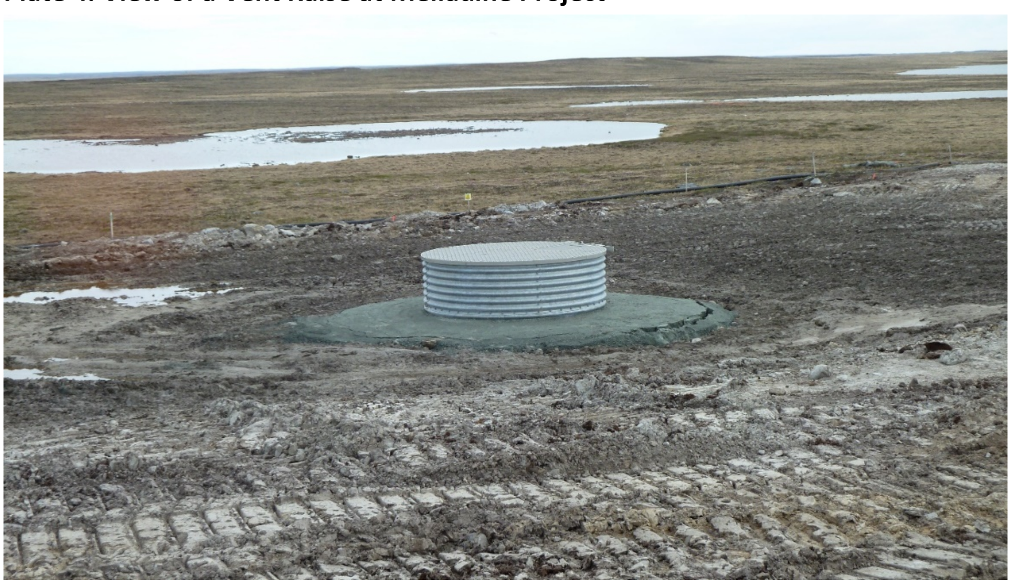
Plate 3. Aerial View of the Meliadine Project with the Ramp Cover

Two ventilation exhaust raises as shown in figure 2 are to be located on either side of Whale Lake. Fans will be installed either on the collars of at surface or underground. The latter will require the approval of the mine inspector. Plate 4 shows a ventilation raise at the Meliadine site.

Plate 4. View of a Vent Raise at Meliadine Project



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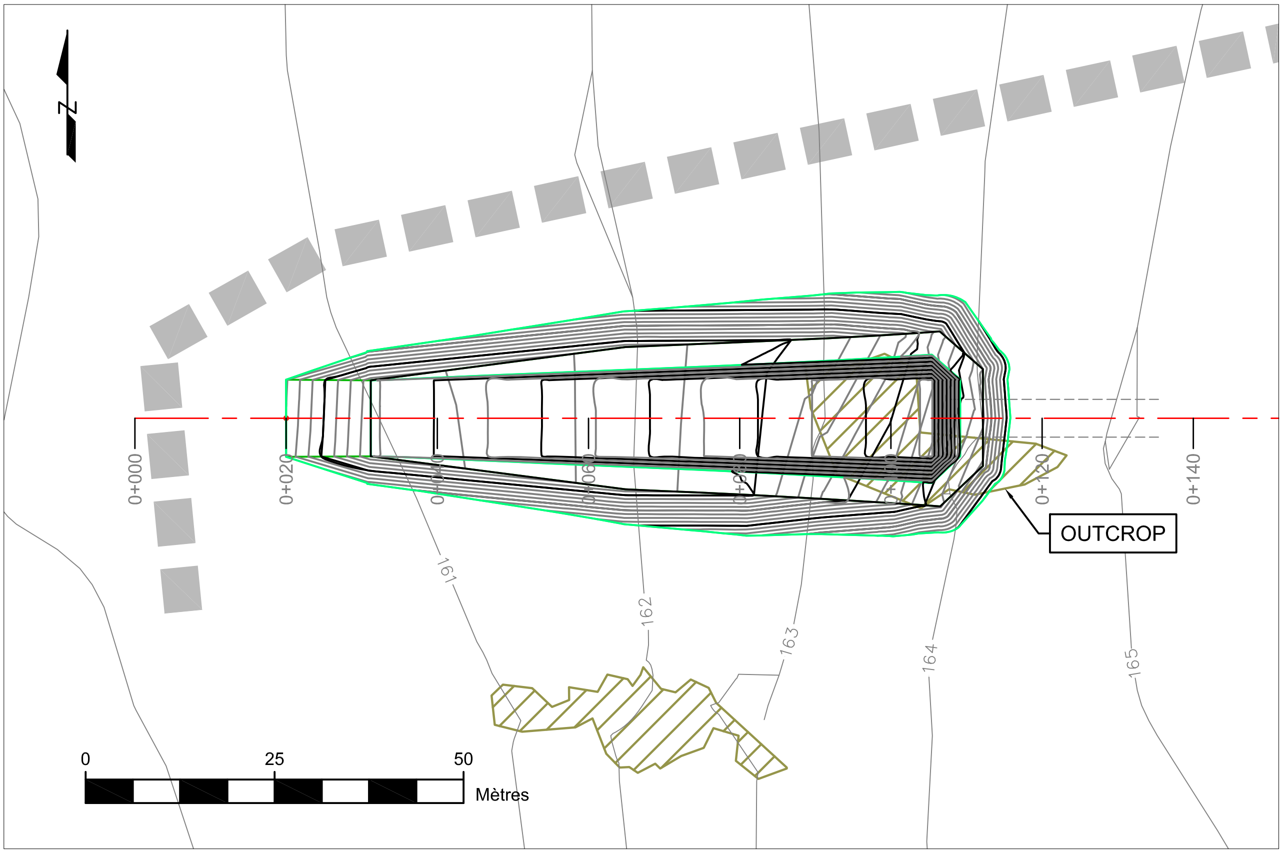

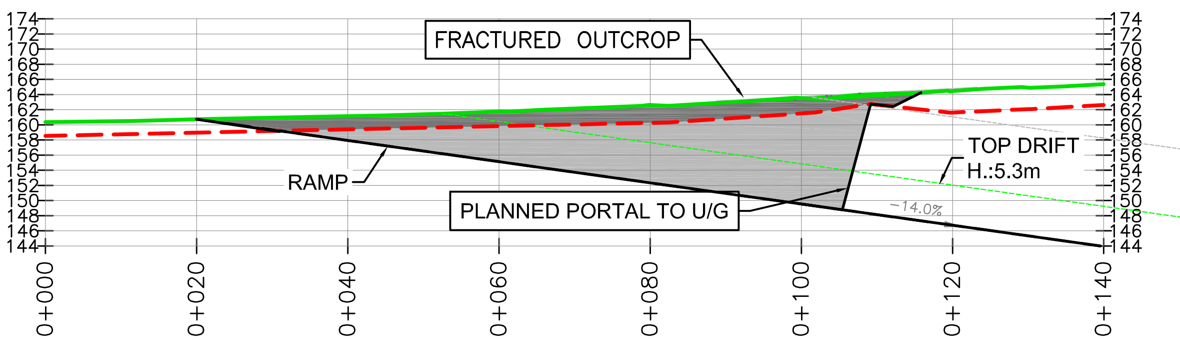

AXE RAMP - (1)

REV	DATE	DESCRIPTION	PAR BY

REVISIONS

AGNICO EAGLE – MEADOWBANK DIVISION

AGNICO EAGLE

AMARUQ PROJECT
EXPLORATION RAMP
RAMP DESIGN

No. PROJET PROJECT No.	6108	DATE	2016–02–17
DESSINÉ PAR DRAWN BY	J.CRETE	FEUILLE/SHT	1 / 1
APPROUVÉ PAR APPROVED BY	J.WITTEMAN		
NO. DESSIN DRAWING NO.	FIG 4	REVISION	0

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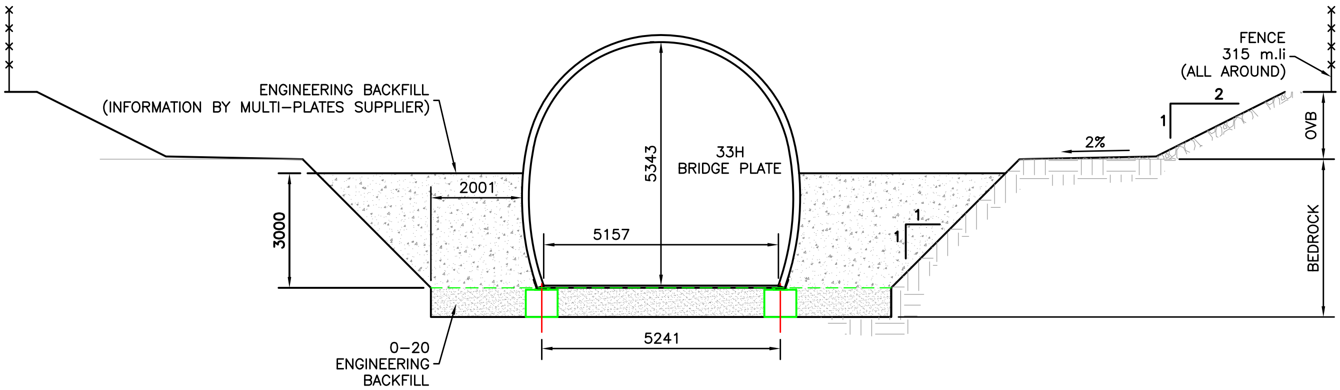

FRONT VIEW

SCL: 1:200

REV	DATE	DESCRIPTION	PAR BY

REVISIONS

AGNICO EAGLE – MEADOWBANK DIVISION

AGNICO EAGLE

AMARUQ PROJECT
EXPLORATION RAMP
RAMP DESIGN

No. PROJET PROJECT No.	6108	DATE	2016–02–17
DESSINÉ PAR DRAWN BY	J.CRETE	FEUILLE/SHT	1 / 1
APPROUVÉ PAR APPROVED BY	J.WITTEMAN		
NO. DESSIN DRAWING NO.	FIG 5	REVISION	0

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Underground Mining Equipment

The underground will use the following equipment in developing the ramp:

- 2 – 8 cubic yard scoop trams (1 operating, 1 spare);
- 1 - bolter at the start of the ramp, 2 by 2017 – 2018;
- 2 – scissor lifts
- 2 – underground trucks with a carrying capacity of 20 – 30 tonnes. The number is to be increased to 3 in 2017 – 2018.
- 2 - tractors
- 2 – jumbo drill rigs (1 operating, 1 spare)

The equipment is to be serviced in the garage located on the waste rock pad.

10. Water Management

10.1 Baseline Aquatic Environment

The Amaruq Project lies immediately south of the Meadowbank River, which is part of the Back River system that drains to the Arctic Ocean. The surrounding terrain is typically barren-ground subarctic with little relief, and is dominated by many small lakes with indistinct and complex drainage patterns.

