |
| Total Beryllium (Be) | ug/L | <1.0 | <1.0 | 1.0 | 4094792 |
| Total Bismuth (Bi) | ug/L | <2.0 | <2.0 | 2.0 | 4094792 |
| Total Boron (B) | ug/L | <50 | <50 | 50 | 4094792 |
| Total Cadmium (Cd) | ug/L | 0.014 | 0.061 | 0.010 | 4094792 |
| Total Calcium (Ca) | ug/L | 1700 | 4900 | 100 | 4094792 |
| Total Chromium (Cr) | ug/L | <1.0 | <1.0 | 1.0 | 4094792 |
| Total Cobalt (Co) | ug/L | <0.40 | 1.8 | 0.40 | 4094792 |
| Total Copper (Cu) | ug/L | <2.0 | 3.0 | 2.0 | 4094792 |
| Total Iron (Fe) | ug/L | 440 | 1400 | 50 | 4094792 |
| Total Lead (Pb) | ug/L | <0.50 | <0.50 | 0.50 | 4094792 |
| Total Magnesium (Mg) | ug/L | 740 | 660 | 100 | 4094792 |
| Total Manganese (Mn) | ug/L | 57 | 110 | 2.0 | 4094792 |
| Total Molybdenum (Mo) | ug/L | <2.0 | <2.0 | 2.0 | 4094792 |
| Total Nickel (Ni) | ug/L | <2.0 | 7.2 | 2.0 | 4094792 |
| Total Phosphorus (P) | ug/L | 150 | 140 | 100 | 4094792 |
| Total Potassium (K) | ug/L | 200 | 640 | 100 | 4094792 |
| Total Selenium (Se) | ug/L | <1.0 | <1.0 | 1.0 | 4094792 |
| Total Silver (Ag) | ug/L | <0.10 | <0.10 | 0.10 | 4094792 |
| Total Sodium (Na) | ug/L | 3100 | 1900 | 100 | 4094792 |
| Total Strontium (Sr) | ug/L | 5.9 | 19 | 2.0 | 4094792 |
| Total Thallium (Tl) | ug/L | <0.10 | <0.10 | 0.10 | 4094792 |
| Total Tin (Sn) | ug/L | <2.0 | <2.0 | 2.0 | 4094792 |
| Total Titanium (Ti) | ug/L | 3.1 | <2.0 | 2.0 | 4094792 |
| Total Uranium (U) | ug/L | <0.10 | <0.10 | 0.10 | 4094792 |
| Total Vanadium (V) | ug/L | <2.0 | <2.0 | 2.0 | 4094792 |
| Total Zinc (Zn) | ug/L | <5.0 | 13 | 5.0 | 4094792 |
| RDL = Reportable Detection Limit | | | | | |
| QC Batch = Quality Control Batch | | | | | |

Maxxam Job #: B5C9254
Report Date: 2015/07/13

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

GENERAL COMMENTS

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

| | |
|-----------|-------|
| Package 1 | 1.7°C |
|-----------|-------|

Sample AOE400-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AOE401-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AOE402-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AOE404-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AOE405-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AOE406-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Results relate only to the items tested.

Maxxam Job #: B5C9254
Report Date: 2015/07/13

QUALITY ASSURANCE REPORT

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 4094135 | Total Aluminum (Al) | 2015/07/08 | 102 | 80 - 120 | 104 | 80 - 120 | <5.0 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Antimony (Sb) | 2015/07/08 | 106 | 80 - 120 | 102 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Arsenic (As) | 2015/07/08 | 100 | 80 - 120 | 99 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Barium (Ba) | 2015/07/08 | 99 | 80 - 120 | 98 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Beryllium (Be) | 2015/07/08 | 99 | 80 - 120 | 99 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Bismuth (Bi) | 2015/07/08 | 102 | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Boron (B) | 2015/07/08 | 108 | 80 - 120 | 109 | 80 - 120 | <50 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Cadmium (Cd) | 2015/07/08 | 103 | 80 - 120 | 104 | 80 - 120 | <0.010 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Calcium (Ca) | 2015/07/08 | 94 | 80 - 120 | 95 | 80 - 120 | <100 | ug/L | 0.070 (1) | 20 | | |
| 4094135 | Total Chromium (Cr) | 2015/07/08 | 99 | 80 - 120 | 98 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Cobalt (Co) | 2015/07/08 | 100 | 80 - 120 | 100 | 80 - 120 | <0.40 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Copper (Cu) | 2015/07/08 | 98 | 80 - 120 | 99 | 80 - 120 | <2.0 | ug/L | 0.31 (1) | 20 | | |
| 4094135 | Total Iron (Fe) | 2015/07/08 | 103 | 80 - 120 | 104 | 80 - 120 | <50 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Lead (Pb) | 2015/07/08 | 102 | 80 - 120 | 101 | 80 - 120 | <0.50 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Magnesium (Mg) | 2015/07/08 | 103 | 80 - 120 | 103 | 80 - 120 | <100 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Manganese (Mn) | 2015/07/08 | 104 | 80 - 120 | 104 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Molybdenum (Mo) | 2015/07/08 | 102 | 80 - 120 | 101 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Nickel (Ni) | 2015/07/08 | 100 | 80 - 120 | 101 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Phosphorus (P) | 2015/07/08 | 104 | 80 - 120 | 105 | 80 - 120 | 130, RDL=100 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Potassium (K) | 2015/07/08 | 97 | 80 - 120 | 99 | 80 - 120 | <100 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Selenium (Se) | 2015/07/08 | 99 | 80 - 120 | 98 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Silver (Ag) | 2015/07/08 | 107 | 80 - 120 | 103 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Sodium (Na) | 2015/07/08 | 104 | 80 - 120 | 106 | 80 - 120 | <100 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Strontium (Sr) | 2015/07/08 | 102 | 80 - 120 | 104 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Thallium (Tl) | 2015/07/08 | 103 | 80 - 120 | 101 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Tin (Sn) | 2015/07/08 | 104 | 80 - 120 | 102 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Titanium (Ti) | 2015/07/08 | 104 | 80 - 120 | 104 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Uranium (U) | 2015/07/08 | 110 | 80 - 120 | 108 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Vanadium (V) | 2015/07/08 | 103 | 80 - 120 | 101 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094135 | Total Zinc (Zn) | 2015/07/08 | 99 | 80 - 120 | 98 | 80 - 120 | <5.0 | ug/L | 6.9 (1) | 20 | | |

Maxxam Job #: B5C9254
Report Date: 2015/07/13

QUALITY ASSURANCE REPORT(CONT'D)

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 4094692 | Total Mercury (Hg) | 2015/07/08 | 95 | 80 - 120 | 94 | 80 - 120 | <0.013 | ug/L | NC (1) | 20 | | |
| 4094727 | Total Mercury (Hg) | 2015/07/08 | 88 (2) | 80 - 120 | 103 | 80 - 120 | <0.013 | ug/L | NC (3) | 20 | | |
| 4094792 | Total Aluminum (Al) | 2015/07/09 | 104 | 80 - 120 | 102 | 80 - 120 | <5.0 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Antimony (Sb) | 2015/07/09 | 114 | 80 - 120 | 112 | 80 - 120 | <1.0 | ug/L | 2.5 (1) | 20 | | |
| 4094792 | Total Arsenic (As) | 2015/07/09 | 100 | 80 - 120 | 98 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Barium (Ba) | 2015/07/09 | 102 | 80 - 120 | 100 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Beryllium (Be) | 2015/07/09 | 103 | 80 - 120 | 97 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Bismuth (Bi) | 2015/07/09 | 106 | 80 - 120 | 107 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Boron (B) | 2015/07/09 | 115 | 80 - 120 | 108 | 80 - 120 | <50 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Cadmium (Cd) | 2015/07/09 | 105 | 80 - 120 | 98 | 80 - 120 | <0.010 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Calcium (Ca) | 2015/07/09 | 97 | 80 - 120 | 97 | 80 - 120 | <100 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Chromium (Cr) | 2015/07/09 | 96 | 80 - 120 | 95 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Cobalt (Co) | 2015/07/09 | 96 | 80 - 120 | 96 | 80 - 120 | <0.40 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Copper (Cu) | 2015/07/09 | 94 | 80 - 120 | 94 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Iron (Fe) | 2015/07/09 | 102 | 80 - 120 | 102 | 80 - 120 | <50 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Lead (Pb) | 2015/07/09 | 103 | 80 - 120 | 103 | 80 - 120 | <0.50 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Magnesium (Mg) | 2015/07/09 | 102 | 80 - 120 | 103 | 80 - 120 | <100 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Manganese (Mn) | 2015/07/09 | 100 | 80 - 120 | 101 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Molybdenum (Mo) | 2015/07/09 | 108 | 80 - 120 | 107 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Nickel (Ni) | 2015/07/09 | 96 | 80 - 120 | 95 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Phosphorus (P) | 2015/07/09 | 108 | 80 - 120 | 108 | 80 - 120 | 140, RDL=100 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Potassium (K) | 2015/07/09 | 108 | 80 - 120 | 108 | 80 - 120 | <100 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Selenium (Se) | 2015/07/09 | 99 | 80 - 120 | 99 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Silver (Ag) | 2015/07/09 | 108 | 80 - 120 | 106 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Sodium (Na) | 2015/07/09 | 96 | 80 - 120 | 99 | 80 - 120 | <100 | ug/L | 0.87 (1) | 20 | | |
| 4094792 | Total Strontium (Sr) | 2015/07/09 | 106 | 80 - 120 | 103 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Thallium (Tl) | 2015/07/09 | 106 | 80 - 120 | 106 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Tin (Sn) | 2015/07/09 | 111 | 80 - 120 | 110 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Titanium (Ti) | 2015/07/09 | 97 | 80 - 120 | 98 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Uranium (U) | 2015/07/09 | 110 | 80 - 120 | 109 | 80 - 120 | <0.10 | ug/L | 0.17 (1) | 20 | | |

Maxxam Job #: B5C9254
Report Date: 2015/07/13

QUALITY ASSURANCE REPORT(CONT'D)

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------------|------------|--------------|-----------|--------------|-----------|---------------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 4094792 | Total Vanadium (V) | 2015/07/09 | 97 | 80 - 120 | 96 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4094792 | Total Zinc (Zn) | 2015/07/09 | 96 | 80 - 120 | 97 | 80 - 120 | <5.0 | ug/L | NC (1) | 20 | | |
| 4096103 | Total Organic Carbon (C) | 2015/07/08 | 100 | 80 - 120 | 100 | 80 - 120 | <0.50 | mg/L | 5.7 (1) | 20 | | |
| 4096104 | Total Organic Carbon (C) | 2015/07/08 | 108 | 80 - 120 | 98 | 80 - 120 | <0.50 | mg/L | NC (1) | 20 | | |
| 4096184 | Nitrogen (Ammonia Nitrogen) | 2015/07/08 | 96 | 80 - 120 | 109 | 80 - 120 | 0.076, RDL=0.050 | mg/L | NC (1) | 25 | | |
| 4096752 | Total Alkalinity (Total as CaCO3) | 2015/07/08 | 101 (4) | 80 - 120 | 101 | 80 - 120 | <5.0 | mg/L | NC (5) | 25 | | |
| 4096766 | Dissolved Chloride (Cl) | 2015/07/10 | 112 (4) | 80 - 120 | 115 | 80 - 120 | <1.0 | mg/L | NC (5) | 25 | 107 | 80 - 120 |
| 4096767 | Dissolved Sulphate (SO4) | 2015/07/10 | 105 (4) | 80 - 120 | 100 | 80 - 120 | <2.0 | mg/L | NC (5) | 25 | | |
| 4096769 | Reactive Silica (SiO2) | 2015/07/09 | 95 (4) | 80 - 120 | 105 | 80 - 120 | <0.50 | mg/L | NC (5) | 25 | | |
| 4096770 | Colour | 2015/07/10 | | | 110 | 80 - 120 | <5.0 | TCU | 0.15 (5) | 20 | | |
| 4096771 | Orthophosphate (P) | 2015/07/10 | 94 (4) | 80 - 120 | 99 | 80 - 120 | <0.010 | mg/L | NC (5) | 25 | | |
| 4096777 | Nitrate + Nitrite | 2015/07/09 | 99 (4) | 80 - 120 | 109 | 80 - 120 | <0.050 | mg/L | NC (5) | 25 | | |
| 4096781 | Nitrite (N) | 2015/07/10 | 92 (4) | 80 - 120 | 105 | 80 - 120 | <0.010 | mg/L | NC (5) | 25 | | |
| 4096782 | Total Alkalinity (Total as CaCO3) | 2015/07/08 | NC | 80 - 120 | 101 | 80 - 120 | <5.0 | mg/L | NC (1) | 25 | | |
| 4096787 | Dissolved Chloride (Cl) | 2015/07/10 | 115 | 80 - 120 | 110 | 80 - 120 | <1.0 | mg/L | NC (1) | 25 | 101 | 80 - 120 |
| 4096788 | Dissolved Sulphate (SO4) | 2015/07/10 | 100 | 80 - 120 | 102 | 80 - 120 | <2.0 | mg/L | NC (1) | 25 | | |
| 4096789 | Reactive Silica (SiO2) | 2015/07/09 | 105 | 80 - 120 | 103 | 80 - 120 | <0.50 | mg/L | NC (1) | 25 | | |
| 4096792 | Colour | 2015/07/10 | | | 99 | 80 - 120 | <5.0 | TCU | NC (1) | 20 | | |
| 4096793 | Orthophosphate (P) | 2015/07/10 | 101 | 80 - 120 | 99 | 80 - 120 | <0.010 | mg/L | NC (1) | 25 | | |
| 4096794 | Nitrate + Nitrite | 2015/07/09 | 98 | 80 - 120 | 107 | 80 - 120 | 0.054, RDL=0.050 | mg/L | NC (1) | 25 | | |
| 4096799 | Nitrite (N) | 2015/07/10 | 105 | 80 - 120 | 94 | 80 - 120 | <0.010 | mg/L | NC (1) | 25 | | |
| 4099822 | pH | 2015/07/10 | | | | | | | 1.0 (6) | N/A | 100 | 97 - 103 |
| 4099826 | Conductivity | 2015/07/10 | | | 103 | 80 - 120 | 1.0, RDL=1.0 | uS/cm | 0 (6) | 25 | | |
| 4102538 | Turbidity | 2015/07/13 | | | | | <0.10 | NTU | NC (1) | 25 | 91 | 80 - 120 |

Maxxam Job #: B5C9254
Report Date: 2015/07/13

QUALITY ASSURANCE REPORT(CONT'D)

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 4102542 | Turbidity | 2015/07/13 | | | | | <0.10 | NTU | 6.1 (1) | 25 | 95 | 80 - 120 |

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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [AOE403-05]

(3) Duplicate Parent ID [AOE402-05]

(4) Matrix Spike Parent ID [AOE402-01]

(5) Duplicate Parent ID [AOE402-01]

(6) Duplicate Parent ID [AOE407-01]

Maxxam Job #: B5C9254
Report Date: 2015/07/13

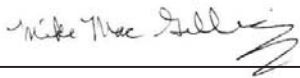
GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: AF

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Kevin MacDonald, Inorganics Supervisor



Mike MacGillivray, Scientific Specialist (Inorganics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

| | | | | | | | |
|-----------------------------------------------------------------------|--------------|------------------------------------------|-------------------------|----------------------------|-------------------|----------------------------|--|
| INVOICE TO: | | Report Information | | Project Information | | Laboratory Use Only | |
| Company Name #16276 Conestoga-Rovers and Associates Ltd GHD | Company Name | Quotation # 14-161K6 | Maxxam Job # B5C9254 | Bottle Order #: | Barcode 519518 | | |
| Contact Name Amanda Facey | Contact Name | P.O. # 20-019340 | Project # 088664-05 | Chain Of Custody Record | Project Manager | | |
| Address 45 Akerley Blvd Dartmouth NS B3B 1J7 | Address | Project Name Atlantic Gold-Bowser Dam | Site # | Barcode C#519518-01-01 | Michelle Hill | | |
| Phone (902) 468-1248 | Phone | Sampled By AF, ZJ | | | | | |
| Fax (902) 468-2207 | Fax | | | | | | |
| Email afacey@creworld.com amanda.facey@ghd.com | Email | | | | | | |

| Barcode B5C9254 | | Special Instructions | | ANALYSIS REQUESTED (PLEASE BE SPECIFIC) | | | | | | | | | | Turnaround Time (TAT) Required: Please provide advance notice for rush projects | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--------------|----------------------------------------------|---|------------------------------------------------------------------------------------|-------------------------------|---------------------------|--|--|--|--|--|--|--|--|--------------|----------------------------------------------|---|---|--|--|--|--|--|--|--|--|--|--|--|---|--|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| | | | | <table border="1"> <tr> <th>Field Filtered & Preserved Lab Filtration Required</th> <th>RCAP-MS Total Metals in Water</th> <th>Mercury - Total (CVAA,LL)</th> <th colspan="8"></th> <th># of Bottles</th> <th>Comments / Hazards / Other Required Analysis</th> </tr> <tr> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5</td> <td></td> </tr> <tr> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | | | | | Field Filtered & Preserved Lab Filtration Required | RCAP-MS Total Metals in Water | Mercury - Total (CVAA,LL) | | | | | | | | | # of Bottles | Comments / Hazards / Other Required Analysis | X | X | | | | | | | | | | | | 5 | | X | X | | | | | | | | | | | | | | X | X | | | | | | | | | | | | | | X | X | | | | | | | | | | | | | | X | X | | | | | | | | | | | | | | X | X | | | | | | | | | | | | | | X | X | | | | | | | | | | | | | | X | X | | | | | | | | | | | | | | X | X | | | | | | | | | | | | | | 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. | |
| Field Filtered & Preserved Lab Filtration Required | RCAP-MS Total Metals in Water | Mercury - Total (CVAA,LL) | | | | | | | | | # of Bottles | Comments / Hazards / Other Required Analysis | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| X | X | | | | | | | | | | | | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Time Required: _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | |
|--------------------------------------------------------|--|-------------------------------|------|--------------------------------------------------------|--|------------------|------|-------------------------------|--------------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------|
| * RELINQUISHED BY: (Signature/Print) <i>A Facey</i> | | Date: (YY/MM/DD) 15/07/103 | Time | RECEIVED BY: (Signature/Print) <i>JRD Joe Doyle</i> | | Date: (YY/MM/DD) | Time | # jars used and not submitted | Lab Use Only | | |
| | | | | | | | | | Time Sensitive <input type="checkbox"/> | Temperature (°C) on Receipt 122 | Custody Seal Intact on Cooler? <input type="checkbox"/> Yes <input type="checkbox"/> No |

* 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. White: Maxxam Yellow: Client

Your P.O. #: 20-019340
 Your Project #: 088664-05
 Site Location: ATLANTIC GOLD-BEAVER DAM
 Your C.O.C. #: 523658-01-01

Attention:Amanda Facey

GHD Limited
 45 Akerley Blvd
 Dartmouth , NS
 B3B 1J7

Report Date: 2015/08/07
 Report #: R3620816
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5F0835
Received: 2015/07/30, 09:12

Sample Matrix: Water
 # Samples Received: 8

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Reference |
|--------------------------------------|-----------------|---------------------------|--------------------------|--------------------------|----------------------|
| Carbonate, Bicarbonate and Hydroxide | 8 | N/A | 2015/08/07 | N/A | SM 22 4500-CO2 D |
| Alkalinity | 8 | N/A | 2015/08/06 | ATL SOP 00013 | EPA 310.2 R1974 m |
| Chloride | 8 | N/A | 2015/08/07 | ATL SOP 00014 | SM 22 4500-Cl- E m |
| Colour | 8 | N/A | 2015/08/06 | ATL SOP 00020 | SM 22 2120C m |
| Conductance - water | 8 | N/A | 2015/08/06 | ATL SOP 00004 | SM 22 2510B m |
| Hardness (calculated as CaCO3) | 8 | N/A | 2015/08/06 | ATL SOP 00048 | SM 22 2340 B |
| Mercury - Total (CVAA,LL) | 7 | 2015/08/04 | 2015/08/04 | ATL SOP 00026 | EPA 245.1 R3 m |
| Mercury - Total (CVAA,LL) | 1 | 2015/08/06 | 2015/08/06 | ATL SOP 00026 | EPA 245.1 R3 m |
| Metals Water Total MS | 8 | 2015/08/05 | 2015/08/06 | ATL SOP 00058 | EPA 6020A R1 m |
| Ion Balance (% Difference) | 8 | N/A | 2015/08/07 | | Auto Calc. |
| Anion and Cation Sum | 8 | N/A | 2015/08/07 | | Auto Calc. |
| Nitrogen Ammonia - water | 8 | N/A | 2015/08/05 | ATL SOP 00015 | EPA 350.1 R2 m |
| Nitrogen - Nitrate + Nitrite | 8 | N/A | 2015/08/07 | ATL SOP 00016 | USGS SOPINCF0452.2 m |
| Nitrogen - Nitrite | 8 | N/A | 2015/08/06 | ATL SOP 00017 | SM 22 4500-NO2- B m |
| Nitrogen - Nitrate (as N) | 8 | N/A | 2015/08/07 | ATL SOP 00018 | ASTM D3867 |
| pH (1) | 8 | N/A | 2015/08/06 | ATL SOP 00003 | SM 22 4500-H+ B m |
| Phosphorus - ortho | 8 | N/A | 2015/08/06 | ATL SOP 00021 | EPA 365.2 m |
| Sat. pH and Langelier Index (@ 20C) | 8 | N/A | 2015/08/07 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 8 | N/A | 2015/08/07 | ATL SOP 00049 | Auto Calc. |
| Reactive Silica | 8 | N/A | 2015/08/06 | ATL SOP 00022 | EPA 366.0 m |
| Sulphate | 8 | N/A | 2015/08/07 | ATL SOP 00023 | EPA 375.4 R1978 m |
| Total Dissolved Solids (TDS calc) | 8 | N/A | 2015/08/07 | | Auto Calc. |
| Organic carbon - Total (TOC) (2) | 8 | N/A | 2015/08/05 | ATL SOP 00037 | SM 22 5310C m |
| Turbidity | 8 | N/A | 2015/08/07 | ATL SOP 00011 | EPA 180.1 R2 m |

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 require 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.

Your P.O. #: 20-019340
Your Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your C.O.C. #: 523658-01-01

Attention:Amanda Facey

GHD Limited
45 Akerley Blvd
Dartmouth , NS
B3B 1J7

Report Date: 2015/08/07
Report #: R3620816
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5F0835
Received: 2015/07/30, 09:12

Encryption Key



Rachael Mansfield
07 Aug 2015 16:34:59 -03:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Michelle Hill, Project Manager
Email: MHill@maxxam.ca
Phone# (902)420-0203 Ext:289

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B5F0835
Report Date: 2015/08/07

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | ASJ208 | ASJ209 | ASJ210 | | ASJ211 | | |
|----------------------------------------------------------------------------------------------|-------|---------------------|---------------------|---------------------|-------|---------------------|-------|----------|
| Sampling Date | | 2015/07/29 14:15 | 2015/07/29 14:45 | 2015/07/29 15:27 | | 2015/07/29 15:55 | | |
| COC Number | | 523658-01-01 | 523658-01-01 | 523658-01-01 | | 523658-01-01 | | |
| | Units | SW-1 | SW-2A | SW-4A | RDL | SW-5 | RDL | QC Batch |
| Calculated Parameters | | | | | | | | |
| Anion Sum | me/L | 0.0800 | 0.0800 | 0.0700 | N/A | 0.360 | N/A | 4128401 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | <1.0 | <1.0 | 1.0 | 11 | 1.0 | 4128398 |
| Calculated TDS | mg/L | 10 | 9.0 | 9.0 | 1.0 | 21 | 1.0 | 4127241 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | <1.0 | <1.0 | 1.0 | <1.0 | 1.0 | 4128398 |
| Cation Sum | me/L | 0.180 | 0.180 | 0.190 | N/A | 0.340 | N/A | 4128401 |
| Hardness (CaCO3) | mg/L | 3.3 | 2.9 | 3.6 | 1.0 | 12 | 1.0 | 4128399 |
| Ion Balance (% Difference) | % | 38.5 | 38.5 | 46.2 | N/A | 2.86 | N/A | 4128400 |
| Langelier Index (@ 20C) | N/A | NC | NC | NC | | -2.84 | | 4127239 |
| Langelier Index (@ 4C) | N/A | NC | NC | NC | | -3.09 | | 4127240 |
| Nitrate (N) | mg/L | 0.051 | <0.050 | <0.050 | 0.050 | <0.050 | 0.050 | 4128388 |
| Saturation pH (@ 20C) | N/A | NC | NC | NC | | 9.66 | | 4127239 |
| Saturation pH (@ 4C) | N/A | NC | NC | NC | | 9.92 | | 4127240 |
| Inorganics | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | <5.0 | <5.0 | <5.0 | 5.0 | 11 | 5.0 | 4134526 |
| Dissolved Chloride (Cl) | mg/L | 2.8 | 2.8 | 2.6 | 1.0 | 1.7 | 1.0 | 4134529 |
| Colour | TCU | 160 | 180 | 170 | 25 | 24 | 5.0 | 4134542 |
| Nitrate + Nitrite | mg/L | 0.051 | <0.050 | <0.050 | 0.050 | <0.050 | 0.050 | 4134544 |
| Nitrite (N) | mg/L | <0.010 | <0.010 | <0.010 | 0.010 | <0.010 | 0.010 | 4134547 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | <0.050 | <0.050 | 0.050 | <0.050 | 0.050 | 4134239 |
| Total Organic Carbon (C) | mg/L | 12 | 13 | 18 | 0.50 | 5.3 | 0.50 | 4133762 |
| Orthophosphate (P) | mg/L | <0.010 | <0.010 | <0.010 | 0.010 | <0.010 | 0.010 | 4134543 |
| pH | pH | 5.57 | 5.26 | 5.09 | N/A | 6.83 | N/A | 4135976 |
| Reactive Silica (SiO2) | mg/L | 2.6 | 2.6 | 2.3 | 0.50 | 0.77 | 0.50 | 4134540 |
| Dissolved Sulphate (SO4) | mg/L | <2.0 | <2.0 | <2.0 | 2.0 | 4.5 | 2.0 | 4134539 |
| Turbidity | NTU | 1.1 | 0.97 | 0.81 | 0.10 | 0.91 | 0.10 | 4138515 |
| Conductivity | uS/cm | 18 | 19 | 19 | 1.0 | 32 | 1.0 | 4135978 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable | | | | | | | | |

Maxxam Job #: B5F0835
Report Date: 2015/08/07

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | ASJ212 | | ASJ213 | | ASJ214 | | ASJ215 | | |
|---------------|-------|---------------------|----------|---------------------|-----|---------------------|-----|---------------------|-----|----------|
| Sampling Date | | 2015/07/29 16:21 | | 2015/07/29 16:48 | | 2015/07/29 15:48 | | 2015/07/29 16:48 | | |
| COC Number | | 523658-01-01 | | 523658-01-01 | | 523658-01-01 | | 523658-01-01 | | |
| | Units | SW-6A | QC Batch | SW-9 | RDL | SW-10 | RDL | SW-9D | RDL | QC Batch |

| Calculated Parameters | | | | | | | | | | |
|-------------------------------------|-------|--------|---------|--------|-------|--------|-------|--------|-------|---------|
| Anion Sum | me/L | 0.0700 | 4128401 | 0.250 | N/A | 0.580 | N/A | 0.250 | N/A | 4128401 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 4128398 | 5.6 | 1.0 | 11 | 1.0 | 5.5 | 1.0 | 4128398 |
| Calculated TDS | mg/L | 8.0 | 4128391 | 18 | 1.0 | 39 | 1.0 | 18 | 1.0 | 4128391 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 4128398 | <1.0 | 1.0 | <1.0 | 1.0 | <1.0 | 1.0 | 4128398 |
| Cation Sum | me/L | 0.170 | 4128401 | 0.330 | N/A | 0.510 | N/A | 0.340 | N/A | 4128401 |
| Hardness (CaCO3) | mg/L | 3.2 | 4128399 | 8.0 | 1.0 | 20 | 1.0 | 8.2 | 1.0 | 4128399 |
| Ion Balance (% Difference) | % | 41.7 | 4128400 | 13.8 | N/A | 6.42 | N/A | 15.3 | N/A | 4128400 |
| Langelier Index (@ 20C) | N/A | NC | 4128389 | -3.90 | | -3.09 | | -3.83 | | 4128389 |
| Langelier Index (@ 4C) | N/A | NC | 4128390 | -4.16 | | -3.35 | | -4.08 | | 4128390 |
| Nitrate (N) | mg/L | <0.050 | 4128388 | 0.064 | 0.050 | 0.070 | 0.050 | <0.050 | 0.050 | 4128388 |
| Saturation pH (@ 20C) | N/A | NC | 4128389 | 10.3 | | 9.46 | | 10.3 | | 4128389 |
| Saturation pH (@ 4C) | N/A | NC | 4128390 | 10.5 | | 9.71 | | 10.5 | | 4128390 |
| Inorganics | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | <5.0 | 4134526 | 5.6 | 5.0 | 11 | 5.0 | 5.5 | 5.0 | 4134526 |
| Dissolved Chloride (Cl) | mg/L | 2.4 | 4134529 | 4.8 | 1.0 | 2.2 | 1.0 | 4.9 | 1.0 | 4134529 |
| Colour | TCU | 140 | 4134542 | 130 | 25 | <5.0 | 5.0 | 130 | 25 | 4134542 |
| Nitrate + Nitrite | mg/L | <0.050 | 4134544 | 0.064 | 0.050 | 0.070 | 0.050 | <0.050 | 0.050 | 4134601 |
| Nitrite (N) | mg/L | <0.010 | 4134547 | <0.010 | 0.010 | <0.010 | 0.010 | <0.010 | 0.010 | 4134603 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 4134239 | <0.050 | 0.050 | <0.050 | 0.050 | <0.050 | 0.050 | 4134239 |
| Total Organic Carbon (C) | mg/L | 13 | 4133762 | 12 | 0.50 | 1.8 | 0.50 | 12 | 0.50 | 4133762 |
| Orthophosphate (P) | mg/L | <0.010 | 4134543 | <0.010 | 0.010 | 0.012 | 0.010 | <0.010 | 0.010 | 4134599 |
| pH | pH | 5.50 | 4135976 | 6.36 | N/A | 6.37 | N/A | 6.43 | N/A | 4135976 |
| Reactive Silica (SiO2) | mg/L | 1.6 | 4134540 | 2.7 | 0.50 | 6.0 | 0.50 | 2.6 | 0.50 | 4134596 |
| Dissolved Sulphate (SO4) | mg/L | <2.0 | 4134539 | <2.0 | 2.0 | 14 | 2.0 | <2.0 | 2.0 | 4134594 |
| Turbidity | NTU | 0.49 | 4138515 | 1.0 | 0.10 | <0.10 | 0.10 | 0.93 | 0.10 | 4138515 |
| Conductivity | uS/cm | 16 | 4135978 | 30 | 1.0 | 54 | 1.0 | 30 | 1.0 | 4135978 |

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

Maxxam Job #: B5F0835
Report Date: 2015/08/07

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

MERCURY BY COLD VAPOUR AA (WATER)

| | | | | | | | | | |
|----------------------|--------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------|-----------------|
| Maxxam ID | | ASJ208 | ASJ209 | ASJ210 | ASJ211 | ASJ212 | ASJ213 | | |
| Sampling Date | | 2015/07/29 14:15 | 2015/07/29 14:45 | 2015/07/29 15:27 | 2015/07/29 15:55 | 2015/07/29 16:21 | 2015/07/29 16:48 | | |
| COC Number | | 523658-01-01 | 523658-01-01 | 523658-01-01 | 523658-01-01 | 523658-01-01 | 523658-01-01 | | |
| | Units | SW-1 | SW-2A | SW-4A | SW-5 | SW-6A | SW-9 | RDL | QC Batch |

| | | | | | | | | | |
|----------------------------------|------|--------|--------|--------|--------|--------|--------|-------|---------|
| Metals | | | | | | | | | |
| Total Mercury (Hg) | ug/L | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | <0.013 | 0.013 | 4133159 |
| RDL = Reportable Detection Limit | | | | | | | | | |
| QC Batch = Quality Control Batch | | | | | | | | | |

| | | | | | | |
|----------------------------------|--------------|---------------------|-----------------|---------------------|------------|-----------------|
| Maxxam ID | | ASJ214 | | ASJ215 | | |
| Sampling Date | | 2015/07/29 15:48 | | 2015/07/29 16:48 | | |
| COC Number | | 523658-01-01 | | 523658-01-01 | | |
| | Units | SW-10 | QC Batch | SW-9D | RDL | QC Batch |
| Metals | | | | | | |
| Total Mercury (Hg) | ug/L | <0.013 | 4133159 | 0.013 | 0.013 | 4136068 |
| RDL = Reportable Detection Limit | | | | | | |
| QC Batch = Quality Control Batch | | | | | | |

Maxxam Job #: B5F0835
Report Date: 2015/08/07

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | ASJ208 | ASJ209 | ASJ210 | ASJ211 | ASJ212 | ASJ213 | | |
|---------------|-------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----|----------|
| Sampling Date | | 2015/07/29 14:15 | 2015/07/29 14:45 | 2015/07/29 15:27 | 2015/07/29 15:55 | 2015/07/29 16:21 | 2015/07/29 16:48 | | |
| COC Number | | 523658-01-01 | 523658-01-01 | 523658-01-01 | 523658-01-01 | 523658-01-01 | 523658-01-01 | | |
| | Units | SW-1 | SW-2A | SW-4A | SW-5 | SW-6A | SW-9 | RDL | QC Batch |

| Metals | | | | | | | | | |
|-----------------------|------|-------|-------|-------|--------|-------|--------|-------|---------|
| Total Aluminum (Al) | ug/L | 280 | 300 | 350 | 43 | 320 | 260 | 5.0 | 4133678 |
| Total Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4133678 |
| Total Arsenic (As) | ug/L | 3.7 | 1.5 | 5.6 | 20 | 2.8 | <1.0 | 1.0 | 4133678 |
| Total Barium (Ba) | ug/L | 3.2 | 3.5 | 3.7 | 4.1 | 3.1 | 3.4 | 1.0 | 4133678 |
| Total Beryllium (Be) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4133678 |
| Total Bismuth (Bi) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4133678 |
| Total Boron (B) | ug/L | <50 | <50 | <50 | <50 | <50 | <50 | 50 | 4133678 |
| Total Cadmium (Cd) | ug/L | 0.014 | 0.017 | 0.014 | <0.010 | 0.012 | <0.010 | 0.010 | 4133678 |
| Total Calcium (Ca) | ug/L | 790 | 620 | 860 | 3800 | 770 | 1800 | 100 | 4133678 |
| Total Chromium (Cr) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4133678 |
| Total Cobalt (Co) | ug/L | <0.40 | <0.40 | 0.63 | <0.40 | <0.40 | <0.40 | 0.40 | 4133678 |
| Total Copper (Cu) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4133678 |
| Total Iron (Fe) | ug/L | 750 | 820 | 840 | 610 | 750 | 490 | 50 | 4133678 |
| Total Lead (Pb) | ug/L | <0.50 | 0.62 | 0.56 | <0.50 | <0.50 | <0.50 | 0.50 | 4133678 |
| Total Magnesium (Mg) | ug/L | 310 | 330 | 360 | 720 | 310 | 830 | 100 | 4133678 |
| Total Manganese (Mn) | ug/L | 43 | 40 | 42 | 45 | 38 | 56 | 2.0 | 4133678 |
| Total Molybdenum (Mo) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4133678 |
| Total Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4133678 |
| Total Phosphorus (P) | ug/L | 170 | 170 | 150 | 170 | 160 | 160 | 100 | 4133678 |
| Total Potassium (K) | ug/L | 210 | 200 | 180 | 350 | 200 | 210 | 100 | 4133678 |
| Total Selenium (Se) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4133678 |
| Total Silver (Ag) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 4133678 |
| Total Sodium (Na) | ug/L | 1900 | 1900 | 1700 | 1500 | 1700 | 3300 | 100 | 4133678 |
| Total Strontium (Sr) | ug/L | 6.3 | 6.3 | 6.4 | 25 | 5.5 | 6.5 | 2.0 | 4133678 |
| Total Thallium (Tl) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 4133678 |
| Total Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4133678 |
| Total Titanium (Ti) | ug/L | 3.7 | 4.6 | 3.8 | <2.0 | 3.5 | 3.6 | 2.0 | 4133678 |
| Total Uranium (U) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.12 | 0.10 | 4133678 |
| Total Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4133678 |
| Total Zinc (Zn) | ug/L | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | 5.0 | 4133678 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B5F0835
Report Date: 2015/08/07