In 2014, baseline surface water quality sampling was carried out in three lakes in the Amaruq area, this included Whale Lake and two adjacent lakes Nemo and Mammoth Lakes (Portt, 2015). A total of 10 water samples were collected. Similar water quality is found in all three lakes. The water soft, has low ionic strength, no nutrient enrichment, and a pH slightly above 7. Calcium is the predominate cation having concentrations ranging from 1.5 to 2.5 mg/L. Magnesium and aluminum were also detected in all samples but at lower concentrations than calcium. The water quality data sheets are provided in Appendix C.

Arsenic is of interest as geochemistry work to date shows that arsenic is commonly leached from several waste rock types (Golder, 2016). Arsenic was detected in all water samples at very low concentrations – 0.2 to 0.5 µg/L. In lake sediments, the arsenic concentration ranges from 11 to 158 mg/kg with a mean of 60 mg/kg. The geochemistry study found many rock types associated with the Amaruq ore deposit had arsenic exceeding five times typical crustal abundance, and lake sediments seem to corroborate this fact.

10.2 Waste Pads Engineered Configuration

The services pad will hold infrastructure supporting underground development, laydown and the bulk sample. The operations pad will hold piles of different types of waste rock, crusher, and piles of aggregate. Both pads will be engineered such that all surface runoff is directed in one direction to simplify water management. This was done by grading the surfaces of the services and operations pads to drain in one direction only. The services and operations pads are shown in Figure 2.

The services pad has a surface area of 31,700 m^2 and will drain to the northwest where any water will enter the drainage path from storm water management pond A-P5. As the pad is to be built of NPAG rock that does not leach trace metals above water licence criteria shown in Table 5, the major concern will be suspended solids in flowing water. A silt fence will be placed across the flow path to capture suspended solids before the water enters Whale Lake. In 2018 when the bulk sample is stored on the pad, leachate having trace metals above licence criteria may prove to be an issue. Water flowing from the pad will be intercepted and sampled to ensure water quality criteria are not being exceeded. If any licence criteria for trace metals is exceeded, the water will be pumped to A-P5.

The operations pad has an area of 42,500 m^2 and will be built of the same types of waste rock as the services pad. However, the operations pad will hold poles of various rock types encountered in developing the ramp and accesses. The pad will be graded such that water will flow west to storm water storage pond A-P5. Also, a diversion ditch, as shown in figure 2, will capture any pad runoff to the south and carry the water to A-P5.

Table 5. Water Licence 2BE-MEA1318: Part D Conditions Applying to Waste Disposal, Clause 12

Parameter	Maximum Concentration of any Grab Sample (mg/L)
Total Arsenic	0.5
Total Copper	0.3
Total Lead	0.2
Total Nickel	0.5
Total Zinc	0.5
Total Suspended Solids	25
Oil and Grease	No visible sheen
pH	6.0 to 9.5

10.3 Surface Water

The underground program is expected to use approximately 5 to 7 m^3 of fresh water daily. The water will be delivered by water truck from the camp. If there is a sufficient volume in A-P5, waste water from the pond could also be used in ramp development. Another option being considered is pumped freshwater from the camp site to the services pad through a heat traced water line. Either way, the water will be used in a brine mixing and delivery system located in the garage near the entrance to the underground. Calcium chloride will be added to the water, the water heated and pumped down the ramp to the working face where it will be used in dust control and drilling. After initial use, the brine will collect in small sumps on the floor of the ramp and be pumped back into the brine recirculation system for reuse. This will reduce the need for make-up water.

Annual precipitation as snow and rain will need to be managed as part of the underground program. Snow represents a significant portion of the annual precipitation at Amaruq and is to be removed wherever possible from the pads, laydown area, quarry and road to an area outside the developed area where it will be left to melt. This melt water will not be controlled as it is expected to not be representative of contact water. As well, any drainage from the natural environment will, if necessary, be directed away from developed areas.

Contact water will result from water coming in contact with the pads, waste rock piles, bulk ore sample, and quarry. All contact water in the quarry will be collected in a sump and pumped to A-P5. Wherever possible, contact water is to be used as makeup water in developing the ramp, dust control at the crusher when it is operating and/or on site roads. The location of storm water storage pond A-P5 is shown in Figure 2.

The arch bridge plate cover constructed over the box cut will significantly reduce snow accumulation and resultant snow melt running down the ramp. What snow melt or rain that does run down the ramp will be intercepted by a sump at the ramp entrance and pumped back to surface. This water could be used as brine makeup water for use underground, or be pumped to the surface water storage pond A-P5.

Drainage and leachate from the operations pad will flow naturally or be directed by a diversion ditch into A-P5. During the open water season, water stored in pond A-P5 is to be used for makeup water for the underground brine system, and dust control at the crusher and/or along roads. The use of contact water in developing the ramp and for dust control will reduce overall freshwater use. Water in A-P5 that is in excess of what can be used will be monitored monthly and, if found suitable, directed to a land treatment area. This will attenuate the water and remove nutrients and other substances before it reaches a watercourse. Water not meeting discharge criteria listed in Table 5 will continue to be held in A-P5 for later use, or be released following treatment.

As per the water licence 2BE-ME1318, the set back of the quarry from Whale Lake will be at least 31 metres. With waste rock pad to the east and the lake to the west, the quarry will be constrained and its floor is expected to be below the surrounding surface, which will necessitate in the collection of water in a sump. This water is to be pumped to A-P5 or to the crusher for dust control when it is operating.

Before the onset of winter each year, the quarry sump will be pumped to A-P5 to provide capacity for next year's freshet. As shown in Figure 2, the water storage pond, A-P5, will have a berm constructed on one side to increase its storage capacity. Following the placement of the berm, the pond will no longer naturally discharge to Whale Lake. If possible, flow outside its small drainage basin will be non-contact water and will be directed around A-P5 to Whale Lake.

Figure 6 shows the bathymetry of A-P5. The volume of the pond is 3,689 m^3 but its holding capacity is expected to increase once the berm is built across its outlet. The pond has a maximum depth of 1.88 m. In February 2016, ice on the pond was 1.37 metres thick. This indicates that the majority of the water in the pond will freeze in winter. Baseline fisheries data indicated that the pond does not have fish and is therefore not a fishery and does not require DFO authorization (Personal communication, Cam Portt, March 2016).

Prior to its use as a storm water storage pond, the non-contact water presently found in A-P5 will be used for dust suppression and/or pumped downstream to Whale Tail Lake. Following this, A-P5 is to receive contact water from the diversion ditch, flow off the surfaces and leachates from the pads, and water pumped from the quarry sump and from the sump located at the entrance to the ramp.

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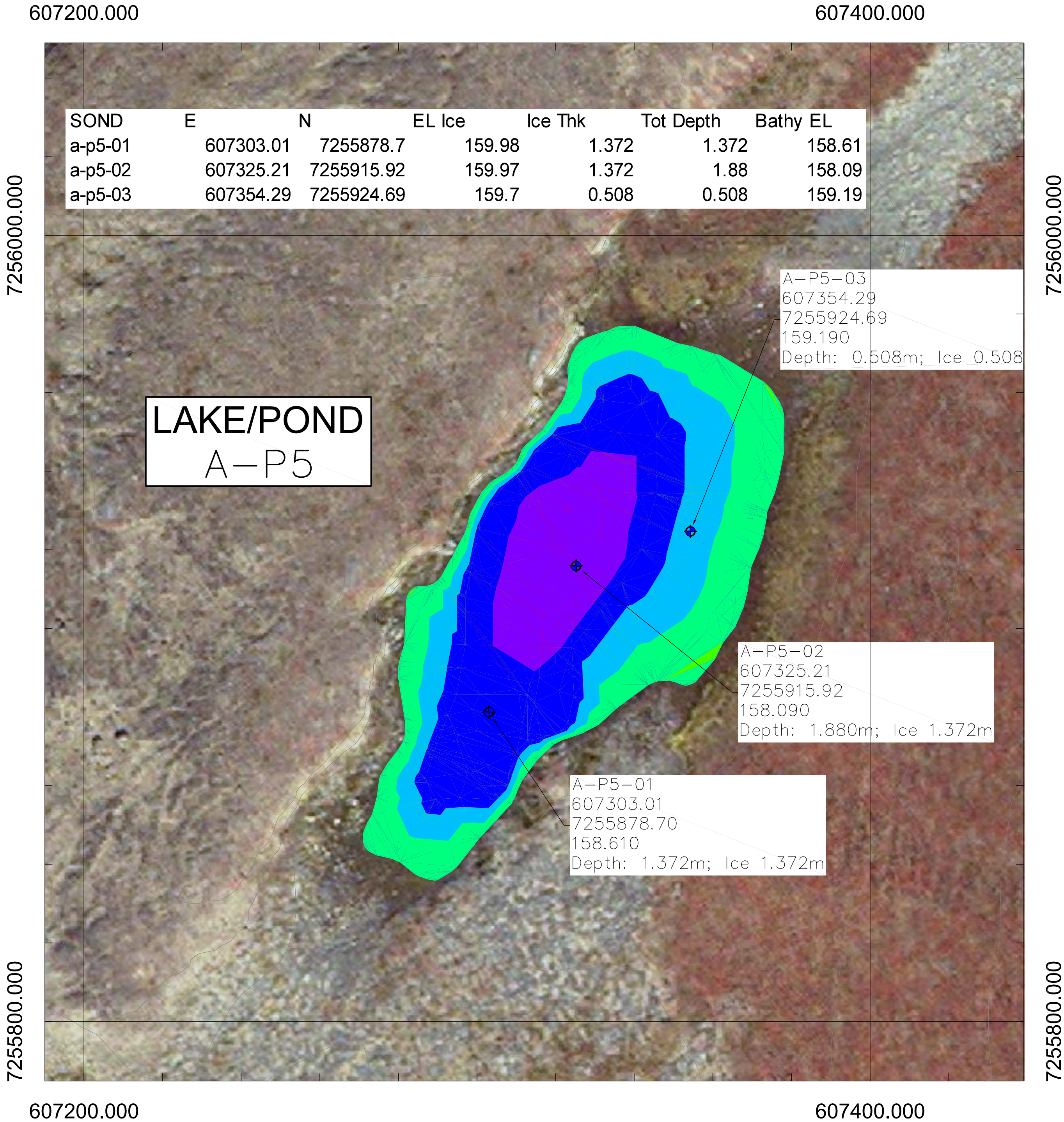

SOND	E	N	EL Ice	Ice Thk	Tot Depth	Bathy EL
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a-p5-02	607325.21	7255915.92	159.97	1.372	1.88	158.09
a-p5-03	607354.29	7255924.69	159.7	0.508	0.508	159.19

Résumé de déblai/remblai

Nom	Facteur de déblai	Facteur de remblai	Aire 2D	Déblai	Remblai	Net
VOL A-P5 (1)	1.000	1.000	7866.66m²	0.00 M³	3689.20 M³	3689.20 M³<Remblai>
Totaux			7866.66m²	0.00 M³	3689.20 M³	3689.20 M³<Remblai>

REV	DATE	DESCRIPTION	PAR BY

REVISIONS

AGNICO EAGLE – MEADOWBANK DIVISION

AGNICO EAGLE

AMARUQ PROJECT
PLAN VIEW
A–P5 DEPTH WATER INVESTIGATION

No. PROJET / PROJECT No.	6108	DATE	2016–02–19
DESSINÉ PAR / DRAWN BY	J.CRETE	FEUILLE/SHT	1 / 1
APPROUVÉ PAR / APPROVED BY	**Figure 6**		
NO. DESSIN / DRAWING NO.	SK–AP5–20160219–1344	REVISION	2

N:\Projet\Amaruq\010 Project\030 Reference documents\MAP_topo&Bathy\Bathy Survey\AMQ BATHY 2016\A–P5\SK–AP5–20160219–1344_R2.dwg–2013–02–19 14:03:29 FILE NO. .DWG

10.4 Ground Water

Drilling has shown that continuous permafrost persists to a depth of 420 metres below surface. The maximum depth of the proposed ramp is 340 metres below ground surface. As a result the ramp will be developed in permafrost until it enters the talik under Whale Tail Lake in 2018. Hydraulic conductivity testing indicates that the permeability of the rock is low and as a result water ingress is also expected to be low. No sampling of deep groundwater below the permafrost layer will be attempted while the development of the ramp is within permafrost. Groundwater encountered within the talik will be sampled.

Once ramp development enters the talik, it is expected to intersect unfrozen groundwater under Whale Lake (Knight – Peisold, 2015). Knight Peisold summarized key aspects of the hydrogeological regime relevant to the groundwater inflow assessment as follows:

- The regional groundwater gradient is controlled by the elevations of large lakes in the area that are connected to the sub-permafrost groundwater system through a series of conservatively predicted, open low flowing taliks; and
- Groundwater flow (through low flowing taliks from lakes to sub-permafrost groundwater and vice versa) will be along open fractures, faults, and joint systems conduits as defined by the regional structural orientations.

Inflow into the ramp can be expected to occur when the ramp intersects the talik under Whale Tail Lake. The base case inflow estimated by Knight Peisold is 0.16 m^3/day, this being due to the low hydraulic conductivity of the rock in which the ramp is to be built. Surface drilling to date has not intersected any faults within the talik that would lead to significant inflows. Where faults were encountered through surface drilling, packer test results suggest that the faults are not significantly more permeable than the surrounding rock mass. Faults elsewhere in the ore body could possibly lead to inflows but the ramp is not to enter these regions.

This does not preclude fault or fracture derived inflow from happening within the talik. It is reasonable to assume that at some point a feature will be encountered in the ramp development that will lead to inflows. Knight Peisold notes, “The most likely scenario is that inflows will quickly reduce as the water stored in the feature drains out.” Any inflows less than 7 m^3/day will be used in ramp development, which will reduce the need for freshwater. As a contingency, inflows exceeding 7 m^3/day and interfering with the development of the ramp will have the extra water pumped from the ramp to A-P5 for storage. Here the water will be tested and, if found acceptable, be released to the receiving environment. If not, the water could be used over the summer period for dust control or make-up water underground.

11. Reclamation and Closure of the Ramp and Quarry Program

Please refer to the Conceptual Reclamation and Closure Plan, version 6 for complete details on the proposed Reclamation and Closure for the Ramp and Quarry Program.

12. Amaruq Exploration Project Public Consultation

Table 6 summarizes the consultation that has been undertaken by Agnico Eagle with various community stakeholders regarding the Amaruq Exploration Project.

Table 6. Record of Public Consultation

Date	Description	Attendees
August 27, 2014	Meeting with Hunters and Trappers Organization representatives to present upcoming work on the proposed exploration access road at the Meadowbank Mine Site	Hunters and Trappers Organization and Agnico Eagle
August, 2014	Pre-construction access road reconnaissance and fly over proposed route and stopped at Amaruq Exploration site with federal representatives	Environment Canada and Agnico Eagle
November 5, 2014	During the Meliadine Aquatic Effects Monitoring Program workshop, Agnico Eagle introduced the access road and about the future plans for an exploration ramp, to local, territorial and federal representatives	Environment Canada, Aboriginal Affairs and Northern Development Canada (AANDC), HTO, and Agnico Eagle
December 2014	Traditional Knowledge workshop with Elders held in Baker Lake. A TK report was prepared (Burt 2015)	Baker Lake Elders and Agnico Eagle
January 2015	Meadowbank NWB Type A public meetings as part of the pre-hearing conference; Agnico Eagle presented preliminary exploration results at the Amaruq Exploration site, the future underground potential and the available information on the proposed exploration access road	Public presentations open to the Kivalliq; KIA, AANDC, Baker Lake Hamlet, Chesterfield Inlet, Agnico Eagle
April 6- 16, 2015	Meetings hosted with federal and territorial regulators to discuss regulatory projects for Agnico Eagle including the need for the Amaruq	AANDC, NIRB, NWB hosted by Agnico Eagle either by webex or in Iqaluit during

Date	Description	Attendees
	exploration access road to provide fuel for the Amaruq exploration ramp development	the Nunavut Mining Symposium
April 7, 2015	Meetings with the HTO entirely in Inuktitut in Baker Lake to review plans for the 2015 field programs around Amaruq exploration site	HTO and Agnico Eagle*
July 6 2015	Informal site visit to Meadowbank and Amaruq Exploration Site. Flew the entire Amaruq Exploration Access Road with 4 HTO members, good conversations with no feedback from HTO	Agnico Eagle and HTO
July 9 2015	Presentation of Amaruq exploration site made to KIA and AANDC representatives during site visit	Agnico Eagle, AANDC water resource, KIA inspectors and consultant
September 8, 2015	Hosted a TK/IQ workshop, archaeological site visit and Amaruq site visit with elders and archaeological consultant. Agnico Eagle intends to invite CLARC members, a KIA representative, HTO representatives.	CLARC, KIA rep, HTO
September 9 and 10, 2015	Community sessions in Baker Lake hosted by NIRB.	Agnico Eagle, community members, elders, mayor, HTO and NIRB representatives
November 12, 2015	Discussed Amaruq Exploration Access road and the future plans for an exploration ramp	Environment Canada, in Edmonton
February 3- 5th 2016	Youth and women TK/IQ on Feb 3rd; meetings with HTO and CLARC on Feb 4th; TK/IQ workshop with Elders of Baker Lake on Feb 5th to review TK/IQ maps and follow-up on December 2014 consultation and the September 8, 2015 site visit and workshop.	Hosted by Agnico Eagle at the Iglu in Baker Lake
March 3, 2016	Meeting with the CLARC to discuss the timelines for the construction of the Amaruq Exploration Access Road and future Exploration Activity at Amaruq	Hosted by KIA in Baker Lake

13. References

Burt, P. and Witteman, J. 2014. Proposed All-weather Exploration Road from the Meadowbank Mine to the Amaruq Site - Baseline Traditional Knowledge Report. Report prepared for Agnico Eagle. ftp://ftp.nwb-oen.ca/1%20PRUC%20PUBLIC%20REGISTRY/8%20MISCELLANEOUS/8B/8BC%20-%20Construction/8BC-AEA1525%20AEM/1%20APPLICATION/2015%20New/150316%208BC-AEA----%20Amaruq%20Access%20Road%20Final%20Amaruq%20TK%20report%20-%20version%202-IMLE/

Golder and Associates. 2016. Technical Memorandum - Evaluation of the Geochemical Properties of Waste Rock from the Underground Ramp, Whale Tail Deposit, Amaruq Mining Project

Knight Peisold Consulting Ltd. 2015. Memorandum - Amaruq Exploration Project – Groundwater Inflows to the Exploration Ramp. AEM, Meadowbank Division

Nunavut Impact Review Board 2015. Meliadine Gold Mine Project Proposal in the Kivalliq Region of Nunavut NIRB PROJECT CERTIFICATE [NO.: 006]. http://ftp.nirb.ca/02-REVIEWS/COMPLETED%20REVIEWS/11MN034-AEM%20MELIADINE/2-REVIEW/12-PROJECT%20CERTIFICATE/150226-11MN034-NIRB%20Project%20Certificate-OT4E.pdf

Nunavut Planning Commission. 2000. Keewatin Regional Land Use Plan. http://www.nunavut.ca/en/approved_plans/keewatin

Portts, C and Associates. 2015. Amaruq Lakes 2014 Aquatic Field Investigations, Report for AEM, Meadowbank Division.

Appendix A. Golder and Associates 2016. Evaluation of the Geochemical Properties of Waste Rock from the Underground Ramp, Whale Tail Deposit, Amaruq Mining Project

Note: The Golder Document was sent under a separate cover to the Nunavut Water Board.

Appendix B. Knight Peisold, November 2015. Agnico Eagle Mines Ltd.: Meadowbank Division – Amaruq Exploration Project – Groundwater Inflows to the Exploration Ramp

MEMORANDUM

To:	Mr. Serge Ouellet	Date:	November 23, 2015
Copy To:	Ben Peacock	File No.:	NB101-00622/04-A.01
From:	Ben Green	Cont. No.:	VA15-03337
Re:	Agnico Eagle Mines Ltd.: Meadowbank Division – Amaruq Exploration Project – Groundwater Inflows to the Exploration Ramp		

1 – INTRODUCTION

Agnico Eagle Mines Ltd. (AEM) is developing the Amaruq Exploration Project (the Project) in Nunavut, Canada. The Project is located 50 km northwest of AEM's Meadowbank Mine and 160 km northwest of Baker Lake. AEM is currently evaluating the potential for mining the satellite Whale Tail deposit using open pit mining methods. AEM is planning to advance an exploration ramp to allow for underground drilling as part of advanced exploration activities.

Knight Piésold Ltd. (KP) was retained to provide geomechanical and hydrogeological services to support permitting and pre-feasibility level open pit mine design for the Project. One of the objectives of this scope of work is to characterize the quantity and quality of groundwater that could be expected during the development of the exploration ramp. The annual ramp development schedule and the ramp sections likely to experience groundwater inflows are shown on Figure 1.

The exploration ramp will be accessed via a portal on the east side of Whale Tail Lake and located to the south and east of the proposed Whale Tail Pit. The ramp will descend towards the southwest to a maximum depth of 340 mbgs below the Whale Tail Lake. The ramp will be developed mostly within permafrost. However, it is expected to intersect unfrozen groundwater (talik) as it descends beneath the lake. These inflows will be incorporated into the underground water balance.