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | ASJ214 | ASJ215 | | |
|----------------------------------|-------|---------------------|---------------------|-------|----------|
| Sampling Date | | 2015/07/29 15:48 | 2015/07/29 16:48 | | |
| COC Number | | 523658-01-01 | 523658-01-01 | | |
| | Units | SW-10 | SW-9D | RDL | QC Batch |
| Metals | | | | | |
| Total Aluminum (Al) | ug/L | 28 | 270 | 5.0 | 4133678 |
| Total Antimony (Sb) | ug/L | <1.0 | <1.0 | 1.0 | 4133678 |
| Total Arsenic (As) | ug/L | 36 | <1.0 | 1.0 | 4133678 |
| Total Barium (Ba) | ug/L | 7.3 | 3.3 | 1.0 | 4133678 |
| Total Beryllium (Be) | ug/L | <1.0 | <1.0 | 1.0 | 4133678 |
| Total Bismuth (Bi) | ug/L | <2.0 | <2.0 | 2.0 | 4133678 |
| Total Boron (B) | ug/L | <50 | <50 | 50 | 4133678 |
| Total Cadmium (Cd) | ug/L | 0.10 | <0.010 | 0.010 | 4133678 |
| Total Calcium (Ca) | ug/L | 6400 | 1900 | 100 | 4133678 |
| Total Chromium (Cr) | ug/L | <1.0 | 1.3 | 1.0 | 4133678 |
| Total Cobalt (Co) | ug/L | 1.4 | <0.40 | 0.40 | 4133678 |
| Total Copper (Cu) | ug/L | 3.6 | <2.0 | 2.0 | 4133678 |
| Total Iron (Fe) | ug/L | 78 | 510 | 50 | 4133678 |
| Total Lead (Pb) | ug/L | <0.50 | <0.50 | 0.50 | 4133678 |
| Total Magnesium (Mg) | ug/L | 900 | 840 | 100 | 4133678 |
| Total Manganese (Mn) | ug/L | 78 | 60 | 2.0 | 4133678 |
| Total Molybdenum (Mo) | ug/L | <2.0 | <2.0 | 2.0 | 4133678 |
| Total Nickel (Ni) | ug/L | 8.7 | <2.0 | 2.0 | 4133678 |
| Total Phosphorus (P) | ug/L | 170 | 170 | 100 | 4133678 |
| Total Potassium (K) | ug/L | 790 | 240 | 100 | 4133678 |
| Total Selenium (Se) | ug/L | <1.0 | <1.0 | 1.0 | 4133678 |
| Total Silver (Ag) | ug/L | <0.10 | <0.10 | 0.10 | 4133678 |
| Total Sodium (Na) | ug/L | 2100 | 3500 | 100 | 4133678 |
| Total Strontium (Sr) | ug/L | 26 | 5.9 | 2.0 | 4133678 |
| Total Thallium (Tl) | ug/L | <0.10 | <0.10 | 0.10 | 4133678 |
| Total Tin (Sn) | ug/L | <2.0 | <2.0 | 2.0 | 4133678 |
| Total Titanium (Ti) | ug/L | <2.0 | 4.9 | 2.0 | 4133678 |
| Total Uranium (U) | ug/L | <0.10 | 0.13 | 0.10 | 4133678 |
| Total Vanadium (V) | ug/L | <2.0 | <2.0 | 2.0 | 4133678 |
| Total Zinc (Zn) | ug/L | 19 | <5.0 | 5.0 | 4133678 |
| RDL = Reportable Detection Limit | | | | | |
| QC Batch = Quality Control Batch | | | | | |

Maxxam Job #: B5F0835
Report Date: 2015/08/07

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

GENERAL COMMENTS

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

| | |
|-----------|-------|
| Package 1 | 5.0°C |
|-----------|-------|

Sample ASJ208-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample ASJ209-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample ASJ210-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample ASJ212-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample ASJ213-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample ASJ214-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample ASJ215-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Results relate only to the items tested.

Maxxam Job #: B5F0835
Report Date: 2015/08/07

QUALITY ASSURANCE REPORT

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 4133159 | Total Mercury (Hg) | 2015/08/05 | 113 | 80 - 120 | 105 | 80 - 120 | <0.013 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Aluminum (Al) | 2015/08/07 | 102 | 80 - 120 | 103 | 80 - 120 | <5.0 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Antimony (Sb) | 2015/08/07 | 105 | 80 - 120 | 103 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Arsenic (As) | 2015/08/07 | 101 | 80 - 120 | 102 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Barium (Ba) | 2015/08/07 | 100 | 80 - 120 | 100 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Beryllium (Be) | 2015/08/07 | 102 | 80 - 120 | 102 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Bismuth (Bi) | 2015/08/07 | 104 | 80 - 120 | 104 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Boron (B) | 2015/08/07 | 105 | 80 - 120 | 105 | 80 - 120 | <50 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Cadmium (Cd) | 2015/08/07 | 102 | 80 - 120 | 103 | 80 - 120 | <0.010 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Calcium (Ca) | 2015/08/07 | 102 | 80 - 120 | 103 | 80 - 120 | <100 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Chromium (Cr) | 2015/08/07 | 99 | 80 - 120 | 100 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Cobalt (Co) | 2015/08/07 | 101 | 80 - 120 | 100 | 80 - 120 | <0.40 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Copper (Cu) | 2015/08/07 | NC | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Iron (Fe) | 2015/08/07 | 105 | 80 - 120 | 106 | 80 - 120 | <50 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Lead (Pb) | 2015/08/07 | 102 | 80 - 120 | 103 | 80 - 120 | <0.50 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Magnesium (Mg) | 2015/08/07 | 105 | 80 - 120 | 106 | 80 - 120 | <100 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Manganese (Mn) | 2015/08/07 | 102 | 80 - 120 | 103 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Molybdenum (Mo) | 2015/08/07 | 106 | 80 - 120 | 106 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Nickel (Ni) | 2015/08/07 | 100 | 80 - 120 | 101 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Phosphorus (P) | 2015/08/07 | 105 | 80 - 120 | 106 | 80 - 120 | 150, RDL=100 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Potassium (K) | 2015/08/07 | 101 | 80 - 120 | 101 | 80 - 120 | <100 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Selenium (Se) | 2015/08/07 | 101 | 80 - 120 | 100 | 80 - 120 | <1.0 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Silver (Ag) | 2015/08/07 | 107 | 80 - 120 | 107 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Sodium (Na) | 2015/08/07 | 103 | 80 - 120 | 104 | 80 - 120 | <100 | ug/L | 1.7 (1) | 20 | | |
| 4133678 | Total Strontium (Sr) | 2015/08/07 | 103 | 80 - 120 | 104 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Thallium (Tl) | 2015/08/07 | 101 | 80 - 120 | 102 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Tin (Sn) | 2015/08/07 | 104 | 80 - 120 | 106 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Titanium (Ti) | 2015/08/07 | 102 | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Uranium (U) | 2015/08/07 | 108 | 80 - 120 | 108 | 80 - 120 | <0.10 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Vanadium (V) | 2015/08/07 | 102 | 80 - 120 | 103 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4133678 | Total Zinc (Zn) | 2015/08/07 | 100 | 80 - 120 | 101 | 80 - 120 | <5.0 | ug/L | NC (1) | 20 | | |

Maxxam Job #: B5F0835
Report Date: 2015/08/07

QUALITY ASSURANCE REPORT(CONT'D)

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 4133762 | Total Organic Carbon (C) | 2015/08/05 | NC | 80 - 120 | 103 | 80 - 120 | <0.50 | mg/L | 1.3 (1) | 20 | | |
| 4134239 | Nitrogen (Ammonia Nitrogen) | 2015/08/05 | 87 | 80 - 120 | 93 | 80 - 120 | <0.050 | mg/L | NC (1) | 20 | | |
| 4134526 | Total Alkalinity (Total as CaCO3) | 2015/08/06 | 101 | 80 - 120 | 104 | 80 - 120 | <5.0 | mg/L | NC (1) | 25 | | |
| 4134529 | Dissolved Chloride (Cl) | 2015/08/07 | NC | 80 - 120 | 98 | 80 - 120 | <1.0 | mg/L | 0.91 (1) | 25 | 105 | 80 - 120 |
| 4134539 | Dissolved Sulphate (SO4) | 2015/08/07 | 115 | 80 - 120 | 104 | 80 - 120 | <2.0 | mg/L | NC (1) | 25 | | |
| 4134540 | Reactive Silica (SiO2) | 2015/08/06 | 97 | 80 - 120 | 99 | 80 - 120 | <0.50 | mg/L | 1.7 (1) | 25 | | |
| 4134542 | Colour | 2015/08/06 | | | 95 | 80 - 120 | <5.0 | TCU | 3.7 (1) | 20 | | |
| 4134543 | Orthophosphate (P) | 2015/08/06 | 102 | 80 - 120 | 99 | 80 - 120 | <0.010 | mg/L | NC (1) | 25 | | |
| 4134544 | Nitrate + Nitrite | 2015/08/07 | 99 | 80 - 120 | 100 | 80 - 120 | <0.050 | mg/L | NC (1) | 25 | | |
| 4134547 | Nitrite (N) | 2015/08/06 | 94 | 80 - 120 | 97 | 80 - 120 | <0.010 | mg/L | NC (1) | 25 | | |
| 4134552 | Total Alkalinity (Total as CaCO3) | 2015/08/06 | 104 | 80 - 120 | 107 | 80 - 120 | <5.0 | mg/L | NC (1) | 25 | | |
| 4134582 | Dissolved Chloride (Cl) | 2015/08/07 | NC | 80 - 120 | 108 | 80 - 120 | <1.0 | mg/L | 5.1 (1) | 25 | 101 | 80 - 120 |
| 4134594 | Dissolved Sulphate (SO4) | 2015/08/07 | 109 | 80 - 120 | 119 | 80 - 120 | <2.0 | mg/L | NC (1) | 25 | | |
| 4134596 | Reactive Silica (SiO2) | 2015/08/06 | NC | 80 - 120 | 97 | 80 - 120 | <0.50 | mg/L | 8.2 (1) | 25 | | |
| 4134598 | Colour | 2015/08/06 | | | 96 | 80 - 120 | <5.0 | TCU | NC (1) | 20 | | |
| 4134599 | Orthophosphate (P) | 2015/08/06 | 95 | 80 - 120 | 98 | 80 - 120 | <0.010 | mg/L | NC (1) | 25 | | |
| 4134601 | Nitrate + Nitrite | 2015/08/07 | 95 | 80 - 120 | 97 | 80 - 120 | <0.050 | mg/L | NC (1) | 25 | | |
| 4134603 | Nitrite (N) | 2015/08/06 | 99 | 80 - 120 | 99 | 80 - 120 | <0.010 | mg/L | NC (1) | 25 | | |
| 4135976 | pH | 2015/08/06 | | | | | | | 0.66 (1) | N/A | 101 | 97 - 103 |
| 4135978 | Conductivity | 2015/08/06 | | | 99 | 80 - 120 | 1.1, RDL=1.0 | uS/cm | 1.1 (1) | 25 | | |
| 4136068 | Total Mercury (Hg) | 2015/08/06 | 99 | 80 - 120 | 89 | 80 - 120 | <0.013 | ug/L | NC (1) | 20 | | |

Maxxam Job #: B5F0835
Report Date: 2015/08/07

QUALITY ASSURANCE REPORT(CONT'D)

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

| QC Batch | Parameter | Date | Matrix Spike | | Spiked Blank | | Method Blank | | RPD | | QC Standard | |
|----------|-----------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | Units | Value (%) | QC Limits | % Recovery | QC Limits |
| 4138515 | Turbidity | 2015/08/07 | | | | | <0.10 | NTU | NC (1) | 25 | 102 | 80 - 120 |

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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

(1) Duplicate Parent ID

Maxxam Job #: B5F0835
Report Date: 2015/08/07

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Kevin A. MacDonald

Kevin MacDonald, Inorganics Supervisor

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Maxxam Analytics International Corporation o/a Maxxam Analytics
200 Bluewater Road, Bedford, Nova Scotia Canada B4B 1G9 Tel: (902) 420-0203 Toll-Free 800-563-6266 Fax: (902) 420-8612 www.maxxam.ca

Chain Of Custody Record

| | | | | | | | |
|----------------------------------------------------|---------------------------------------------------------|------------------------------|------------------------|-----------------------------------------|----------------------------------|----------------------------|--|
| INVOICE TO: | | Report Information | | Project Information | | Laboratory Use Only | |
| Company Name #16276 GHD Limited | Company Name Trina Jeffrey | Company Name Amanda Facey | Quotation # B46955 | Maxxam Job # B5F0835 | Bottle Order # 523658 | | |
| Contact Name Trina Jeffrey | Contact Name Amanda Facey | | P.O. # 20-019340 | Chain Of Custody Record | Project Manager Michelle Hill | | |
| Address 45 Akerley Blvd Dartmouth NS B3B 1J7 | Address | | Project # 088664-05 | Project Name ATLANTIC GOLD-BEAVERTON | | | |
| Phone (902) 468-1248 Fax: (902) 468-2207 | Phone (902) 468-1248 Fax: (902) 468-2207 | | Site # | Sampled By DAWN NEGUS / ZACH JEWLES | | | |
| Email tjeffrey@croworld.com | Email amanda.facey@ghd.com, NationalEDDsupport@maxxa | | | | | | |

| | | | | |
|-----------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regulatory Criteria: | Special Instructions | ANALYSIS REQUESTED (PLEASE BE SPECIFIC) | | Turnaround Time (TAT) Required: |
| *** Specify Matrix: Surface/Ground/Tapwater/Sewage/Effluent/Seawater Potable/Nonpotable/Tissue/Soil/Sediment/Metal | | RCap-MS Total Metals in Water | Mercury - Total (CVAA,LL) | 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. <input checked="" type="checkbox"/> 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: _____ <input type="checkbox"/> |

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

| Sample Barcode Label | Sample (Location) Identification | Date Sampled | Time Sampled | Matrix | Field/Filtered & Reserved Lab Filtration Required | RCap-MS Total Metals in Water | Mercury - Total (CVAA,LL) | | | | | | | # of Bottles | Comments / Hazards / Other Required Analysis |
|----------------------|----------------------------------|--------------|--------------|--------|------------------------------------------------------|-------------------------------|---------------------------|--|--|--|--|--|--|--------------|----------------------------------------------|
| 1 | SW-1 | 29/7/15 | 14:15 | SW | X | X | X | | | | | | | 5 | |
| 2 | SW-2A | 29/7/15 | 14:45 | SW | X | X | X | | | | | | | 5 | |
| 3 | SW-4A | 29/7/15 | 15:27 | SW | X | X | X | | | | | | | 5 | |
| | SW-5 | 29/7/15 | 15:55 | SW | X | X | X | | | | | | | 5 | |
| | SW-6A | 29/7/15 | 16:21 | SW | X | X | X | | | | | | | 5 | |
| | SW-9 | 29/7/15 | 16:48 | SW | X | X | X | | | | | | | 5 | 2015 JUL 30 12:24 |
| | SW-10 | 29/7/15 | 15:48 | SW | X | X | X | | | | | | | 5 | |
| | SW-9D | 29/7/15 | 16:48 | SW | X | X | X | | | | | | | 5 | 15 JUL 30 8:12 |

| | | | | | | | | | |
|--------------------------------------------------|------------------------------|--------------|----------------------------------------------|------------------|------|------------------------------------|--------------------------------------------|--------------------------------------|--------------------------------------------------------------------------------------------|
| RELINQUISHED BY: (Signature/Print) DAWN NEGUS | Date: (YY/MM/DD) 15/07/30 | Time 9:12 | RECEIVED BY: (Signature/Print) SARA NASON | Date: (YY/MM/DD) | Time | # jars used and not submitted 0 | Time Sensitive <input type="checkbox"/> | Temperature (°C) on Receipt 6 6 3 | Custody Seal Intact on Cooler? <input type="checkbox"/> Yes <input type="checkbox"/> No |
|--------------------------------------------------|------------------------------|--------------|----------------------------------------------|------------------|------|------------------------------------|--------------------------------------------|--------------------------------------|--------------------------------------------------------------------------------------------|

* 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. White: Maxxam Yellow: Client

Your P.O. #: 20-019340
 Your Project #: 088664-05
 Site Location: ATLANTIC GOLD-BEAVER DAM
 Your C.O.C. #: N/A

Attention:Dawn Negus

GHD Limited
 45 Akerley Blvd
 Dartmouth , NS
 B3B 1J7

Report Date: 2015/09/01
 Report #: R3647471
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5H0151
Received: 2015/08/25, 10:09

Sample Matrix: Water
 # Samples Received: 8

| Analyses | Quantity | Date | Date | Laboratory Method | Reference |
|--------------------------------------|----------|------------|------------|-------------------|----------------------|
| | | Extracted | Analyzed | | |
| Carbonate, Bicarbonate and Hydroxide | 3 | N/A | 2015/08/28 | N/A | SM 22 4500-CO2 D |
| Carbonate, Bicarbonate and Hydroxide | 5 | N/A | 2015/08/31 | N/A | SM 22 4500-CO2 D |
| Alkalinity | 8 | N/A | 2015/08/31 | ATL SOP 00013 | EPA 310.2 R1974 m |
| Chloride | 8 | N/A | 2015/09/01 | ATL SOP 00014 | SM 22 4500-Cl- E m |
| Colour | 8 | N/A | 2015/08/31 | ATL SOP 00020 | SM 22 2120C m |
| Conductance - water | 8 | N/A | 2015/08/28 | ATL SOP 00004 | SM 22 2510B m |
| Hardness (calculated as CaCO3) | 8 | N/A | 2015/09/01 | ATL SOP 00048 | SM 22 2340 B |
| Mercury - Total (CVAA,LL) | 8 | 2015/08/31 | 2015/08/31 | ATL SOP 00026 | EPA 245.1 R3 m |
| Metals Water Total MS | 8 | 2015/08/28 | 2015/08/31 | ATL SOP 00058 | EPA 6020A R1 m |
| Ion Balance (% Difference) | 8 | N/A | 2015/09/01 | | Auto Calc. |
| Anion and Cation Sum | 8 | N/A | 2015/09/01 | | Auto Calc. |
| Nitrogen Ammonia - water | 8 | N/A | 2015/08/31 | ATL SOP 00015 | EPA 350.1 R2 m |
| Nitrogen - Nitrate + Nitrite | 8 | N/A | 2015/09/01 | ATL SOP 00016 | USGS SOPINCF0452.2 m |
| Nitrogen - Nitrite | 8 | N/A | 2015/08/31 | ATL SOP 00017 | SM 22 4500-NO2- B m |
| Nitrogen - Nitrate (as N) | 8 | N/A | 2015/09/01 | ATL SOP 00018 | ASTM D3867 |
| pH (1) | 8 | N/A | 2015/08/28 | ATL SOP 00003 | SM 22 4500-H+ B m |
| Phosphorus - ortho | 8 | N/A | 2015/08/31 | ATL SOP 00021 | EPA 365.2 m |
| Sat. pH and Langelier Index (@ 20C) | 8 | N/A | 2015/09/01 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 8 | N/A | 2015/09/01 | ATL SOP 00049 | Auto Calc. |
| Reactive Silica | 8 | N/A | 2015/09/01 | ATL SOP 00022 | EPA 366.0 m |
| Sulphate | 8 | N/A | 2015/09/01 | ATL SOP 00023 | EPA 375.4 R1978 m |
| Total Dissolved Solids (TDS calc) | 8 | N/A | 2015/09/01 | | Auto Calc. |
| Organic carbon - Total (TOC) (2) | 8 | N/A | 2015/09/01 | ATL SOP 00037 | SM 22 5310C m |
| Turbidity | 8 | N/A | 2015/08/28 | ATL SOP 00011 | EPA 180.1 R2 m |

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 require 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.

Your P.O. #: 20-019340
Your Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your C.O.C. #: N/A

Attention:Dawn Negus

GHD Limited
45 Akerley Blvd
Dartmouth , NS
B3B 1J7

Report Date: 2015/09/01
Report #: R3647471
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5H0151
Received: 2015/08/25, 10:09

Encryption Key



Rachael Mansfield
01 Sep 2015 16:16:12 -03:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Michelle Hill, Project Manager
Email: MHill@maxxam.ca
Phone# (902)420-0203 Ext:289

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B5H0151
Report Date: 2015/09/01

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: DN

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | AWD356 | | | AWD357 | | | AWD358 | | | AWD359 | | |
|---------------|-------|---------------------|-----|----------|---------------------|-------|-----|---------------------|------|-----|---------------------|--|--|
| Sampling Date | | 2015/08/24 14:04 | | | 2015/08/24 10:40 | | | 2015/08/24 11:30 | | | 2015/08/24 13:33 | | |
| COC Number | | N/A | | | N/A | | | N/A | | | N/A | | |
| | UNITS | SW-1 | RDL | QC Batch | SW-2A | SW-4A | RDL | QC Batch | SW-5 | RDL | QC Batch | | |

| Calculated Parameters | | | | | | | | | | | |
|-------------------------------------|------|--------|-------|---------|--------|--------|-------|---------|-------|-------|---------|
| Anion Sum | me/L | 0.100 | N/A | 4164169 | 0.100 | 0.110 | N/A | 4164169 | 0.410 | N/A | 4164169 |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 1.0 | 4164165 | <1.0 | <1.0 | 1.0 | 4164165 | 13 | 1.0 | 4164165 |
| Calculated TDS | mg/L | 12 | 1.0 | 4164173 | 12 | 12 | 1.0 | 4164173 | 25 | 1.0 | 4164173 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 1.0 | 4164165 | <1.0 | <1.0 | 1.0 | 4164165 | <1.0 | 1.0 | 4164165 |
| Cation Sum | me/L | 0.230 | N/A | 4164169 | 0.220 | 0.230 | N/A | 4164169 | 0.420 | N/A | 4164169 |
| Hardness (CaCO3) | mg/L | 4.0 | 1.0 | 4164167 | 3.6 | 3.9 | 1.0 | 4164167 | 15 | 1.0 | 4164167 |
| Ion Balance (% Difference) | % | 39.4 | N/A | 4164168 | 37.5 | 35.3 | N/A | 4164168 | 1.20 | N/A | 4164168 |
| Langelier Index (@ 20C) | N/A | NC | | 4164171 | NC | NC | | 4164171 | -2.55 | | 4164171 |
| Langelier Index (@ 4C) | N/A | NC | | 4164172 | NC | NC | | 4164172 | -2.80 | | 4164172 |
| Nitrate (N) | mg/L | <0.050 | 0.050 | 4164170 | <0.050 | <0.050 | 0.050 | 4164170 | 0.055 | 0.050 | 4164170 |
| Saturation pH (@ 20C) | N/A | NC | | 4164171 | NC | NC | | 4164171 | 9.50 | | 4164171 |
| Saturation pH (@ 4C) | N/A | NC | | 4164172 | NC | NC | | 4164172 | 9.75 | | 4164172 |

| Inorganics | | | | | | | | | | | |
|-----------------------------------|-------|--------|-------|---------|--------|--------|-------|---------|--------|-------|---------|
| Total Alkalinity (Total as CaCO3) | mg/L | <5.0 | 5.0 | 4168809 | <5.0 | <5.0 | 5.0 | 4168809 | 13 | 5.0 | 4168809 |
| Dissolved Chloride (Cl) | mg/L | 3.7 | 1.0 | 4168823 | 3.7 | 3.7 | 1.0 | 4168823 | 2.2 | 1.0 | 4168823 |
| Colour | TCU | 230 | 25 | 4168833 | 230 | 260 | 50 | 4168833 | 37 | 5.0 | 4168833 |
| Nitrate + Nitrite | mg/L | <0.050 | 0.050 | 4168838 | <0.050 | <0.050 | 0.050 | 4168838 | 0.055 | 0.050 | 4168838 |
| Nitrite (N) | mg/L | <0.010 | 0.010 | 4168842 | <0.010 | <0.010 | 0.010 | 4168842 | <0.010 | 0.010 | 4168842 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 0.050 | 4169316 | 0.084 | <0.050 | 0.050 | 4169316 | <0.050 | 0.050 | 4169316 |
| Total Organic Carbon (C) | mg/L | 11 (1) | 5.0 | 4172579 | 14 (1) | 14 (1) | 5.0 | 4172599 | 4.3 | 0.50 | 4172599 |
| Orthophosphate (P) | mg/L | <0.010 | 0.010 | 4168837 | <0.010 | <0.010 | 0.010 | 4168837 | 0.011 | 0.010 | 4168837 |
| pH | pH | 5.59 | N/A | 4168309 | 5.16 | 4.93 | N/A | 4168309 | 6.95 | N/A | 4168375 |
| Reactive Silica (SiO2) | mg/L | 3.2 | 0.50 | 4168830 | 3.2 | 3.0 | 0.50 | 4168830 | 2.5 | 0.50 | 4168830 |
| Dissolved Sulphate (SO4) | mg/L | <2.0 | 2.0 | 4168826 | <2.0 | <2.0 | 2.0 | 4168826 | 3.6 | 2.0 | 4168826 |
| Turbidity | NTU | 1.2 | 0.10 | 4168900 | 1.9 | 1.0 | 0.10 | 4168900 | 1.2 | 0.10 | 4168900 |
| Conductivity | uS/cm | 21 | 1.0 | 4168318 | 21 | 21 | 1.0 | 4168318 | 40 | 1.0 | 4168392 |

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

Maxxam Job #: B5H0151
Report Date: 2015/09/01

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: DN

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | AWD360 | AWD361 | | AWD362 | AWD363 | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------|---------------------|------------|---------------------|---------------------|------------|-----------------|
| Sampling Date | | 2015/08/24 12:27 | 2015/08/24 14:25 | | 2015/08/24 13:52 | 2015/08/24 13:52 | | |
| COC Number | | N/A | N/A | | N/A | N/A | | |
| | UNITS | SW-6A | SW-9 | RDL | SW-10 | SW-10D | RDL | QC Batch |
| Calculated Parameters | | | | | | | | |
| Anion Sum | me/L | 0.100 | 0.150 | N/A | 0.770 | 0.780 | N/A | 4164169 |
| Bicarb. Alkalinity (calc. as CaCO ₃) | mg/L | <1.0 | <1.0 | 1.0 | 25 | 25 | 1.0 | 4164165 |
| Calculated TDS | mg/L | 12 | 15 | 1.0 | 55 | 55 | 1.0 | 4164173 |
| Carb. Alkalinity (calc. as CaCO ₃) | mg/L | <1.0 | <1.0 | 1.0 | <1.0 | <1.0 | 1.0 | 4164165 |
| Cation Sum | me/L | 0.240 | 0.330 | N/A | 0.960 | 0.960 | N/A | 4164169 |
| Hardness (CaCO ₃) | mg/L | 4.4 | 7.5 | 1.0 | 30 | 30 | 1.0 | 4164167 |
| Ion Balance (% Difference) | % | 41.2 | 37.5 | N/A | 11.0 | 10.3 | N/A | 4164168 |
| Langelier Index (@ 20C) | N/A | NC | NC | | -2.67 | -2.60 | | 4164171 |
| Langelier Index (@ 4C) | N/A | NC | NC | | -2.92 | -2.85 | | 4164172 |
| Nitrate (N) | mg/L | <0.050 | <0.050 | 0.050 | <0.050 | <0.050 | 0.050 | 4164170 |
| Saturation pH (@ 20C) | N/A | NC | NC | | 8.91 | 8.91 | | 4164171 |
| Saturation pH (@ 4C) | N/A | NC | NC | | 9.16 | 9.16 | | 4164172 |
| Inorganics | | | | | | | | |
| Total Alkalinity (Total as CaCO ₃) | mg/L | <5.0 | <5.0 | 5.0 | 25 | 25 | 5.0 | 4168809 |
| Dissolved Chloride (Cl) | mg/L | 3.5 | 5.4 | 1.0 | 2.9 | 3.1 | 1.0 | 4168823 |
| Colour | TCU | 220 | 180 | 25 | 100 | 110 | 25 | 4168833 |
| Nitrate + Nitrite | mg/L | <0.050 | <0.050 | 0.050 | <0.050 | <0.050 | 0.050 | 4168838 |
| Nitrite (N) | mg/L | <0.010 | <0.010 | 0.010 | <0.010 | <0.010 | 0.010 | 4168842 |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | <0.050 | 0.050 | 0.10 | 0.19 | 0.050 | 4169316 |
| Total Organic Carbon (C) | mg/L | 12 (1) | 11 (1) | 5.0 | 7.6 | 7.4 | 0.50 | 4172599 |
| Orthophosphate (P) | mg/L | <0.010 | <0.010 | 0.010 | 0.064 | 0.064 | 0.010 | 4168837 |
| pH | pH | 5.37 | 6.05 | N/A | 6.24 | 6.31 | N/A | 4168354 |
| Reactive Silica (SiO ₂) | mg/L | 2.7 | 2.3 | 0.50 | 7.0 | 7.0 | 0.50 | 4168830 |
| Dissolved Sulphate (SO ₄) | mg/L | <2.0 | <2.0 | 2.0 | 8.8 | 8.9 | 2.0 | 4168826 |
| Turbidity | NTU | 0.54 | 0.82 | 0.10 | 10 | 8.3 | 0.10 | 4168900 |
| Conductivity | uS/cm | 20 | 29 | 1.0 | 75 | 76 | 1.0 | 4168347 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Elevated reporting limit due to sample matrix. | | | | | | | | |

Maxxam Job #: B5H0151
Report Date: 2015/09/01

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: DN

MERCURY BY COLD VAPOUR AA (WATER)

| | | | | | | | | | | |
|----------------------|--------------|---------------------|-------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------|-----------------|
| Maxxam ID | | AWD356 | AWD356 | AWD357 | AWD358 | AWD359 | AWD360 | AWD361 | | |
| Sampling Date | | 2015/08/24 14:04 | 2015/08/24 14:04 | 2015/08/24 10:40 | 2015/08/24 11:30 | 2015/08/24 13:33 | 2015/08/24 12:27 | 2015/08/24 14:25 | | |
| COC Number | | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | |
| | UNITS | SW-1 | SW-1 Lab-Dup | SW-2A | SW-4A | SW-5 | SW-6A | SW-9 | RDL | QC Batch |

| | | | | | | | | | | |
|------------------------------------------------------------------------------------------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| Metals | | | | | | | | | | |
| Total Mercury (Hg) | ug/L | 0.032 | 0.035 | 0.035 | 0.028 | 0.027 | 0.035 | 0.032 | 0.013 | 4170872 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate | | | | | | | | | | |

| | | | | | |
|----------------------------------------------------------------------|--------------|---------------------|---------------------|------------|-----------------|
| Maxxam ID | | AWD362 | AWD363 | | |
| Sampling Date | | 2015/08/24 13:52 | 2015/08/24 13:52 | | |
| COC Number | | N/A | N/A | | |
| | UNITS | SW-10 | SW-10D | RDL | QC Batch |
| Metals | | | | | |
| Total Mercury (Hg) | ug/L | 0.025 | 0.028 | 0.013 | 4170872 |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch | | | | | |

Maxxam Job #: B5H0151
Report Date: 2015/09/01

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: DN

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | AWD356 | AWD357 | AWD358 | AWD359 | AWD360 | AWD361 | AWD362 | | |
|---------------|-------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----|----------|
| Sampling Date | | 2015/08/24 14:04 | 2015/08/24 10:40 | 2015/08/24 11:30 | 2015/08/24 13:33 | 2015/08/24 12:27 | 2015/08/24 14:25 | 2015/08/24 13:52 | | |
| COC Number | | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | |
| | UNITS | SW-1 | SW-2A | SW-4A | SW-5 | SW-6A | SW-9 | SW-10 | RDL | QC Batch |

| Metals | | | | | | | | | | |
|-----------------------|------|-------|-------|-------|--------|-------|-------|-------|-------|---------|
| Total Aluminum (Al) | ug/L | 390 | 400 | 390 | 52 | 470 | 320 | 220 | 5.0 | 4168208 |
| Total Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4168208 |
| Total Arsenic (As) | ug/L | 4.1 | 1.3 | 5.6 | 47 | 7.6 | <1.0 | 380 | 1.0 | 4168208 |
| Total Barium (Ba) | ug/L | 4.2 | 4.6 | 3.4 | 4.5 | 3.8 | 4.2 | 7.1 | 1.0 | 4168208 |
| Total Beryllium (Be) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4168208 |
| Total Bismuth (Bi) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4168208 |
| Total Boron (B) | ug/L | <50 | <50 | <50 | <50 | <50 | <50 | <50 | 50 | 4168208 |
| Total Cadmium (Cd) | ug/L | 0.036 | 0.022 | 0.021 | <0.010 | 0.031 | 0.015 | 0.011 | 0.010 | 4168208 |
| Total Calcium (Ca) | ug/L | 900 | 770 | 930 | 4500 | 1000 | 1700 | 10000 | 100 | 4168208 |
| Total Chromium (Cr) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4168208 |
| Total Cobalt (Co) | ug/L | 0.57 | 0.53 | 0.48 | <0.40 | 1.0 | <0.40 | 2.2 | 0.40 | 4168208 |
| Total Copper (Cu) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4168208 |
| Total Iron (Fe) | ug/L | 1000 | 1000 | 1100 | 750 | 1500 | 580 | 6000 | 50 | 4168208 |
| Total Lead (Pb) | ug/L | 0.58 | 0.57 | 0.55 | <0.50 | <0.50 | <0.50 | 1.1 | 0.50 | 4168208 |
| Total Magnesium (Mg) | ug/L | 420 | 420 | 370 | 870 | 430 | 810 | 1200 | 100 | 4168208 |
| Total Manganese (Mn) | ug/L | 65 | 58 | 51 | 97 | 100 | 76 | 290 | 2.0 | 4168208 |
| Total Molybdenum (Mo) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4168208 |
| Total Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 6.2 | 2.0 | 4168208 |
| Total Phosphorus (P) | ug/L | 140 | 140 | 150 | 150 | 150 | 160 | 140 | 100 | 4168208 |
| Total Potassium (K) | ug/L | 190 | 170 | 200 | 450 | 240 | 180 | 1000 | 100 | 4168208 |
| Total Selenium (Se) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 4168208 |
| Total Silver (Ag) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 4168208 |
| Total Sodium (Na) | ug/L | 2400 | 2300 | 2200 | 2000 | 2200 | 3500 | 2500 | 100 | 4168208 |
| Total Strontium (Sr) | ug/L | 8.0 | 7.4 | 7.2 | 27 | 7.6 | 6.6 | 33 | 2.0 | 4168208 |
| Total Thallium (Tl) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 4168208 |
| Total Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4168208 |
| Total Titanium (Ti) | ug/L | 4.2 | 5.0 | 4.9 | <2.0 | 4.3 | 4.3 | 2.8 | 2.0 | 4168208 |
| Total Uranium (U) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.11 | 0.21 | 0.10 | 4168208 |
| Total Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 4168208 |
| Total Zinc (Zn) | ug/L | <5.0 | <5.0 | 6.0 | <5.0 | <5.0 | <5.0 | <5.0 | 5.0 | 4168208 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B5H0151
Report Date: 2015/09/01

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: DN

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | AWD363 | | |
|----------------------------------|-------|---------------------|-------|----------|
| Sampling Date | | 2015/08/24 13:52 | | |
| COC Number | | N/A | | |
| | UNITS | SW-10D | RDL | QC Batch |
| Metals | | | | |
| Total Aluminum (Al) | ug/L | 210 | 5.0 | 4168208 |
| Total Antimony (Sb) | ug/L | <1.0 | 1.0 | 4168208 |
| Total Arsenic (As) | ug/L | 370 | 1.0 | 4168208 |
| Total Barium (Ba) | ug/L | 6.9 | 1.0 | 4168208 |
| Total Beryllium (Be) | ug/L | <1.0 | 1.0 | 4168208 |
| Total Bismuth (Bi) | ug/L | <2.0 | 2.0 | 4168208 |
| Total Boron (B) | ug/L | <50 | 50 | 4168208 |
| Total Cadmium (Cd) | ug/L | <0.010 | 0.010 | 4168208 |
| Total Calcium (Ca) | ug/L | 10000 | 100 | 4168208 |
| Total Chromium (Cr) | ug/L | <1.0 | 1.0 | 4168208 |
| Total Cobalt (Co) | ug/L | 2.3 | 0.40 | 4168208 |
| Total Copper (Cu) | ug/L | <2.0 | 2.0 | 4168208 |
| Total Iron (Fe) | ug/L | 5900 | 50 | 4168208 |
| Total Lead (Pb) | ug/L | 1.2 | 0.50 | 4168208 |
| Total Magnesium (Mg) | ug/L | 1200 | 100 | 4168208 |
| Total Manganese (Mn) | ug/L | 280 | 2.0 | 4168208 |
| Total Molybdenum (Mo) | ug/L | <2.0 | 2.0 | 4168208 |
| Total Nickel (Ni) | ug/L | 6.1 | 2.0 | 4168208 |
| Total Phosphorus (P) | ug/L | 140 | 100 | 4168208 |
| Total Potassium (K) | ug/L | 1000 | 100 | 4168208 |
| Total Selenium (Se) | ug/L | <1.0 | 1.0 | 4168208 |
| Total Silver (Ag) | ug/L | <0.10 | 0.10 | 4168208 |
| Total Sodium (Na) | ug/L | 2400 | 100 | 4168208 |
| Total Strontium (Sr) | ug/L | 33 | 2.0 | 4168208 |
| Total Thallium (Tl) | ug/L | <0.10 | 0.10 | 4168208 |
| Total Tin (Sn) | ug/L | <2.0 | 2.0 | 4168208 |
| Total Titanium (Ti) | ug/L | 2.9 | 2.0 | 4168208 |
| Total Uranium (U) | ug/L | 0.20 | 0.10 | 4168208 |
| Total Vanadium (V) | ug/L | <2.0 | 2.0 | 4168208 |
| Total Zinc (Zn) | ug/L | <5.0 | 5.0 | 4168208 |
| RDL = Reportable Detection Limit | | | | |
| QC Batch = Quality Control Batch | | | | |

Maxxam Job #: B5H0151
Report Date: 2015/09/01

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: DN

GENERAL COMMENTS

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

| | |
|-----------|-------|
| Package 1 | 2.7°C |
|-----------|-------|

Sample AWD356-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AWD357-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AWD358-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AWD360-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AWD361-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AWD362-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AWD363-01 : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Results relate only to the items tested.

Maxxam Job #: B5H0151
Report Date: 2015/09/01

QUALITY ASSURANCE REPORT

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: DN

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | % Recovery | QC Limits |
| 4168208 | Total Aluminum (Al) | 2015/08/29 | 105 | 80 - 120 | 104 | 80 - 120 | <5.0 | ug/L | | | | |
| 4168208 | Total Antimony (Sb) | 2015/08/29 | 106 | 80 - 120 | 100 | 80 - 120 | <1.0 | ug/L | | | | |
| 4168208 | Total Arsenic (As) | 2015/08/29 | 97 | 80 - 120 | 93 | 80 - 120 | <1.0 | ug/L | | | | |
| 4168208 | Total Barium (Ba) | 2015/08/29 | 101 | 80 - 120 | 98 | 80 - 120 | <1.0 | ug/L | | | | |
| 4168208 | Total Beryllium (Be) | 2015/08/29 | 102 | 80 - 120 | 97 | 80 - 120 | <1.0 | ug/L | | | | |
| 4168208 | Total Bismuth (Bi) | 2015/08/29 | 101 | 80 - 120 | 101 | 80 - 120 | <2.0 | ug/L | | | | |
| 4168208 | Total Boron (B) | 2015/08/29 | 102 | 80 - 120 | 96 | 80 - 120 | <50 | ug/L | | | | |
| 4168208 | Total Cadmium (Cd) | 2015/08/29 | 99 | 80 - 120 | 96 | 80 - 120 | <0.010 | ug/L | | | | |
| 4168208 | Total Calcium (Ca) | 2015/08/29 | NC | 80 - 120 | 102 | 80 - 120 | <100 | ug/L | 2.4 (1) | 20 | | |
| 4168208 | Total Chromium (Cr) | 2015/08/29 | 97 | 80 - 120 | 94 | 80 - 120 | <1.0 | ug/L | | | | |
| 4168208 | Total Cobalt (Co) | 2015/08/29 | 95 | 80 - 120 | 93 | 80 - 120 | <0.40 | ug/L | | | | |
| 4168208 | Total Copper (Cu) | 2015/08/29 | 93 | 80 - 120 | 92 | 80 - 120 | <2.0 | ug/L | NC (1) | 20 | | |
| 4168208 | Total Iron (Fe) | 2015/08/29 | NC | 80 - 120 | 98 | 80 - 120 | <50 | ug/L | 1.5 (1) | 20 | | |
| 4168208 | Total Lead (Pb) | 2015/08/29 | 100 | 80 - 120 | 98 | 80 - 120 | <0.50 | ug/L | | | | |
| 4168208 | Total Magnesium (Mg) | 2015/08/29 | 104 | 80 - 120 | 103 | 80 - 120 | <100 | ug/L | 1.6 (1) | 20 | | |
| 4168208 | Total Manganese (Mn) | 2015/08/29 | NC | 80 - 120 | 99 | 80 - 120 | <2.0 | ug/L | 0.54 (1) | 20 | | |
| 4168208 | Total Molybdenum (Mo) | 2015/08/29 | 105 | 80 - 120 | 99 | 80 - 120 | <2.0 | ug/L | | | | |
| 4168208 | Total Nickel (Ni) | 2015/08/29 | 95 | 80 - 120 | 94 | 80 - 120 | <2.0 | ug/L | | | | |
| 4168208 | Total Phosphorus (P) | 2015/08/29 | 104 | 80 - 120 | 103 | 80 - 120 | 160, RDL=100 | ug/L | | | | |
| 4168208 | Total Potassium (K) | 2015/08/29 | NC | 80 - 120 | 104 | 80 - 120 | <100 | ug/L | 2.6 (1) | 20 | | |
| 4168208 | Total Selenium (Se) | 2015/08/29 | 95 | 80 - 120 | 93 | 80 - 120 | <1.0 | ug/L | | | | |
| 4168208 | Total Silver (Ag) | 2015/08/29 | 100 | 80 - 120 | 96 | 80 - 120 | <0.10 | ug/L | | | | |
| 4168208 | Total Sodium (Na) | 2015/08/29 | NC | 80 - 120 | 102 | 80 - 120 | <100 | ug/L | 1.9 (1) | 20 | | |
| 4168208 | Total Strontium (Sr) | 2015/08/29 | NC | 80 - 120 | 98 | 80 - 120 | <2.0 | ug/L | | | | |
| 4168208 | Total Thallium (Tl) | 2015/08/29 | 100 | 80 - 120 | 98 | 80 - 120 | <0.10 | ug/L | | | | |
| 4168208 | Total Tin (Sn) | 2015/08/29 | 104 | 80 - 120 | 99 | 80 - 120 | <2.0 | ug/L | | | | |
| 4168208 | Total Titanium (Ti) | 2015/08/29 | 105 | 80 - 120 | 101 | 80 - 120 | <2.0 | ug/L | | | | |
| 4168208 | Total Uranium (U) | 2015/08/29 | 111 | 80 - 120 | 106 | 80 - 120 | <0.10 | ug/L | | | | |
| 4168208 | Total Vanadium (V) | 2015/08/29 | 99 | 80 - 120 | 95 | 80 - 120 | <2.0 | ug/L | | | | |
| 4168208 | Total Zinc (Zn) | 2015/08/29 | 94 | 80 - 120 | 92 | 80 - 120 | <5.0 | ug/L | NC (1) | 20 | | |

Maxxam Job #: B5H0151
Report Date: 2015/09/01

QUALITY ASSURANCE REPORT(CONT'D)

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: DN

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | | QC Standard | |
|----------|------------------------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | % Recovery | QC Limits |
| 4168309 | pH | 2015/08/28 | | | | | | | 1.3 (1) | N/A | 99 | 97 - 103 |
| 4168318 | Conductivity | 2015/08/28 | | | 98 | 80 - 120 | 1.3, RDL=1.0 | uS/cm | NC (1) | 25 | | |
| 4168347 | Conductivity | 2015/08/28 | | | 101 | 80 - 120 | 1.1, RDL=1.0 | uS/cm | 0.35 (1) | 25 | | |
| 4168354 | pH | 2015/08/28 | | | | | | | 0.66 (1) | N/A | 100 | 97 - 103 |
| 4168375 | pH | 2015/08/28 | | | | | | | 0.42 (1) | N/A | 100 | 97 - 103 |
| 4168392 | Conductivity | 2015/08/28 | | | 100 | 80 - 120 | 1.1, RDL=1.0 | uS/cm | 0.48 (1) | 25 | | |
| 4168809 | Total Alkalinity (Total as CaCO ₃) | 2015/08/31 | 106 | 80 - 120 | 103 | 80 - 120 | <5.0 | mg/L | NC (1) | 25 | | |
| 4168823 | Dissolved Chloride (Cl) | 2015/09/01 | 102 | 80 - 120 | 104 | 80 - 120 | <1.0 | mg/L | NC (1) | 25 | 105 | 80 - 120 |
| 4168826 | Dissolved Sulphate (SO ₄) | 2015/09/01 | 107 | 80 - 120 | 100 | 80 - 120 | <2.0 | mg/L | NC (1) | 25 | | |
| 4168830 | Reactive Silica (SiO ₂) | 2015/09/01 | 100 | 80 - 120 | 99 | 80 - 120 | <0.50 | mg/L | NC (1) | 25 | | |
| 4168833 | Colour | 2015/08/31 | | | 102 | 80 - 120 | <5.0 | TCU | NC (1) | 20 | | |
| 4168837 | Orthophosphate (P) | 2015/08/31 | 98 | 80 - 120 | 97 | 80 - 120 | <0.010 | mg/L | NC (1) | 25 | | |
| 4168838 | Nitrate + Nitrite | 2015/09/01 | 98 | 80 - 120 | 98 | 80 - 120 | <0.050 | mg/L | NC (1) | 25 | | |
| 4168842 | Nitrite (N) | 2015/08/31 | 95 | 80 - 120 | 104 | 80 - 120 | <0.010 | mg/L | NC (1) | 25 | | |
| 4168900 | Turbidity | 2015/08/28 | | | | | <0.10 | NTU | 0.33 (1) | 25 | 102 | 80 - 120 |
| 4169316 | Nitrogen (Ammonia Nitrogen) | 2015/08/31 | 98 | 80 - 120 | 95 | 80 - 120 | <0.050 | mg/L | NC (1) | 20 | | |
| 4170872 | Total Mercury (Hg) | 2015/08/31 | 101 (2) | 80 - 120 | 101 | 80 - 120 | <0.013 | ug/L | NC (3) | 20 | | |
| 4172579 | Total Organic Carbon (C) | 2015/09/01 | 91 | 80 - 120 | 101 | 80 - 120 | <0.50 | mg/L | NC (1) | 20 | | |

Maxxam Job #: B5H0151
Report Date: 2015/09/01

QUALITY ASSURANCE REPORT(CONT'D)

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: DN

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | | QC Standard | |
|----------|--------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | % Recovery | QC Limits |
| 4172599 | Total Organic Carbon (C) | 2015/09/01 | 100 | 80 - 120 | 97 | 80 - 120 | <0.50 | mg/L | NC (1) | 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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [AWD357-05]

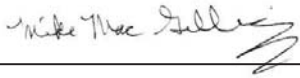
(3) Duplicate Parent ID [AWD356-05]

Maxxam Job #: B5H0151
Report Date: 2015/09/01

GHD Limited
Client Project #: 088664-05
Site Location: ATLANTIC GOLD-BEAVER DAM
Your P.O. #: 20-019340
Sampler Initials: DN

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Mike MacGillivray, Scientific Specialist (Inorganics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Maxxam Analytics International Corporation o/a Maxxam Analytics
 200 Bluewater Road, Bedford, Nova Scotia Canada B4B 1G9 Tel:(902) 420-0203 Toll-Free:800-563-6296 Fax:(902) 420-8612 www.maxxam.ca

Chain Of Custody Record

| | | | | | | | |
|--------------------|----------------------|---------------------------|--|----------------------------|---------------------------|----------------------------|-----------------|
| INVOICE TO: | | Report Information | | Project Information | | Laboratory Use Only | |
| Company Name | #16276 GHD Limited | Company Name | | Quotation # | B37708 | Maxxam Job # | |
| Contact Name | Dawn Negus | Contact Name | | P.O. # | 20-019340 | B5H0151 | Bottle Order #: |
| Address | 45 Akerley Blvd | Address | | Project # | 088664-05 | 526668 | |
| | Dartmouth NS B3B 1J7 | | | Project Name | ATLANTIC GOLD - BEVER DAM | Chain Of Custody Record | Project Manager |
| Phone | (902) 468-1248 | Phone | | Site # | | | Michelle Hill |
| Fax | (902) 468-2207 | Fax | | Sampled By | D. NEGUS / K. BILLIE | C#526668-01-01 | |
| Email | dnegus@craworld.com | Email | | | | | |

| Sample Barcode Label | Sample (Location) Identification | Date Sampled | Time Sampled | Matrix | Field Filtration Required | Lab Filtration & Preserved | ANALYSIS REQUESTED (PLEASE BE SPECIFIC) | | | | | | | | | | # of Bottles | Comments / Hazards / Other Required Analysis |
|----------------------|----------------------------------|------------------|--------------|--------|---------------------------|----------------------------|-----------------------------------------|---------------------------|---|--|--|--|--|--|--|--|--------------|----------------------------------------------|
| | | | | | | | Atlantic RCAP-MS Total Metals in Water | Mercury - Total (CVAA,LL) | | | | | | | | | | |
| | SW-1 | 24/8/15 | 14:04 | SW | | | X | X | | | | | | | | | 5 | |
| | SW-2A | 24/8/15 | 10:40 | SW | | | X | X | | | | | | | | | 5 | |
| | SW-4A | 24/8/15 | 11:30 | SW | | | X | X | | | | | | | | | 5 | |
| | SW-5 | 24/8/15 | 13:33 | SW | | | X | X | | | | | | | | | 5 | |
| | SW-6A | 24/8/15 | 12:27 | SW | | | X | X | | | | | | | | | 5 | |
| | SW-9 | 24/8/15 | 14:25 | SW | | | X | X | | | | | | | | | 5 | |
| | SW-10 | 24/8/15 | 13:52 | SW | | | X | X | | | | | | | | | 5 | |
| | SW-10 | SW-10 | | | SW | | | X | X | | | | | | | | - | |
| | SW-10.D | 24/8/15 | 13:52 | SW | | | X | X | | | | | | | | | 5 | |
| | | | | | | | | | | | | | | | | | | |

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 | | |
| <i>Dawn Negus</i> | | 15/25/08 | 10:08 | <i>Joe Doyle</i> | | | | 0 | Time Sensitive | Temperature (°C) on Receipt | Custody Seal Intact on Cooler? |
| | | | | <i>Joseph Wilson</i> | | | | | <input type="checkbox"/> | 3 3 2 | <input type="checkbox"/> Yes <input type="checkbox"/> No |

* 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.

White: Maxxam Yellow: Client

Your P.O. #: 73512044
 Your Project #: 088664-20
 Site Location: BEAVER DAM
 Your C.O.C. #: D34770

Attention: Jeff Parks

GHD Limited
 45 Akerley Blvd
 Dartmouth, NS
 CANADA B3B 1J7

Report Date: 2018/06/26
 Report #: R5266818
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8F1147
Received: 2018/06/19, 14:47

Sample Matrix: Water
 # Samples Received: 12

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Reference |
|--------------------------------------|-----------------|---------------------------|--------------------------|--------------------------|---------------------|
| Carbonate, Bicarbonate and Hydroxide | 12 | N/A | 2018/06/22 | N/A | SM 22 4500-CO2 D |
| Alkalinity | 12 | N/A | 2018/06/25 | ATL SOP 00013 | EPA 310.2 R1974 m |
| Chloride | 12 | N/A | 2018/06/22 | ATL SOP 00014 | SM 22 4500-Cl- E m |
| Colour | 11 | N/A | 2018/06/22 | ATL SOP 00020 | SM 22 2120C m |
| Colour | 1 | N/A | 2018/06/25 | ATL SOP 00020 | SM 22 2120C m |
| Conductance - water | 12 | N/A | 2018/06/22 | ATL SOP 00004 | SM 23 2510B m |
| Hardness (calculated as CaCO3) | 12 | N/A | 2018/06/22 | ATL SOP 00048 | SM 22 2340 B |
| Metals Water Diss. MS (as rec'd) | 12 | N/A | 2018/06/22 | ATL SOP 00058 | EPA 6020A R1 m |
| Ion Balance (% Difference) | 12 | N/A | 2018/06/26 | N/A | Auto Calc. |
| Anion and Cation Sum | 12 | N/A | 2018/06/22 | N/A | Auto Calc. |
| Nitrogen Ammonia - water | 12 | N/A | 2018/06/21 | ATL SOP 00015 | EPA 350.1 R2 m |
| Nitrogen - Nitrate + Nitrite | 12 | N/A | 2018/06/25 | ATL SOP 00016 | USGS I-2547-11m |
| Nitrogen - Nitrite | 12 | N/A | 2018/06/25 | ATL SOP 00017 | SM 23 4500-NO2- B m |
| Nitrogen - Nitrate (as N) | 12 | N/A | 2018/06/26 | ATL SOP 00018 | ASTM D3867-16 |
| pH (1) | 12 | N/A | 2018/06/22 | ATL SOP 00003 | SM 23 4500-H+ B m |
| Phosphorus - ortho | 12 | N/A | 2018/06/22 | ATL SOP 00021 | SM 23 4500-P E m |
| Sat. pH and Langelier Index (@ 20C) | 12 | N/A | 2018/06/26 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 12 | N/A | 2018/06/26 | ATL SOP 00049 | Auto Calc. |
| Reactive Silica | 12 | N/A | 2018/06/25 | ATL SOP 00022 | EPA 366.0 m |
| Sulphate | 12 | N/A | 2018/06/22 | ATL SOP 00023 | ASTM D516-16 m |
| Total Dissolved Solids (TDS calc) | 12 | N/A | 2018/06/26 | N/A | Auto Calc. |
| Organic carbon - Total (TOC) (2) | 12 | N/A | 2018/06/22 | ATL SOP 00203 | SM 23 5310B m |
| Turbidity | 12 | N/A | 2018/06/22 | ATL SOP 00011 | EPA 180.1 R2 m |

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam 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

Your P.O. #: 73512044
Your Project #: 088664-20
Site Location: BEAVER DAM
Your C.O.C. #: D34770

Attention: Jeff Parks

GHD Limited
45 Akerley Blvd
Dartmouth, NS
CANADA B3B 1J7

Report Date: 2018/06/26
Report #: R5266818
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8F1147

Received: 2018/06/19, 14:47

indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam 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 Maxxam, unless otherwise agreed in writing.

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.

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 require 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



Kavya Nair
Project Manager Assistant
26 Jun 2018 13:41:37

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Heather Macumber, Senior Project Manager

Email: HMacumber@maxxam.ca

Phone# (902)420-0203 Ext:226

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GZX294 | GZX295 | GZX296 | | GZX297 | | | |
|----------------------------------------------------------------------------------------------|-------|---------------------|---------------------|---------------------|----------|---------------------|-------|----------|------|
| Sampling Date | | 2018/06/19 10:29 | 2018/06/19 10:20 | 2018/06/19 10:16 | | 2018/06/19 11:12 | | | |
| COC Number | | D34770 | D34770 | D34770 | | D34770 | | | |
| | UNITS | MW-01A | MW-01B | MW-01C | QC Batch | MW-02A | RDL | QC Batch | MDL |
| Calculated Parameters | | | | | | | | | |
| Anion Sum | me/L | 0.560 | 1.56 | 1.35 | 5590385 | 0.330 | N/A | 5590385 | N/A |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 18 | 60 | 52 | 5590380 | 6.0 | 1.0 | 5590380 | 0.20 |
| Calculated TDS | mg/L | 37 | 91 | 79 | 5590389 | 21 | 1.0 | 5590389 | 0.20 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | <1.0 | <1.0 | 5590380 | <1.0 | 1.0 | 5590380 | 0.20 |
| Cation Sum | me/L | 0.510 | 1.47 | 1.26 | 5590385 | 0.260 | N/A | 5590385 | N/A |
| Hardness (CaCO3) | mg/L | 2.2 | 54 | 40 | 5590383 | 4.9 | 1.0 | 5590383 | 1.0 |
| Ion Balance (% Difference) | % | 4.67 | 2.97 | 3.45 | 5590384 | 11.9 | N/A | 5590384 | N/A |
| Langelier Index (@ 20C) | N/A | -3.54 | -0.512 | -1.03 | 5590387 | -4.58 | | 5590387 | |
| Langelier Index (@ 4C) | N/A | -3.79 | -0.763 | -1.28 | 5590388 | -4.83 | | 5590388 | |
| Nitrate (N) | mg/L | <0.050 | <0.050 | <0.050 | 5590281 | <0.050 | 0.050 | 5590281 | N/A |
| Saturation pH (@ 20C) | N/A | 10.3 | 8.29 | 8.50 | 5590387 | 10.4 | | 5590387 | |
| Saturation pH (@ 4C) | N/A | 10.5 | 8.55 | 8.75 | 5590388 | 10.7 | | 5590388 | |
| Inorganics | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | 18 | 61 | 52 | 5593768 | 6.0 | 5.0 | 5593768 | N/A |
| Dissolved Chloride (Cl) | mg/L | 4.8 | 4.4 | 4.7 | 5593775 | 5.4 | 1.0 | 5593775 | N/A |
| Colour | TCU | <5.0 | <5.0 | 6.5 | 5593779 | <5.0 | 5.0 | 5593779 | N/A |
| Nitrate + Nitrite (N) | mg/L | <0.050 | <0.050 | <0.050 | 5593781 | <0.050 | 0.050 | 5593781 | N/A |
| Nitrite (N) | mg/L | <0.010 | <0.010 | <0.010 | 5593783 | <0.010 | 0.010 | 5593783 | N/A |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | <0.050 | <0.050 | 5592399 | <0.050 | 0.050 | 5592423 | N/A |
| Total Organic Carbon (C) | mg/L | 1.3 | 2.6 | 1.9 | 5592255 | 1.2 | 0.50 | 5592255 | N/A |
| Orthophosphate (P) | mg/L | <0.010 | <0.010 | <0.010 | 5593780 | <0.010 | 0.010 | 5593780 | N/A |
| pH | pH | 6.75 | 7.78 | 7.47 | 5593693 | 5.83 | N/A | 5593691 | N/A |
| Reactive Silica (SiO2) | mg/L | 6.3 | 9.4 | 7.5 | 5593778 | 3.2 | 0.50 | 5593778 | N/A |
| Dissolved Sulphate (SO4) | mg/L | 3.0 | 11 | 8.7 | 5593777 | 2.6 | 2.0 | 5593777 | N/A |
| Turbidity | NTU | 29 | 7.1 | 17 | 5593709 | 22 | 0.10 | 5593708 | 0.10 |
| Conductivity | uS/cm | 54 | 140 | 120 | 5593694 | 34 | 1.0 | 5593692 | N/A |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable | | | | | | | | | |

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GZX298 | | GZX299 | | | | GZX299 | | | |
|------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------------|----------|---------------------|-------|----------|------|---------------------|-------|----------|-----|
| Sampling Date | | 2018/06/19 11:09 | | 2018/06/19 09:47 | | | | 2018/06/19 09:47 | | | |
| COC Number | | D34770 | | D34770 | | | | D34770 | | | |
| | UNITS | MW-02B | QC Batch | MW-03A | RDL | QC Batch | MDL | MW-03A Lab-Dup | RDL | QC Batch | MDL |
| Calculated Parameters | | | | | | | | | | | |
| Anion Sum | me/L | 0.480 | 5590385 | 0.280 | N/A | 5590385 | N/A | | | | |
| Bicarb. Alkalinity (calc. as CaCO ₃) | mg/L | 17 | 5590380 | 6.2 | 1.0 | 5590380 | 0.20 | | | | |
| Calculated TDS | mg/L | 40 | 5590389 | 20 | 1.0 | 5590389 | 0.20 | | | | |
| Carb. Alkalinity (calc. as CaCO ₃) | mg/L | <1.0 | 5590380 | <1.0 | 1.0 | 5590380 | 0.20 | | | | |
| Cation Sum | me/L | 0.440 | 5590385 | 0.260 | N/A | 5590385 | N/A | | | | |
| Hardness (CaCO ₃) | mg/L | 10 | 5590383 | 5.9 | 1.0 | 5590383 | 1.0 | | | | |
| Ion Balance (% Difference) | % | 4.35 | 5590384 | 3.70 | N/A | 5590384 | N/A | | | | |
| Langelier Index (@ 20C) | N/A | -3.20 | 5590387 | -4.37 | | 5590387 | | | | | |
| Langelier Index (@ 4C) | N/A | -3.45 | 5590388 | -4.63 | | 5590388 | | | | | |
| Nitrate (N) | mg/L | <0.050 | 5590281 | 0.31 | 0.050 | 5590281 | N/A | | | | |
| Saturation pH (@ 20C) | N/A | 9.64 | 5590387 | 10.3 | | 5590387 | | | | | |
| Saturation pH (@ 4C) | N/A | 9.89 | 5590388 | 10.6 | | 5590388 | | | | | |
| Inorganics | | | | | | | | | | | |
| Total Alkalinity (Total as CaCO ₃) | mg/L | 17 | 5593768 | 6.2 | 5.0 | 5593768 | N/A | | | | |
| Dissolved Chloride (Cl) | mg/L | 2.7 | 5593775 | 4.7 | 1.0 | 5593775 | N/A | | | | |
| Colour | TCU | <5.0 | 5593779 | 8.6 | 5.0 | 5593779 | N/A | | | | |
| Nitrate + Nitrite (N) | mg/L | <0.050 | 5593781 | 0.31 | 0.050 | 5593781 | N/A | | | | |
| Nitrite (N) | mg/L | <0.010 | 5593783 | <0.010 | 0.010 | 5593783 | N/A | | | | |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 5592423 | <0.050 | 0.050 | 5592423 | N/A | <0.050 | 0.050 | 5592423 | N/A |
| Total Organic Carbon (C) | mg/L | 1.9 | 5593990 | 3.6 | 0.50 | 5592255 | N/A | 3.5 | 0.50 | 5592255 | N/A |
| Orthophosphate (P) | mg/L | 0.058 | 5593780 | <0.010 | 0.010 | 5593780 | N/A | | | | |
| pH | pH | 6.44 | 5593691 | 5.93 | N/A | 5593691 | N/A | | | | |
| Reactive Silica (SiO ₂) | mg/L | 15 | 5593778 | 4.1 | 0.50 | 5593778 | N/A | | | | |
| Dissolved Sulphate (SO ₄) | mg/L | 2.7 | 5593777 | <2.0 | 2.0 | 5593777 | N/A | | | | |
| Turbidity | NTU | 4.6 | 5593708 | 0.39 | 0.10 | 5593708 | 0.10 | | | | |
| Conductivity | uS/cm | 46 | 5593692 | 32 | 1.0 | 5593692 | N/A | | | | |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable | | | | | | | | | | | |

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GZX300 | | GZX301 | GZX302 | GZX303 | | | |
|----------------------------------------------------------------------------------------------|-------|---------------------|----------|---------------------|---------------------|---------------------|-------|----------|------|
| Sampling Date | | 2018/06/19 09:52 | | 2018/06/19 10:00 | 2018/06/19 10:42 | 2018/06/19 10:46 | | | |
| COC Number | | D34770 | | D34770 | D34770 | D34770 | | | |
| | UNITS | MW-03B | QC Batch | MW-03C | MW-19A | MW-19B | RDL | QC Batch | MDL |
| Calculated Parameters | | | | | | | | | |
| Anion Sum | me/L | 0.980 | 5590385 | 1.87 | 0.210 | 1.49 | N/A | 5590385 | N/A |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 37 | 5590380 | 83 | <1.0 | 60 | 1.0 | 5590380 | 0.20 |
| Calculated TDS | mg/L | 62 | 5590389 | 110 | 21 | 88 | 1.0 | 5590389 | 0.20 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 5590380 | <1.0 | <1.0 | <1.0 | 1.0 | 5590380 | 0.20 |
| Cation Sum | me/L | 0.930 | 5590385 | 1.79 | 0.280 | 1.45 | N/A | 5590385 | N/A |
| Hardness (CaCO3) | mg/L | 35 | 5590383 | 67 | 5.4 | 59 | 1.0 | 5590383 | 1.0 |
| Ion Balance (% Difference) | % | 2.62 | 5590384 | 2.19 | 14.3 | 1.36 | N/A | 5590384 | N/A |
| Langelier Index (@ 20C) | N/A | -2.01 | 5590387 | -0.247 | NC | -0.330 | | 5590387 | |
| Langelier Index (@ 4C) | N/A | -2.26 | 5590388 | -0.498 | NC | -0.581 | | 5590388 | |
| Nitrate (N) | mg/L | 0.10 | 5590281 | <0.050 | 0.25 | 0.066 | 0.050 | 5590281 | N/A |
| Saturation pH (@ 20C) | N/A | 8.67 | 5590387 | 8.06 | NC | 8.23 | | 5590387 | |
| Saturation pH (@ 4C) | N/A | 8.93 | 5590388 | 8.31 | NC | 8.48 | | 5590388 | |
| Inorganics | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | 37 | 5593768 | 84 | <5.0 | 61 | 5.0 | 5593768 | N/A |
| Dissolved Chloride (Cl) | mg/L | 5.5 | 5593775 | 4.3 | 4.1 | 2.4 | 1.0 | 5593775 | N/A |
| Colour | TCU | 5.4 | 5593779 | 5.3 | <5.0 | <5.0 | 5.0 | 5593779 | N/A |
| Nitrate + Nitrite (N) | mg/L | 0.10 | 5593781 | <0.050 | 0.25 | 0.066 | 0.050 | 5593781 | N/A |
| Nitrite (N) | mg/L | <0.010 | 5593783 | <0.010 | <0.010 | <0.010 | 0.010 | 5593783 | N/A |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 5592423 | <0.050 | <0.050 | <0.050 | 0.050 | 5592423 | N/A |
| Total Organic Carbon (C) | mg/L | 1.1 | 5593990 | 4.2 | 2.4 | 0.95 | 0.50 | 5592255 | N/A |
| Orthophosphate (P) | mg/L | <0.010 | 5593780 | <0.010 | <0.010 | <0.010 | 0.010 | 5593780 | N/A |
| pH | pH | 6.66 | 5593691 | 7.81 | 5.85 | 7.90 | N/A | 5593691 | N/A |
| Reactive Silica (SiO2) | mg/L | 10 | 5593778 | 9.6 | 5.9 | 8.9 | 0.50 | 5593778 | N/A |
| Dissolved Sulphate (SO4) | mg/L | 3.8 | 5593777 | 3.7 | 3.5 | 9.8 | 2.0 | 5593777 | N/A |
| Turbidity | NTU | 0.26 | 5593708 | 1.7 | 1.3 | 2.7 | 0.10 | 5593708 | 0.10 |
| Conductivity | uS/cm | 94 | 5593692 | 170 | 34 | 140 | 1.0 | 5593692 | N/A |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable | | | | | | | | | |

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GZX304 | | | | GZX304 | | | | GZX305 | | | |
|---------------|-------|---------------------|-----|----------|-----|---------------------|-----|----------|-----|------------|-----|----------|-----|
| Sampling Date | | 2018/06/19 10:53 | | | | 2018/06/19 10:53 | | | | 2018/06/19 | | | |
| COC Number | | D34770 | | | | D34770 | | | | D34770 | | | |
| | UNITS | MW-19C | RDL | QC Batch | MDL | MW-19C Lab-Dup | RDL | QC Batch | MDL | MW-DUPC | RDL | QC Batch | MDL |

| Calculated Parameters | | | | | | | | | | | | | |
|-------------------------------------|-------|--------|-------|---------|------|------|-----|---------|-----|--------|-------|---------|------|
| Anion Sum | me/L | 1.24 | N/A | 5590385 | N/A | | | | | 1.77 | N/A | 5590385 | N/A |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 37 | 1.0 | 5590380 | 0.20 | | | | | 77 | 1.0 | 5590380 | 0.20 |
| Calculated TDS | mg/L | 80 | 1.0 | 5590389 | 0.20 | | | | | 100 | 1.0 | 5590389 | 0.20 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 1.0 | 5590380 | 0.20 | | | | | <1.0 | 1.0 | 5590380 | 0.20 |
| Cation Sum | me/L | 1.21 | N/A | 5590385 | N/A | | | | | 1.76 | N/A | 5590385 | N/A |
| Hardness (CaCO3) | mg/L | 36 | 1.0 | 5590383 | 1.0 | | | | | 66 | 1.0 | 5590383 | 1.0 |
| Ion Balance (% Difference) | % | 1.22 | N/A | 5590384 | N/A | | | | | 0.280 | N/A | 5590384 | N/A |
| Langelier Index (@ 20C) | N/A | -1.53 | | 5590387 | | | | | | -0.304 | | 5590387 | |
| Langelier Index (@ 4C) | N/A | -1.78 | | 5590388 | | | | | | -0.556 | | 5590388 | |
| Nitrate (N) | mg/L | 0.11 | 0.050 | 5590281 | N/A | | | | | <0.050 | 0.050 | 5590281 | N/A |
| Saturation pH (@ 20C) | N/A | 8.68 | | 5590387 | | | | | | 8.10 | | 5590387 | |
| Saturation pH (@ 4C) | N/A | 8.93 | | 5590388 | | | | | | 8.36 | | 5590388 | |
| Inorganics | | | | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | 37 | 5.0 | 5593768 | N/A | | | | | 77 | 5.0 | 5589743 | N/A |
| Dissolved Chloride (Cl) | mg/L | 3.8 | 1.0 | 5593775 | N/A | | | | | 5.2 | 1.0 | 5589752 | N/A |
| Colour | TCU | <5.0 | 5.0 | 5593779 | N/A | | | | | <5.0 | 5.0 | 5597605 | N/A |
| Nitrate + Nitrite (N) | mg/L | 0.15 | 0.050 | 5593781 | N/A | | | | | <0.050 | 0.050 | 5589765 | N/A |
| Nitrite (N) | mg/L | 0.041 | 0.010 | 5593783 | N/A | | | | | <0.010 | 0.010 | 5589767 | N/A |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 0.050 | 5592423 | N/A | | | | | <0.050 | 0.050 | 5592423 | N/A |
| Total Organic Carbon (C) | mg/L | 2.1 | 0.50 | 5593990 | N/A | | | | | 4.3 | 0.50 | 5592255 | N/A |
| Orthophosphate (P) | mg/L | <0.010 | 0.010 | 5593780 | N/A | | | | | <0.010 | 0.010 | 5589762 | N/A |
| pH | pH | 7.15 | N/A | 5593695 | N/A | 7.20 | N/A | 5593695 | N/A | 7.80 | N/A | 5593691 | N/A |
| Reactive Silica (SiO2) | mg/L | 8.8 | 0.50 | 5593778 | N/A | | | | | 9.4 | 0.50 | 5589757 | N/A |
| Dissolved Sulphate (SO4) | mg/L | 18 | 2.0 | 5593777 | N/A | | | | | 3.9 | 2.0 | 5589755 | N/A |
| Turbidity | NTU | 7.0 | 0.10 | 5593709 | 0.10 | | | | | 1.5 | 0.10 | 5593709 | 0.10 |
| Conductivity | uS/cm | 130 | 1.0 | 5593696 | N/A | 130 | 1.0 | 5593696 | N/A | 170 | 1.0 | 5593692 | N/A |

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

RESULTS OF ANALYSES OF WATER

| | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|------------|-----------------|------------|
| Maxxam ID | | GZX305 | | | |
| Sampling Date | | 2018/06/19 | | | |
| COC Number | | D34770 | | | |
| | UNITS | MW-DUPC Lab-Dup | RDL | QC Batch | MDL |
| Inorganics | | | | | |
| Total Alkalinity (Total as CaCO ₃) | mg/L | 84 | 5.0 | 5589743 | N/A |
| Dissolved Chloride (Cl) | mg/L | 5.8 | 1.0 | 5589752 | N/A |
| Colour | TCU | <5.0 | 5.0 | 5597605 | N/A |
| Nitrate + Nitrite (N) | mg/L | <0.050 | 0.050 | 5589765 | N/A |
| Nitrite (N) | mg/L | <0.010 | 0.010 | 5589767 | N/A |
| Orthophosphate (P) | mg/L | <0.010 | 0.010 | 5589762 | N/A |
| Reactive Silica (SiO ₂) | mg/L | 9.5 | 0.50 | 5589757 | N/A |
| Dissolved Sulphate (SO ₄) | mg/L | 3.9 | 2.0 | 5589755 | N/A |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable | | | | | |

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | GZX294 | GZX295 | GZX296 | GZX297 | GZX298 | GZX299 | | | |
|---------------|-------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----|----------|-----|
| Sampling Date | | 2018/06/19 10:29 | 2018/06/19 10:20 | 2018/06/19 10:16 | 2018/06/19 11:12 | 2018/06/19 11:09 | 2018/06/19 09:47 | | | |
| COC Number | | D34770 | D34770 | D34770 | D34770 | D34770 | D34770 | | | |
| | UNITS | MW-01A | MW-01B | MW-01C | MW-02A | MW-02B | MW-03A | RDL | QC Batch | MDL |

| Metals | | | | | | | | | | |
|---------------------------|------|--------|--------|--------|-------|-------|-------|-------|---------|-----|
| Dissolved Aluminum (Al) | ug/L | 69 | 20 | 19 | 160 | 9.2 | 190 | 5.0 | 5592240 | N/A |
| Dissolved Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Arsenic (As) | ug/L | <1.0 | 5.7 | 1.5 | <1.0 | 2.1 | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Barium (Ba) | ug/L | 1.3 | 4.0 | 7.3 | 9.3 | 4.2 | 7.2 | 1.0 | 5592240 | N/A |
| Dissolved Beryllium (Be) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Bismuth (Bi) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Boron (B) | ug/L | <50 | <50 | <50 | <50 | <50 | <50 | 50 | 5592240 | N/A |
| Dissolved Cadmium (Cd) | ug/L | <0.010 | <0.010 | <0.010 | 0.025 | 0.60 | 0.030 | 0.010 | 5592240 | N/A |
| Dissolved Calcium (Ca) | ug/L | 560 | 18000 | 13000 | 1200 | 2700 | 1500 | 100 | 5592240 | N/A |
| Dissolved Chromium (Cr) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Cobalt (Co) | ug/L | <0.40 | <0.40 | <0.40 | 1.8 | <0.40 | 0.46 | 0.40 | 5592240 | N/A |
| Dissolved Copper (Cu) | ug/L | <2.0 | <2.0 | <2.0 | 8.7 | <2.0 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Iron (Fe) | ug/L | <50 | <50 | <50 | 250 | <50 | <50 | 50 | 5592240 | N/A |
| Dissolved Lead (Pb) | ug/L | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | 5592240 | N/A |
| Dissolved Magnesium (Mg) | ug/L | 190 | 2200 | 1800 | 460 | 800 | 510 | 100 | 5592240 | N/A |
| Dissolved Manganese (Mn) | ug/L | 37 | <2.0 | 140 | 150 | 22 | 50 | 2.0 | 5592240 | N/A |
| Dissolved Molybdenum (Mo) | ug/L | <2.0 | <2.0 | 2.1 | <2.0 | <2.0 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | 7.8 | 2.1 | 3.5 | 2.0 | 5592240 | N/A |
| Dissolved Phosphorus (P) | ug/L | <100 | <100 | <100 | <100 | <100 | <100 | 100 | 5592240 | N/A |
| Dissolved Potassium (K) | ug/L | 1300 | 3100 | 3100 | 250 | 640 | 880 | 100 | 5592240 | N/A |
| Dissolved Selenium (Se) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Silver (Ag) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 5592240 | N/A |
| Dissolved Sodium (Na) | ug/L | 9900 | 7100 | 8900 | 3400 | 5100 | 2700 | 100 | 5592240 | N/A |
| Dissolved Strontium (Sr) | ug/L | 6.0 | 69 | 77 | 6.0 | 20 | 11 | 2.0 | 5592240 | N/A |
| Dissolved Thallium (Tl) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 5592240 | N/A |
| Dissolved Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Titanium (Ti) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Uranium (U) | ug/L | <0.10 | 0.90 | 0.63 | <0.10 | 0.56 | <0.10 | 0.10 | 5592240 | N/A |
| Dissolved Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Zinc (Zn) | ug/L | <5.0 | <5.0 | <5.0 | 12 | 91 | <5.0 | 5.0 | 5592240 | N/A |

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

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | GZX300 | GZX301 | GZX301 | GZX302 | GZX303 | GZX304 | | | |
|---------------|-------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----|----------|-----|
| Sampling Date | | 2018/06/19 09:52 | 2018/06/19 10:00 | 2018/06/19 10:00 | 2018/06/19 10:42 | 2018/06/19 10:46 | 2018/06/19 10:53 | | | |
| COC Number | | D34770 | D34770 | D34770 | D34770 | D34770 | D34770 | | | |
| | UNITS | MW-03B | MW-03C | MW-03C Lab-Dup | MW-19A | MW-19B | MW-19C | RDL | QC Batch | MDL |

| Metals | | | | | | | | | | |
|---------------------------|------|-------|--------|--------|-------|--------|-------|-------|---------|-----|
| Dissolved Aluminum (Al) | ug/L | <5.0 | 26 | 26 | 110 | 15 | 37 | 5.0 | 5592240 | N/A |
| Dissolved Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Arsenic (As) | ug/L | <1.0 | 1.5 | 1.5 | <1.0 | 8.5 | 3.0 | 1.0 | 5592240 | N/A |
| Dissolved Barium (Ba) | ug/L | 3.9 | 8.6 | 8.6 | 7.4 | 10 | 7.3 | 1.0 | 5592240 | N/A |
| Dissolved Beryllium (Be) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Bismuth (Bi) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Boron (B) | ug/L | <50 | <50 | <50 | <50 | <50 | <50 | 50 | 5592240 | N/A |
| Dissolved Cadmium (Cd) | ug/L | 0.038 | <0.010 | <0.010 | 0.084 | <0.010 | 0.010 | 0.010 | 5592240 | N/A |
| Dissolved Calcium (Ca) | ug/L | 12000 | 23000 | 23000 | 1200 | 21000 | 12000 | 100 | 5592240 | N/A |
| Dissolved Chromium (Cr) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Cobalt (Co) | ug/L | <0.40 | <0.40 | <0.40 | 1.2 | <0.40 | 0.94 | 0.40 | 5592240 | N/A |
| Dissolved Copper (Cu) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Iron (Fe) | ug/L | <50 | <50 | <50 | <50 | <50 | <50 | 50 | 5592240 | N/A |
| Dissolved Lead (Pb) | ug/L | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | 5592240 | N/A |
| Dissolved Magnesium (Mg) | ug/L | 1100 | 2300 | 2300 | 600 | 1500 | 1200 | 100 | 5592240 | N/A |
| Dissolved Manganese (Mn) | ug/L | 32 | 120 | 120 | 83 | 7.9 | 110 | 2.0 | 5592240 | N/A |
| Dissolved Molybdenum (Mo) | ug/L | <2.0 | 6.6 | 6.8 | <2.0 | 15 | 18 | 2.0 | 5592240 | N/A |
| Dissolved Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | 2.4 | <2.0 | 4.0 | 2.0 | 5592240 | N/A |
| Dissolved Phosphorus (P) | ug/L | <100 | <100 | <100 | <100 | <100 | <100 | 100 | 5592240 | N/A |
| Dissolved Potassium (K) | ug/L | 1700 | 4300 | 4400 | 800 | 1900 | 2100 | 100 | 5592240 | N/A |
| Dissolved Selenium (Se) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Silver (Ag) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 5592240 | N/A |
| Dissolved Sodium (Na) | ug/L | 4600 | 7700 | 7700 | 3400 | 5200 | 10000 | 100 | 5592240 | N/A |
| Dissolved Strontium (Sr) | ug/L | 24 | 56 | 57 | 8.6 | 120 | 71 | 2.0 | 5592240 | N/A |
| Dissolved Thallium (Tl) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.10 | 5592240 | N/A |
| Dissolved Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Titanium (Ti) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Uranium (U) | ug/L | 0.25 | 1.6 | 1.6 | <0.10 | 2.9 | <0.10 | 0.10 | 5592240 | N/A |
| Dissolved Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | 3.1 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Zinc (Zn) | ug/L | <5.0 | <5.0 | <5.0 | 9.9 | <5.0 | 7.6 | 5.0 | 5592240 | N/A |

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

ELEMENTS BY ICP/MS (WATER)

| | | | | | |
|----------------------------------------------------------------------------------------------|--------------|----------------|------------|-----------------|------------|
| Maxxam ID | | GZX305 | | | |
| Sampling Date | | 2018/06/19 | | | |
| COC Number | | D34770 | | | |
| | UNITS | MW-DUPC | RDL | QC Batch | MDL |
| Metals | | | | | |
| Dissolved Aluminum (Al) | ug/L | 30 | 5.0 | 5592240 | N/A |
| Dissolved Antimony (Sb) | ug/L | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Arsenic (As) | ug/L | 1.7 | 1.0 | 5592240 | N/A |
| Dissolved Barium (Ba) | ug/L | 9.1 | 1.0 | 5592240 | N/A |
| Dissolved Beryllium (Be) | ug/L | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Bismuth (Bi) | ug/L | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Boron (B) | ug/L | <50 | 50 | 5592240 | N/A |
| Dissolved Cadmium (Cd) | ug/L | <0.010 | 0.010 | 5592240 | N/A |
| Dissolved Calcium (Ca) | ug/L | 23000 | 100 | 5592240 | N/A |
| Dissolved Chromium (Cr) | ug/L | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Cobalt (Co) | ug/L | <0.40 | 0.40 | 5592240 | N/A |
| Dissolved Copper (Cu) | ug/L | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Iron (Fe) | ug/L | <50 | 50 | 5592240 | N/A |
| Dissolved Lead (Pb) | ug/L | <0.50 | 0.50 | 5592240 | N/A |
| Dissolved Magnesium (Mg) | ug/L | 2300 | 100 | 5592240 | N/A |
| Dissolved Manganese (Mn) | ug/L | 120 | 2.0 | 5592240 | N/A |
| Dissolved Molybdenum (Mo) | ug/L | 6.4 | 2.0 | 5592240 | N/A |
| Dissolved Nickel (Ni) | ug/L | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Phosphorus (P) | ug/L | <100 | 100 | 5592240 | N/A |
| Dissolved Potassium (K) | ug/L | 4300 | 100 | 5592240 | N/A |
| Dissolved Selenium (Se) | ug/L | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Silver (Ag) | ug/L | <0.10 | 0.10 | 5592240 | N/A |
| Dissolved Sodium (Na) | ug/L | 7700 | 100 | 5592240 | N/A |
| Dissolved Strontium (Sr) | ug/L | 56 | 2.0 | 5592240 | N/A |
| Dissolved Thallium (Tl) | ug/L | <0.10 | 0.10 | 5592240 | N/A |
| Dissolved Tin (Sn) | ug/L | 3.8 | 2.0 | 5592240 | N/A |
| Dissolved Titanium (Ti) | ug/L | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Uranium (U) | ug/L | 1.6 | 0.10 | 5592240 | N/A |
| Dissolved Vanadium (V) | ug/L | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Zinc (Zn) | ug/L | <5.0 | 5.0 | 5592240 | N/A |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable | | | | | |

TEST SUMMARY

Maxxam ID: GZX294
Sample ID: MW-01A
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5593779 | N/A | 2018/06/22 | Jacob Henley |
| Conductance - water | AT | 5593694 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592240 | N/A | 2018/06/22 | Cassandra Hartery |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593693 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593709 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZX295
Sample ID: MW-01B
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5593779 | N/A | 2018/06/22 | Jacob Henley |
| Conductance - water | AT | 5593694 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592240 | N/A | 2018/06/22 | Cassandra Hartery |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593693 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |

TEST SUMMARY

Maxxam ID: GZX295
Sample ID: MW-01B
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|-------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593709 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZX296
Sample ID: MW-01C
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5593779 | N/A | 2018/06/22 | Jacob Henley |
| Conductance - water | AT | 5593694 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592240 | N/A | 2018/06/22 | Cassandra Hartery |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593693 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593709 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZX297
Sample ID: MW-02A
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |

TEST SUMMARY

Maxxam ID: GZX297
Sample ID: MW-02A
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|-------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5593779 | N/A | 2018/06/22 | Jacob Henley |
| Conductance - water | AT | 5593692 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592240 | N/A | 2018/06/22 | Cassandra Hartery |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592423 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593691 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593708 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZX298
Sample ID: MW-02B
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5593779 | N/A | 2018/06/22 | Jacob Henley |
| Conductance - water | AT | 5593692 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592240 | N/A | 2018/06/22 | Cassandra Hartery |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592423 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593691 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |

TEST SUMMARY

Maxxam ID: GZX298
Sample ID: MW-02B
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|-----------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5593990 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593708 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZX299
Sample ID: MW-03A
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5593779 | N/A | 2018/06/22 | Jacob Henley |
| Conductance - water | AT | 5593692 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592240 | N/A | 2018/06/22 | Cassandra Hartery |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592423 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593691 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593708 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZX299 Dup
Sample ID: MW-03A
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|------------------------------|-----------------|---------|-----------|---------------|-----------------|
| Nitrogen Ammonia - water | KONE | 5592423 | N/A | 2018/06/21 | Jacob Henley |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |

TEST SUMMARY

Maxxam ID: GZX300
Sample ID: MW-03B
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5593779 | N/A | 2018/06/22 | Jacob Henley |
| Conductance - water | AT | 5593692 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592240 | N/A | 2018/06/22 | Cassandra Hartery |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592423 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593691 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5593990 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593708 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZX301
Sample ID: MW-03C
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5593779 | N/A | 2018/06/22 | Jacob Henley |
| Conductance - water | AT | 5593692 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592240 | N/A | 2018/06/22 | Cassandra Hartery |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592423 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593691 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |

TEST SUMMARY

Maxxam ID: GZX301
Sample ID: MW-03C
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|-------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593708 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZX301 Dup
Sample ID: MW-03C
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|----------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592240 | N/A | 2018/06/22 | Cassandra Hartery |

Maxxam ID: GZX302
Sample ID: MW-19A
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5593779 | N/A | 2018/06/22 | Jacob Henley |
| Conductance - water | AT | 5593692 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592240 | N/A | 2018/06/22 | Cassandra Hartery |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592423 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593691 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593708 | N/A | 2018/06/22 | Julia McGovern |

TEST SUMMARY

Maxxam ID: GZX303
Sample ID: MW-19B
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5593779 | N/A | 2018/06/22 | Jacob Henley |
| Conductance - water | AT | 5593692 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592240 | N/A | 2018/06/22 | Cassandra Hartery |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592423 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593691 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593708 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZX304
Sample ID: MW-19C
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5593779 | N/A | 2018/06/22 | Jacob Henley |
| Conductance - water | AT | 5593696 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592240 | N/A | 2018/06/22 | Cassandra Hartery |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592423 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593695 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |

TEST SUMMARY

Maxxam ID: GZX304
Sample ID: MW-19C
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|-------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5593990 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593709 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZX304 Dup
Sample ID: MW-19C
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---------------------|-----------------|---------|-----------|---------------|----------------|
| Conductance - water | AT | 5593696 | N/A | 2018/06/22 | Julia McGovern |
| pH | AT | 5593695 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZX305
Sample ID: MW-DUPC
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5589743 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5589752 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5597605 | N/A | 2018/06/25 | Jacob Henley |
| Conductance - water | AT | 5593692 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592240 | N/A | 2018/06/22 | Cassandra Hartery |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592423 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5589765 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5589767 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593691 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5589762 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5589757 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5589755 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593709 | N/A | 2018/06/22 | Julia McGovern |

Maxxam Job #: B8F1147
Report Date: 2018/06/26

GHD Limited
Client Project #: 088664-20
Site Location: BEAVER DAM
Your P.O. #: 73512044
Sampler Initials: DN

TEST SUMMARY

Maxxam ID: GZX305 Dup
Sample ID: MW-DUPC
Matrix: Water

Collected: 2018/06/19
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|------------------------------|-----------------|---------|-----------|---------------|--------------|
| Alkalinity | KONE | 5589743 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5589752 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5597605 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5589765 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5589767 | N/A | 2018/06/25 | Jacob Henley |
| Phosphorus - ortho | KONE | 5589762 | N/A | 2018/06/22 | Jacob Henley |
| Reactive Silica | KONE | 5589757 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5589755 | N/A | 2018/06/22 | Jacob Henley |

GENERAL COMMENTS

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

| | |
|-----------|-------|
| Package 1 | 6.3°C |
|-----------|-------|

Sample GZX297 [MW-02A] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample GZX302 [MW-19A] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

GHD Limited
Client Project #: 088664-20
Site Location: BEAVER DAM
Your P.O. #: 73512044
Sampler Initials: DN

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | % Recovery | QC Limits |
| 5589743 | Total Alkalinity (Total as CaCO3) | 2018/06/25 | NC | 80 - 120 | 96 | 80 - 120 | <5.0 | mg/L | 9.1 | 25 | | |
| 5589752 | Dissolved Chloride (Cl) | 2018/06/22 | 100 | 80 - 120 | 103 | 80 - 120 | <1.0 | mg/L | 10 | 25 | 102 | 80 - 120 |
| 5589755 | Dissolved Sulphate (SO4) | 2018/06/22 | 93 | 80 - 120 | 95 | 80 - 120 | <2.0 | mg/L | 0.48 | 25 | | |
| 5589757 | Reactive Silica (SiO2) | 2018/06/25 | 98 | 80 - 120 | 95 | 80 - 120 | <0.50 | mg/L | 0.84 | 25 | | |
| 5589762 | Orthophosphate (P) | 2018/06/22 | 87 | 80 - 120 | 94 | 80 - 120 | <0.010 | mg/L | NC | 25 | | |
| 5589765 | Nitrate + Nitrite (N) | 2018/06/25 | 96 | 80 - 120 | 98 | 80 - 120 | <0.050 | mg/L | NC | 25 | | |
| 5589767 | Nitrite (N) | 2018/06/25 | 92 | 80 - 120 | 96 | 80 - 120 | <0.010 | mg/L | NC | 20 | | |
| 5592240 | Dissolved Aluminum (Al) | 2018/06/22 | 97 | 80 - 120 | 98 | 80 - 120 | <5.0 | ug/L | 1.7 | 20 | | |
| 5592240 | Dissolved Antimony (Sb) | 2018/06/22 | 103 | 80 - 120 | 99 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Arsenic (As) | 2018/06/22 | 96 | 80 - 120 | 96 | 80 - 120 | <1.0 | ug/L | 3.9 | 20 | | |
| 5592240 | Dissolved Barium (Ba) | 2018/06/22 | 104 | 80 - 120 | 105 | 80 - 120 | <1.0 | ug/L | 0.23 | 20 | | |
| 5592240 | Dissolved Beryllium (Be) | 2018/06/22 | 99 | 80 - 120 | 100 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Bismuth (Bi) | 2018/06/22 | 101 | 80 - 120 | 104 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Boron (B) | 2018/06/22 | 96 | 80 - 120 | 95 | 80 - 120 | <50 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Cadmium (Cd) | 2018/06/22 | 103 | 80 - 120 | 104 | 80 - 120 | <0.010 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Calcium (Ca) | 2018/06/22 | 99 | 80 - 120 | 105 | 80 - 120 | <100 | ug/L | 1.0 | 20 | | |
| 5592240 | Dissolved Chromium (Cr) | 2018/06/22 | 95 | 80 - 120 | 97 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Cobalt (Co) | 2018/06/22 | 95 | 80 - 120 | 97 | 80 - 120 | <0.40 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Copper (Cu) | 2018/06/22 | 91 | 80 - 120 | 93 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Iron (Fe) | 2018/06/22 | 98 | 80 - 120 | 100 | 80 - 120 | <50 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Lead (Pb) | 2018/06/22 | 98 | 80 - 120 | 100 | 80 - 120 | <0.50 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Magnesium (Mg) | 2018/06/22 | 100 | 80 - 120 | 103 | 80 - 120 | <100 | ug/L | 0.41 | 20 | | |
| 5592240 | Dissolved Manganese (Mn) | 2018/06/22 | NC | 80 - 120 | 97 | 80 - 120 | <2.0 | ug/L | 0.58 | 20 | | |
| 5592240 | Dissolved Molybdenum (Mo) | 2018/06/22 | 103 | 80 - 120 | 103 | 80 - 120 | <2.0 | ug/L | 3.7 | 20 | | |
| 5592240 | Dissolved Nickel (Ni) | 2018/06/22 | 92 | 80 - 120 | 94 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Phosphorus (P) | 2018/06/22 | 104 | 80 - 120 | 103 | 80 - 120 | <100 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Potassium (K) | 2018/06/22 | 100 | 80 - 120 | 105 | 80 - 120 | <100 | ug/L | 1.3 | 20 | | |
| 5592240 | Dissolved Selenium (Se) | 2018/06/22 | 96 | 80 - 120 | 96 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Silver (Ag) | 2018/06/22 | 92 | 80 - 120 | 99 | 80 - 120 | <0.10 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Sodium (Na) | 2018/06/22 | 94 | 80 - 120 | 95 | 80 - 120 | <100 | ug/L | 0.53 | 20 | | |

QUALITY ASSURANCE REPORT(CONT'D)

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | % Recovery | QC Limits |
| 5592240 | Dissolved Strontium (Sr) | 2018/06/22 | 100 | 80 - 120 | 99 | 80 - 120 | <2.0 | ug/L | 1.0 | 20 | | |
| 5592240 | Dissolved Thallium (Tl) | 2018/06/22 | 103 | 80 - 120 | 104 | 80 - 120 | <0.10 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Tin (Sn) | 2018/06/22 | 105 | 80 - 120 | 108 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Titanium (Ti) | 2018/06/22 | 99 | 80 - 120 | 103 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Uranium (U) | 2018/06/22 | 101 | 80 - 120 | 102 | 80 - 120 | <0.10 | ug/L | 2.6 | 20 | | |
| 5592240 | Dissolved Vanadium (V) | 2018/06/22 | 98 | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Zinc (Zn) | 2018/06/22 | 100 | 80 - 120 | 100 | 80 - 120 | <5.0 | ug/L | NC | 20 | | |
| 5592255 | Total Organic Carbon (C) | 2018/06/22 | 95 | 85 - 115 | 96 | 80 - 120 | <0.50 | mg/L | 2.1 | 15 | | |
| 5592399 | Nitrogen (Ammonia Nitrogen) | 2018/06/21 | 101 | 80 - 120 | 104 | 80 - 120 | <0.050 | mg/L | NC | 20 | | |
| 5592423 | Nitrogen (Ammonia Nitrogen) | 2018/06/21 | 103 | 80 - 120 | 100 | 80 - 120 | <0.050 | mg/L | NC | 20 | | |
| 5593691 | pH | 2018/06/22 | | | | | | | 0.74 | N/A | 101 | 97 - 103 |
| 5593692 | Conductivity | 2018/06/22 | | | 101 | 80 - 120 | 1.5, RDL=1.0 | uS/cm | 0.29 | 25 | | |
| 5593693 | pH | 2018/06/22 | | | | | | | 0.48 | N/A | 100 | 97 - 103 |
| 5593694 | Conductivity | 2018/06/22 | | | 100 | 80 - 120 | 1.4, RDL=1.0 | uS/cm | 0.24 | 25 | | |
| 5593695 | pH | 2018/06/22 | | | | | | | 0.76 | N/A | 100 | 97 - 103 |
| 5593696 | Conductivity | 2018/06/22 | | | 101 | 80 - 120 | 1.7, RDL=1.0 | uS/cm | 0.15 | 25 | | |
| 5593708 | Turbidity | 2018/06/22 | | | 94 | 80 - 120 | <0.10 | NTU | 2.4 | 20 | 97 | 80 - 120 |
| 5593709 | Turbidity | 2018/06/22 | | | 94 | 80 - 120 | <0.10 | NTU | 9.5 | 20 | 96 | 80 - 120 |
| 5593768 | Total Alkalinity (Total as CaCO3) | 2018/06/25 | 90 | 80 - 120 | 95 | 80 - 120 | <5.0 | mg/L | 2.2 | 25 | | |
| 5593775 | Dissolved Chloride (Cl) | 2018/06/22 | 101 | 80 - 120 | 102 | 80 - 120 | <1.0 | mg/L | 1.8 | 25 | 100 | 80 - 120 |
| 5593777 | Dissolved Sulphate (SO4) | 2018/06/22 | 97 | 80 - 120 | 93 | 80 - 120 | <2.0 | mg/L | 0.015 | 25 | | |
| 5593778 | Reactive Silica (SiO2) | 2018/06/25 | NC | 80 - 120 | 97 | 80 - 120 | <0.50 | mg/L | 0.95 | 25 | | |
| 5593779 | Colour | 2018/06/22 | | | 99 | 80 - 120 | <5.0 | TCU | NC | 20 | | |
| 5593780 | Orthophosphate (P) | 2018/06/22 | 92 | 80 - 120 | 94 | 80 - 120 | <0.010 | mg/L | NC | 25 | | |
| 5593781 | Nitrate + Nitrite (N) | 2018/06/25 | 95 | 80 - 120 | 97 | 80 - 120 | <0.050 | mg/L | 0.94 | 25 | | |
| 5593783 | Nitrite (N) | 2018/06/25 | 98 | 80 - 120 | 96 | 80 - 120 | <0.010 | mg/L | NC | 20 | | |
| 5593990 | Total Organic Carbon (C) | 2018/06/22 | 92 | 85 - 115 | 94 | 80 - 120 | <0.50 | mg/L | 1.5 | 15 | | |

QUALITY ASSURANCE REPORT(CONT'D)

GHD Limited
Client Project #: 088664-20
Site Location: BEAVER DAM
Your P.O. #: 73512044
Sampler Initials: DN

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | | QC Standard | |
|----------|-----------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | % Recovery | QC Limits |
| 5597605 | Colour | 2018/06/25 | | | 96 | 80 - 120 | <5.0 | TCU | NC | 20 | | |

N/A = Not Applicable

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.

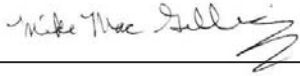
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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).

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Mike MacGillivray, Scientific Specialist (Inorganics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-0612 Toll Free: 1-800-565-7227
 49-55 Elizabeth Avenue, St. John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8512 Toll Free: 1-888-492-7227
 485 George Street, Unit G, Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
 www.maxxam.ca E-mail: CustomerService@bedford@maxxam.ca

ATL FCD 00149 / 22

CHAIN OF CUSTODY RECORD

COC #: **D34770** Page **1** of **2**

| | | | | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Invoice Information Company Name: <u>GHD Ltd.</u> Contact Name: <u>Trina Jeffrey</u> Address: <u>45 Akerley Blvd.</u> <u>Dartmouth</u> Postal Code: <u>B3B 1J7</u> Phone: <u>902-468-1248</u> Fax: Email: <u>trina.jeffery@ghd.com</u> | | Report Information (if differs from invoice) Company Name: <u>Jeff Parks</u> Contact Name: <u>GHD</u> Address: <u>45 Akerley Blvd.</u> <u>Dartmouth</u> Postal Code: <u>B3B 1J7</u> Phone: <u>902-468-1248</u> Fax: Email: <u>jeffrey.parks@ghd.com</u> | | Project Information (where applicable) Quotation #: <u>STANDING OFFER</u> P.O. #: <u>73512044</u> Project #: <u>088664</u> Site Location: <u>Beaver Dam</u> Site #: Sampled By: <u>D.N. / J.R. / R.H.</u> | | Turnaround Time (TAT) Required <input checked="" type="checkbox"/> Regular TAT (5 business days) Most Analyses. PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS IF RUSH please specify date (Surcharges will be applied) DATE REQUIRED: | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

| | | | | | | | | | | | | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| Laboratory Use Only CUSTODY SEAL Present Intact COOLER TEMPERATURES COOLER TEMPERATURES COOLING MEDIA PRESENT Y / N | | | | Analysis Requested # OF CONTAINERS SUBMITTED FIELD FILTERED & PRESERVED LAB FILTRATION REQUIRED RCAP-MS (Total Metals) Well / Surface water RCAP-MS (Dissolved Metals) Ground waters Total Digest (Default Method) for well water & surface water Dissolved for ground water Mercury (CIRCLE) TOTAL / DISSOLVED Metals & Mercury Default Acid Extractable (Available) Digest Metals Total Digest - for Ocean sediments (HNO ₃ /HF/HClO ₄) Mercury low level by Cold Vapor AA Hot Water Soluble Boron (required for CCME Agriculture / Landfill) RBCA Hydrocarbons (BTEX, C5-C20) Hydrocarbons Soil (Portable), NS Fuel Oil Spill Policy Low Level BTEX, C5-C20 CCME Hydrocarbons (CWS-PHC F1/BTEX, F2-F4) NB Permeable Water BTEX, VPH, Low Level T.E.H PAHs (Default for water/soil) PAHs (RWAL / CCME Sediment) PCBs VOCs Total Coliform/E.coli (Presence/Absence) Total Coliform/E.coli (Count) HOLD - DO NOT ANALYZE Regulatory Requirements (Specify) COMMENTS | | | | | | | | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|

| SAMPLE IDENTIFICATION | | DATE SAMPLED (YYYY/MM/DD) | TIME SAMPLED (HH:MM) | MATRIX | # OF CONTAINERS SUBMITTED | FIELD FILTERED & PRESERVED | LAB FILTRATION REQUIRED | RCAP-MS (Total Metals) Well / Surface water | RCAP-MS (Dissolved Metals) Ground waters | Total Digest (Default Method) for well water & surface water | Dissolved for ground water | Mercury (CIRCLE) TOTAL / DISSOLVED | Metals & Mercury | Default Acid Extractable (Available) Digest | Metals Total Digest - for Ocean sediments (HNO ₃ /HF/HClO ₄) | Mercury low level by Cold Vapor AA | Hot Water Soluble Boron (required for CCME Agriculture / Landfill) | RBCA Hydrocarbons (BTEX, C5-C20) | Hydrocarbons Soil (Portable), NS Fuel Oil Spill Policy Low Level BTEX, C5-C20 | CCME Hydrocarbons (CWS-PHC F1/BTEX, F2-F4) | NB Permeable Water BTEX, VPH, Low Level T.E.H | PAHs (Default for water/soil) | PAHs (RWAL / CCME Sediment) | PCBs | VOCs | Total Coliform/E.coli (Presence/Absence) | Total Coliform/E.coli (Count) | HOLD - DO NOT ANALYZE | REGULATORY REQUIREMENTS (Specify) | COMMENTS | | |
|-----------------------|--------|---------------------------|----------------------|------------------|---------------------------|----------------------------|-------------------------|---------------------------------------------|------------------------------------------|--------------------------------------------------------------|----------------------------|------------------------------------|------------------|---------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------|--------------------------------------------------------------------|----------------------------------|-------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------|-------------------------------|-----------------------------|------|------|------------------------------------------|-------------------------------|-----------------------|-----------------------------------|----------|--|--|
| 1 | MW-01A | 2018/06/19 | 10:29 | H ₂ O | 3 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | MW-01B | 2018/06/19 | 10:20 | H ₂ O | 3 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | MW-01C | 2018/06/19 | 10:16 | H ₂ O | 3 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | MW-02A | 2018/06/19 | 11:12 | H ₂ O | 3 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | MW-02B | 2018/06/19 | 11:09 | H ₂ O | 3 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | MW-03A | 2018/06/19 | 9:47 | H ₂ O | 3 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | MW-03B | 2018/06/19 | 9:52 | H ₂ O | 3 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | MW-03C | 2018/06/19 | 10:00 | H ₂ O | 3 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | MW-19A | 2018/06/19 | 10:42 | H ₂ O | 3 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | MW-19B | 2018/06/19 | 10:46 | H ₂ O | 3 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | |
|-------------------------------------|--------------------|---------------|--------------------------------|--------------------|---------------|--------------|
| RELINQUISHED BY: (Signature/Print) | DATE: (YYYY/MM/DD) | TIME: (HH:MM) | RECEIVED BY: (Signature/Print) | DATE: (YYYY/MM/DD) | TIME: (HH:MM) | MAXXAM JOB # |
| <u>Jessica Romo</u> Jessica Romo | 2018/06/19 | 2:47 | <u>JRD Joe Day</u> | | | B8F1147 |

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam'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.maxxam.ca/terms.