2 – BACKGROUND

2.1 AVAILABLE RESOURCES

Information reviewed as part of the groundwater inflow assessment included:

- The proposed design and scheduling for the exploration ramp (AEM, 2015a)
- Whale Tail Lake bathymetry (Groupe Conseil Nutshimit-Nippour, 2015)
- Lithology and structural, models (AEM, 2015b)
- Hydraulic conductivity data from eighteen packer tests conducted during the 2015 site investigation program completed by KP
- Ground temperature data from thermistors installed in six geotechnical boreholes during the 2015 site investigation program completed by KP
- Rock mass quality data collected during the 2015 site investigation program completed by KP, and
- The expected permafrost and talik conditions beneath Whale Tail Lake.

2.2 GEOLOGY

The main lithologies expected to be encountered during the development of the exploration ramp are summarized below:

- **Diorite (I2):** The Diorite is an intrusive unit located to the south of the Whale Tail deposit. The initial portions of the exploration ramp, including the portal, are expected to be within the Diorite.

- **Greywacke (S3):** The Greywacke is the most common lithology at the Project. This unit hosts the deposit and is also internal to it. The Greywacke is fine to medium grained and can be altered and/or deformed in the vicinity of the mineralized zones. The majority of the exploration ramp will be within the Greywacke.
- **Mafic Volcanics (V3):** The Mafic Volcanics are present along the southern limit of the deposit and primarily consist of basalt. This package has been heavily folded and is characterized by a schistose or chaotic texture. Biotite and chlorite alteration are common within the Mafic Volcanics.

Structurally, the deposit lithologies trend ENE-WSW, which may represent the axis of an anticline or syncline. This is the dominant structural orientation. A series of diffuse ductile structures do exist that trend NE-SW, which offsets both the lithologies and the mineralization. A sub-horizontal set of structures has also been identified during the geomechanical site investigation program.

2.3 HYDRAULIC CONDUCTIVITY TESTING

Eighteen (18) constant head hydraulic conductivity packer tests were completed in six geotechnical boreholes that were drilled during the geomechanical and hydrogeological site investigations undertaken between June 8 and October 4, 2015. The packer testing results suggested relatively low hydraulic conductivities between less than 1×10^{-9} m/s (the achievable precision of the p) and 5×10^{-8} m/s. The results are summarized in Table 1.

Some uncertainty exists as to whether all of the tests were completed in talik due to the preliminary nature of the thermistor data used to define the extent of the talik. Two packer tests were completed in AMQ15-349A that were thought to be completely within the talik. These tests resulted in horizontal conductivity estimates of 1×10^{-8} m/s and 5×10^{-8} m/s.

2.4 PERMAFROST AND TALIK CHARACTERIZATION

Groundwater regimes in permafrost regions are characterized as two systems separated by permafrost; the active layer and the deep regional groundwater system. A talik is a region of unfrozen ground that can form beneath large lakes. Fluids within a talik may remain in a liquid phase at temperatures below zero due to freezing point depression caused by high total dissolved solids (TDS) and hydrostatic pressure. An open talik is one which extends from the lakebed down through the surrounding permafrost to the regional groundwater table. Open taliks form beneath large lakes and represent the primary connecting pathway for groundwater between the active layer and the regional groundwater system.

KP characterized the permafrost and potential for talik formation beneath Whale Tail Lake using the thermistor and hydraulic conductivity data from the geomechanical and hydrogeological site investigation program. The characterization is summarised below:

- The depth to the base of continuous permafrost is expected to be approximately 420 metres below ground surface (mbgs).
- Freezing point depression beneath Whale Tail Lake ranges from -0.23°C beneath the lake to -0.75°C at 420 mbgs. These estimates are based upon an exponential freezing point depression vs. TDS function developed for the Meadowbank Mine (Golder, 2012) and on an exponentially increasing TDS relationship with depth (Golder, 2014) that has been calibrated to the Project TDS data.
- The northwestern end of Whale Tail Lake is shallow and likely overlies permafrost. The northeastern end is deeper and likely overlies a talik. The thermistor data and analytical solutions indicate that the talik below the northeastern end does not connect vertically through to the regional groundwater system. Whale Tail Lake becomes larger to the south of the deposit, and the analyses indicate that it overlies a talik that may connect through to the regional sub-permafrost groundwater system.

3 – CONCEPTUAL HYDROGEOLOGICAL MODEL

The hydrogeological conceptual model at the Project is largely a function of the permafrost and talik characterization completed by KP. Other input data and assumptions used to develop the conceptual model include:

- The vertical and horizontal hydraulic conductivities of the permafrost are assumed to be zero for the purposes of the inflow assessment.
- The horizontal hydraulic conductivity within the Whale Tail Lake talik zone is conservatively estimated to be 1 $x10^{-8}$ m/s based on the results of the packer testing summarized in Table 1.
- The vertical hydraulic conductivity is typically estimated to be considerably less than horizontal hydraulic conductivity (in lieu of sufficient data to indicate otherwise). This relationship may not be valid at the Project, where both stratigraphy and structure are steeply dipping to sub-vertical, and where horizontal flow within talik zones is restricted by the areal extent of the talik. As a result, the vertical hydraulic conductivity was conservatively assumed to be equal to the horizontal hydraulic conductivity (1 $x10^{-8}$ m/s).
- The active layer is estimated to average 3 m thick, with a horizontal hydraulic conductivity of 1 $x10^{-7}$ m/s while thawed. This estimate is based on the thickness of the active layer at other Projects in Northern Canada (Rescan, 2014).
- The available geomechanical data indicate that the bedrock close to surface is weathered and more fractured than the deeper bedrock. This is likely due to successive freeze/thaw cycles. The horizontal hydraulic conductivity of this weathered bedrock cap is estimated to be 1 $x10^{-7}$ m/s within the talik zone and zero within the surrounding permafrost. The thickness of this weathered bedrock cap is estimated to be 30 m.
- In-situ hydraulic head data is not currently available for the deposit. As a result, the direction and magnitude of the hydraulic gradients at the Project are unknown. Hydraulic gradients prior to the development of the open pit are expected to be small, since the lake elevations in the project area are all reasonably similar due to the flat topography.

Key aspects of the hydrogeological regime relevant to the groundwater inflow assessment are summarized below:

- The regional groundwater gradient is controlled by the elevations of large lakes in the area that are connected to the sub-permafrost groundwater system through a series of open taliks.
- Groundwater flow (through taliks from lakes to sub-permafrost groundwater and vice versa) will be along open fractures, faults, and joint systems conduits as defined by the regional structural orientations.

4 – GROUNDWATER INFLOW ESTIMATES

4.1 METHODOLOGY

The inflows to the exploration ramp were estimated using two approaches:

- Steady-state base-case groundwater inflows.
- Transient fault-derived inflows associated with potential faults that may be encountered during the development of the ramp.

The steady state base-case groundwater inflows to the exploration ramp were estimated using the following equation developed by Goodman et al. (1965) in Freeze and Cherry (1971):

$$\mathbf{Q} = \frac{\mathbf{2\pi LKH_o}}{\mathbf{2.3log(2H_o/r)}}$$

Where:

Q = Inflow (L/s)

L = Length of drift (m)

K = Hydraulic conductivity (m/s)

Ho = Depth of drift below initial water table (m)

r = Radius of drift (m)

Key assumptions associated with this approach include:

- Inflows are constant with time (steady-state), and
- Underground workings are in a homogenous, isotopic aquifer system.

Steady-state groundwater inflow is considered a reasonable assumption given the low estimated K_h and K_v values. The approach is considered reasonable for the level of study and the available information; even though the hydrogeologic data collected below Whale Tail Lake indicate the aquifer system is neither homogeneous nor isotropic.

Inflow estimates to the exploration ramp were calculated by simulating the ramp as an inclined cylinder. Inflows were approximated by dividing the inclined cylinder into one-metre, horizontal lengths (L) so that the exploration ramp advances in a stepwise fashion. Inflows increase with each one-metre unit length as the overlying saturated thickness (Ho) increases. Inflows were calculated for all one-metre lengths then summed based on the ramp advance rates provided by AEM (2015a) to estimate a cumulative inflow as the ramp advances.

Transient fault-derived inflows to the ramp were estimated using the following equation developed by Goodman et al. (1965) in Freeze and Cherry (1971):

$$\mathbf{Q(t)} = \left(\frac{\mathbf{8C}}{\mathbf{3}}\mathbf{KH_0^3S_y\,t}\right)^{\mathbf{1/2}}$$

Where:

Q(t) = Inflow (L/s)

C = Constant (-)

K = Hydraulic conductivity (m/s)

H_o = Depth of drift below initial water table (m)

S_y = Specific Yield (-)

t = Time (s)

Transient inflows were calculated to highlight the possibility of encountering water-bearing zones of higher conductivity. The most likely situation is a fault or fracture system which yields high initial inflow rates when encountered that quickly decline as the feature drains. This requires that the fault or fracture system is not hydraulically connected to a surficial recharge source (lake or stream), the possibility of which is reduced in a permafrost environment. Water-bearing structures have not been conclusively identified at the Project to date, but the possibility remains.

Input variables used to calculate steady-state base-case and transient fault derived inflows are summarized in Table 2. Both methods conservatively assumed that the talik extends vertically downward from the edges of Whale Tail Lake to a depth greater than the deepest point reached by the exploration ramp (340 mbgs).

4.2 EXPLORATION RAMP DEVELOPMENT

The depth of the exploration ramp, the rate at which it is developed, and its position relative to permafrost and talik are all important factors in estimating the groundwater inflows to the ramp. The groundwater inflow estimate calculation is based on a schedule developed from information provided by AEM (2015a), and summarized in Table 2.

The ramp has been divided into sections to account for changes in the annual ramp development rates and to acknowledge when the ramp intersects the talik. Inflows to the ramp are expected to begin once the ramp encounters the talik below Whale Tail Lake, conservatively assumed to be directly below the shoreline of the lake. A schematic plan and cross-section of the exploration ramp development detailed in Table 2 are provided on Figure 1.

4.3 EXPLORATION RAMP GROUNDWATER INFLOW ESTIMATES

The groundwater inflow estimates are provided per elapsed day of ramp development and per quarter on Figure 2. The base-case inflows are low due to the low bulk hydraulic conductivity. Base-case inflows increase as the ramp is developed in talik and remain constant while the ramp is developed in the surrounding permafrost. The base-case inflows reach a maximum of 0.16 m^3/day in Q2 2019.

Two hypothetical fault-derived inflows are illustrated on Figure 2. The first case considers a fault encountered in Q4 2018 during the advancement of Ramp Section C. The second case considers a fault encountered in Q2 2019 during the advancement of Ramp Section G. The greater depth of the fault encountered in Section G results in an initial inflow of approximately 5 times greater than the fault encountered in Section C (8 m^3/day and 38 m^3/day, respectively). Inflows of the Section C and G faults reduce to less than 1 m^3/day in 25 and approximately 180 days, respectively as a result of the low storage in the faulted rock. These hypothetical fault inflows are considerably larger than the base-case inflows. The results suggest that any encountered water-bearing features are likely to be responsible for the bulk of the inflows.