2018 JUN 19 15:24
2018 JUN 19 14:47

White: Maxxam Pink: Client



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 49-55 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
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CHAIN OF CUSTODY RECORD

COC #: **D34772** Page **2** of **2**

| Invoice Information | | | | Report Information (if differs from invoice) | | | | Project Information (where applicable) | | | | Turnaround Time (TAT) Required | | | | | | | | | | | | | | | | | |
|------------------------------------------------------------------------------------|----------|---------------------------|----------------------|----------------------------------------------------------------------------------|---------------------------|----------------------------|-------------------------|---------------------------------------------|------------------------------------------|--------------------------------------------------------------|----------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------|------------------------------------------------------------------|----------------------------------|---------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------------|-------------------------------|---------------------------|------|------|------------------------------------------|-------------------------------|----------------------|----------|--|
| Company Name: <u>GHD Ltd.</u> | | | | Company Name: <u>GHD Ltd.</u> | | | | Quotation #: <u>STANDING OFFER</u> | | | | <input checked="" type="checkbox"/> Regular TAT (5 business days) <small>Most as shown</small> | | | | | | | | | | | | | | | | | |
| Contact Name: <u>Trina Jeffery</u> | | | | Contact Name: <u>Jeff Parks</u> | | | | P.O. #: <u>73512044</u> | | | | PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS | | | | | | | | | | | | | | | | | |
| Address: <u>45 Aketley Blvd.</u> <u>Dartmouth</u> Postal Code: <u>B3B 1J7</u> | | | | Address: <u>45 Aketley Blvd.</u> <u>Dartmouth</u> Postal Code: <u>B3B 1J7</u> | | | | Project #: <u>088664</u> | | | | IF RUSH please specify date (Surcharges will be applied) | | | | | | | | | | | | | | | | | |
| Phone: <u>902-468-1248</u> Fax: | | | | Phone: <u>902-468-1248</u> Fax: | | | | Site Location: <u>Beaver Dam</u> | | | | DATE REQUIRED: | | | | | | | | | | | | | | | | | |
| Email: <u>trina.jeffery@ghd.com</u> | | | | Email: <u>jeffrey.parks@ghd.com</u> | | | | Site #: _____ | | | | | | | | | | | | | | | | | | | | | |
| Email: <u>trina.jeffery@ghd.com</u> | | | | Email: <u>jeffrey.parks@ghd.com</u> | | | | Sampled By: <u>B.D.N. / J.R. / R.H.</u> | | | | | | | | | | | | | | | | | | | | | |
| Laboratory Use Only | | | | | | Analysis Requested | | | | | | | | | | | | | | | | | | | | | | | |
| CUSTODY SEAL | | COOLER TEMPERATURES | | COOLER TEMPERATURES | | FIELD FILTERED & PRESERVED | LAB FILTRATION REQUIRED | RCAP-MS (Total Metals) Well / Surface water | RCAP-MS (Dissolved Metals) Ground waters | Metals (Water) | | | Metals (Soil) | | | Regulatory Requirements (Specify) | | | | | | | | | | | | | |
| Present | Intact | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| COOLING MEDIA PRESENT Y / N | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SAMPLE IDENTIFICATION | | DATE SAMPLED (YYYY/MM/DD) | TIME SAMPLED (HH-MM) | MATRIX | # OF CONTAINERS SUBMITTED | FIELD FILTERED & PRESERVED | LAB FILTRATION REQUIRED | RCAP-MS (Total Metals) Well / Surface water | RCAP-MS (Dissolved Metals) Ground waters | Total Digest (Default Method) for well water & surface water | Dissolved for ground water | Mercury (CIRCLE) TOTAL / DISSOLVED | Metals & Mercury Default: Acid Extractable (Available) Digest | Metals Total Digest for Ocean Sediments (HClO ₄ /HF/HNO ₃) | Mercury low level by Cold Vapor AA | Hot Water Soluble Boron (required for CCME Agriculture/Landfill) | RBCA Hydrocarbons (BTEX, C6-C12) | Hydrocarbons Soil (Possible), NS Fuel Oil Spill Policy Low Level (BTEX, C6-C12) | CCME Hydrocarbons (CWS-FIC T1/BTEX, F2-F4) | NB Potable Water: BTEX, VPH, Low level T.E.H | PAHs (Default for water/soil) | PAHs (FWAL/CCME Sediment) | PCBs | VOCs | Total Coliform/E.coli (Presence/Absence) | Total Coliform/E.coli (Count) | HOLD- DO NOT ANALYZE | COMMENTS | |
| 1 | MW-19C | 2018/06/19 | 10:53 | H ₂ O | 3 | X | | X | | | | | | | | | | | | | | | | | | | | | |
| 2 | MW-Dup C | 2018/06/19 | — | H ₂ O | 3 | X | | X | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RELINQUISHED BY: (Signature/Print) | | DATE: (YYYY/MM/DD) | TIME: (HH-MM) | RECEIVED BY: (Signature/Print) | | | | DATE: (YYYY/MM/DD) | TIME: (HH-MM) | MAXXAM JOB # | | | | | | | | | | | | | | | | | | | |
| <u>Jessica Remo</u> <u>Jessica Remo</u> | | 2018/06/19 | 2:47 | <u>JRP</u> <u>Jeff Parks</u> | | | | | | B8F1147 | | | | | | | | | | | | | | | | | | | |

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam'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.maxxam.ca/terms.

White: Maxxam

Pink: Client

18 JUN 19 16:47

Your P.O. #: 73512044
 Your Project #: 088664-20
 Site Location: BEAVER DAM
 Your C.O.C. #: D34771

Attention: Jeff Parks

GHD Limited
 45 Akerley Blvd
 Dartmouth, NS
 CANADA B3B 1J7

Report Date: 2018/06/26
 Report #: R5266814
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8F0978
Received: 2018/06/19, 14:47

Sample Matrix: Water
 # Samples Received: 17

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Reference |
|--------------------------------------|-----------------|---------------------------|--------------------------|--------------------------|---------------------|
| Carbonate, Bicarbonate and Hydroxide | 17 | N/A | 2018/06/22 | N/A | SM 22 4500-CO2 D |
| Alkalinity | 17 | N/A | 2018/06/25 | ATL SOP 00013 | EPA 310.2 R1974 m |
| Chloride | 17 | N/A | 2018/06/22 | ATL SOP 00014 | SM 22 4500-Cl- E m |
| Colour | 4 | N/A | 2018/06/22 | ATL SOP 00020 | SM 22 2120C m |
| Colour | 13 | N/A | 2018/06/25 | ATL SOP 00020 | SM 22 2120C m |
| Conductance - water | 17 | N/A | 2018/06/22 | ATL SOP 00004 | SM 23 2510B m |
| Hardness (calculated as CaCO3) | 17 | N/A | 2018/06/22 | ATL SOP 00048 | SM 22 2340 B |
| Metals Water Diss. MS (as rec'd) | 17 | N/A | 2018/06/22 | ATL SOP 00058 | EPA 6020A R1 m |
| Ion Balance (% Difference) | 17 | N/A | 2018/06/26 | N/A | Auto Calc. |
| Anion and Cation Sum | 17 | N/A | 2018/06/22 | N/A | Auto Calc. |
| Nitrogen Ammonia - water | 17 | N/A | 2018/06/21 | ATL SOP 00015 | EPA 350.1 R2 m |
| Nitrogen - Nitrate + Nitrite | 17 | N/A | 2018/06/25 | ATL SOP 00016 | USGS I-2547-11m |
| Nitrogen - Nitrite | 17 | N/A | 2018/06/25 | ATL SOP 00017 | SM 23 4500-NO2- B m |
| Nitrogen - Nitrate (as N) | 17 | N/A | 2018/06/26 | ATL SOP 00018 | ASTM D3867-16 |
| pH (1) | 17 | N/A | 2018/06/22 | ATL SOP 00003 | SM 23 4500-H+ B m |
| Phosphorus - ortho | 17 | N/A | 2018/06/22 | ATL SOP 00021 | SM 23 4500-P E m |
| Sat. pH and Langelier Index (@ 20C) | 17 | N/A | 2018/06/26 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 17 | N/A | 2018/06/26 | ATL SOP 00049 | Auto Calc. |
| Reactive Silica | 17 | N/A | 2018/06/25 | ATL SOP 00022 | EPA 366.0 m |
| Sulphate | 17 | N/A | 2018/06/22 | ATL SOP 00023 | ASTM D516-16 m |
| Total Dissolved Solids (TDS calc) | 17 | N/A | 2018/06/26 | N/A | Auto Calc. |
| Organic carbon - Total (TOC) (2) | 16 | N/A | 2018/06/22 | ATL SOP 00203 | SM 23 5310B m |
| Organic carbon - Total (TOC) (2) | 1 | N/A | 2018/06/25 | ATL SOP 00203 | SM 23 5310B m |
| Turbidity | 17 | N/A | 2018/06/22 | ATL SOP 00011 | EPA 180.1 R2 m |

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All

Your P.O. #: 73512044
Your Project #: 088664-20
Site Location: BEAVER DAM
Your C.O.C. #: D34771

Attention: Jeff Parks

GHD Limited
45 Akerley Blvd
Dartmouth, NS
CANADA B3B 1J7

Report Date: 2018/06/26
Report #: R5266814
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8F0978

Received: 2018/06/19, 14:47

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.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam 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 Maxxam, unless otherwise agreed in writing.

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.

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 require 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



Kavya Nair
Project Manager Assistant
26 Jun 2018 13:38:53

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Heather Macumber, Senior Project Manager

Email: HMacumber@maxxam.ca

Phone# (902)420-0203 Ext:226

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GZW431 | | | | GZW431 | | | | GZW432 | | | |
|------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------------|-------|----------|------|---------------------|-------|----------|------|---------------------|-------|----------|------|
| Sampling Date | | 2018/06/18 11:26 | | | | 2018/06/18 11:26 | | | | 2018/06/18 11:37 | | | |
| COC Number | | D34771 | | | | D34771 | | | | D34771 | | | |
| | UNITS | MW-12A | RDL | QC Batch | MDL | MW-12A Lab-Dup | RDL | QC Batch | MDL | MW-12B | RDL | QC Batch | MDL |
| Calculated Parameters | | | | | | | | | | | | | |
| Anion Sum | me/L | 0.830 | N/A | 5589413 | N/A | | | | | 2.20 | N/A | 5589413 | N/A |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 33 | 1.0 | 5589410 | 0.20 | | | | | 80 | 1.0 | 5589410 | 0.20 |
| Calculated TDS | mg/L | 64 | 1.0 | 5589418 | 0.20 | | | | | 130 | 1.0 | 5589418 | 0.20 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 1.0 | 5589410 | 0.20 | | | | | <1.0 | 1.0 | 5589410 | 0.20 |
| Cation Sum | me/L | 0.940 | N/A | 5589413 | N/A | | | | | 2.10 | N/A | 5589413 | N/A |
| Hardness (CaCO3) | mg/L | 31 | 1.0 | 5589411 | 1.0 | | | | | 70 | 1.0 | 5589411 | 1.0 |
| Ion Balance (% Difference) | % | 6.21 | N/A | 5589412 | N/A | | | | | 2.33 | N/A | 5589412 | N/A |
| Langelier Index (@ 20C) | N/A | -2.42 | | 5589415 | | | | | | -0.212 | | 5589415 | |
| Langelier Index (@ 4C) | N/A | -2.67 | | 5589416 | | | | | | -0.462 | | 5589416 | |
| Nitrate (N) | mg/L | 0.085 | 0.050 | 5590281 | N/A | | | | | 0.062 | 0.050 | 5590281 | N/A |
| Saturation pH (@ 20C) | N/A | 8.90 | | 5589415 | | | | | | 8.08 | | 5589415 | |
| Saturation pH (@ 4C) | N/A | 9.15 | | 5589416 | | | | | | 8.33 | | 5589416 | |
| Inorganics | | | | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | 33 | 5.0 | 5593768 | N/A | 33 | 5.0 | 5593768 | N/A | 81 | 5.0 | 5589743 | N/A |
| Dissolved Chloride (Cl) | mg/L | 2.4 | 1.0 | 5593775 | N/A | 2.4 | 1.0 | 5593775 | N/A | 4.6 | 1.0 | 5589752 | N/A |
| Colour | TCU | <5.0 | 5.0 | 5593779 | N/A | <5.0 | 5.0 | 5593779 | N/A | <5.0 | 5.0 | 5597605 | N/A |
| Nitrate + Nitrite (N) | mg/L | 0.085 | 0.050 | 5593781 | N/A | 0.086 | 0.050 | 5593781 | N/A | 0.062 | 0.050 | 5589765 | N/A |
| Nitrite (N) | mg/L | <0.010 | 0.010 | 5593783 | N/A | <0.010 | 0.010 | 5593783 | N/A | <0.010 | 0.010 | 5589767 | N/A |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 0.050 | 5592399 | N/A | <0.050 | 0.050 | 5592399 | N/A | <0.050 | 0.050 | 5592399 | N/A |
| Total Organic Carbon (C) | mg/L | <0.50 | 0.50 | 5592255 | N/A | | | | | 1.0 | 0.50 | 5592255 | N/A |
| Orthophosphate (P) | mg/L | <0.010 | 0.010 | 5593780 | N/A | <0.010 | 0.010 | 5593780 | N/A | 0.016 | 0.010 | 5589762 | N/A |
| pH | pH | 6.48 | N/A | 5593693 | N/A | 6.45 | N/A | 5593693 | N/A | 7.86 | N/A | 5593691 | N/A |
| Reactive Silica (SiO2) | mg/L | 17 | 0.50 | 5593778 | N/A | 17 | 0.50 | 5593778 | N/A | 10 | 0.50 | 5589757 | N/A |
| Dissolved Sulphate (SO4) | mg/L | 4.0 | 2.0 | 5593777 | N/A | 4.0 | 2.0 | 5593777 | N/A | 21 | 2.0 | 5589755 | N/A |
| Turbidity | NTU | 41 | 0.10 | 5593708 | 0.10 | 40 | 0.10 | 5593708 | 0.10 | 11 | 0.10 | 5593709 | 0.10 |
| Conductivity | uS/cm | 80 | 1.0 | 5593694 | N/A | 80 | 1.0 | 5593694 | N/A | 200 | 1.0 | 5593692 | N/A |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable | | | | | | | | | | | | | |

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GZW433 | | | GZW434 | | | GZW435 | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------------|-------|----------|---------------------|-------|----------|---------------------|-------|----------|------|
| Sampling Date | | 2018/06/18 11:58 | | | 2018/06/18 12:07 | | | 2018/06/18 12:15 | | | |
| COC Number | | D34771 | | | D34771 | | | D34771 | | | |
| | UNITS | MW-09A | RDL | QC Batch | MW-09B | RDL | QC Batch | MW-09D | RDL | QC Batch | MDL |
| Calculated Parameters | | | | | | | | | | | |
| Anion Sum | me/L | 0.340 | N/A | 5589413 | 2.46 | N/A | 5589413 | 2.97 | N/A | 5589413 | N/A |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 9.2 | 1.0 | 5589410 | 71 | 1.0 | 5589410 | 65 | 1.0 | 5589410 | 0.20 |
| Calculated TDS | mg/L | 30 | 1.0 | 5589418 | 150 | 1.0 | 5589418 | 190 | 1.0 | 5589418 | 0.20 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 1.0 | 5589410 | <1.0 | 1.0 | 5589410 | <1.0 | 1.0 | 5589410 | 0.20 |
| Cation Sum | me/L | 0.630 | N/A | 5589413 | 2.37 | N/A | 5589413 | 2.89 | N/A | 5589413 | N/A |
| Hardness (CaCO3) | mg/L | 25 | 1.0 | 5589411 | 72 | 1.0 | 5589411 | 93 | 1.0 | 5589411 | 1.0 |
| Ion Balance (% Difference) | % | 29.9 | N/A | 5589412 | 1.86 | N/A | 5589412 | 1.37 | N/A | 5589412 | N/A |
| Langelier Index (@ 20C) | N/A | -3.07 | | 5589415 | -0.174 | | 5589415 | -0.547 | | 5589415 | |
| Langelier Index (@ 4C) | N/A | -3.32 | | 5589416 | -0.424 | | 5589416 | -0.798 | | 5589416 | |
| Nitrate (N) | mg/L | <0.050 | 0.050 | 5590281 | <0.050 | 0.050 | 5590281 | <0.050 | 0.050 | 5590281 | N/A |
| Saturation pH (@ 20C) | N/A | 9.37 | | 5589415 | 8.11 | | 5589415 | 8.09 | | 5589415 | |
| Saturation pH (@ 4C) | N/A | 9.62 | | 5589416 | 8.36 | | 5589416 | 8.34 | | 5589416 | |
| Inorganics | | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | 9.2 | 5.0 | 5589743 | 72 | 5.0 | 5589743 | 65 | 5.0 | 5589743 | N/A |
| Dissolved Chloride (Cl) | mg/L | 3.5 | 1.0 | 5589752 | 5.1 | 1.0 | 5589752 | 8.6 | 1.0 | 5589752 | N/A |
| Colour | TCU | <5.0 | 5.0 | 5597605 | <5.0 | 5.0 | 5597605 | <5.0 | 5.0 | 5597605 | N/A |
| Nitrate + Nitrite (N) | mg/L | <0.050 | 0.050 | 5589765 | <0.050 | 0.050 | 5589765 | <0.050 | 0.050 | 5589765 | N/A |
| Nitrite (N) | mg/L | <0.010 | 0.010 | 5589767 | <0.010 | 0.010 | 5589767 | <0.010 | 0.010 | 5589767 | N/A |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 0.050 | 5592399 | <0.050 | 0.050 | 5592399 | <0.050 | 0.050 | 5592399 | N/A |
| Total Organic Carbon (C) | mg/L | 0.59 | 0.50 | 5592255 | 2.5 | 0.50 | 5592255 | 9.1 (1) | 5.0 | 5593990 | N/A |
| Orthophosphate (P) | mg/L | <0.010 | 0.010 | 5589762 | 0.027 | 0.010 | 5589762 | 0.012 | 0.010 | 5589762 | N/A |
| pH | pH | 6.30 | N/A | 5593693 | 7.94 | N/A | 5593691 | 7.54 | N/A | 5593691 | N/A |
| Reactive Silica (SiO2) | mg/L | 5.1 | 0.50 | 5589757 | 9.3 | 0.50 | 5589757 | 12 | 0.50 | 5589757 | N/A |
| Dissolved Sulphate (SO4) | mg/L | 2.9 | 2.0 | 5589755 | 42 (1) | 10 | 5589755 | 68 (1) | 10 | 5589755 | N/A |
| Turbidity | NTU | 0.29 | 0.10 | 5593709 | 6.1 | 0.10 | 5593709 | 2.4 | 0.10 | 5593708 | 0.10 |
| Conductivity | uS/cm | 30 | 1.0 | 5593694 | 230 | 1.0 | 5593692 | 300 | 1.0 | 5593692 | N/A |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Elevated reporting limit due to sample matrix. | | | | | | | | | | | |

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GZW436 | GZW437 | | GZW438 | | GZW439 | | | |
|----------------------------------------------------------------------------------------------|-------|---------------------|---------------------|----------|---------------------|----------|---------------------|-------|----------|------|
| Sampling Date | | 2018/06/18 12:50 | 2018/06/18 12:58 | | 2018/06/18 15:10 | | 2018/06/18 15:16 | | | |
| COC Number | | D34771 | D34771 | | D34771 | | D34771 | | | |
| | UNITS | MW-04A | MW-04B | QC Batch | MW-21A | QC Batch | MW-21B | RDL | QC Batch | MDL |
| Calculated Parameters | | | | | | | | | | |
| Anion Sum | me/L | 0.440 | 1.16 | 5590385 | 0.250 | 5590385 | 0.580 | N/A | 5590385 | N/A |
| Bicarb. Alkalinity (calc. as CaCO ₃) | mg/L | 11 | 41 | 5590380 | 6.5 | 5590380 | 21 | 1.0 | 5590380 | 0.20 |
| Calculated TDS | mg/L | 32 | 71 | 5590389 | 20 | 5590389 | 40 | 1.0 | 5590389 | 0.20 |
| Carb. Alkalinity (calc. as CaCO ₃) | mg/L | <1.0 | <1.0 | 5590380 | <1.0 | 5590380 | <1.0 | 1.0 | 5590380 | 0.20 |
| Cation Sum | me/L | 0.510 | 1.08 | 5590385 | 0.240 | 5590385 | 0.550 | N/A | 5590385 | N/A |
| Hardness (CaCO ₃) | mg/L | 17 | 44 | 5590383 | 7.0 | 5590383 | 18 | 1.0 | 5590383 | 1.0 |
| Ion Balance (% Difference) | % | 7.37 | 3.57 | 5590384 | 2.04 | 5590384 | 2.65 | N/A | 5590384 | N/A |
| Langelier Index (@ 20C) | N/A | -3.26 | -1.26 | 5590387 | -4.65 | 5590387 | -2.94 | | 5590387 | |
| Langelier Index (@ 4C) | N/A | -3.51 | -1.51 | 5590388 | -4.90 | 5590388 | -3.19 | | 5590388 | |
| Nitrate (N) | mg/L | <0.050 | <0.050 | 5590281 | 0.48 | 5590281 | 0.35 | 0.050 | 5590281 | N/A |
| Saturation pH (@ 20C) | N/A | 9.58 | 8.54 | 5590387 | 10.3 | 5590387 | 9.30 | | 5590387 | |
| Saturation pH (@ 4C) | N/A | 9.83 | 8.79 | 5590388 | 10.5 | 5590388 | 9.56 | | 5590388 | |
| Inorganics | | | | | | | | | | |
| Total Alkalinity (Total as CaCO ₃) | mg/L | 11 | 41 | 5589743 | 6.5 | 5589743 | 21 | 5.0 | 5589743 | N/A |
| Dissolved Chloride (Cl) | mg/L | 6.4 | 4.9 | 5589752 | 3.1 | 5589752 | 3.1 | 1.0 | 5589752 | N/A |
| Colour | TCU | <5.0 | <5.0 | 5597605 | 8.0 | 5597605 | <5.0 | 5.0 | 5597605 | N/A |
| Nitrate + Nitrite (N) | mg/L | <0.050 | <0.050 | 5589765 | 0.48 | 5589765 | 0.35 | 0.050 | 5589765 | N/A |
| Nitrite (N) | mg/L | <0.010 | <0.010 | 5589767 | <0.010 | 5589767 | <0.010 | 0.010 | 5589767 | N/A |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | <0.050 | 5592399 | <0.050 | 5592399 | <0.050 | 0.050 | 5592399 | N/A |
| Total Organic Carbon (C) | mg/L | 0.73 | 1.1 | 5592255 | 2.1 | 5593990 | 1.0 | 0.50 | 5593990 | N/A |
| Orthophosphate (P) | mg/L | <0.010 | <0.010 | 5589762 | <0.010 | 5589762 | 0.018 | 0.010 | 5589762 | N/A |
| pH | pH | 6.32 | 7.28 | 5593693 | 5.64 | 5593693 | 6.37 | N/A | 5593697 | N/A |
| Reactive Silica (SiO ₂) | mg/L | 6.4 | 9.6 | 5589757 | 5.6 | 5589757 | 8.9 | 0.50 | 5589757 | N/A |
| Dissolved Sulphate (SO ₄) | mg/L | 2.3 | 9.6 | 5589755 | <2.0 | 5589755 | 2.2 | 2.0 | 5589755 | N/A |
| Turbidity | NTU | 0.79 | 5.9 | 5593709 | 1.1 | 5593709 | 23 | 0.10 | 5593709 | 0.10 |
| Conductivity | uS/cm | 41 | 110 | 5593694 | 33 | 5593694 | 61 | 1.0 | 5593698 | N/A |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable | | | | | | | | | | |

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GZW439 | | | | GZW440 | | GZW441 | | | |
|------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------------|-----|----------|-----|---------------------|----------|---------------------|-------|----------|------|
| Sampling Date | | 2018/06/18 15:16 | | | | 2018/06/18 15:28 | | 2018/06/18 13:36 | | | |
| COC Number | | D34771 | | | | D34771 | | D34771 | | | |
| | UNITS | MW-21B Lab-Dup | RDL | QC Batch | MDL | MW-21C | QC Batch | MW-16A | RDL | QC Batch | MDL |
| Calculated Parameters | | | | | | | | | | | |
| Anion Sum | me/L | | | | | 1.67 | 5590385 | 1.80 | N/A | 5590385 | N/A |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | | | | | 54 | 5590380 | 79 | 1.0 | 5590380 | 0.20 |
| Calculated TDS | mg/L | | | | | 110 | 5590389 | 100 | 1.0 | 5590389 | 0.20 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | | | | | <1.0 | 5590380 | <1.0 | 1.0 | 5590380 | 0.20 |
| Cation Sum | me/L | | | | | 1.56 | 5590385 | 1.72 | N/A | 5590385 | N/A |
| Hardness (CaCO3) | mg/L | | | | | 38 | 5590383 | 66 | 1.0 | 5590383 | 1.0 |
| Ion Balance (% Difference) | % | | | | | 3.41 | 5590384 | 2.27 | N/A | 5590384 | N/A |
| Langelier Index (@ 20C) | N/A | | | | | -1.93 | 5590387 | -0.291 | | 5590387 | |
| Langelier Index (@ 4C) | N/A | | | | | -2.18 | 5590388 | -0.542 | | 5590388 | |
| Nitrate (N) | mg/L | | | | | 0.14 | 5590281 | 0.092 | 0.050 | 5590281 | N/A |
| Saturation pH (@ 20C) | N/A | | | | | 8.63 | 5590387 | 8.08 | | 5590387 | |
| Saturation pH (@ 4C) | N/A | | | | | 8.88 | 5590388 | 8.33 | | 5590388 | |
| Inorganics | | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | | | | | 54 | 5589743 | 79 | 5.0 | 5589743 | N/A |
| Dissolved Chloride (Cl) | mg/L | | | | | 5.2 | 5589752 | 4.0 | 1.0 | 5589752 | N/A |
| Colour | TCU | | | | | <5.0 | 5597605 | <5.0 | 5.0 | 5597605 | N/A |
| Nitrate + Nitrite (N) | mg/L | | | | | 0.14 | 5589765 | 0.092 | 0.050 | 5589765 | N/A |
| Nitrite (N) | mg/L | | | | | <0.010 | 5589767 | <0.010 | 0.010 | 5589767 | N/A |
| Nitrogen (Ammonia Nitrogen) | mg/L | | | | | <0.050 | 5592399 | <0.050 | 0.050 | 5592399 | N/A |
| Total Organic Carbon (C) | mg/L | | | | | 4.2 | 5593990 | 0.60 | 0.50 | 5596952 | N/A |
| Orthophosphate (P) | mg/L | | | | | <0.010 | 5589762 | <0.010 | 0.010 | 5589762 | N/A |
| pH | pH | 6.39 | N/A | 5593697 | N/A | 6.70 | 5593693 | 7.79 | N/A | 5593695 | N/A |
| Reactive Silica (SiO2) | mg/L | | | | | 15 | 5589757 | 11 | 0.50 | 5589757 | N/A |
| Dissolved Sulphate (SO4) | mg/L | | | | | 21 | 5589755 | 4.5 | 2.0 | 5589755 | N/A |
| Turbidity | NTU | | | | | 7.6 | 5593711 | 3.0 | 0.10 | 5593711 | 0.10 |
| Conductivity | uS/cm | 60 | 1.0 | 5593698 | N/A | 160 | 5593694 | 160 | 1.0 | 5593696 | N/A |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable | | | | | | | | | | | |

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GZW442 | | GZW443 | | GZW444 | | GZW445 | | | |
|---------------|--------------|---------------------|-----------------|---------------------|-----------------|---------------------|-----------------|---------------------|------------|-----------------|------------|
| Sampling Date | | 2018/06/18 13:40 | | 2018/06/18 14:11 | | 2018/06/18 14:19 | | 2018/06/18 14:25 | | | |
| COC Number | | D34771 | | D34771 | | D34771 | | D34771 | | | |
| | UNITS | MW-16B | QC Batch | MW-17A | QC Batch | MW-17B | QC Batch | MW-17C | RDL | QC Batch | MDL |

| Calculated Parameters | | | | | | | | | | | |
|-------------------------------------|------|--------|---------|--------|---------|--------|---------|--------|-------|---------|------|
| Anion Sum | me/L | 1.43 | 5590385 | 0.510 | 5590385 | 0.300 | 5590385 | 0.420 | N/A | 5590385 | N/A |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 59 | 5590380 | 15 | 5590380 | 8.3 | 5590380 | 14 | 1.0 | 5590380 | 0.20 |
| Calculated TDS | mg/L | 84 | 5590389 | 34 | 5590389 | 25 | 5590389 | 32 | 1.0 | 5590389 | 0.20 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 5590380 | <1.0 | 5590380 | <1.0 | 5590380 | <1.0 | 1.0 | 5590380 | 0.20 |
| Cation Sum | me/L | 1.34 | 5590385 | 0.470 | 5590385 | 0.260 | 5590385 | 0.390 | N/A | 5590385 | N/A |
| Hardness (CaCO3) | mg/L | 55 | 5590383 | 15 | 5590383 | 6.6 | 5590383 | 12 | 1.0 | 5590383 | 1.0 |
| Ion Balance (% Difference) | % | 3.25 | 5590384 | 4.08 | 5590384 | 7.14 | 5590384 | 3.70 | N/A | 5590384 | N/A |
| Langelier Index (@ 20C) | N/A | -0.510 | 5590387 | -3.14 | 5590387 | -4.06 | 5590387 | -3.07 | | 5590387 | |
| Langelier Index (@ 4C) | N/A | -0.761 | 5590388 | -3.40 | 5590388 | -4.31 | 5590388 | -3.33 | | 5590388 | |
| Nitrate (N) | mg/L | 0.14 | 5590281 | <0.050 | 5590281 | <0.050 | 5590281 | <0.050 | 0.050 | 5590281 | N/A |
| Saturation pH (@ 20C) | N/A | 8.27 | 5590387 | 9.42 | 5590387 | 10.2 | 5590387 | 9.59 | | 5590387 | |
| Saturation pH (@ 4C) | N/A | 8.52 | 5590388 | 9.67 | 5590388 | 10.4 | 5590388 | 9.84 | | 5590388 | |

| Inorganics | | | | | | | | | | | |
|-----------------------------------|-------|--------|---------|--------|---------|--------|---------|--------|-------|---------|------|
| Total Alkalinity (Total as CaCO3) | mg/L | 59 | 5589743 | 15 | 5589743 | 8.3 | 5593768 | 14 | 5.0 | 5593768 | N/A |
| Dissolved Chloride (Cl) | mg/L | 4.1 | 5589752 | 5.2 | 5589752 | 2.9 | 5593775 | 2.9 | 1.0 | 5593775 | N/A |
| Colour | TCU | <5.0 | 5597605 | <5.0 | 5597605 | <5.0 | 5597513 | <5.0 | 5.0 | 5593779 | N/A |
| Nitrate + Nitrite (N) | mg/L | 0.14 | 5589765 | <0.050 | 5589765 | <0.050 | 5593781 | <0.050 | 0.050 | 5593781 | N/A |
| Nitrite (N) | mg/L | <0.010 | 5589767 | <0.010 | 5589767 | <0.010 | 5593783 | <0.010 | 0.010 | 5593783 | N/A |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 5592399 | <0.050 | 5592399 | <0.050 | 5592399 | <0.050 | 0.050 | 5592399 | N/A |
| Total Organic Carbon (C) | mg/L | <0.50 | 5593990 | 0.59 | 5593990 | 0.56 | 5593990 | <0.50 | 0.50 | 5593990 | N/A |
| Orthophosphate (P) | mg/L | <0.010 | 5589762 | <0.010 | 5589762 | 0.014 | 5593780 | <0.010 | 0.010 | 5593780 | N/A |
| pH | pH | 7.76 | 5593693 | 6.28 | 5593693 | 6.10 | 5593693 | 6.51 | N/A | 5593691 | N/A |
| Reactive Silica (SiO2) | mg/L | 10 | 5589757 | 6.9 | 5589757 | 8.6 | 5593778 | 10 | 0.50 | 5593778 | N/A |
| Dissolved Sulphate (SO4) | mg/L | 6.0 | 5589755 | 2.6 | 5589755 | 2.7 | 5593777 | 2.9 | 2.0 | 5593777 | N/A |
| Turbidity | NTU | 0.68 | 5593709 | 1.6 | 5593711 | 0.49 | 5593711 | 0.74 | 0.10 | 5593709 | 0.10 |
| Conductivity | uS/cm | 130 | 5593694 | 46 | 5593694 | 29 | 5593694 | 40 | 1.0 | 5593692 | N/A |