5 – TOTAL DISSOLVED SOLIDS OF GROUNDWATER INFLOWS

Talik groundwater in permafrost environments often contains elevated concentrations of dissolved solids. The concentration of total dissolved solids (TDS) in talik groundwater below Whale Tail Lake is presently not well defined. As a result, data from other northern projects were reviewed, including data compiled by Frape and Fritz in 1987 and data from the Diavik Mine, Meadowbank Mine and Meliadine Project (Golder 2014). The data is shown on Figure 3.

The TDS concentration data range over several orders of magnitude, though at all of the projects the TDS concentrations increase with depth. Based on the data, a range of TDS concentrations may be expected during the development of the exploration ramp. The highest TDS concentrations are expected to be associated with the groundwater inflow at the deepest point of the exploration ramp, (i.e., the end of Section G).

The TDS data for the Meadowbank Mine are considered most relevant to the current study given the close proximity of the Meadowbank Mine to the Project, and the similarities in the permafrost conditions and regional geology between the two sites. Both sites are underlain by the same sequence of Archean supra crustal rocks of the Woodburn Lake Group (AEM, 2015c).

The relationship between TDS and depth developed for the Meadowbank Mine suggests that TDS concentrations will range from approximately 1,000 mg/L at a depth of 220 mbgs to 1,700 mg/L at a depth of 340 mbgs (Figure 3). The TDS concentrations estimated using the TDS vs depth relationship are typically higher than the actual concentrations measured at the mine (AEM, 2015d). As such, the estimated TDS values may be conservative.

6 – CONCLUSIONS

The cumulative base-case inflow at the end of exploration ramp development is estimated to be 0.16 m^3/day.

Inflows from fault or fracture systems are expected to constitute the main inflow to the exploration ramp if they are encountered. These inflows will increase proportionally with the depth at which the feature is encountered (all other variables being equal). The most likely scenario is that inflows from these features will quickly reduce as the water stored in the feature drains out. Water-bearing structures have not been conclusively identified at the Project to date.

The concentration of TDS in the inflows was estimated from the TDS vs. depth relationship for the Meadowbank Mine. The TDS concentration is expected to increase with depth and could range from 1,000 mg/L to 1,700 mg/L. This estimate is based on a TDS vs. Depth relationship developed for the Meadowbank Mine.

We trust this letter meets your present needs. Please do not hesitate to contact the undersigned should further information be required.

Prepared: Eric Westberg, M.Sc., GIT
Staff Hydrogeologist

Reviewed: Ben Green, M.Sc., P.Geo.
Senior Hydrogeologist

PROFESSIONAL PROVINCE OF BRITISH COLUMBIA M. B. GREEN # 40812 GEOSCIENTIST
23 November 2015

Approval that this document adheres to Knight Piésold Quality Systems:

Attachments:

Table 1 Rev 0	Drillhole Packer Testing Summary
Table 2 Rev 0	Exploration Ramp Development Schedule
Table 3 Rev 0	Summary of Calculation Input Parameters
Figure 1 Rev 0	Base Groundwater Inflow Calculation Plan and Cross-Section Schematic
Figure 2 Rev 0	Base and Drainable Fault Derived Groundwater Inflows
Figure 3 Rev 0	Groundwater TDS Values Versus Depth From Regional TDS Data

References:

Agnico Eagle Mines Ltd. 2014. *Preliminary Structural Interpretation and Possible Exploration Implications*. PowerPoint Presentation provided by Patrice Barbe, February 18, 2015.

Agnico Eagle Mines Ltd. 2015a. Updated Exploration Ramp and Development Schedule. Provided to KP October 22, 2015.

Agnico Eagle Mines Ltd. 2015b. Lithology and Structural Model. Provided to KP September 29, 2015.

AEM, 2015c. Geology and Mineralization: Agnico Eagle Amaruq website. http://www.agnicoeagle.com/en/Exploration/Advanced-Projects/Amaruq/Pages/default.aspx. Accessed November 2015.

AEM, 2015d. *Meadowbank Gold Mine - 2014 Groundwater Monitoring Report*. In Accordance with NWB Water License 2AM-MEA0815 and NIRB Project Certificate No. 004 and prepared by: Agnico Eagle Mines Limited - Meadowbank Division. March 2015.

Burn, C., R. 2002. Tundra Lakes and Permafrost, Richards Island, Western Arctic Coast, Canada. Canadian Journal of Earth Science vol. 39, pp 1281-1298.

Freeze, R., A., Cherry, J., A. 1971. Groundwater. Prentice-Hall, Inc. Englewood Cliffs, New Jersey.

Golder Associates Ltd. 2012. SD 6-1 Permafrost Thermal Regime Baseline Studies – Meliadine Gold Project, Nunavut. Prepared for Agnico Eagle Mines Ltd.

Golder Associates Ltd. 2014. Final Environmental Impact Statement (FEIS) – Meliadine Gold Project: Volume 7.0 Freshwater Environment. Prepared for Agnico Eagle Mines Ltd.

Groupe Conseil Nutshimit-Nippour, 2015. Bathymetry of Whale Tail Lake. http://sdei.ca/accueil. Accessed November 2015.

Rescan Environmental Services Ltd. 2014. Back River Project: Cumulative Permafrost Baseline Data Report (2007 to May 2014). Prepared for Sabina Gold and Silver Corp.

/ew

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TABLE 1

AGNICO EAGLE MINES LTD. MEADOWBANK DIVISION
WHALE TAIL LAKE EXPLORATION RAMP

GROUNDWATER INFLOWS TO THE EXPLORATION RAMP
DRILLHOLE PACKER TESTING SUMMMARY

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Planning Drillhole Name	Actual Drillhole Name	Surveyed Drillhole Details[2]						Hydraulic Testing			
		Collar Coordinates[1]			Azimuth	Dip	Final Length	Along-Hole Packer Testing Interval		Constant Head Test Results[3]	Test Interval Lithology
		Easting	Northing	Elevation							
		(m)	(m)	(m)	(°)	(°)	(m)	From (m)	To (m)	(m/s)	
KP15-01A	AMQ15-326A	606,430.9	7,255,330.8	10,154.6	287	-58	180	160.3	180.0	No Take	ULTRAMAFIC
KP15-02	AMQ15-316	606,655.1	7,255,428.2	10,154.1	7	-54	189	181.3	189.0	< 1 x10^{-9}	GREYWACKE
KP15-04	AMQ15-349A	607,064.9	7,255,627.5	10,155.3	204	-45	203	97.3	141.0	5 x10^{-8}	GREYWACKE, ALTERED ULTRAMAFICS
								136.3	180.0	1 x10^{-8}	GREYWACKE, ALTERED ULTRAMAFICS
								178.3	202.5	< 1 x10^{-9}	GREYWACKE, ALTERED ULTRAMAFICS
KP15-05	AMQ15-306	606,714.8	7,255,363.8	10,154.9	96	-45	201	52.3	100.5	< 1 x10^{-9}	GREYWACKE
								103.3	162.0	< 1 x10^{-9}	GREYWACKE
								178.3	201.0	< 1 x10^{-9}	GREYWACKE
KP15-07	AMQ15-294	607,073.2	7,255,676.1	10,155.9	323	-45	221	100.3	150.0	1 x10^{-9}	ULTRAMAFICS, ALTERED ULTRAMAFICS, QUARTZ VEINS
								201.8	220.5	9 x10^{-9}	GREYWACKE
KP15-09	AM15-452	606,627	7,255,688	10,156	160	-50	501	127.3	177.0	< 1 x10^{-9}	GREYWACKE
KP15-10	AMQ15-421	607,098	7,255,491	10,155	274	-51	501	94.3	150.0	1 x10^{-9}	DIORITE, GREYWACKE, ALTERED ULTRAMAFICS
								148.3	201.0	< 1 x10^{-9}	ALTERED MAFICS
								199.3	225.0	< 1 x10^{-9}	ALTERED ULTRAMAFICS
								298.3	330.0	1 x10^{-9}	ULTRAMAFICS
								328.3	455.6	< 1 x10^{-9}	ULTRAMAFICS
								469.3	501.0	< 1 x10^{-9}	GRAPHIC CHERT

I:\1\01\00622\04\A\Correspondence\VA15-03337 - Exploration Ramp GWQ and Inflows\3. Final\Tables\[Table 1.xlsx]Table 1 Packer Testing Summary

NOTES:

1. COLLAR COORDINATES SURVEYED AND PROVIDED BY AEM. COORDINATES ARE IN UTM ZONE 14W; ELEVATIONS ARE TRANSLATED FROM THE MINE GRID.
2. REPORTED AZIMUTH AND DIPS ARE THE DRILLHOLE AVERAGE.
3. 1 x10^{-9} m/s IS LOWER LIMIT OF SWiPS PACKER TESTING PRECISION.

0	19NOV'15	ISSUED WITH MEMO VA15-03337	REW	MBG
REV	DATE	DESCRIPTION	PREP'D	RVW'D

Knight Piésold CONSULTING

TABLE 2

AGNICO EAGLE MINES LTD. MEADOWBANK DIVISION
WHALE TAIL LAKE EXPLORATION RAMP

GROUNDWATER INFLOWS TO THE EXPLORATION RAMP
EXPLORATION RAMP DEVELOPMENT SCHEDULE

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<table>
<tr><th rowspan="2">Year</th><th rowspan="2">Quarter</th><th>Development Rate[1]</th><th>Development Length[2]</th><th rowspan="2">Development Section</th><th>Section Length</th><th rowspan="2">Section Description</th></tr>
<tr><th>(m/day)</th><th>(m)</th><th>(m)</th></tr>
<tr><td rowspan="4">2017</td><td>Q1</td><td>N/A</td><td>0</td><td rowspan="3">A</td><td rowspan="3">N/A</td><td rowspan="3">Portal Developed</td></tr>
<tr><td>Q2</td><td>N/A</td><td>0</td></tr>
<tr><td>Q3</td><td>N/A</td><td>0</td></tr>
<tr><td>Q4</td><td>4.44</td><td>400</td><td rowspan="5">B</td><td rowspan="5">1458</td><td rowspan="5">Permafrost</td></tr>
<tr><td rowspan="5">2018</td><td>Q1</td><td>3.33</td><td>300</td></tr>
<tr><td>Q2</td><td>3.33</td><td>300</td></tr>
<tr><td>Q3</td><td>3.33</td><td>300</td></tr>
<tr><td rowspan="2">Q4</td><td rowspan="2">3.33</td><td rowspan="2">300</td></tr>
<tr><td>C</td><td>142</td><td>Enter Talik</td></tr>
<tr><td rowspan="11">2019</td><td rowspan="4">Q1</td><td rowspan="4">10</td><td rowspan="4">900</td><td>D</td><td>81</td><td>Talik</td></tr>
<tr><td>E</td><td>102</td><td>Talik</td></tr>
<tr><td>F</td><td>677</td><td>Permafrost</td></tr>
<tr><td rowspan="2">G</td><td rowspan="2">103</td><td rowspan="2">Re-enter Talik</td></tr>
<tr><td rowspan="5">Q2</td><td rowspan="5">10</td><td rowspan="5">900</td></tr>
<tr><td>H</td><td>41</td><td>Talik</td></tr>
<tr><td>I</td><td>114</td><td>Talik</td></tr>
<tr><td>J</td><td>41</td><td>Talik</td></tr>
<tr><td rowspan="3">K</td><td rowspan="3">2441</td><td rowspan="3">Permafrost</td></tr>
<tr><td>Q3</td><td>10</td><td>900</td></tr>
<tr><td>Q4</td><td>10</td><td>900</td></tr>
<tr><td colspan="3">Total Meterage:</td><td>5200</td><td></td><td>5200</td><td></td></tr>
</table>

I:\1\01\00622\04\A\Correspondence\VA15-03337 - Exploration Ramp GWQ and Inflows\3. Final\Tables\[Table 2.xlsx]Table 2 - Development Schedule

NOTES:

1. DEVELOPMENT RATE PROVIDED BY AEM 2015b.
2. DEVELOPMENT LENGTHS PROVIDED BY AEM 2015b.
3. TALIK INTERSECTION LOCATIONS ESTIMATED FROM EXPLORATION RAMP MODEL IN SURPAC.
4. TALIK IS CONSERVATIVELY ASSUMED TO EXTEND FROM LAKE EDGES TO BELOW DEEEPEST POINT OF EXPLORATION RAMP.

0	19NOV'15	ISSUED WITH MEMO VA15-03337	REW	MBG
REV	DATE	DESCRIPTION	PREP'D	RVW'D

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TABLE 3

AGNICO EAGLE MINES LTD. MEADOWBANK DIVISION
WHALE TAIL LAKE EXPLORATION RAMP

GROUNDWATER INFLOWS TO THE EXPLORATION RAMP
SUMMARY OF CALCULATION INPUT PARAMETERS

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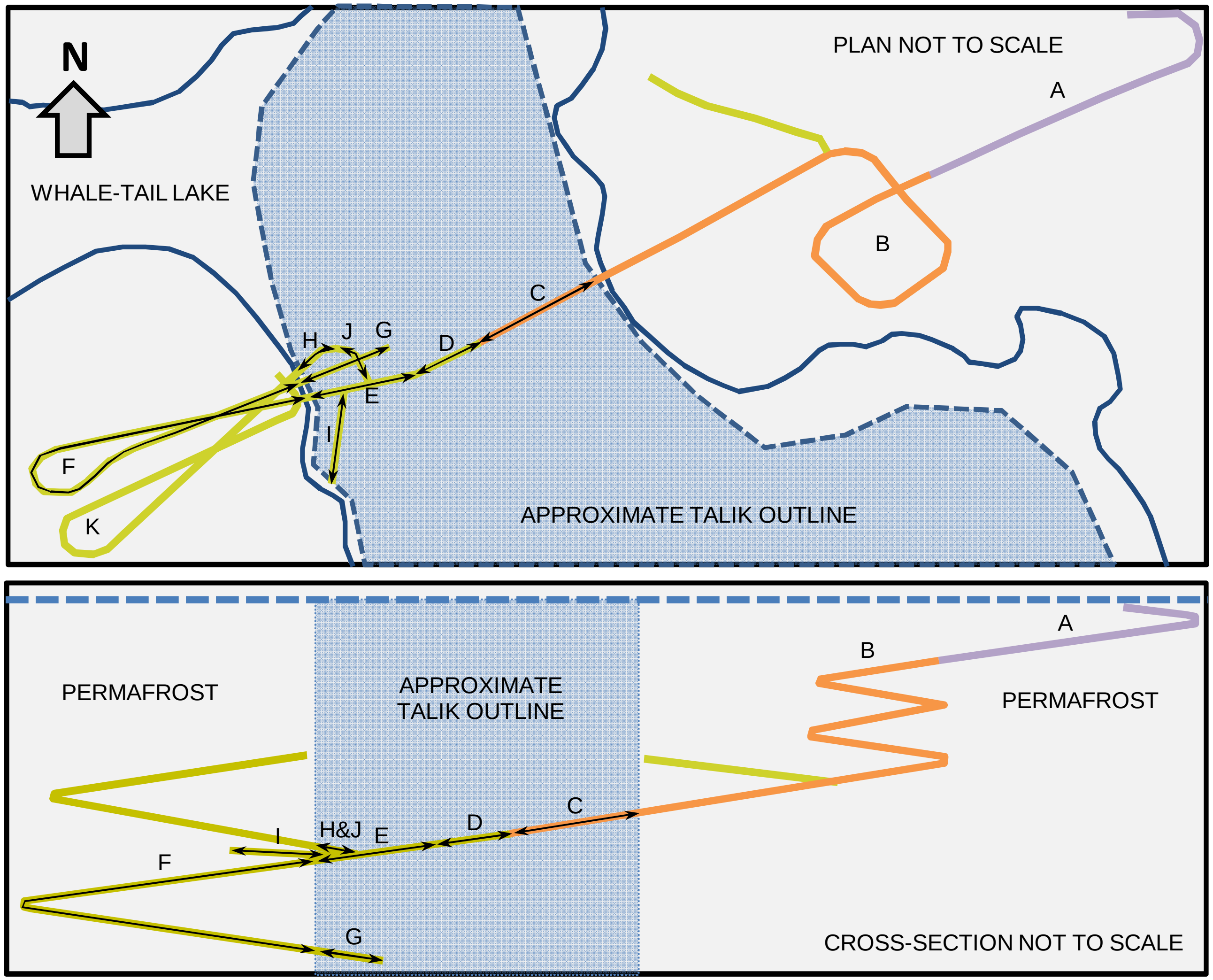
INPUT USE	DESCRIPTION	VARIABLE	VALUE	UNIT[1]	SOURCE[2]
Steady-state Base-case Inflow Calculation	Base-case Inflow Hydraulic Conductivity	$K_{(bc)}$	1×10^{-8}	m/s	KP Packer Testing Results
	Ramp Height	H	5.2	m	AEM (2015b)
	Ramp Width	W	5.2	m	AEM (2015b)
	Ramp Incline	θ	5.7 - 7.7	°	AEM (2015b)
	2017 Ramp Advance Rate	-	400	m/Qtr	AEM (2015b)
	2018 Ramp Advance Rate	-	300	m/Qtr	AEM (2015b)
	2019 Ramp Advance Rate	-	900	m/Qtr	AEM (2015b)
	Water Table	-	0	mbgs	Estimated
	Ramp Intersection with Talik	-	1459	m (along ramp)	Estimated
	Length of Quarter	-	90	days	n/a
Transient Fault Inflow Calculation	Fault Derived Hydraulic Conductivity	$K_{(F)}$	1×10^{-6}	m/s	Hypothetical
	Specific Yield	-	0.02	n/a	Hypothetical
	Fault Width	w_F	0.05	m	Hypothetical

I:\1\01\00622\04\A\Correspondence\VA15-03337 - Exploration Ramp GWQ and Inflows\3. Final\Figures\[Figure 1, 2, Table 3.xlsx]Table 3 - Input Summary

NOTES:

1. m/s = METERS PER SECOND; m = METERS; ° = DEGREES; m/Qtr = METERS PER QUARTER; mbgs = METERS BELOW GROUND SURFACE; n/a = NOT APPLICABLE.

0	19NOV'15	ISSUED WITH MEMO VA15-03337	REW	MBG
REV	DATE	DESCRIPTION	PREP'D	RVW'D



EXPLORATION RAMP DEVELOPMENT

- 2017
- 2018
- 2019

EXPLORATION RAMP SECTIONS[2]

C = 142 m

D = 80 m

E = 102 m

F = 630 m

G = 102 m

H = 41 m

I = 114 m

J = 41 m

NOTES:

1. PLAN AND SECTION SCHEMATICS BASED ON SCREENSHOTS PROVIDED BY AEM OCTOBER 21 2015.
2. SECTION LENGTHS MEASURED OFF SCREENSHOTS PROVIDED BY AEM OCTOBER 21 2015.
3. AREAL AND VERTICAL EXTENT OF TALIK UNDERLYING WHALE-TAIL LAKE IS CONSERVATIVELY ESTIMATED FOR THE INFLOWS CALCULATION. TALIK MAY NOT EXTEND TO LAKE EDGE OR TO THE BOTTOM OF THE EXPLORATION RAMP.
4. CALCULATIONS AND YEAR QUARTERS ARE BASED ON A 30-DAY MONTH.