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

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GZW446 | | GZW447 | | | | GZW447 | | | |
|------------------------------------------------------------------------------------------------------------------------------------------|-------|------------|----------|------------|-------|----------|------|-----------------|------|----------|------|
| Sampling Date | | 2018/06/18 | | 2018/06/18 | | | | 2018/06/18 | | | |
| COC Number | | D34771 | | D34771 | | | | D34771 | | | |
| | UNITS | MW-DUPA | QC Batch | MW-DUPB | RDL | QC Batch | MDL | MW-DUPB Lab-Dup | RDL | QC Batch | MDL |
| Calculated Parameters | | | | | | | | | | | |
| Anion Sum | me/L | 0.320 | 5590385 | 0.300 | N/A | 5590385 | N/A | | | | |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 8.8 | 5590380 | 7.4 | 1.0 | 5590380 | 0.20 | | | | |
| Calculated TDS | mg/L | 29 | 5590389 | 25 | 1.0 | 5590389 | 0.20 | | | | |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | <1.0 | 5590380 | <1.0 | 1.0 | 5590380 | 0.20 | | | | |
| Cation Sum | me/L | 0.630 | 5590385 | 0.260 | N/A | 5590385 | N/A | | | | |
| Hardness (CaCO3) | mg/L | 25 | 5590383 | 6.7 | 1.0 | 5590383 | 1.0 | | | | |
| Ion Balance (% Difference) | % | 32.6 | 5590384 | 7.14 | N/A | 5590384 | N/A | | | | |
| Langelier Index (@ 20C) | N/A | -2.95 | 5590387 | -4.08 | | 5590387 | | | | | |
| Langelier Index (@ 4C) | N/A | -3.20 | 5590388 | -4.33 | | 5590388 | | | | | |
| Nitrate (N) | mg/L | <0.050 | 5590281 | <0.050 | 0.050 | 5590281 | N/A | | | | |
| Saturation pH (@ 20C) | N/A | 9.39 | 5590387 | 10.2 | | 5590387 | | | | | |
| Saturation pH (@ 4C) | N/A | 9.64 | 5590388 | 10.4 | | 5590388 | | | | | |
| Inorganics | | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | 8.8 | 5593768 | 7.4 | 5.0 | 5593768 | N/A | | | | |
| Dissolved Chloride (Cl) | mg/L | 2.9 | 5593775 | 3.3 | 1.0 | 5593775 | N/A | | | | |
| Colour | TCU | <5.0 | 5593779 | 5.3 | 5.0 | 5593779 | N/A | | | | |
| Nitrate + Nitrite (N) | mg/L | <0.050 | 5593781 | <0.050 | 0.050 | 5593781 | N/A | | | | |
| Nitrite (N) | mg/L | 0.021 | 5593783 | <0.010 | 0.010 | 5593783 | N/A | | | | |
| Nitrogen (Ammonia Nitrogen) | mg/L | <0.050 | 5592399 | <0.050 | 0.050 | 5592399 | N/A | | | | |
| Total Organic Carbon (C) | mg/L | 0.61 | 5593990 | 0.51 | 0.50 | 5592255 | N/A | | | | |
| Orthophosphate (P) | mg/L | <0.010 | 5593780 | 0.017 | 0.010 | 5593780 | N/A | | | | |
| pH | pH | 6.44 | 5593691 | 6.12 | N/A | 5593693 | N/A | | | | |
| Reactive Silica (SiO2) | mg/L | 5.1 | 5593778 | 9.1 | 0.50 | 5593778 | N/A | | | | |
| Dissolved Sulphate (SO4) | mg/L | 2.9 | 5593777 | 2.6 | 2.0 | 5593777 | N/A | | | | |
| Turbidity | NTU | 0.33 | 5593708 | 0.90 | 0.10 | 5593709 | 0.10 | 0.99 | 0.10 | 5593709 | 0.10 |
| Conductivity | uS/cm | 31 | 5593692 | 29 | 1.0 | 5593694 | N/A | | | | |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable | | | | | | | | | | | |

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | GZW431 | GZW432 | GZW433 | GZW434 | GZW435 | | GZW436 | | | |
|---------------|-------|---------------------|---------------------|---------------------|---------------------|---------------------|----------|---------------------|-----|----------|-----|
| Sampling Date | | 2018/06/18 11:26 | 2018/06/18 11:37 | 2018/06/18 11:58 | 2018/06/18 12:07 | 2018/06/18 12:15 | | 2018/06/18 12:50 | | | |
| COC Number | | D34771 | D34771 | D34771 | D34771 | D34771 | | D34771 | | | |
| | UNITS | MW-12A | MW-12B | MW-09A | MW-09B | MW-09D | QC Batch | MW-04A | RDL | QC Batch | MDL |

| Metals | | | | | | | | | | | |
|---------------------------|------|-------|--------|-------|--------|--------|---------|-------|-------|---------|-----|
| Dissolved Aluminum (Al) | ug/L | 5.0 | 5.5 | <5.0 | 61 | 8.9 | 5592239 | 6.0 | 5.0 | 5593914 | N/A |
| Dissolved Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 5592239 | <1.0 | 1.0 | 5593914 | N/A |
| Dissolved Arsenic (As) | ug/L | <1.0 | 44 | 1.0 | 120 | 140 | 5592239 | <1.0 | 1.0 | 5593914 | N/A |
| Dissolved Barium (Ba) | ug/L | 6.7 | 10 | 6.1 | 12 | 8.9 | 5592239 | 4.1 | 1.0 | 5593914 | N/A |
| Dissolved Beryllium (Be) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 5592239 | <1.0 | 1.0 | 5593914 | N/A |
| Dissolved Bismuth (Bi) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 5592239 | <2.0 | 2.0 | 5593914 | N/A |
| Dissolved Boron (B) | ug/L | <50 | <50 | <50 | <50 | <50 | 5592239 | <50 | 50 | 5593914 | N/A |
| Dissolved Cadmium (Cd) | ug/L | 0.027 | <0.010 | 0.030 | <0.010 | <0.010 | 5592239 | 0.011 | 0.010 | 5593914 | N/A |
| Dissolved Calcium (Ca) | ug/L | 7900 | 24000 | 9100 | 25000 | 30000 | 5592239 | 4800 | 100 | 5593914 | N/A |
| Dissolved Chromium (Cr) | ug/L | <1.0 | 2.3 | <1.0 | <1.0 | <1.0 | 5592239 | <1.0 | 1.0 | 5593914 | N/A |
| Dissolved Cobalt (Co) | ug/L | 2.6 | <0.40 | 1.2 | <0.40 | <0.40 | 5592239 | 0.87 | 0.40 | 5593914 | N/A |
| Dissolved Copper (Cu) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 5592239 | <2.0 | 2.0 | 5593914 | N/A |
| Dissolved Iron (Fe) | ug/L | 220 | <50 | <50 | <50 | <50 | 5592239 | <50 | 50 | 5593914 | N/A |
| Dissolved Lead (Pb) | ug/L | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 5592239 | <0.50 | 0.50 | 5593914 | N/A |
| Dissolved Magnesium (Mg) | ug/L | 2700 | 2500 | 640 | 2300 | 4100 | 5592239 | 1200 | 100 | 5593914 | N/A |
| Dissolved Manganese (Mn) | ug/L | 1300 | 230 | 110 | 11 | 46 | 5592239 | 69 | 2.0 | 5593914 | N/A |
| Dissolved Molybdenum (Mo) | ug/L | <2.0 | 19 | <2.0 | 9.2 | 10 | 5592239 | <2.0 | 2.0 | 5593914 | N/A |
| Dissolved Nickel (Ni) | ug/L | 2.5 | <2.0 | 3.3 | <2.0 | <2.0 | 5592239 | 5.4 | 2.0 | 5593914 | N/A |
| Dissolved Phosphorus (P) | ug/L | <100 | <100 | <100 | <100 | <100 | 5592239 | <100 | 100 | 5593914 | N/A |
| Dissolved Potassium (K) | ug/L | 2300 | 1600 | 720 | 1700 | 1200 | 5592239 | 1100 | 100 | 5593914 | N/A |
| Dissolved Selenium (Se) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 5592239 | <1.0 | 1.0 | 5593914 | N/A |
| Dissolved Silver (Ag) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 5592239 | <0.10 | 0.10 | 5593914 | N/A |
| Dissolved Sodium (Na) | ug/L | 6000 | 15000 | 2400 | 20000 | 23000 | 5592239 | 3300 | 100 | 5593914 | N/A |
| Dissolved Strontium (Sr) | ug/L | 53 | 80 | 14 | 340 | 680 | 5592239 | 25 | 2.0 | 5593914 | N/A |
| Dissolved Thallium (Tl) | ug/L | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 5592239 | <0.10 | 0.10 | 5593914 | N/A |
| Dissolved Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 5592239 | <2.0 | 2.0 | 5593914 | N/A |
| Dissolved Titanium (Ti) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 5592239 | <2.0 | 2.0 | 5593914 | N/A |
| Dissolved Uranium (U) | ug/L | <0.10 | 2.0 | <0.10 | 6.6 | 3.7 | 5592239 | <0.10 | 0.10 | 5593914 | N/A |
| Dissolved Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 5592239 | <2.0 | 2.0 | 5593914 | N/A |
| Dissolved Zinc (Zn) | ug/L | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | 5592239 | <5.0 | 5.0 | 5593914 | N/A |

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

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | GZW436 | | GZW437 | | GZW438 | | GZW439 | | | |
|------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------------|----------|---------------------|----------|---------------------|----------|---------------------|-------|----------|-----|
| Sampling Date | | 2018/06/18 12:50 | | 2018/06/18 12:58 | | 2018/06/18 15:10 | | 2018/06/18 15:16 | | | |
| COC Number | | D34771 | | D34771 | | D34771 | | D34771 | | | |
| | UNITS | MW-04A Lab-Dup | QC Batch | MW-04B | QC Batch | MW-21A | QC Batch | MW-21B | RDL | QC Batch | MDL |
| Metals | | | | | | | | | | | |
| Dissolved Aluminum (Al) | ug/L | 5.8 | 5593914 | 9.0 | 5592239 | 430 | 5593914 | 16 | 5.0 | 5592239 | N/A |
| Dissolved Antimony (Sb) | ug/L | <1.0 | 5593914 | <1.0 | 5592239 | <1.0 | 5593914 | <1.0 | 1.0 | 5592239 | N/A |
| Dissolved Arsenic (As) | ug/L | <1.0 | 5593914 | <1.0 | 5592239 | <1.0 | 5593914 | <1.0 | 1.0 | 5592239 | N/A |
| Dissolved Barium (Ba) | ug/L | 4.1 | 5593914 | 4.0 | 5592239 | 15 | 5593914 | 3.5 | 1.0 | 5592239 | N/A |
| Dissolved Beryllium (Be) | ug/L | <1.0 | 5593914 | <1.0 | 5592239 | <1.0 | 5593914 | <1.0 | 1.0 | 5592239 | N/A |
| Dissolved Bismuth (Bi) | ug/L | <2.0 | 5593914 | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | 2.0 | 5592239 | N/A |
| Dissolved Boron (B) | ug/L | <50 | 5593914 | <50 | 5592239 | <50 | 5593914 | <50 | 50 | 5592239 | N/A |
| Dissolved Cadmium (Cd) | ug/L | 0.010 | 5593914 | <0.010 | 5592239 | 0.049 | 5593914 | 0.015 | 0.010 | 5592239 | N/A |
| Dissolved Calcium (Ca) | ug/L | 4800 | 5593914 | 15000 | 5592239 | 1500 | 5593914 | 4700 | 100 | 5592239 | N/A |
| Dissolved Chromium (Cr) | ug/L | <1.0 | 5593914 | <1.0 | 5592239 | <1.0 | 5593914 | <1.0 | 1.0 | 5592239 | N/A |
| Dissolved Cobalt (Co) | ug/L | 0.84 | 5593914 | <0.40 | 5592239 | 3.7 | 5593914 | <0.40 | 0.40 | 5592239 | N/A |
| Dissolved Copper (Cu) | ug/L | <2.0 | 5593914 | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | 2.0 | 5592239 | N/A |
| Dissolved Iron (Fe) | ug/L | <50 | 5593914 | <50 | 5592239 | 65 | 5593914 | <50 | 50 | 5592239 | N/A |
| Dissolved Lead (Pb) | ug/L | <0.50 | 5593914 | <0.50 | 5592239 | <0.50 | 5593914 | <0.50 | 0.50 | 5592239 | N/A |
| Dissolved Magnesium (Mg) | ug/L | 1200 | 5593914 | 1600 | 5592239 | 780 | 5593914 | 1500 | 100 | 5592239 | N/A |
| Dissolved Manganese (Mn) | ug/L | 70 | 5593914 | 55 | 5592239 | 650 | 5593914 | 110 | 2.0 | 5592239 | N/A |
| Dissolved Molybdenum (Mo) | ug/L | <2.0 | 5593914 | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | 2.0 | 5592239 | N/A |
| Dissolved Nickel (Ni) | ug/L | 5.4 | 5593914 | <2.0 | 5592239 | 2.8 | 5593914 | <2.0 | 2.0 | 5592239 | N/A |
| Dissolved Phosphorus (P) | ug/L | <100 | 5593914 | <100 | 5592239 | <100 | 5593914 | <100 | 100 | 5592239 | N/A |
| Dissolved Potassium (K) | ug/L | 1100 | 5593914 | 1300 | 5592239 | 850 | 5593914 | 1200 | 100 | 5592239 | N/A |
| Dissolved Selenium (Se) | ug/L | <1.0 | 5593914 | <1.0 | 5592239 | <1.0 | 5593914 | <1.0 | 1.0 | 5592239 | N/A |
| Dissolved Silver (Ag) | ug/L | <0.10 | 5593914 | <0.10 | 5592239 | <0.10 | 5593914 | <0.10 | 0.10 | 5592239 | N/A |
| Dissolved Sodium (Na) | ug/L | 3200 | 5593914 | 4100 | 5592239 | 1800 | 5593914 | 3700 | 100 | 5592239 | N/A |
| Dissolved Strontium (Sr) | ug/L | 24 | 5593914 | 84 | 5592239 | 15 | 5593914 | 33 | 2.0 | 5592239 | N/A |
| Dissolved Thallium (Tl) | ug/L | <0.10 | 5593914 | <0.10 | 5592239 | <0.10 | 5593914 | <0.10 | 0.10 | 5592239 | N/A |
| Dissolved Tin (Sn) | ug/L | <2.0 | 5593914 | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | 2.0 | 5592239 | N/A |
| Dissolved Titanium (Ti) | ug/L | <2.0 | 5593914 | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | 2.0 | 5592239 | N/A |
| Dissolved Uranium (U) | ug/L | <0.10 | 5593914 | <0.10 | 5592239 | 0.10 | 5593914 | <0.10 | 0.10 | 5592239 | N/A |
| Dissolved Vanadium (V) | ug/L | <2.0 | 5593914 | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | 2.0 | 5592239 | N/A |
| Dissolved Zinc (Zn) | ug/L | <5.0 | 5593914 | <5.0 | 5592239 | <5.0 | 5593914 | <5.0 | 5.0 | 5592239 | N/A |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable | | | | | | | | | | | |

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | GZW440 | | GZW441 | | GZW442 | GZW443 | | | |
|----------------------------------------------------------------------------------------------|-------|---------------------|----------|---------------------|----------|---------------------|---------------------|-------|----------|-----|
| Sampling Date | | 2018/06/18 15:28 | | 2018/06/18 13:36 | | 2018/06/18 13:40 | 2018/06/18 14:11 | | | |
| COC Number | | D34771 | | D34771 | | D34771 | D34771 | | | |
| | UNITS | MW-21C | QC Batch | MW-16A | QC Batch | MW-16B | MW-17A | RDL | QC Batch | MDL |
| Metals | | | | | | | | | | |
| Dissolved Aluminum (Al) | ug/L | 7.5 | 5592239 | <5.0 | 5593914 | 11 | 6.4 | 5.0 | 5592239 | N/A |
| Dissolved Antimony (Sb) | ug/L | <1.0 | 5592239 | <1.0 | 5593914 | <1.0 | <1.0 | 1.0 | 5592239 | N/A |
| Dissolved Arsenic (As) | ug/L | <1.0 | 5592239 | 1.5 | 5593914 | 8.6 | <1.0 | 1.0 | 5592239 | N/A |
| Dissolved Barium (Ba) | ug/L | 9.7 | 5592239 | 3.5 | 5593914 | 4.6 | 10 | 1.0 | 5592239 | N/A |
| Dissolved Beryllium (Be) | ug/L | <1.0 | 5592239 | <1.0 | 5593914 | <1.0 | <1.0 | 1.0 | 5592239 | N/A |
| Dissolved Bismuth (Bi) | ug/L | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | <2.0 | 2.0 | 5592239 | N/A |
| Dissolved Boron (B) | ug/L | <50 | 5592239 | <50 | 5593914 | <50 | <50 | 50 | 5592239 | N/A |
| Dissolved Cadmium (Cd) | ug/L | 0.019 | 5592239 | 0.021 | 5593914 | <0.010 | 0.039 | 0.010 | 5592239 | N/A |
| Dissolved Calcium (Ca) | ug/L | 9700 | 5592239 | 23000 | 5593914 | 20000 | 4900 | 100 | 5592239 | N/A |
| Dissolved Chromium (Cr) | ug/L | <1.0 | 5592239 | <1.0 | 5593914 | <1.0 | <1.0 | 1.0 | 5592239 | N/A |
| Dissolved Cobalt (Co) | ug/L | 0.51 | 5592239 | 2.1 | 5593914 | <0.40 | 3.0 | 0.40 | 5592239 | N/A |
| Dissolved Copper (Cu) | ug/L | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | 3.7 | 2.0 | 5592239 | N/A |
| Dissolved Iron (Fe) | ug/L | <50 | 5592239 | <50 | 5593914 | <50 | <50 | 50 | 5592239 | N/A |
| Dissolved Lead (Pb) | ug/L | <0.50 | 5592239 | <0.50 | 5593914 | <0.50 | <0.50 | 0.50 | 5592239 | N/A |
| Dissolved Magnesium (Mg) | ug/L | 3200 | 5592239 | 1900 | 5593914 | 1400 | 790 | 100 | 5592239 | N/A |
| Dissolved Manganese (Mn) | ug/L | 180 | 5592239 | 690 | 5593914 | 6.3 | 240 | 2.0 | 5592239 | N/A |
| Dissolved Molybdenum (Mo) | ug/L | 2.6 | 5592239 | <2.0 | 5593914 | <2.0 | <2.0 | 2.0 | 5592239 | N/A |
| Dissolved Nickel (Ni) | ug/L | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | 8.5 | 2.0 | 5592239 | N/A |
| Dissolved Phosphorus (P) | ug/L | <100 | 5592239 | <100 | 5593914 | <100 | <100 | 100 | 5592239 | N/A |
| Dissolved Potassium (K) | ug/L | 2100 | 5592239 | 550 | 5593914 | 1700 | 670 | 100 | 5592239 | N/A |
| Dissolved Selenium (Se) | ug/L | <1.0 | 5592239 | <1.0 | 5593914 | <1.0 | <1.0 | 1.0 | 5592239 | N/A |
| Dissolved Silver (Ag) | ug/L | <0.10 | 5592239 | <0.10 | 5593914 | <0.10 | <0.10 | 0.10 | 5592239 | N/A |
| Dissolved Sodium (Na) | ug/L | 17000 | 5592239 | 8700 | 5593914 | 4600 | 3400 | 100 | 5592239 | N/A |
| Dissolved Strontium (Sr) | ug/L | 85 | 5592239 | 77 | 5593914 | 74 | 32 | 2.0 | 5592239 | N/A |
| Dissolved Thallium (Tl) | ug/L | <0.10 | 5592239 | <0.10 | 5593914 | <0.10 | <0.10 | 0.10 | 5592239 | N/A |
| Dissolved Tin (Sn) | ug/L | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | <2.0 | 2.0 | 5592239 | N/A |
| Dissolved Titanium (Ti) | ug/L | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | <2.0 | 2.0 | 5592239 | N/A |
| Dissolved Uranium (U) | ug/L | 0.29 | 5592239 | 2.4 | 5593914 | 2.6 | <0.10 | 0.10 | 5592239 | N/A |
| Dissolved Vanadium (V) | ug/L | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | <2.0 | 2.0 | 5592239 | N/A |
| Dissolved Zinc (Zn) | ug/L | 6.5 | 5592239 | <5.0 | 5593914 | <5.0 | 12 | 5.0 | 5592239 | N/A |
| RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable | | | | | | | | | | |

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | GZW444 | | GZW445 | | GZW446 | | GZW447 | | | |
|---------------|-------|---------------------|----------|---------------------|----------|------------|----------|------------|-----|----------|-----|
| Sampling Date | | 2018/06/18 14:19 | | 2018/06/18 14:25 | | 2018/06/18 | | 2018/06/18 | | | |
| COC Number | | D34771 | | D34771 | | D34771 | | D34771 | | | |
| | UNITS | MW-17B | QC Batch | MW-17C | QC Batch | MW-DUPA | QC Batch | MW-DUPB | RDL | QC Batch | MDL |

| Metals | | | | | | | | | | | |
|---------------------------|------|-------|---------|--------|---------|-------|---------|-------|-------|---------|-----|
| Dissolved Aluminum (Al) | ug/L | 12 | 5593914 | <5.0 | 5592239 | 81 | 5593914 | 11 | 5.0 | 5592240 | N/A |
| Dissolved Antimony (Sb) | ug/L | <1.0 | 5593914 | <1.0 | 5592239 | <1.0 | 5593914 | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Arsenic (As) | ug/L | <1.0 | 5593914 | 1.2 | 5592239 | <1.0 | 5593914 | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Barium (Ba) | ug/L | 3.0 | 5593914 | 2.4 | 5592239 | 5.7 | 5593914 | 2.9 | 1.0 | 5592240 | N/A |
| Dissolved Beryllium (Be) | ug/L | <1.0 | 5593914 | <1.0 | 5592239 | <1.0 | 5593914 | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Bismuth (Bi) | ug/L | <2.0 | 5593914 | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Boron (B) | ug/L | <50 | 5593914 | <50 | 5592239 | <50 | 5593914 | <50 | 50 | 5592240 | N/A |
| Dissolved Cadmium (Cd) | ug/L | 0.033 | 5593914 | <0.010 | 5592239 | 0.026 | 5593914 | 0.037 | 0.010 | 5592240 | N/A |
| Dissolved Calcium (Ca) | ug/L | 1600 | 5593914 | 3600 | 5592239 | 9000 | 5593914 | 1600 | 100 | 5592240 | N/A |
| Dissolved Chromium (Cr) | ug/L | <1.0 | 5593914 | <1.0 | 5592239 | <1.0 | 5593914 | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Cobalt (Co) | ug/L | <0.40 | 5593914 | <0.40 | 5592239 | 1.3 | 5593914 | <0.40 | 0.40 | 5592240 | N/A |
| Dissolved Copper (Cu) | ug/L | <2.0 | 5593914 | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Iron (Fe) | ug/L | <50 | 5593914 | <50 | 5592239 | <50 | 5593914 | <50 | 50 | 5592240 | N/A |
| Dissolved Lead (Pb) | ug/L | <0.50 | 5593914 | <0.50 | 5592239 | <0.50 | 5593914 | <0.50 | 0.50 | 5592240 | N/A |
| Dissolved Magnesium (Mg) | ug/L | 630 | 5593914 | 670 | 5592239 | 640 | 5593914 | 630 | 100 | 5592240 | N/A |
| Dissolved Manganese (Mn) | ug/L | 200 | 5593914 | 20 | 5592239 | 110 | 5593914 | 200 | 2.0 | 5592240 | N/A |
| Dissolved Molybdenum (Mo) | ug/L | <2.0 | 5593914 | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Nickel (Ni) | ug/L | <2.0 | 5593914 | <2.0 | 5592239 | 3.6 | 5593914 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Phosphorus (P) | ug/L | <100 | 5593914 | <100 | 5592239 | <100 | 5593914 | <100 | 100 | 5592240 | N/A |
| Dissolved Potassium (K) | ug/L | 410 | 5593914 | 440 | 5592239 | 670 | 5593914 | 410 | 100 | 5592240 | N/A |
| Dissolved Selenium (Se) | ug/L | <1.0 | 5593914 | <1.0 | 5592239 | <1.0 | 5593914 | <1.0 | 1.0 | 5592240 | N/A |
| Dissolved Silver (Ag) | ug/L | <0.10 | 5593914 | <0.10 | 5592239 | <0.10 | 5593914 | <0.10 | 0.10 | 5592240 | N/A |
| Dissolved Sodium (Na) | ug/L | 2800 | 5593914 | 3200 | 5592239 | 2500 | 5593914 | 2700 | 100 | 5592240 | N/A |
| Dissolved Strontium (Sr) | ug/L | 19 | 5593914 | 18 | 5592239 | 14 | 5593914 | 18 | 2.0 | 5592240 | N/A |
| Dissolved Thallium (Tl) | ug/L | <0.10 | 5593914 | <0.10 | 5592239 | <0.10 | 5593914 | <0.10 | 0.10 | 5592240 | N/A |
| Dissolved Tin (Sn) | ug/L | <2.0 | 5593914 | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Titanium (Ti) | ug/L | <2.0 | 5593914 | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Uranium (U) | ug/L | <0.10 | 5593914 | <0.10 | 5592239 | <0.10 | 5593914 | <0.10 | 0.10 | 5592240 | N/A |
| Dissolved Vanadium (V) | ug/L | <2.0 | 5593914 | <2.0 | 5592239 | <2.0 | 5593914 | <2.0 | 2.0 | 5592240 | N/A |
| Dissolved Zinc (Zn) | ug/L | <5.0 | 5593914 | <5.0 | 5592239 | <5.0 | 5593914 | <5.0 | 5.0 | 5592240 | N/A |

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

TEST SUMMARY

Maxxam ID: GZW431
Sample ID: MW-12A
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5589410 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5593779 | N/A | 2018/06/22 | Jacob Henley |
| Conductance - water | AT | 5593694 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5589411 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592239 | N/A | 2018/06/22 | Bryon Angevine |
| Ion Balance (% Difference) | CALC | 5589412 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5589413 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593693 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5589415 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5589416 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5589418 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593708 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZW431 Dup
Sample ID: MW-12A
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|------------------------------|-----------------|---------|-----------|---------------|----------------|
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5593779 | N/A | 2018/06/22 | Jacob Henley |
| Conductance - water | AT | 5593694 | N/A | 2018/06/22 | Julia McGovern |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| pH | AT | 5593693 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Turbidity | TURB | 5593708 | N/A | 2018/06/22 | Julia McGovern |

TEST SUMMARY

Maxxam ID: GZW432
Sample ID: MW-12B
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5589410 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5589743 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5589752 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5597605 | N/A | 2018/06/25 | Jacob Henley |
| Conductance - water | AT | 5593692 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5589411 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592239 | N/A | 2018/06/22 | Bryon Angevine |
| Ion Balance (% Difference) | CALC | 5589412 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5589413 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5589765 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5589767 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593691 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5589762 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5589415 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5589416 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5589757 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5589755 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5589418 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593709 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZW433
Sample ID: MW-09A
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5589410 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5589743 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5589752 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5597605 | N/A | 2018/06/25 | Jacob Henley |
| Conductance - water | AT | 5593694 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5589411 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592239 | N/A | 2018/06/22 | Bryon Angevine |
| Ion Balance (% Difference) | CALC | 5589412 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5589413 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5589765 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5589767 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593693 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5589762 | N/A | 2018/06/22 | Jacob Henley |



Maxxam Job #: B8F0978
Report Date: 2018/06/26

GHD Limited
Client Project #: 088664-20
Site Location: BEAVER DAM
Your P.O. #: 73512044
Sampler Initials: DN

TEST SUMMARY

Maxxam ID: GZW433
Sample ID: MW-09A
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|-------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Sat. pH and Langelier Index (@ 20C) | CALC | 5589415 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5589416 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5589757 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5589755 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5589418 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593709 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZW434
Sample ID: MW-09B
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5589410 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5589743 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5589752 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5597605 | N/A | 2018/06/25 | Jacob Henley |
| Conductance - water | AT | 5593692 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5589411 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592239 | N/A | 2018/06/22 | Bryon Angevine |
| Ion Balance (% Difference) | CALC | 5589412 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5589413 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5589765 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5589767 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593691 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5589762 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5589415 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5589416 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5589757 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5589755 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5589418 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593709 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZW435
Sample ID: MW-09D
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5589410 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5589743 | N/A | 2018/06/25 | Jacob Henley |

TEST SUMMARY

Maxxam ID: GZW435
Sample ID: MW-09D
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---------------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Chloride | KONE | 5589752 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5597605 | N/A | 2018/06/25 | Jacob Henley |
| Conductance - water | AT | 5593692 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO ₃) | | 5589411 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592239 | N/A | 2018/06/22 | Bryon Angevine |
| Ion Balance (% Difference) | CALC | 5589412 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5589413 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5589765 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5589767 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593691 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5589762 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5589415 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5589416 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5589757 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5589755 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5589418 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5593990 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593708 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZW436
Sample ID: MW-04A
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---------------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5589743 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5589752 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5597605 | N/A | 2018/06/25 | Jacob Henley |
| Conductance - water | AT | 5593694 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO ₃) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5593914 | N/A | 2018/06/22 | Bryon Angevine |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5589765 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5589767 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593693 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5589762 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |

Maxxam Job #: B8F0978
Report Date: 2018/06/26

GHD Limited
Client Project #: 088664-20
Site Location: BEAVER DAM
Your P.O. #: 73512044
Sampler Initials: DN

TEST SUMMARY

Maxxam ID: GZW436
Sample ID: MW-04A
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|-----------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Reactive Silica | KONE | 5589757 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5589755 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593709 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZW436 Dup
Sample ID: MW-04A
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|----------------------------------|-----------------|---------|-----------|---------------|----------------|
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5593914 | N/A | 2018/06/22 | Bryon Angevine |

Maxxam ID: GZW437
Sample ID: MW-04B
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5589743 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5589752 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5597605 | N/A | 2018/06/25 | Jacob Henley |
| Conductance - water | AT | 5593694 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592239 | N/A | 2018/06/22 | Bryon Angevine |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5589765 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5589767 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593693 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5589762 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5589757 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5589755 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593709 | N/A | 2018/06/22 | Julia McGovern |

TEST SUMMARY

Maxxam ID: GZW438
Sample ID: MW-21A
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5589743 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5589752 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5597605 | N/A | 2018/06/25 | Jacob Henley |
| Conductance - water | AT | 5593694 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5593914 | N/A | 2018/06/22 | Bryon Angevine |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5589765 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5589767 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593693 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5589762 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5589757 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5589755 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5593990 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593709 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZW439
Sample ID: MW-21B
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5589743 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5589752 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5597605 | N/A | 2018/06/25 | Jacob Henley |
| Conductance - water | AT | 5593698 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592239 | N/A | 2018/06/22 | Bryon Angevine |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5589765 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5589767 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593697 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5589762 | N/A | 2018/06/22 | Jacob Henley |

TEST SUMMARY

Maxxam ID: GZW439
Sample ID: MW-21B
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|-------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5589757 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5589755 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5593990 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593709 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZW439 Dup
Sample ID: MW-21B
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---------------------|-----------------|---------|-----------|---------------|----------------|
| Conductance - water | AT | 5593698 | N/A | 2018/06/22 | Julia McGovern |
| pH | AT | 5593697 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZW440
Sample ID: MW-21C
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5589743 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5589752 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5597605 | N/A | 2018/06/25 | Jacob Henley |
| Conductance - water | AT | 5593694 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592239 | N/A | 2018/06/22 | Bryon Angevine |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5589765 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5589767 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593693 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5589762 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5589757 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5589755 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5593990 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593711 | N/A | 2018/06/22 | Julia McGovern |

TEST SUMMARY

Maxxam ID: GZW441
Sample ID: MW-16A
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---------------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5589743 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5589752 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5597605 | N/A | 2018/06/25 | Jacob Henley |
| Conductance - water | AT | 5593696 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO ₃) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5593914 | N/A | 2018/06/22 | Bryon Angevine |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5589765 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5589767 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593695 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5589762 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5589757 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5589755 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5596952 | N/A | 2018/06/25 | Luke MacPherson |
| Turbidity | TURB | 5593711 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZW442
Sample ID: MW-16B
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---------------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5589743 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5589752 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5597605 | N/A | 2018/06/25 | Jacob Henley |
| Conductance - water | AT | 5593694 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO ₃) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592239 | N/A | 2018/06/22 | Bryon Angevine |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5589765 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5589767 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593693 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5589762 | N/A | 2018/06/22 | Jacob Henley |



Maxxam Job #: B8F0978
 Report Date: 2018/06/26

GHD Limited
 Client Project #: 088664-20
 Site Location: BEAVER DAM
 Your P.O. #: 73512044
 Sampler Initials: DN

TEST SUMMARY

Maxxam ID: GZW442
Sample ID: MW-16B
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|-------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5589757 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5589755 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5593990 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593709 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZW443
Sample ID: MW-17A
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5589743 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5589752 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5597605 | N/A | 2018/06/25 | Jacob Henley |
| Conductance - water | AT | 5593694 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592239 | N/A | 2018/06/22 | Bryon Angevine |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5589765 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5589767 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593693 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5589762 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5589757 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5589755 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5593990 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593711 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZW444
Sample ID: MW-17B
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |

TEST SUMMARY

Maxxam ID: GZW444
Sample ID: MW-17B
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---------------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5597513 | N/A | 2018/06/25 | Jacob Henley |
| Conductance - water | AT | 5593694 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO ₃) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5593914 | N/A | 2018/06/22 | Bryon Angevine |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593693 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5593990 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593711 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZW445
Sample ID: MW-17C
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---------------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5593779 | N/A | 2018/06/22 | Jacob Henley |
| Conductance - water | AT | 5593692 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO ₃) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592239 | N/A | 2018/06/22 | Bryon Angevine |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593691 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |

TEST SUMMARY

Maxxam ID: GZW445
Sample ID: MW-17C
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|-----------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5593990 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593709 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZW446
Sample ID: MW-DUPA
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5593779 | N/A | 2018/06/22 | Jacob Henley |
| Conductance - water | AT | 5593692 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5593914 | N/A | 2018/06/22 | Bryon Angevine |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593691 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5593990 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593708 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZW447
Sample ID: MW-DUPB
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Carbonate, Bicarbonate and Hydroxide | CALC | 5590380 | N/A | 2018/06/22 | Automated Statchk |
| Alkalinity | KONE | 5593768 | N/A | 2018/06/25 | Jacob Henley |
| Chloride | KONE | 5593775 | N/A | 2018/06/22 | Jacob Henley |
| Colour | KONE | 5593779 | N/A | 2018/06/22 | Jacob Henley |

Maxxam Job #: B8F0978
Report Date: 2018/06/26

GHD Limited
Client Project #: 088664-20
Site Location: BEAVER DAM
Your P.O. #: 73512044
Sampler Initials: DN

TEST SUMMARY

Maxxam ID: GZW447
Sample ID: MW-DUPB
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|-------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| Conductance - water | AT | 5593694 | N/A | 2018/06/22 | Julia McGovern |
| Hardness (calculated as CaCO3) | | 5590383 | N/A | 2018/06/22 | Automated Statchk |
| Metals Water Diss. MS (as rec'd) | CICP/MS | 5592240 | N/A | 2018/06/22 | Cassandra Hartery |
| Ion Balance (% Difference) | CALC | 5590384 | N/A | 2018/06/26 | Automated Statchk |
| Anion and Cation Sum | CALC | 5590385 | N/A | 2018/06/22 | Automated Statchk |
| Nitrogen Ammonia - water | KONE | 5592399 | N/A | 2018/06/21 | Jacob Henley |
| Nitrogen - Nitrate + Nitrite | KONE | 5593781 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrite | KONE | 5593783 | N/A | 2018/06/25 | Jacob Henley |
| Nitrogen - Nitrate (as N) | CALC | 5590281 | N/A | 2018/06/26 | Automated Statchk |
| pH | AT | 5593693 | N/A | 2018/06/22 | Julia McGovern |
| Phosphorus - ortho | KONE | 5593780 | N/A | 2018/06/22 | Jacob Henley |
| Sat. pH and Langelier Index (@ 20C) | CALC | 5590387 | N/A | 2018/06/26 | Automated Statchk |
| Sat. pH and Langelier Index (@ 4C) | CALC | 5590388 | N/A | 2018/06/26 | Automated Statchk |
| Reactive Silica | KONE | 5593778 | N/A | 2018/06/25 | Jacob Henley |
| Sulphate | KONE | 5593777 | N/A | 2018/06/22 | Jacob Henley |
| Total Dissolved Solids (TDS calc) | CALC | 5590389 | N/A | 2018/06/26 | Automated Statchk |
| Organic carbon - Total (TOC) | TOCV/NDIR | 5592255 | N/A | 2018/06/22 | Luke MacPherson |
| Turbidity | TURB | 5593709 | N/A | 2018/06/22 | Julia McGovern |

Maxxam ID: GZW447 Dup
Sample ID: MW-DUPB
Matrix: Water

Collected: 2018/06/18
Shipped:
Received: 2018/06/19

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|------------------|-----------------|---------|-----------|---------------|----------------|
| Turbidity | TURB | 5593709 | N/A | 2018/06/22 | Julia McGovern |

GENERAL COMMENTS

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

| | |
|-----------|-------|
| Package 1 | 6.3°C |
| Package 2 | 5.3°C |

Sample GZW431 [MW-12A] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample GZW433 [MW-09A] : RCap Ion Balance acceptable. Low ionic strength sample.