0	19NOV'15	ISSUED WITH MEMO	REW	MBG
REV	DATE	DESCRIPTION	PREP'D	RVW'D

AGNICO EAGLE MINES LTD. MEADOWBANK DIVISION

WHALE TAIL LAKE EXPLORATION RAMP

BASE GROUNDWATER INFLOW CALCULATION
PLAN AND CROSS-SECTION SCHEMATIC

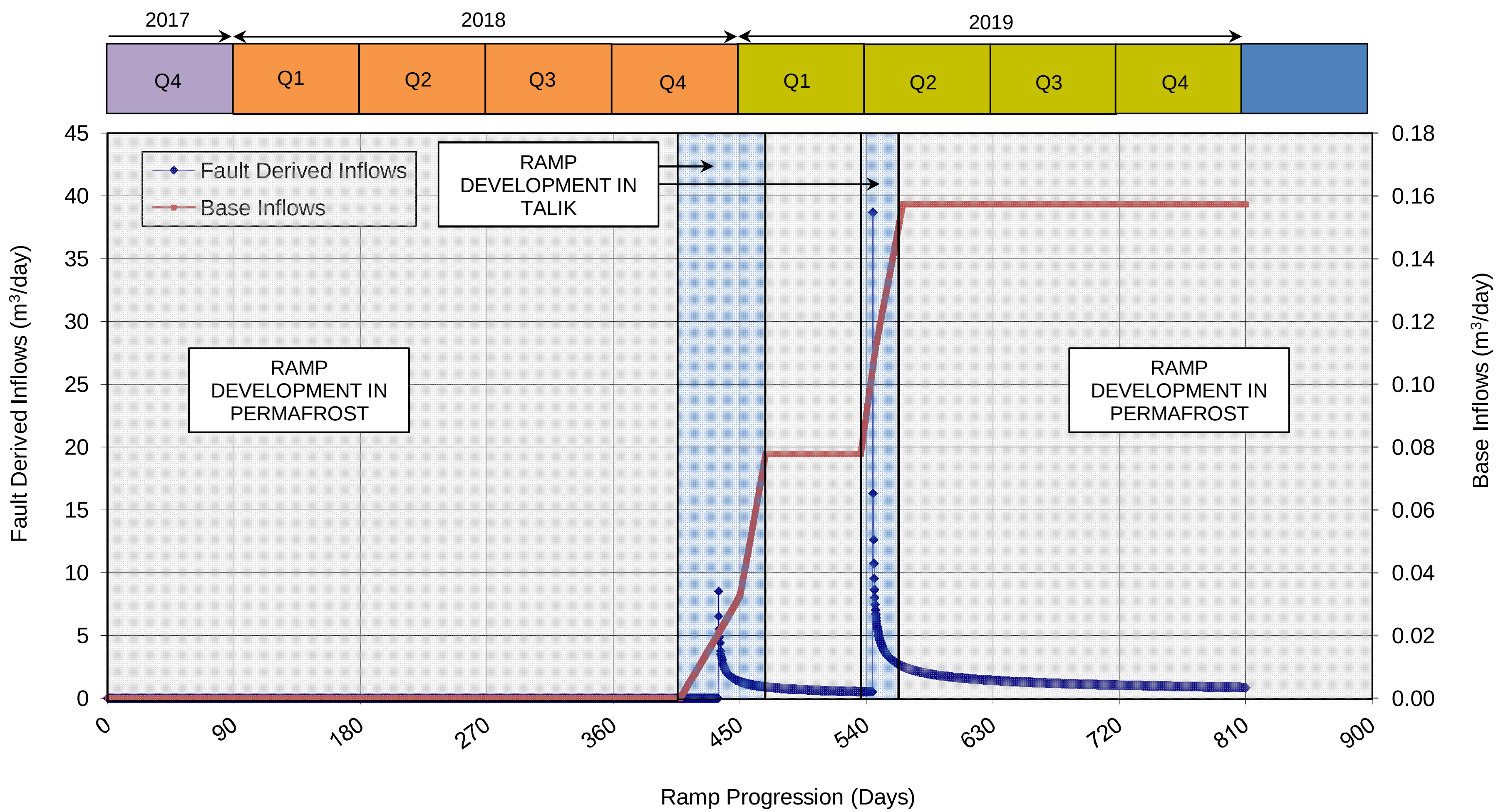
Knight Piésold CONSULTING

P/A NO. NB101-622/04

REF. NO. VA15-03337

FIGURE 1

REV 0



NOTES:
1. BASE AND FAULT DERIVED INFLOWS CALCULATED FROM INPUTS SUMMARIZED IN TABLE 2.
2. FAULT DERIVED INFLOWS ARE HYPOTHETICAL AND MAY NOT BE ENCOUNTERED.
3. CALCULATIONS AND YEAR QUARTERS ARE BASED ON A 30-DAY MONTH.

0	19NOV'15	ISSUED WITH MEMO	REW	MBG
REV	DATE	DESCRIPTION	PREP'D	RVW'D

AGNICO EAGLE MINES LTD. MEADOWBANK DIVISION

WHALE TAIL LAKE EXPLORATION RAMP

BASE AND DRAINABLE FAULT DERIVED GROUNDWATER INFLOWS

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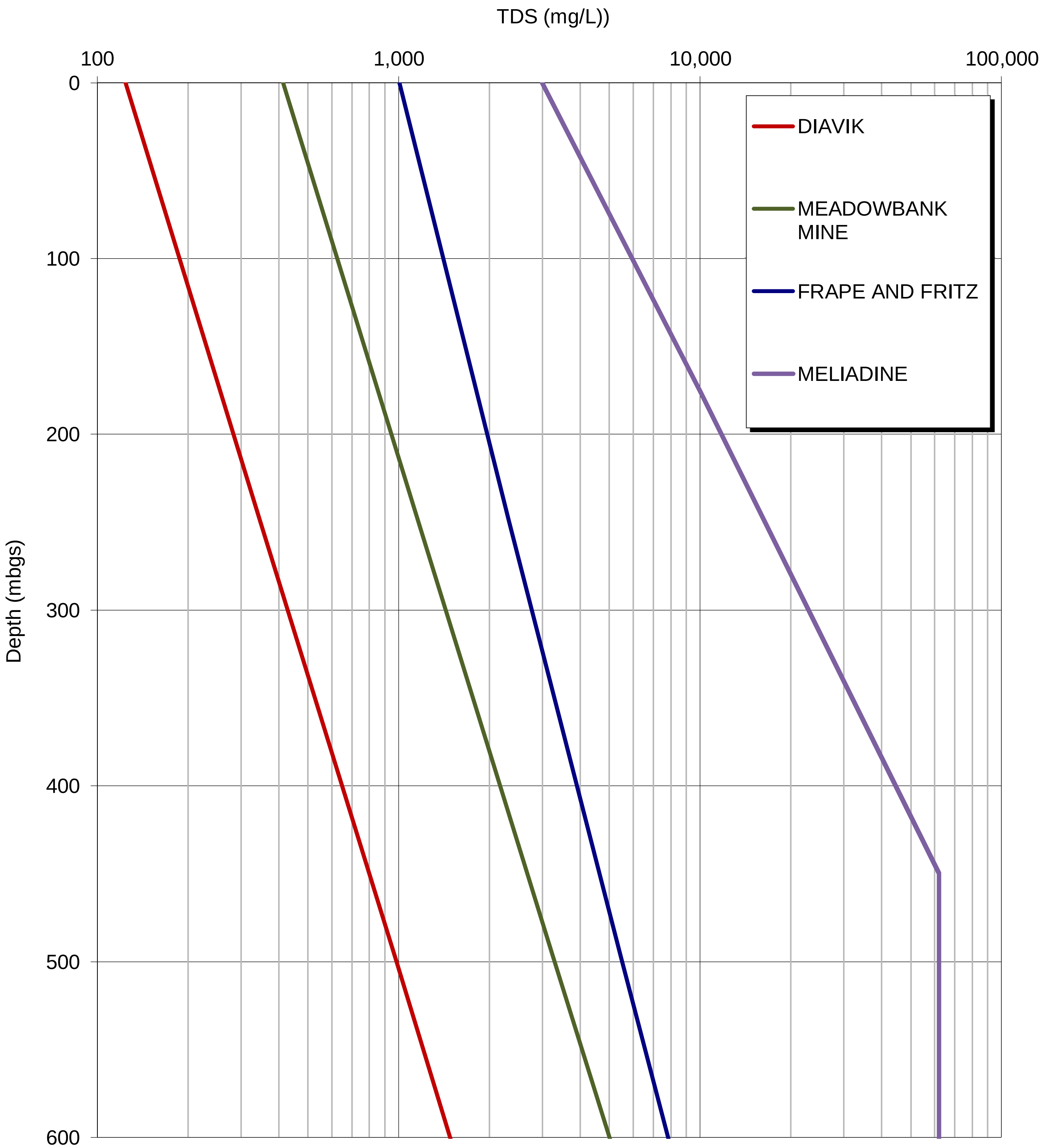
P/A NO. NB101-622/04

REF. NO. VA15-03337

FIGURE 2

REV 0



NOTES:

1. PROJECT TDS VS DEPTH FUNCTIONS BASED ON BEST FIT TRENDLINES FROM GOLDER (2014).

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	19NOV'15	ISSUED WITH MEMO	REW	JEM

AGNICO EAGLE MINES LTD. MEADOWBANK DIVISION

WHALE TAIL LAKE EXPLORATION RAMP

GROUNDWATER TDS VALUES VERSUS DEPTH FROM REGIONAL TDS DATA

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P/A NO.	REF. NO.
NB101-622/04	VA15-03337

FIGURE 3 REV 0

Appendix C. Water Quality Results taken from Portts, C and Associates. 2015. Amaruq Lakes 2014 Aquatic Field Investigations

Table 15. Sediment characteristics from the sampling locations in three Amaruq lakes.

Lake	Nemo	Nemo	Nemo	Whale Tail	Whale Tail	Whale Tail	Mammoth	Mammoth	Mammoth	duplicate Mammoth
Sampling Location	**1**	**3**	**5**	**1**	**3**	**5**	**1**	**3**	**5**	**5**
Date Sampled (dd/mm/yy)	06/09/14	06/09/14	06/09/14	05/09/14	05/09/14	05/09/14	04/09/14	04/09/14	04/09/14	04/09/14
% Moisture	88.7	30.7	80.2	87.7	86.4	86.8	90.5	88.8	90.5	90.1
pH (1:2 soil:water)	5.48	6.32	5.91	6.19	5.07	6.03	5.68	5.88	6.04	5.74
Particle Size										
% Gravel (>2mm)	<0.10	6.30	0.94	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
% Sand (2.0mm - 0.063mm)	18.6	68.0	49.9	12.3	1.50	0.85	0.11	0.20	0.15	0.21
% Silt (0.063mm - 4um)	75.7	25.1	46.0	74.7	79.9	79.6	84.3	83.5	84.4	83.3
% Clay (<4um)	5.74	0.58	3.17	13.1	18.6	19.6	15.6	16.3	15.4	16.5
Texture	Silt loam	Loamy sand	Sandy loam	Silt loam	Silt loam	Silt loam	Silt loam	Silt loam	Silt loam	Silt loam
Total Organic Carbon (mg/L)	6.59	0.26	3.26	7.04	4.67	5.80	9.62	6.95	9.28	9.34
Metals (mg/L)										
Aluminum (Al)	11600	6390	9850	18800	19200	19900	21500	28500	20000	22400
Antimony (Sb)	0.37	<0.10	0.44	0.31	0.23	0.22	0.37	0.38	0.41	0.39
Arsenic (As)	24.6	11.3	16.8	50.7	151	8.58	70.5	158	54.9	56.7
Barium (Ba)	63.9	22.7	63.5	116	134	134	142	213	155	159
Beryllium (Be)	0.68	0.27	0.58	1.26	1.54	1.46	1.41	1.91	1.46	1.48
Bismuth (Bi)	0.22	<0.20	0.21	0.39	0.59	0.54	0.52	0.76	0.59	0.56
Cadmium (Cd)	0.221	<0.050	0.384	0.407	0.346	0.465	0.422	0.606	0.542	0.554
Calcium (Ca)	2690	1430	1940	3040	1850	2780	2530	2610	2980	3060
Chromium (Cr)	112	66.0	86.6	210	79.9	78.9	174	211	163	168
Cobalt (Co)	7.57	7.18	6.03	15.2	13.1	8.68	12.1	16.2	12.1	12.0
Copper (Cu)	39.2	7.06	37.5	48.5	48.7	52.8	75.5	117	88.1	88.5
Iron (Fe)	19400	15800	16000	33600	90000	22700	35100	53100	32200	32700
Lead (Pb)	7.38	3.27	6.81	10.8	13.1	13.5	17.0	24.4	19.2	18.6
Lithium (Li)	12.8	7.9	11.0	17.9	15.6	19.4	17.1	22.2	18.6	18.0
Magnesium (Mg)	7170	5250	5640	10400	6850	7440	9980	12000	9310	10100
Manganese (Mn)	210	408	194	436	622	267	307	583	309	322