Sample GZW436 [MW-04A] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample GZW444 [MW-17B] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample GZW446 [MW-DUPA] : RCap Ion Balance acceptable. Low ionic strength sample.

Sample GZW447 [MW-DUPB] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

GHD Limited
Client Project #: 088664-20
Site Location: BEAVER DAM
Your P.O. #: 73512044
Sampler Initials: DN

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | % Recovery | QC Limits |
| 5589743 | Total Alkalinity (Total as CaCO3) | 2018/06/25 | NC | 80 - 120 | 96 | 80 - 120 | <5.0 | mg/L | 9.1 | 25 | | |
| 5589752 | Dissolved Chloride (Cl) | 2018/06/22 | 100 | 80 - 120 | 103 | 80 - 120 | <1.0 | mg/L | 10 | 25 | 102 | 80 - 120 |
| 5589755 | Dissolved Sulphate (SO4) | 2018/06/22 | 93 | 80 - 120 | 95 | 80 - 120 | <2.0 | mg/L | 0.48 | 25 | | |
| 5589757 | Reactive Silica (SiO2) | 2018/06/25 | 98 | 80 - 120 | 95 | 80 - 120 | <0.50 | mg/L | 0.84 | 25 | | |
| 5589762 | Orthophosphate (P) | 2018/06/22 | 87 | 80 - 120 | 94 | 80 - 120 | <0.010 | mg/L | NC | 25 | | |
| 5589765 | Nitrate + Nitrite (N) | 2018/06/25 | 96 | 80 - 120 | 98 | 80 - 120 | <0.050 | mg/L | NC | 25 | | |
| 5589767 | Nitrite (N) | 2018/06/25 | 92 | 80 - 120 | 96 | 80 - 120 | <0.010 | mg/L | NC | 20 | | |
| 5592239 | Dissolved Aluminum (Al) | 2018/06/22 | 100 | 80 - 120 | 98 | 80 - 120 | <5.0 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Antimony (Sb) | 2018/06/22 | 103 | 80 - 120 | 98 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Arsenic (As) | 2018/06/22 | 97 | 80 - 120 | 95 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Barium (Ba) | 2018/06/22 | 101 | 80 - 120 | 101 | 80 - 120 | <1.0 | ug/L | 0.13 | 20 | | |
| 5592239 | Dissolved Beryllium (Be) | 2018/06/22 | 101 | 80 - 120 | 100 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Bismuth (Bi) | 2018/06/22 | 98 | 80 - 120 | 103 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Boron (B) | 2018/06/22 | 99 | 80 - 120 | 94 | 80 - 120 | <50 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Cadmium (Cd) | 2018/06/22 | 102 | 80 - 120 | 101 | 80 - 120 | <0.010 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Calcium (Ca) | 2018/06/22 | NC | 80 - 120 | 102 | 80 - 120 | <100 | ug/L | 0.11 | 20 | | |
| 5592239 | Dissolved Chromium (Cr) | 2018/06/22 | 96 | 80 - 120 | 95 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Cobalt (Co) | 2018/06/22 | 94 | 80 - 120 | 95 | 80 - 120 | <0.40 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Copper (Cu) | 2018/06/22 | 90 | 80 - 120 | 93 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Iron (Fe) | 2018/06/22 | 99 | 80 - 120 | 98 | 80 - 120 | <50 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Lead (Pb) | 2018/06/22 | 97 | 80 - 120 | 98 | 80 - 120 | <0.50 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Magnesium (Mg) | 2018/06/22 | NC | 80 - 120 | 101 | 80 - 120 | <100 | ug/L | 0.36 | 20 | | |
| 5592239 | Dissolved Manganese (Mn) | 2018/06/22 | 95 | 80 - 120 | 96 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Molybdenum (Mo) | 2018/06/22 | 106 | 80 - 120 | 102 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Nickel (Ni) | 2018/06/22 | 92 | 80 - 120 | 95 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Phosphorus (P) | 2018/06/22 | 104 | 80 - 120 | 102 | 80 - 120 | <100 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Potassium (K) | 2018/06/22 | 102 | 80 - 120 | 103 | 80 - 120 | <100 | ug/L | 1.3 | 20 | | |
| 5592239 | Dissolved Selenium (Se) | 2018/06/22 | 96 | 80 - 120 | 95 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Silver (Ag) | 2018/06/22 | 99 | 80 - 120 | 98 | 80 - 120 | <0.10 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Sodium (Na) | 2018/06/22 | 94 | 80 - 120 | 96 | 80 - 120 | <100 | ug/L | 0.37 | 20 | | |

QUALITY ASSURANCE REPORT(CONT'D)

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | | QC Standard | |
|----------|---------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | % Recovery | QC Limits |
| 5592239 | Dissolved Strontium (Sr) | 2018/06/22 | NC | 80 - 120 | 97 | 80 - 120 | <2.0 | ug/L | 0.60 | 20 | | |
| 5592239 | Dissolved Thallium (Tl) | 2018/06/22 | 101 | 80 - 120 | 101 | 80 - 120 | <0.10 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Tin (Sn) | 2018/06/22 | 108 | 80 - 120 | 107 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Titanium (Ti) | 2018/06/22 | 100 | 80 - 120 | 99 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Uranium (U) | 2018/06/22 | 101 | 80 - 120 | 99 | 80 - 120 | <0.10 | ug/L | 0.48 | 20 | | |
| 5592239 | Dissolved Vanadium (V) | 2018/06/22 | 99 | 80 - 120 | 98 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592239 | Dissolved Zinc (Zn) | 2018/06/22 | 97 | 80 - 120 | 99 | 80 - 120 | <5.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Aluminum (Al) | 2018/06/22 | 97 | 80 - 120 | 98 | 80 - 120 | <5.0 | ug/L | 1.7 | 20 | | |
| 5592240 | Dissolved Antimony (Sb) | 2018/06/22 | 103 | 80 - 120 | 99 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Arsenic (As) | 2018/06/22 | 96 | 80 - 120 | 96 | 80 - 120 | <1.0 | ug/L | 3.9 | 20 | | |
| 5592240 | Dissolved Barium (Ba) | 2018/06/22 | 104 | 80 - 120 | 105 | 80 - 120 | <1.0 | ug/L | 0.23 | 20 | | |
| 5592240 | Dissolved Beryllium (Be) | 2018/06/22 | 99 | 80 - 120 | 100 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Bismuth (Bi) | 2018/06/22 | 101 | 80 - 120 | 104 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Boron (B) | 2018/06/22 | 96 | 80 - 120 | 95 | 80 - 120 | <50 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Cadmium (Cd) | 2018/06/22 | 103 | 80 - 120 | 104 | 80 - 120 | <0.010 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Calcium (Ca) | 2018/06/22 | 99 | 80 - 120 | 105 | 80 - 120 | <100 | ug/L | 1.0 | 20 | | |
| 5592240 | Dissolved Chromium (Cr) | 2018/06/22 | 95 | 80 - 120 | 97 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Cobalt (Co) | 2018/06/22 | 95 | 80 - 120 | 97 | 80 - 120 | <0.40 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Copper (Cu) | 2018/06/22 | 91 | 80 - 120 | 93 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Iron (Fe) | 2018/06/22 | 98 | 80 - 120 | 100 | 80 - 120 | <50 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Lead (Pb) | 2018/06/22 | 98 | 80 - 120 | 100 | 80 - 120 | <0.50 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Magnesium (Mg) | 2018/06/22 | 100 | 80 - 120 | 103 | 80 - 120 | <100 | ug/L | 0.41 | 20 | | |
| 5592240 | Dissolved Manganese (Mn) | 2018/06/22 | NC | 80 - 120 | 97 | 80 - 120 | <2.0 | ug/L | 0.58 | 20 | | |
| 5592240 | Dissolved Molybdenum (Mo) | 2018/06/22 | 103 | 80 - 120 | 103 | 80 - 120 | <2.0 | ug/L | 3.7 | 20 | | |
| 5592240 | Dissolved Nickel (Ni) | 2018/06/22 | 92 | 80 - 120 | 94 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Phosphorus (P) | 2018/06/22 | 104 | 80 - 120 | 103 | 80 - 120 | <100 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Potassium (K) | 2018/06/22 | 100 | 80 - 120 | 105 | 80 - 120 | <100 | ug/L | 1.3 | 20 | | |
| 5592240 | Dissolved Selenium (Se) | 2018/06/22 | 96 | 80 - 120 | 96 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Silver (Ag) | 2018/06/22 | 92 | 80 - 120 | 99 | 80 - 120 | <0.10 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Sodium (Na) | 2018/06/22 | 94 | 80 - 120 | 95 | 80 - 120 | <100 | ug/L | 0.53 | 20 | | |

QUALITY ASSURANCE REPORT(CONT'D)

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | | QC Standard | |
|----------|-----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | % Recovery | QC Limits |
| 5592240 | Dissolved Strontium (Sr) | 2018/06/22 | 100 | 80 - 120 | 99 | 80 - 120 | <2.0 | ug/L | 1.0 | 20 | | |
| 5592240 | Dissolved Thallium (Tl) | 2018/06/22 | 103 | 80 - 120 | 104 | 80 - 120 | <0.10 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Tin (Sn) | 2018/06/22 | 105 | 80 - 120 | 108 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Titanium (Ti) | 2018/06/22 | 99 | 80 - 120 | 103 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Uranium (U) | 2018/06/22 | 101 | 80 - 120 | 102 | 80 - 120 | <0.10 | ug/L | 2.6 | 20 | | |
| 5592240 | Dissolved Vanadium (V) | 2018/06/22 | 98 | 80 - 120 | 100 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5592240 | Dissolved Zinc (Zn) | 2018/06/22 | 100 | 80 - 120 | 100 | 80 - 120 | <5.0 | ug/L | NC | 20 | | |
| 5592255 | Total Organic Carbon (C) | 2018/06/22 | 95 | 85 - 115 | 96 | 80 - 120 | <0.50 | mg/L | 2.1 | 15 | | |
| 5592399 | Nitrogen (Ammonia Nitrogen) | 2018/06/21 | 101 | 80 - 120 | 104 | 80 - 120 | <0.050 | mg/L | NC | 20 | | |
| 5593691 | pH | 2018/06/22 | | | | | | | 0.74 | N/A | 101 | 97 - 103 |
| 5593692 | Conductivity | 2018/06/22 | | | 101 | 80 - 120 | 1.5, RDL=1.0 | uS/cm | 0.29 | 25 | | |
| 5593693 | pH | 2018/06/22 | | | | | | | 0.48 | N/A | 100 | 97 - 103 |
| 5593694 | Conductivity | 2018/06/22 | | | 100 | 80 - 120 | 1.4, RDL=1.0 | uS/cm | 0.24 | 25 | | |
| 5593695 | pH | 2018/06/22 | | | | | | | 0.76 | N/A | 100 | 97 - 103 |
| 5593696 | Conductivity | 2018/06/22 | | | 101 | 80 - 120 | 1.7, RDL=1.0 | uS/cm | 0.15 | 25 | | |
| 5593697 | pH | 2018/06/22 | | | | | | | 0.39 | N/A | 101 | 97 - 103 |
| 5593698 | Conductivity | 2018/06/22 | | | 101 | 80 - 120 | 1.8, RDL=1.0 | uS/cm | 1.9 | 25 | | |
| 5593708 | Turbidity | 2018/06/22 | | | 94 | 80 - 120 | <0.10 | NTU | 2.4 | 20 | 97 | 80 - 120 |
| 5593709 | Turbidity | 2018/06/22 | | | 94 | 80 - 120 | <0.10 | NTU | 9.5 | 20 | 96 | 80 - 120 |
| 5593711 | Turbidity | 2018/06/22 | | | 92 | 80 - 120 | <0.10 | NTU | 4.5 | 20 | 96 | 80 - 120 |
| 5593768 | Total Alkalinity (Total as CaCO3) | 2018/06/25 | 90 | 80 - 120 | 95 | 80 - 120 | <5.0 | mg/L | 2.2 | 25 | | |
| 5593775 | Dissolved Chloride (Cl) | 2018/06/22 | 101 | 80 - 120 | 102 | 80 - 120 | <1.0 | mg/L | 1.8 | 25 | 100 | 80 - 120 |
| 5593777 | Dissolved Sulphate (SO4) | 2018/06/22 | 97 | 80 - 120 | 93 | 80 - 120 | <2.0 | mg/L | 0.015 | 25 | | |
| 5593778 | Reactive Silica (SiO2) | 2018/06/25 | NC | 80 - 120 | 97 | 80 - 120 | <0.50 | mg/L | 0.95 | 25 | | |
| 5593779 | Colour | 2018/06/22 | | | 99 | 80 - 120 | <5.0 | TCU | NC | 20 | | |
| 5593780 | Orthophosphate (P) | 2018/06/22 | 92 | 80 - 120 | 94 | 80 - 120 | <0.010 | mg/L | NC | 25 | | |
| 5593781 | Nitrate + Nitrite (N) | 2018/06/25 | 95 | 80 - 120 | 97 | 80 - 120 | <0.050 | mg/L | 0.94 | 25 | | |
| 5593783 | Nitrite (N) | 2018/06/25 | 98 | 80 - 120 | 96 | 80 - 120 | <0.010 | mg/L | NC | 20 | | |
| 5593914 | Dissolved Aluminum (Al) | 2018/06/22 | 100 | 80 - 120 | 99 | 80 - 120 | <5.0 | ug/L | 3.1 | 20 | | |
| 5593914 | Dissolved Antimony (Sb) | 2018/06/22 | 94 | 80 - 120 | 92 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |

QUALITY ASSURANCE REPORT(CONT'D)

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | | QC Standard | |
|----------|---------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | % Recovery | QC Limits |
| 5593914 | Dissolved Arsenic (As) | 2018/06/22 | 95 | 80 - 120 | 95 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Barium (Ba) | 2018/06/22 | 95 | 80 - 120 | 95 | 80 - 120 | <1.0 | ug/L | 0.55 | 20 | | |
| 5593914 | Dissolved Beryllium (Be) | 2018/06/22 | 94 | 80 - 120 | 96 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Bismuth (Bi) | 2018/06/22 | 101 | 80 - 120 | 99 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Boron (B) | 2018/06/22 | 93 | 80 - 120 | 93 | 80 - 120 | <50 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Cadmium (Cd) | 2018/06/22 | 95 | 80 - 120 | 98 | 80 - 120 | <0.010 | ug/L | 0.74 | 20 | | |
| 5593914 | Dissolved Calcium (Ca) | 2018/06/22 | 98 | 80 - 120 | 99 | 80 - 120 | <100 | ug/L | 0.17 | 20 | | |
| 5593914 | Dissolved Chromium (Cr) | 2018/06/22 | 92 | 80 - 120 | 93 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Cobalt (Co) | 2018/06/22 | 95 | 80 - 120 | 96 | 80 - 120 | <0.40 | ug/L | 3.5 | 20 | | |
| 5593914 | Dissolved Copper (Cu) | 2018/06/22 | 94 | 80 - 120 | 96 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Iron (Fe) | 2018/06/22 | 97 | 80 - 120 | 98 | 80 - 120 | <50 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Lead (Pb) | 2018/06/22 | 97 | 80 - 120 | 97 | 80 - 120 | <0.50 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Magnesium (Mg) | 2018/06/22 | 97 | 80 - 120 | 98 | 80 - 120 | <100 | ug/L | 0.76 | 20 | | |
| 5593914 | Dissolved Manganese (Mn) | 2018/06/22 | 96 | 80 - 120 | 99 | 80 - 120 | <2.0 | ug/L | 2.1 | 20 | | |
| 5593914 | Dissolved Molybdenum (Mo) | 2018/06/22 | 100 | 80 - 120 | 98 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Nickel (Ni) | 2018/06/22 | 94 | 80 - 120 | 96 | 80 - 120 | <2.0 | ug/L | 0.38 | 20 | | |
| 5593914 | Dissolved Phosphorus (P) | 2018/06/22 | 102 | 80 - 120 | 103 | 80 - 120 | <100 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Potassium (K) | 2018/06/22 | 100 | 80 - 120 | 101 | 80 - 120 | <100 | ug/L | 0.065 | 20 | | |
| 5593914 | Dissolved Selenium (Se) | 2018/06/22 | 95 | 80 - 120 | 95 | 80 - 120 | <1.0 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Silver (Ag) | 2018/06/22 | 95 | 80 - 120 | 95 | 80 - 120 | <0.10 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Sodium (Na) | 2018/06/22 | 93 | 80 - 120 | 95 | 80 - 120 | <100 | ug/L | 0.99 | 20 | | |
| 5593914 | Dissolved Strontium (Sr) | 2018/06/22 | 97 | 80 - 120 | 97 | 80 - 120 | <2.0 | ug/L | 0.61 | 20 | | |
| 5593914 | Dissolved Thallium (Tl) | 2018/06/22 | 101 | 80 - 120 | 100 | 80 - 120 | <0.10 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Tin (Sn) | 2018/06/22 | 103 | 80 - 120 | 98 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Titanium (Ti) | 2018/06/22 | 101 | 80 - 120 | 98 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Uranium (U) | 2018/06/22 | 100 | 80 - 120 | 99 | 80 - 120 | <0.10 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Vanadium (V) | 2018/06/22 | 94 | 80 - 120 | 96 | 80 - 120 | <2.0 | ug/L | NC | 20 | | |
| 5593914 | Dissolved Zinc (Zn) | 2018/06/22 | 100 | 80 - 120 | 101 | 80 - 120 | <5.0 | ug/L | NC | 20 | | |
| 5593990 | Total Organic Carbon (C) | 2018/06/22 | 92 | 85 - 115 | 94 | 80 - 120 | <0.50 | mg/L | 1.5 | 15 | | |
| 5596952 | Total Organic Carbon (C) | 2018/06/25 | 105 | 85 - 115 | 106 | 80 - 120 | <0.50 | mg/L | 5.4 | 15 | | |

QUALITY ASSURANCE REPORT(CONT'D)

| QC Batch | Parameter | Date | Matrix Spike | | SPIKED BLANK | | Method Blank | | RPD | | QC Standard | |
|----------|-----------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|-------------|-----------|
| | | | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | % Recovery | QC Limits |
| 5597513 | Colour | 2018/06/25 | | | 98 | 80 - 120 | <5.0 | TCU | NC | 20 | | |
| 5597605 | Colour | 2018/06/25 | | | 96 | 80 - 120 | <5.0 | TCU | NC | 20 | | |

N/A = Not Applicable

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)

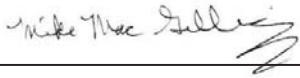
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Eric Dearman, Scientific Specialist



Mike MacGillivray, Scientific Specialist (Inorganics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



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ATL FCD 00149 / 22

CHAIN OF CUSTODY RECORD

COC #: **D34771** Page **L of 2**

| Invoice Information | | | Report Information (if differs from invoice) | | | Project Information (where applicable) | | | Turnaround Time (TAT) Required | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------------------------------------------------------|--------|---------------------------|----------------------------------------------|--------------------------------|---------------------------|----------------------------------------|-------------------------|---------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------|----------------------------|----------------|---------------|------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------|-------------------------------------------------------------------|----------------------------------|------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------|--------------------------------|----------------------------|------|------|------------------------------------------|-------------------------------|-----------------------------------|----------|-------------------|
| Company Name: <u>GHD LTD</u> | | | Company Name: _____ | | | Quotation #: <u>STANDING OFFER</u> | | | <input checked="" type="checkbox"/> Regular TAT (5 business days) Most analyses | | | | | | | | | | | | | | | | | | | | | | |
| Contact Name: <u>JEFFREY, TRINA</u> | | | Contact Name: <u>JEFF PARKS</u> | | | P.O. #: <u>73512044</u> | | | PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS | | | | | | | | | | | | | | | | | | | | | | |
| Address: <u>45 AKERLEY BLVD</u> | | | Address: _____ | | | Project #: <u>088664</u> | | | IF RUSH please specify date (Surcharges will be applied) | | | | | | | | | | | | | | | | | | | | | | |
| Postal Code: <u>B3B 1J7</u> | | | Postal Code: _____ | | | Site Location: <u>BEAVER DAM</u> | | | DATE REQUIRED: | | | | | | | | | | | | | | | | | | | | | | |
| Phone: <u>902-468-1248</u> | | | Phone: _____ Fax: _____ | | | Site #: _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| Email: <u>trina.jeffrey@ghd.com</u> | | | Email: <u>jeffrey.parks@ghd.com</u> | | | Sampled By: <u>D.N./J.R./R.H.</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| Laboratory Use Only | | | | | | Analysis Requested | | | | | | | | | | | | | | | | | | | | | | | | | |
| CUSTODY SEAL | | COOLER TEMPERATURES | | COOLER TEMPERATURES | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Present | Intact | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <u>6</u> | <u>4</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <u>6</u> | <u>3</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <u>7</u> | <u>7</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| COOLING MEDIA PRESENT <u>Y / N</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SAMPLE IDENTIFICATION | | DATE SAMPLED (YYYY/MM/DD) | TIME SAMPLED (HH:MM) | MATRIX | # OF CONTAINERS SUBMITTED | FIELD FILTERED & PRESERVED | LAB FILTRATION REQUIRED | ICAP-MS (Total Metals) Well / Surface water | ICAP-MS (Dissolved Metals) Ground waters | Total Digest (Default Method) for well water & surface water | Dissolved for ground water | Metals (Water) | Metals (Soil) | Mercury (CIRCLE) TOTAL / DISSOLVED | Mercury & Mercury Derivat. Acid Extractable (available) Digest | Metals Total Digest - for Ocean sediments (MNO3/HF/HClO4) | Mercury Low level by Cold Vapour AA | Hot Water Soluble Boron (required for CofE: Agriculture/Landfill) | RBCA Hydrocarbons (BTEX, CE-C32) | Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX, CE-C32 | CCME Hydrocarbons (CWS-9HC F3/BTEX, F2-F4) | NS Potable Water BTEX, VPH, Low level T.E.H | PAHs (Default: for water/soil) | PAHs (FWAL /CCME Sediment) | PCBs | VOCs | Total Coliform/E.coli (Presence/Absence) | Total Coliform/E.coli (Count) | Regulatory Requirements (Specify) | COMMENTS | |
| 1 | MW-12A | 18/06/18 | 11:26 | GW | 4 | X | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | MW-12B | 18/06/18 | 11:37 | GW | 4 | X | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | MW-09A | 18/06/18 | 11:58 | GW | 4 | X | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | MW-09B | 18/06/18 | 12:07 | GW | 4 | X | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | MW-09D | 18/06/18 | 12:15 | GW | 4 | X | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | MW-04A | 18/06/18 | 12:50 | GW | 4 | X | | X | | | | | | | | | | | | | | | | | | | | | | | 2018 JUN 19 15:24 |
| 7 | MW-04B | 18/06/18 | 12:58 | GW | 4 | X | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | MW-21A | 18/06/18 | 15:10 | GW | 4 | X | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | MW-21B | 18/06/18 | 15:16 | GW | 4 | X | | X | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | MW-21C | 18/06/18 | 15:28 | GW | 4 | X | | X | | | | | | | | | | | | | | | | | | | | | | | |
| RELINQUISHED BY: (Signature/Print) | | DATE: (YYYY/MM/DD) | TIME: (HH:MM) | RECEIVED BY: (Signature/Print) | | DATE: (YYYY/MM/DD) | TIME: (HH:MM) | MAXXAM JOB # | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Jessica Remo</u> JESSICA REMO | | 2018/06/19 | 2:46 | <u>JRD Jeffrey</u> | | | | B8F09178 | | | | | | | | | | | | | | | | | | | | | | | |

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19 JUN 19 14:47

White: Maxxam

Pink: Client



200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
 49-55 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
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ATL FCD 00149 / 22

CHAIN OF CUSTODY RECORD

COC #: **D34773** Page **2** of **2**

| Invoice Information | | | | Report Information (if differs from invoice) | | | | Project Information (where applicable) | | | | Turnaround Time (TAT) Required | | | | | |
|------------------------------------------------------------------------------------|---------|---------------------------|----------------------|----------------------------------------------|---------------------------|--------------------|---------------|----------------------------------------|--------------------------------------------|------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------|-----------------------------------|---------------|-----------------------------------|--|
| Company Name: <u>GHD LTD</u> | | | | Company Name: _____ | | | | Quotation #: <u>STANDING OFFER</u> | | | | <input checked="" type="checkbox"/> Regular TAT (5 business days) Most | | | | | |
| Contact Name: <u>TRINA JEFFREY</u> | | | | Contact Name: <u>JEFFREY PARKS</u> | | | | P.O. #: <u>73512044</u> | | | | PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS | | | | | |
| Address: <u>45 AKERLEY BLVD</u> | | | | Address: _____ | | | | Project #: <u>088664</u> | | | | IF RUSH please specify date (Surcharges will be applied) | | | | | |
| Postal Code: <u>DARTMOUTH B3B 1J7</u> | | | | Postal Code: _____ | | | | Site Location: <u>BEAVER DAM</u> | | | | DATE REQUIRED: _____ | | | | | |
| Phone: <u>902-468-1248</u> 902-468-2207 | | | | Phone: _____ Fax: _____ | | | | Site #: _____ | | | | | | | | | |
| Email: <u>trina.jeffrey@ghd.com</u> | | | | Email: <u>jeffrey.parks@ghd.com</u> | | | | Sampled By: <u>DN/JR/RH</u> | | | | | | | | | |
| Laboratory Use Only | | | | | | | | Analysis Requested | | | | | | | | | |
| CUSTODY SEAL | | COOLER TEMPERATURES | | COOLER TEMPERATURES | | | | | | | | | | Regulatory Requirements (Specify) | | | |
| Present | Intact | | | | | | | | | | | | | | | | |
| | | <u>6</u> | <u>4</u> | <u>6</u> | <u>4</u> | | | | | | | | | | | | |
| | | <u>6</u> | <u>5</u> | <u>6</u> | <u>5</u> | | | | | | | | | | | | |
| | | <u>7</u> | <u>7</u> | <u>7</u> | <u>7</u> | | | | | | | | | | | | |
| COOLING MEDIA PRESENT Y / N | | | | | | | | | | | | | | | | | |
| SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM | | | | | | | | | | | | | | | | | |
| SAMPLE IDENTIFICATION | | DATE SAMPLED (YYYY/MM/DD) | TIME SAMPLED (HH:MM) | MATRIX | # OF CONTAINERS SUBMITTED | FIELD FILTERED | APPROVED | LAB FILTRATION REQUIRED | RCAP-MS (Total Metals) Wet / Surface water | RCAP-MS (Dissolved Metals) Ground waters | Total Digest (Default Method) for wall water & surface water | Dissolved for ground water | Mercury (CIRCLE) TOTAL / DISSOLVED | Metals (Water) | Metals (Soil) | Regulatory Requirements (Specify) | |
| 1 | MW-16A | 18/06/18 | 13:36 | GW | 4 | X | | | X | | | | | | | | |
| 2 | MW-16B | 18/06/18 | 13:40 | GW | 4 | X | | | X | | | | | | | | |
| 3 | MW-17A | 18/06/18 | 14:11 | GW | 4 | X | | | X | | | | | | | | |
| 4 | MW-17B | 18/06/18 | 14:19 | GW | 4 | X | | | X | | | | | | | | |
| 5 | MW-17C | 18/06/18 | 14:25 | GW | 4 | X | | | X | | | | | | | | |
| 6 | MW-DUPA | 18/06/18 | - | GW | 4 | X | | | X | | | | | | | | |
| 7 | MW-DUPB | 18/06/18 | - | GW | 4 | X | | | X | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | |
| RELINQUISHED BY: (Signature/Print) | | DATE: (YYYY/MM/DD) | TIME: (HH:MM) | RECEIVED BY: (Signature/Print) | | DATE: (YYYY/MM/DD) | TIME: (HH:MM) | MAXXAM JOB # | | | | | | | | | |
| <u>Jessica Remo</u> | | <u>2018/06/19</u> | <u>2:46</u> | <u>JRD Joe Doyle</u> | | | | <u>32F0978</u> <u>32F0978</u> K10 | | | | | | | | | |

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White: Maxxam Pink: Client

18 JUN 19 14:47



Your P.O. #: 3151
 Your Project #: 088664-20
 Site Location: BEAVER DAM
 Your C.O.C. #: D34774

Attention: James Millard
 Atlantic Mining NS Corp
 6749 Moose River Rd
 Middle Musquodoboit, NS
 CANADA B0N 1X0

Report Date: 2018/07/09
 Report #: R5286935
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8G1148
Received: 2018/06/28, 10:31

Sample Matrix: Water
 # Samples Received: 22

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Reference |
|--------------------------------------|----------|-------------------|------------------|-------------------|---------------------|
| Carbonate, Bicarbonate and Hydroxide | 22 | N/A | 2018/07/04 | N/A | SM 22 4500-CO2 D |
| Alkalinity | 1 | N/A | 2018/07/04 | ATL SOP 00013 | EPA 310.2 R1974 m |
| Alkalinity | 8 | N/A | 2018/07/05 | ATL SOP 00013 | EPA 310.2 R1974 m |
| Alkalinity | 13 | N/A | 2018/07/06 | ATL SOP 00013 | EPA 310.2 R1974 m |
| Chloride | 1 | N/A | 2018/07/05 | ATL SOP 00014 | SM 23 4500-Cl- E m |
| Chloride | 21 | N/A | 2018/07/06 | ATL SOP 00014 | SM 23 4500-Cl- E m |
| Colour | 1 | N/A | 2018/07/06 | ATL SOP 00020 | SM 22 2120C m |
| Colour | 21 | N/A | 2018/07/09 | ATL SOP 00020 | SM 22 2120C m |
| Conductance - water | 22 | N/A | 2018/07/04 | ATL SOP 00004 | SM 23 2510B m |
| Hardness (calculated as CaCO3) | 8 | N/A | 2018/07/05 | ATL SOP 00048 | SM 22 2340 B |
| Hardness (calculated as CaCO3) | 14 | N/A | 2018/07/06 | ATL SOP 00048 | SM 22 2340 B |
| Metals Water Diss. MS (as rec'd) | 8 | N/A | 2018/07/05 | ATL SOP 00058 | EPA 6020A R1 m |
| Metals Water Diss. MS (as rec'd) | 14 | N/A | 2018/07/06 | ATL SOP 00058 | EPA 6020A R1 m |
| Ion Balance (% Difference) | 1 | N/A | 2018/07/06 | N/A | Auto Calc. |
| Ion Balance (% Difference) | 21 | N/A | 2018/07/09 | N/A | Auto Calc. |
| Anion and Cation Sum | 8 | N/A | 2018/07/05 | N/A | Auto Calc. |
| Anion and Cation Sum | 14 | N/A | 2018/07/06 | N/A | Auto Calc. |
| Nitrogen Ammonia - water | 21 | N/A | 2018/07/05 | ATL SOP 00015 | EPA 350.1 R2 m |
| Nitrogen Ammonia - water | 1 | N/A | 2018/07/06 | ATL SOP 00015 | EPA 350.1 R2 m |
| Nitrogen - Nitrate + Nitrite | 1 | N/A | 2018/07/05 | ATL SOP 00016 | USGS I-2547-11m |
| Nitrogen - Nitrate + Nitrite | 21 | N/A | 2018/07/09 | ATL SOP 00016 | USGS I-2547-11m |
| Nitrogen - Nitrite | 22 | N/A | 2018/07/05 | ATL SOP 00017 | SM 23 4500-NO2- B m |
| Nitrogen - Nitrate (as N) | 1 | N/A | 2018/07/06 | ATL SOP 00018 | ASTM D3867-16 |
| Nitrogen - Nitrate (as N) | 21 | N/A | 2018/07/09 | ATL SOP 00018 | ASTM D3867-16 |
| pH (1) | 22 | N/A | 2018/07/04 | ATL SOP 00003 | SM 23 4500-H+ B m |
| Phosphorus - ortho | 1 | N/A | 2018/07/05 | ATL SOP 00021 | SM 23 4500-P E m |
| Phosphorus - ortho | 21 | N/A | 2018/07/06 | ATL SOP 00021 | SM 23 4500-P E m |
| Sat. pH and Langelier Index (@ 20C) | 1 | N/A | 2018/07/06 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 20C) | 21 | N/A | 2018/07/09 | ATL SOP 00049 | Auto Calc. |
| Sat. pH and Langelier Index (@ 4C) | 1 | N/A | 2018/07/06 | ATL SOP 00049 | Auto Calc. |

Your P.O. #: 3151
 Your Project #: 088664-20
 Site Location: BEAVER DAM
 Your C.O.C. #: D34774

Attention: James Millard

Atlantic Mining NS Corp
 6749 Moose River Rd
 Middle Musquodoboit, NS
 CANADA B0N 1X0

Report Date: 2018/07/09
 Report #: R5286935
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8G1148
Received: 2018/06/28, 10:31

Sample Matrix: Water
 # Samples Received: 22

| Analyses | Quantity | Date | Date | Laboratory Method | Reference |
|------------------------------------|----------|-----------|------------|-------------------|----------------|
| | | Extracted | Analyzed | | |
| Sat. pH and Langelier Index (@ 4C) | 21 | N/A | 2018/07/09 | ATL SOP 00049 | Auto Calc. |
| Reactive Silica | 14 | N/A | 2018/07/05 | ATL SOP 00022 | EPA 366.0 m |
| Reactive Silica | 8 | N/A | 2018/07/06 | ATL SOP 00022 | EPA 366.0 m |
| Sulphate | 1 | N/A | 2018/07/04 | ATL SOP 00023 | ASTM D516-16 m |
| Sulphate | 21 | N/A | 2018/07/06 | ATL SOP 00023 | ASTM D516-16 m |
| Total Dissolved Solids (TDS calc) | 1 | N/A | 2018/07/06 | N/A | Auto Calc. |
| Total Dissolved Solids (TDS calc) | 21 | N/A | 2018/07/09 | N/A | Auto Calc. |
| Organic carbon - Total (TOC) (2) | 8 | N/A | 2018/07/04 | ATL SOP 00203 | SM 23 5310B m |
| Organic carbon - Total (TOC) (2) | 14 | N/A | 2018/07/05 | ATL SOP 00203 | SM 23 5310B m |
| Turbidity | 22 | N/A | 2018/07/05 | ATL SOP 00011 | EPA 180.1 R2 m |

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam 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.

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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.

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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 require 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.

Your P.O. #: 3151
Your Project #: 088664-20
Site Location: BEAVER DAM
Your C.O.C. #: D34774

Attention: James Millard

Atlantic Mining NS Corp
6749 Moose River Rd
Middle Musquodoboit, NS
CANADA B0N 1X0

Report Date: 2018/07/09
Report #: R5286935
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8G1148
Received: 2018/06/28, 10:31

Encryption Key



Maxxam
09 Jul 2018 17:20:08

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Maryann Comeau, Project Manager
Email: MComeau@maxxam.ca
Phone# (902) 420-0203

=====
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RESULTS OF ANALYSES OF WATER

| Maxxam ID | | HCC205 | HCC206 | HCC207 | | HCC207 | | HCC208 | | HCC209 | |
|---------------------------------------------------------------------------------------------------------------------------|-------|---------------------|---------------------|---------------------|-------|---------------------|-------|---------------------|-------|---------------------|-------|
| Sampling Date | | 2018/06/27 10:49 | 2018/06/27 10:57 | 2018/06/27 11:03 | | 2018/06/27 11:03 | | 2018/06/27 11:19 | | 2018/06/27 11:23 | |
| COC Number | | D34774 | D34774 | D34774 | | D34774 | | D34774 | | D34774 | |
| | UNITS | MW-05A | MW-05B | MW-05D | RDL | MW-05D Lab-Dup | RDL | MW-07A | RDL | MW-07B | RDL |
| Calculated Parameters | | | | | | | | | | | |
| Anion Sum | me/L | 0.410 | 0.990 | 1.73 | N/A | | | 2.47 | N/A | 7.02 | N/A |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 11 | 37 | 66 | 1.0 | | | 100 | 1.0 | 320 | 1.0 |
| Calculated TDS | mg/L | 27 | 60 | 100 | 1.0 | | | 150 | 1.0 | 380 | 1.0 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | ND | ND | ND | 1.0 | | | ND | 1.0 | 2.2 | 1.0 |
| Cation Sum | me/L | 0.370 | 0.900 | 1.61 | N/A | | | 2.53 | N/A | 6.68 | N/A |
| Hardness (CaCO3) | mg/L | 10 | 27 | 56 | 1.0 | | | 93 | 1.0 | 290 | 1.0 |
| Ion Balance (% Difference) | % | 5.13 | 4.76 | 3.59 | N/A | | | 1.20 | N/A | 2.48 | N/A |
| Langelier Index (@ 20C) | N/A | -3.37 | -1.33 | -0.134 | | | | -0.988 | | 0.935 | |
| Langelier Index (@ 4C) | N/A | -3.62 | -1.58 | -0.385 | | | | -1.24 | | 0.686 | |
| Nitrate (N) | mg/L | 0.051 | 0.061 | ND | 0.050 | | | ND | 0.050 | ND | 0.050 |
| Saturation pH (@ 20C) | N/A | 9.80 | 8.80 | 8.26 | | | | 7.93 | | 6.93 | |
| Saturation pH (@ 4C) | N/A | 10.1 | 9.05 | 8.51 | | | | 8.18 | | 7.18 | |
| Inorganics | | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | 11 | 37 | 66 | 5.0 | | | 100 | 10 | 320 | 25 |
| Dissolved Chloride (Cl-) | mg/L | 4.5 | 4.0 | 4.7 | 1.0 | | | 4.4 | 1.0 | 6.7 | 1.0 |
| Colour | TCU | ND | ND | ND | 5.0 | | | 8.0 | 5.0 | ND | 5.0 |
| Nitrate + Nitrite (N) | mg/L | 0.051 | 0.061 | ND | 0.050 | | | ND | 0.050 | ND | 0.050 |
| Nitrite (N) | mg/L | ND | ND | ND | 0.010 | | | ND | 0.010 | ND | 0.010 |
| Nitrogen (Ammonia Nitrogen) | mg/L | ND | ND | ND | 0.050 | ND | 0.050 | ND | 0.050 | 0.060 | 0.050 |
| Total Organic Carbon (C) | mg/L | 1.5 | 2.0 | 1.3 | 0.50 | | | 1.1 | 0.50 | 3.2 | 0.50 |
| Orthophosphate (P) | mg/L | ND | ND | ND | 0.010 | | | ND | 0.010 | 0.013 | 0.010 |
| pH | pH | 6.43 | 7.47 | 8.13 | N/A | | | 6.94 | N/A | 7.86 | N/A |
| Reactive Silica (SiO2) | mg/L | 5.1 | 8.2 | 12 | 0.50 | | | 21 | 0.50 | 24 | 0.50 |
| Dissolved Sulphate (SO4) | mg/L | 3.0 | 6.6 | 13 | 2.0 | | | 13 | 2.0 | 19 | 2.0 |
| Turbidity | NTU | 1.5 | 11 | 2.2 | 0.10 | | | 30 | 0.10 | 4.6 | 0.10 |
| Conductivity | uS/cm | 44 | 100 | 170 | 1.0 | | | 240 | 1.0 | 620 | 1.0 |
| RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable ND = Not detected | | | | | | | | | | | |

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | HCC210 | | HCC211 | HCC212 | HCC213 | HCC214 | | HCC215 | |
|-------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------|------------|---------------------|---------------------|---------------------|---------------------|------------|---------------------|------------|
| Sampling Date | | 2018/06/27 11:28 | | 2018/06/27 11:49 | 2018/06/27 11:54 | 2018/06/27 11:45 | 2018/06/27 12:42 | | 2018/06/27 12:51 | |
| COC Number | | D34774 | | D34774 | D34774 | D34774 | D34774 | | D34774 | |
| | UNITS | MW-07D | RDL | MW-11A | MW-11B | MW-11C | MW-14A | RDL | MW-14B | RDL |
| Calculated Parameters | | | | | | | | | | |
| Anion Sum | me/L | 2.59 | N/A | 0.300 | 1.87 | 2.02 | 0.740 | N/A | 5.07 | N/A |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 110 | 1.0 | 5.5 | 78 | 68 | 27 | 1.0 | 91 | 1.0 |
| Calculated TDS | mg/L | 150 | 1.0 | 21 | 100 | 120 | 53 | 1.0 | 320 | 1.0 |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | 1.1 | 1.0 | ND | ND | ND | ND | 1.0 | 1.3 | 1.0 |
| Cation Sum | me/L | 2.75 | N/A | 0.280 | 1.71 | 1.91 | 0.670 | N/A | 4.58 | N/A |
| Hardness (CaCO3) | mg/L | 120 | 1.0 | 8.0 | 71 | 76 | 18 | 1.0 | 46 | 1.0 |
| Ion Balance (% Difference) | % | 3.00 | N/A | 3.45 | 4.47 | 2.80 | 4.96 | N/A | 5.08 | N/A |
| Langelier Index (@ 20C) | N/A | 0.288 | | -4.04 | 0.0690 | -0.283 | -2.64 | | -0.123 | |
| Langelier Index (@ 4C) | N/A | 0.0380 | | -4.29 | -0.182 | -0.534 | -2.89 | | -0.371 | |
| Nitrate (N) | mg/L | ND | 0.050 | 0.059 | 0.19 | 0.066 | 0.11 | 0.050 | ND | 0.050 |
| Saturation pH (@ 20C) | N/A | 7.77 | | 10.2 | 8.05 | 8.10 | 9.19 | | 8.29 | |
| Saturation pH (@ 4C) | N/A | 8.02 | | 10.4 | 8.30 | 8.35 | 9.44 | | 8.54 | |
| Inorganics | | | | | | | | | | |
| Total Alkalinity (Total as CaCO3) | mg/L | 110 (1) | 25 | 5.5 | 79 | 69 | 27 | 5.0 | 92 | 5.0 |
| Dissolved Chloride (Cl-) | mg/L | 6.9 | 1.0 | 4.8 | 3.5 | 4.4 | 3.6 | 1.0 | 13 | 1.0 |
| Colour | TCU | ND | 5.0 | ND | ND | ND | ND | 5.0 | ND | 5.0 |
| Nitrate + Nitrite (N) | mg/L | ND | 0.050 | 0.059 | 0.19 | 0.066 | 0.11 | 0.050 | ND | 0.050 |
| Nitrite (N) | mg/L | ND | 0.010 | ND | ND | ND | ND | 0.010 | ND | 0.010 |
| Nitrogen (Ammonia Nitrogen) | mg/L | ND | 0.050 | ND | ND | ND | ND | 0.050 | ND | 0.050 |
| Total Organic Carbon (C) | mg/L | 2.2 | 0.50 | 1.3 | 0.65 | 1.7 | 0.62 | 0.50 | 14 | 0.50 |
| Orthophosphate (P) | mg/L | 0.035 | 0.010 | ND | 0.018 | 0.021 | 0.012 | 0.010 | ND | 0.010 |
| pH | pH | 8.05 | N/A | 6.12 | 8.11 | 7.82 | 6.56 | N/A | 8.17 | N/A |
| Reactive Silica (SiO2) | mg/L | 15 | 0.50 | 3.8 | 8.7 | 8.8 | 14 | 0.50 | 8.9 | 0.50 |
| Dissolved Sulphate (SO4) | mg/L | 12 | 2.0 | 2.6 | 8.2 | 25 | 4.3 | 2.0 | 140 | 10 |
| Turbidity | NTU | 9.5 | 0.10 | 0.80 | 10 | 6.8 | 61 | 0.10 | 37 | 0.10 |
| Conductivity | uS/cm | 280 | 1.0 | 35 | 170 | 200 | 74 | 1.0 | 540 | 1.0 |
| RDL = Reportable Detection Limit N/A = Not Applicable ND = Not detected (1) Elevated reporting limit due to sample matrix. | | | | | | | | | | |

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | HCC216 | HCC217 | HCC218 | | HCC218 | | HCC219 | HCC220 | |
|---------------------------------------------------------------------------------------------------------------------------|-------|---------------------|---------------------|---------------------|-------|---------------------|-------|---------------------|---------------------|-------|
| Sampling Date | | 2018/06/27 13:01 | 2018/06/27 12:18 | 2018/06/27 12:22 | | 2018/06/27 12:22 | | 2018/06/27 12:27 | 2018/06/26 13:28 | |
| COC Number | | D34774 | D34774 | D34774 | | D34774 | | D34774 | D34774 | |
| | UNITS | MW-14C | MW-18A | MW-18B | RDL | MW-18B Lab-Dup | RDL | MW-18C | MW-20A | RDL |
| Calculated Parameters | | | | | | | | | | |
| Anion Sum | me/L | 1.80 | 0.310 | 1.34 | N/A | | | 2.02 | 0.360 | N/A |
| Bicarb. Alkalinity (calc. as CaCO ₃) | mg/L | 72 | 5.5 | 45 | 1.0 | | | 52 | 7.9 | 1.0 |
| Calculated TDS | mg/L | 100 | 23 | 84 | 1.0 | | | 130 | 26 | 1.0 |
| Carb. Alkalinity (calc. as CaCO ₃) | mg/L | 1.3 | ND | ND | 1.0 | | | ND | ND | 1.0 |
| Cation Sum | me/L | 1.60 | 0.270 | 1.23 | N/A | | | 1.89 | 0.310 | N/A |
| Hardness (CaCO ₃) | mg/L | 29 | 6.8 | 41 | 1.0 | | | 45 | 7.6 | 1.0 |
| Ion Balance (% Difference) | % | 5.88 | 6.90 | 4.28 | N/A | | | 3.32 | 7.46 | N/A |
| Langelier Index (@ 20C) | N/A | -0.227 | -4.17 | -0.820 | | | | -0.636 | -4.03 | |
| Langelier Index (@ 4C) | N/A | -0.478 | -4.42 | -1.07 | | | | -0.886 | -4.28 | |
| Nitrate (N) | mg/L | 0.052 | 0.062 | ND | 0.050 | | | ND | 0.21 | 0.050 |
| Saturation pH (@ 20C) | N/A | 8.52 | 10.3 | 8.52 | | | | 8.44 | 10.1 | |
| Saturation pH (@ 4C) | N/A | 8.77 | 10.6 | 8.77 | | | | 8.69 | 10.4 | |
| Inorganics | | | | | | | | | | |
| Total Alkalinity (Total as CaCO ₃) | mg/L | 74 | 5.5 | 45 | 5.0 | 46 | 5.0 | 52 | 7.9 | 5.0 |
| Dissolved Chloride (Cl ⁻) | mg/L | 3.9 | 3.8 | 3.5 | 1.0 | 3.3 | 1.0 | 5.3 | 4.8 | 1.0 |
| Colour | TCU | ND | ND | ND | 5.0 | ND | 5.0 | ND | 5.5 | 5.0 |
| Nitrate + Nitrite (N) | mg/L | 0.052 | 0.062 | ND | 0.050 | 0.050 | 0.050 | ND | 0.21 | 0.050 |
| Nitrite (N) | mg/L | ND | ND | ND | 0.010 | ND | 0.010 | ND | ND | 0.010 |
| Nitrogen (Ammonia Nitrogen) | mg/L | ND | ND | ND | 0.050 | | | ND | ND | 0.050 |
| Total Organic Carbon (C) | mg/L | 1.5 | 1.7 | 1.4 | 0.50 | | | 5.8 | 1.3 | 0.50 |
| Orthophosphate (P) | mg/L | ND | ND | 0.054 | 0.010 | 0.051 | 0.010 | ND | ND | 0.010 |
| pH | pH | 8.29 | 6.18 | 7.70 | N/A | 7.83 | N/A | 7.81 | 6.08 | N/A |
| Reactive Silica (SiO ₂) | mg/L | 10 | 5.3 | 11 | 0.50 | 11 | 0.50 | 11 | 6.7 | 0.50 |
| Dissolved Sulphate (SO ₄) | mg/L | 11 | 4.3 | 17 | 2.0 | 16 | 2.0 | 40 | 2.3 | 2.0 |
| Turbidity | NTU | 33 | 1.1 | 20 | 0.10 | 19 | 0.10 | 18 | 4.9 | 0.10 |
| Conductivity | uS/cm | 170 | 35 | 130 | 1.0 | 130 | 1.0 | 210 | 38 | 1.0 |
| RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable ND = Not detected | | | | | | | | | | |

RESULTS OF ANALYSES OF WATER

| Maxxam ID | | HCC221 | HCC222 | HCC223 | HCC224 | HCC225 | | HCC226 | |
|-------------------------------------------------------------------------------|--------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------|---------------------|------------|
| Sampling Date | | 2018/06/26 13:36 | 2018/06/26 12:58 | 2018/06/26 13:03 | 2018/06/26 13:09 | 2018/06/27 13:20 | | 2018/06/27 13:25 | |
| COC Number | | D34774 | D34774 | D34774 | D34774 | D34774 | | D34774 | |
| | UNITS | MW-20B | MW-22A | MW-22B | MW-22C | DUP4 | RDL | DUP5 | RDL |
| Calculated Parameters | | | | | | | | | |
| Anion Sum | me/L | 2.12 | 0.300 | 1.56 | 2.24 | 0.420 | N/A | 5.04 | N/A |
| Bicarb. Alkalinity (calc. as CaCO ₃) | mg/L | 90 | 5.8 | 59 | 94 | 11 | 1.0 | 94 | 1.0 |
| Calculated TDS | mg/L | 120 | 23 | 94 | 130 | 28 | 1.0 | 310 | 1.0 |
| Carb. Alkalinity (calc. as CaCO ₃) | mg/L | ND | ND | ND | 1.0 | ND | 1.0 | 1.5 | 1.0 |
| Cation Sum | me/L | 1.95 | 0.260 | 1.38 | 2.00 | 0.380 | N/A | 4.50 | N/A |
| Hardness (CaCO ₃) | mg/L | 72 | 5.5 | 48 | 52 | 10 | 1.0 | 45 | 1.0 |
| Ion Balance (% Difference) | % | 4.18 | 7.14 | 6.12 | 5.66 | 5.00 | N/A | 5.66 | N/A |
| Langelier Index (@ 20C) | N/A | -0.0410 | -4.11 | -0.786 | -0.0890 | -3.46 | | -0.0470 | |
| Langelier Index (@ 4C) | N/A | -0.291 | -4.36 | -1.04 | -0.340 | -3.71 | | -0.297 | |
| Nitrate (N) | mg/L | ND | 0.093 | ND | ND | ND | 0.050 | ND | 0.050 |
| Saturation pH (@ 20C) | N/A | 8.07 | 10.5 | 8.41 | 8.16 | 9.79 | | 8.29 | |
| Saturation pH (@ 4C) | N/A | 8.32 | 10.7 | 8.66 | 8.41 | 10.0 | | 8.54 | |
| Inorganics | | | | | | | | | |
| Total Alkalinity (Total as CaCO ₃) | mg/L | 91 | 5.8 | 60 | 95 | 11 | 5.0 | 95 | 5.0 |
| Dissolved Chloride (Cl ⁻) | mg/L | 3.6 | 4.0 | 4.2 | 4.2 | 4.8 | 1.0 | 13 | 1.0 |
| Colour | TCU | ND | ND | ND | ND | ND | 5.0 | 5.7 | 5.0 |
| Nitrate + Nitrite (N) | mg/L | ND | 0.093 | ND | ND | ND | 0.050 | ND | 0.050 |
| Nitrite (N) | mg/L | ND | ND | ND | ND | ND | 0.010 | ND | 0.010 |
| Nitrogen (Ammonia Nitrogen) | mg/L | 0.054 | ND | ND | ND | ND | 0.050 | ND | 0.050 |
| Total Organic Carbon (C) | mg/L | 0.84 | 1.0 | 1.8 | 1.6 | 1.5 | 0.50 | 14 | 0.50 |
| Orthophosphate (P) | mg/L | ND | ND | ND | ND | ND | 0.010 | ND | 0.010 |
| pH | pH | 8.02 | 6.38 | 7.63 | 8.07 | 6.33 | N/A | 8.24 | N/A |
| Reactive Silica (SiO ₂) | mg/L | 12 | 6.5 | 14 | 12 | 5.2 | 0.50 | 9.0 | 0.50 |
| Dissolved Sulphate (SO ₄) | mg/L | 9.8 | 3.3 | 12 | 10 | 3.0 | 2.0 | 130 | 10 |
| Turbidity | NTU | 4.7 | 2.2 | 1.8 | 6.8 | 0.77 | 0.10 | 37 | 0.10 |
| Conductivity | uS/cm | 200 | 33 | 150 | 210 | 43 | 1.0 | 540 | 1.0 |
| RDL = Reportable Detection Limit N/A = Not Applicable ND = Not detected | | | | | | | | | |

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | HCC205 | HCC206 | HCC206 | HCC207 | HCC208 | HCC209 | HCC210 | HCC211 | |
|---------------|-------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----|
| Sampling Date | | 2018/06/27 10:49 | 2018/06/27 10:57 | 2018/06/27 10:57 | 2018/06/27 11:03 | 2018/06/27 11:19 | 2018/06/27 11:23 | 2018/06/27 11:28 | 2018/06/27 11:49 | |
| COC Number | | D34774 | D34774 | D34774 | D34774 | D34774 | D34774 | D34774 | D34774 | |
| | UNITS | MW-05A | MW-05B | MW-05B Lab-Dup | MW-05D | MW-07A | MW-07B | MW-07D | MW-11A | RDL |

| Metals | | | | | | | | | | |
|---------------------------|------|-------|-------|-------|-------|-------|--------|-------|-------|-------|
| Dissolved Aluminum (Al) | ug/L | 8.3 | 10 | 9.9 | 29 | ND | 5.7 | 10 | 31 | 5.0 |
| Dissolved Antimony (Sb) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 1.0 |
| Dissolved Arsenic (As) | ug/L | ND | 1.0 | 1.0 | ND | 12 | 39 | 170 | ND | 1.0 |
| Dissolved Barium (Ba) | ug/L | 5.9 | 5.8 | 5.9 | 3.4 | 11 | 13 | 5.5 | 6.9 | 1.0 |
| Dissolved Beryllium (Be) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 1.0 |
| Dissolved Bismuth (Bi) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2.0 |
| Dissolved Boron (B) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 50 |
| Dissolved Cadmium (Cd) | ug/L | 0.031 | 0.018 | 0.014 | ND | ND | ND | ND | 0.024 | 0.010 |
| Dissolved Calcium (Ca) | ug/L | 2900 | 9000 | 8900 | 18000 | 27000 | 100000 | 38000 | 2400 | 100 |
| Dissolved Chromium (Cr) | ug/L | ND | ND | ND | ND | 6.2 | ND | ND | ND | 1.0 |
| Dissolved Cobalt (Co) | ug/L | 2.2 | 1.3 | 1.4 | ND | 0.55 | ND | ND | 1.0 | 0.40 |
| Dissolved Copper (Cu) | ug/L | 4.7 | 4.8 | 4.7 | ND | ND | ND | ND | ND | 2.0 |
| Dissolved Iron (Fe) | ug/L | ND | 100 | 91 | ND | 5100 | ND | ND | ND | 50 |
| Dissolved Lead (Pb) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 0.50 |
| Dissolved Magnesium (Mg) | ug/L | 770 | 1200 | 1100 | 2400 | 6400 | 8600 | 5400 | 470 | 100 |
| Dissolved Manganese (Mn) | ug/L | 110 | 130 | 130 | 20 | 530 | 970 | 44 | 76 | 2.0 |
| Dissolved Molybdenum (Mo) | ug/L | ND | 4.2 | 4.2 | ND | ND | ND | ND | ND | 2.0 |
| Dissolved Nickel (Ni) | ug/L | 8.8 | 3.9 | 3.8 | ND | 2.4 | ND | ND | 2.8 | 2.0 |
| Dissolved Phosphorus (P) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 |
| Dissolved Potassium (K) | ug/L | 990 | 1400 | 1400 | 980 | 1800 | 3600 | 1200 | 590 | 100 |
| Dissolved Selenium (Se) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 1.0 |
| Dissolved Silver (Ag) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 0.10 |
| Dissolved Sodium (Na) | ug/L | 3300 | 7200 | 7200 | 11000 | 10000 | 18000 | 9200 | 2400 | 100 |
| Dissolved Strontium (Sr) | ug/L | 14 | 34 | 33 | 160 | 140 | 340 | 310 | 17 | 2.0 |
| Dissolved Thallium (Tl) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 0.10 |
| Dissolved Tin (Sn) | ug/L | 3.5 | ND | ND | ND | ND | ND | ND | ND | 2.0 |
| Dissolved Titanium (Ti) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2.0 |
| Dissolved Uranium (U) | ug/L | ND | 0.14 | 0.14 | 0.35 | 0.11 | 2.3 | 0.73 | ND | 0.10 |
| Dissolved Vanadium (V) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2.0 |
| Dissolved Zinc (Zn) | ug/L | 30 | 8.7 | 9.7 | ND | 9.5 | ND | ND | 12 | 5.0 |

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | HCC212 | HCC213 | HCC214 | HCC215 | HCC216 | HCC217 | HCC218 | HCC219 | |
|---------------|--------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------|
| Sampling Date | | 2018/06/27 11:54 | 2018/06/27 11:45 | 2018/06/27 12:42 | 2018/06/27 12:51 | 2018/06/27 13:01 | 2018/06/27 12:18 | 2018/06/27 12:22 | 2018/06/27 12:27 | |
| COC Number | | D34774 | D34774 | D34774 | D34774 | D34774 | D34774 | D34774 | D34774 | |
| | UNITS | MW-11B | MW-11C | MW-14A | MW-14B | MW-14C | MW-18A | MW-18B | MW-18C | RDL |

| Metals | | | | | | | | | | |
|---------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Dissolved Aluminum (Al) | ug/L | 14 | 18 | ND | ND | 6.5 | 23 | 13 | 16 | 5.0 |
| Dissolved Antimony (Sb) | ug/L | ND | ND | ND | 1.6 | ND | ND | ND | ND | 1.0 |
| Dissolved Arsenic (As) | ug/L | 60 | 78 | 4.9 | 7.7 | 1.6 | 40 | 230 | 57 | 1.0 |
| Dissolved Barium (Ba) | ug/L | 7.8 | 11 | 3.2 | 5.9 | 13 | 5.7 | 4.1 | 6.4 | 1.0 |
| Dissolved Beryllium (Be) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 1.0 |
| Dissolved Bismuth (Bi) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2.0 |
| Dissolved Boron (B) | ug/L | ND | ND | ND | 84 | 120 | ND | ND | ND | 50 |
| Dissolved Cadmium (Cd) | ug/L | ND | ND | 0.014 | ND | ND | 0.028 | ND | ND | 0.010 |
| Dissolved Calcium (Ca) | ug/L | 25000 | 26000 | 4900 | 15000 | 9300 | 1600 | 15000 | 16000 | 100 |
| Dissolved Chromium (Cr) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 1.0 |
| Dissolved Cobalt (Co) | ug/L | ND | 0.44 | 1.6 | ND | ND | 2.2 | ND | ND | 0.40 |
| Dissolved Copper (Cu) | ug/L | ND | ND | ND | ND | ND | 5.1 | ND | ND | 2.0 |
| Dissolved Iron (Fe) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 50 |
| Dissolved Lead (Pb) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 0.50 |
| Dissolved Magnesium (Mg) | ug/L | 1800 | 2400 | 1300 | 2200 | 1400 | 710 | 1200 | 1400 | 100 |
| Dissolved Manganese (Mn) | ug/L | 35 | 56 | 190 | 11 | ND | 53 | 3.1 | 13 | 2.0 |
| Dissolved Molybdenum (Mo) | ug/L | ND | 2.6 | ND | 15 | ND | ND | 4.9 | 4.1 | 2.0 |
| Dissolved Nickel (Ni) | ug/L | ND | ND | 4.2 | ND | ND | 6.3 | ND | ND | 2.0 |
| Dissolved Phosphorus (P) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 |
| Dissolved Potassium (K) | ug/L | 1600 | 1100 | 1300 | 1400 | 660 | 790 | 1500 | 1600 | 100 |
| Dissolved Selenium (Se) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 1.0 |
| Dissolved Silver (Ag) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 0.10 |
| Dissolved Sodium (Na) | ug/L | 5800 | 8500 | 6700 | 83000 | 23000 | 2500 | 8400 | 22000 | 100 |
| Dissolved Strontium (Sr) | ug/L | 86 | 190 | 38 | 330 | 270 | 13 | 85 | 180 | 2.0 |
| Dissolved Thallium (Tl) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 0.10 |
| Dissolved Tin (Sn) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2.0 |
| Dissolved Titanium (Ti) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2.0 |
| Dissolved Uranium (U) | ug/L | 0.91 | 3.3 | ND | 4.7 | 0.53 | ND | 1.1 | 1.8 | 0.10 |
| Dissolved Vanadium (V) | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2.0 |
| Dissolved Zinc (Zn) | ug/L | ND | 10 | 8.1 | ND | ND | 19 | ND | ND | 5.0 |

RDL = Reportable Detection Limit
ND = Not detected

ELEMENTS BY ICP/MS (WATER)

| Maxxam ID | | HCC220 | HCC221 | HCC222 | HCC223 | HCC224 | HCC225 | HCC226 | |
|-------------------------------------------------------|-------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-------|
| Sampling Date | | 2018/06/26 13:28 | 2018/06/26 13:36 | 2018/06/26 12:58 | 2018/06/26 13:03 | 2018/06/26 13:09 | 2018/06/27 13:20 | 2018/06/27 13:25 | |
| COC Number | | D34774 | D34774 | D34774 | D34774 | D34774 | D34774 | D34774 | |
| | UNITS | MW-20A | MW-20B | MW-22A | MW-22B | MW-22C | DUP4 | DUP5 | RDL |
| Metals | | | | | | | | | |
| Dissolved Aluminum (Al) | ug/L | 38 | 62 | 22 | 23 | 12 | 8.8 | ND | 5.0 |
| Dissolved Antimony (Sb) | ug/L | ND | ND | ND | ND | ND | ND | 1.6 | 1.0 |
| Dissolved Arsenic (As) | ug/L | ND | 7.0 | ND | 1.5 | 5.4 | ND | 7.6 | 1.0 |
| Dissolved Barium (Ba) | ug/L | 4.8 | 11 | 5.0 | 3.6 | 4.7 | 5.7 | 5.7 | 1.0 |
| Dissolved Beryllium (Be) | ug/L | ND | ND | ND | ND | ND | ND | ND | 1.0 |
| Dissolved Bismuth (Bi) | ug/L | ND | ND | ND | ND | ND | ND | ND | 2.0 |
| Dissolved Boron (B) | ug/L | ND | ND | ND | ND | ND | ND | 78 | 50 |
| Dissolved Cadmium (Cd) | ug/L | 0.035 | 0.011 | 0.016 | ND | ND | 0.031 | ND | 0.010 |
| Dissolved Calcium (Ca) | ug/L | 1900 | 22000 | 1000 | 14000 | 17000 | 2900 | 15000 | 100 |
| Dissolved Chromium (Cr) | ug/L | ND | ND | ND | ND | ND | ND | ND | 1.0 |
| Dissolved Cobalt (Co) | ug/L | 2.8 | ND | 1.8 | 0.43 | ND | 2.1 | ND | 0.40 |
| Dissolved Copper (Cu) | ug/L | 3.0 | ND | 9.4 | ND | ND | 5.0 | ND | 2.0 |
| Dissolved Iron (Fe) | ug/L | ND | ND | ND | ND | ND | ND | ND | 50 |
| Dissolved Lead (Pb) | ug/L | ND | ND | ND | ND | ND | ND | ND | 0.50 |
| Dissolved Magnesium (Mg) | ug/L | 680 | 4500 | 700 | 3000 | 2500 | 760 | 2100 | 100 |
| Dissolved Manganese (Mn) | ug/L | 150 | 100 | 160 | 190 | 15 | 110 | 11 | 2.0 |
| Dissolved Molybdenum (Mo) | ug/L | ND | 7.0 | ND | ND | 3.3 | ND | 15 | 2.0 |
| Dissolved Nickel (Ni) | ug/L | 6.8 | ND | 8.1 | ND | ND | 8.4 | ND | 2.0 |
| Dissolved Phosphorus (P) | ug/L | ND | ND | ND | ND | ND | ND | ND | 100 |
| Dissolved Potassium (K) | ug/L | 610 | 1600 | 810 | 1600 | 1100 | 1000 | 1400 | 100 |
| Dissolved Selenium (Se) | ug/L | ND | ND | ND | ND | ND | ND | ND | 1.0 |
| Dissolved Silver (Ag) | ug/L | ND | ND | ND | ND | ND | ND | ND | 0.10 |
| Dissolved Sodium (Na) | ug/L | 3200 | 10000 | 3000 | 8900 | 21000 | 3300 | 82000 | 100 |
| Dissolved Strontium (Sr) | ug/L | 19 | 270 | 15 | 81 | 280 | 15 | 330 | 2.0 |
| Dissolved Thallium (Tl) | ug/L | ND | ND | ND | ND | ND | ND | ND | 0.10 |
| Dissolved Tin (Sn) | ug/L | ND | 2.1 | ND | ND | ND | 2.5 | ND | 2.0 |
| Dissolved Titanium (Ti) | ug/L | ND | ND | ND | ND | ND | ND | ND | 2.0 |
| Dissolved Uranium (U) | ug/L | ND | 0.86 | ND | 0.26 | 0.52 | ND | 4.7 | 0.10 |
| Dissolved Vanadium (V) | ug/L | ND | ND | ND | ND | ND | ND | ND | 2.0 |
| Dissolved Zinc (Zn) | ug/L | 10 | ND | 16 | 5.2 | ND | 35 | ND | 5.0 |
| RDL = Reportable Detection Limit ND = Not detected | | | | | | | | | |

GENERAL COMMENTS

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

| | |
|-----------|-------|
| Package 1 | 4.3°C |
| Package 2 | 3.0°C |

Sample HCC205 [MW-05A] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample HCC215 [MW-14B] : Poor RCap Ion Balance due to sample matrix.

Sample HCC216 [MW-14C] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample HCC217 [MW-18A] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample HCC220 [MW-20A] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample HCC222 [MW-22A] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample HCC223 [MW-22B] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample HCC224 [MW-22C] : Poor RCap Ion Balance due to sample matrix.

Sample HCC226 [DUP5] : Poor RCap Ion Balance due to sample matrix.

Results relate only to the items tested.



Maxxam Job #: B8G1148
Report Date: 2018/07/09

Atlantic Mining NS Corp
Client Project #: 088664-20
Site Location: BEAVER DAM
Your P.O. #: 3151
Sampler Initials: RH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

A handwritten signature in black ink, appearing to read "Mike MacGillivray", is written over a horizontal line.

Mike MacGillivray, Scientific Specialist (Inorganics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.