Lake	Nemo	Nemo	Nemo	Whale Tail	Whale Tail	Whale Tail	Mammoth	Mammoth	Mammoth	duplicate Mammoth
Sampling Location	**1**	**3**	**5**	**1**	**3**	**5**	**1**	**3**	**5**	**5**
Mercury (Hg)	0.0111	<0.0050	0.0094	0.0533	0.0499	0.0383	0.0589	0.0519	0.0487	0.0499
Molybdenum (Mo)	2.64	<0.50	2.13	2.61	3.33	1.97	4.30	5.05	4.07	4.01
Nickel (Ni)	78.6	36.9	83.8	109	81.4	76.0	123	194	127	126
Phosphorus (P)	504	345	375	675	2270	756	632	1220	871	721
Potassium (K)	1310	650	1090	2040	2410	2420	2860	3840	2900	3110
Selenium (Se)	0.54	<0.20	0.50	0.72	1.02	0.71	0.90	1.41	0.95	1.06
Silver (Ag)	0.13	<0.10	0.15	0.29	0.32	0.37	0.46	0.55	0.54	0.54
Sodium (Na)	<100	<100	<100	160	180	160	160	210	150	190
Strontium (Sr)	26.1	17.4	20.0	23.3	21.9	25.1	18.3	21.0	20.6	21.9
Thallium (Tl)	0.091	<0.050	0.088	0.194	0.211	0.152	0.302	0.383	0.330	0.322
Tin (Sn)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Titanium (Ti)	325	245	237	529	497	458	509	744	556	654
Uranium (U)	4.35	1.64	4.18	9.94	12.1	12.7	13.3	18.3	14.8	14.0
Vanadium (V)	23.7	14.0	19.4	36.7	28.5	27.1	41.7	56.0	41.5	43.6
Zinc (Zn)	63.3	25.2	54.1	105	112	99.2	141	154	147	153

Table 16. Concentrations of mineral oil and grease, hydrocarbons and PAHs in composite sediment samples from Mammoth and Whale Tail Lakes.

Lake	Nemo	Mammoth	Mammoth Duplicate	Whale Tail
Date Sampled (dd/mm/yy)	**06/09/14**	**04/09/14**	**04/09/14**	**05/09/14**
% Moisture	77.2	89.3	89.2	84.8
Aggregate Organics				
Mineral Oil and Grease	720	1690	960	1150
Hydrocarbons				
EPH10-19	<800	<800	<800	<540
EPH19-32	<800	<800	<800	<540
LEPH	<800	<800	<800	<540
HEPH	<800	<800	<800	<540
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	<0.0050	<0.0050	<0.0050	<0.0050
Acenaphthylene	<0.0050	<0.0050	<0.0050	<0.0050
Anthracene	<0.0040	<0.0040	<0.0040	<0.0040
Benz(a)anthracene	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	<0.010	<0.010	<0.010	<0.010
Benzo(b+j+k)fluoranthene	<0.015	<0.015	<0.015	<0.015
Benzo(g,h,i)perylene	<0.010	<0.010	<0.010	<0.010
Benzo(k)fluoranthene	<0.010	<0.010	<0.010	<0.010
Chrysene	<0.010	<0.010	<0.010	<0.010
Dibenz(a,h)anthracene	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene	<0.010	<0.010	<0.010	<0.010
Fluorene	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-c,d)pyrene	<0.010	<0.010	<0.010	<0.010
2-Methylnaphthalene	<0.010	<0.010	<0.010	<0.010
Naphthalene	<0.010	<0.010	<0.010	<0.010
Phenanthrene	<0.010	<0.010	<0.010	<0.010
Pyrene	<0.010	<0.010	<0.010	<0.010
Surrogate: Acenaphthene d10	87.6	95.0	95.0	88.8
Surrogate: Chrysene d12	106.9	99.3	108.4	83.8
Surrogate: Naphthalene d8	86.5	91.6	90.8	84.6
Surrogate: Phenanthrene d10	97.6	94.4	99.7	83.8
B(a)P Total Potency Equivalent	<0.020	<0.020	<0.020	<0.020
IACR (CCME)	<0.15	<0.15	<0.15	<0.15

Table 9. Sampling date and analytical results for physical parameters, anions and nutrients, cyanide, organic carbon and chlorophyll A in water samples from three Amaruq akes. Units are mg/L except for pH, conductivity (µS/cm), turbidity (NTU) and chlorophyll A (µg/L).

Lake	Nemo	Nemo	Nemo	Whale Tail	Whale Tail	Whale Tail	Mammoth	Mammoth	Mammoth	duplicate Mammoth	Equip. Blank
Sampling Location	1	3	5	1	3	5	1	3	5	5	
Date Sampled (dd/mm/yy)	06/09/14	06/09/14	06/09/14	05/09/14	05/09/14	05/09/14	04/09/14	04/09/14	04/09/14	04/09/14	04/09/14
Conductivity	24.7	24.8	24.6	20.9	17.4	17.2	22.5	20.0	20.4	20.8	<2.0
Hardness (as CaCO3)	9.31	9.96	10	8.17	6.65	6.55	8.14	8.04	7.97	7.79	<0.50
pH	7.11	7.11	7.11	6.99	6.91	6.92	7.17	6.83	7.14	6.76	5.58
Total Suspended Solids	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0
Total Dissolved Solids	22	20	21	20	14	21	21	22	17	20	<10
Turbidity	0.28	0.28	0.25	0.38	0.40	0.39	0.49	0.40	0.42	0.39	<0.10
Alkalinity, Bicarbonate (as CaCO3)	7.1	7.0	6.9	5.5	4.7	4.7	5.8	4.4	5.7	4.0	<1.0
Alkalinity, Carbonate (as CaCO3)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Hydroxide (as CaCO3)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	7.1	7.0	6.9	5.5	4.7	4.7	5.8	4.4	5.7	4.0	<1.0
Ammonia, Total (as N)	<0.0050	0.0059	<0.0050	<0.0050	0.101	0.0212	0.0346	0.0288	0.0260	0.0165	<0.0050
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.55	0.55	0.55	0.93	0.72	0.73	0.86	0.69	0.69	0.69	<0.10
Fluoride (F)	0.026	0.026	0.027	0.034	0.031	0.033	0.033	0.032	0.032	0.030	<0.020
Nitrate (as N)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Orthophosphate-Dissolved (as P)	<0.0010	<0.0010	<0.0010	0.0018	<0.0010	<0.0010	0.0013	0.0013	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0021	<0.0020	<0.0020
Phosphorus (P)-Total	0.0030	<0.0020	<0.0020	<0.0020	0.0833	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicate (as SiO2)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.64	<0.50	0.51	0.57	<0.50
Sulfate (SO4)	3.30	3.30	3.29	2.59	1.61	1.64	2.88	2.84	2.83	2.80	<0.50
Cyanide, Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, Free	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Organic Carbon	2.16	2.14	2.11	2.75	2.43	2.82	2.61	2.26	2.19	2.25	0.83
Total Organic Carbon	1.90	1.89	1.95	2.57	2.74	2.59	2.30	2.07	1.93	1.87	<0.50
Chlorophyll a	0.250	0.265	0.247	0.289	0.379	0.552	0.335	0.356	0.335	0.369	

Table 10. Dissolved metal concentrations in water samples from three Amaruq Lakes. All units are mg/L.

Lake	Nemo	Nemo	Nemo	Whale Tail	Whale Tail	Whale Tail	Mammoth	Mammoth	Mammoth	duplicate Mammoth	Equip. Blank
Sampling Location	1	3	5	1	3	5	1	3	5	5	
Date Sampled (dd/mm/yy)	06/09/14	06/09/14	06/09/14	05/09/14	05/09/14	05/09/14	04/09/14	04/09/14	04/09/14	04/09/14	04/09/14
Aluminum (Al)	0.0050	0.0033	0.0047	0.0079	0.0087	0.0106	0.0101	0.0057	0.0060	0.0066	0.0018
Antimony (Sb)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)	0.00029	0.00027	0.00032	0.00030	0.00019	0.00017	0.00047	0.00042	0.00039	0.00040	<0.00010
Barium (Ba)	0.00369	0.00372	0.00367	0.00325	0.00271	0.00268	0.00353	0.00350	0.00354	0.00349	0.000099
Beryllium (Be)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)	2.14	2.26	2.27	1.99	1.52	1.50	1.96	1.96	1.94	1.91	<0.050
Chromium (Cr)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)	0.00024	0.00024	0.00023	0.00040	0.00037	0.00039	0.00050	0.00042	0.00039	0.00038	<0.00020
Iron (Fe)	<0.010	<0.010	<0.010	0.019	0.016	0.019	0.015	0.012	0.011	0.010	<0.010
Lead (Pb)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000468
Lithium (Li)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium (Mg)	0.97	1.05	1.06	0.78	0.69	0.68	0.79	0.76	0.76	0.73	<0.10
Manganese (Mn)	0.00120	0.00108	0.00156	0.00269	0.00108	0.00113	0.00107	0.000981	0.000988	0.000919	0.000114
Mercury (Hg)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel (Ni)	<0.00050	<0.00050	<0.00050	0.00061	<0.00050	<0.00050	0.00062	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus (P)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)	0.50	0.55	0.60	0.44	0.36	0.36	0.49	0.51	0.53	0.53	<0.10
Selenium (Se)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)	0.194	0.219	0.207	0.297	0.307	0.312	0.370	0.329	0.329	0.315	<0.050
Silver (Ag)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)	0.475	0.468	0.473	0.518	0.528	0.529	0.516	0.499	0.497	0.501	<0.050
Strontium (Sr)	0.00951	0.00949	0.00952	0.00863	0.00701	0.00702	0.00792	0.00762	0.00753	0.00753	<0.00020
Sulfur (S)	1.18	1.12	1.09	0.91	0.58	0.57	0.97	1.02	0.93	0.98	<0.50
Thallium (Tl)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010

Lake	Nemo	Nemo	Nemo	Whale Tail	Whale Tail	Whale Tail	Mammoth	Mammoth	Mammoth	duplicate Mammoth	Equip. Blank
Sampling Location	**1**	**3**	**5**	**1**	**3**	**5**	**1**	**3**	**5**	**5**	
Tin (Sn)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)	0.000011	<0.000010	<0.000010	0.000032	0.000035	0.000034	0.000028	0.000022	0.000020	0.000022	<0.000010
Vanadium (V)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)	0.0014	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Table 11. Total metals in water samples collected from three Amaruq Lakes. All units are mg/L.

Lake	**Nemo**	**Nemo**	**Nemo**	**Whale Tail**	**Whale Tail**	**Whale Tail**	**Mammoth**	**Mammoth**	**Mammoth**	**duplicate Mammoth**	**Equip. Blank**
Sampling Location	**1**	**3**	**5**	**1**	**3**	**5**	**1**	**3**	**5**	**5**	
Date Sampled (dd/mm/yy)	06/09/14	06/09/14	06/09/14	05/09/14	05/09/14	05/09/14	04/09/14	04/09/14	04/09/14	04/09/14	04/09/14
Aluminum (Al)	0.0046	0.0055	0.0072	0.0120	0.0165	0.0155	0.0157	0.0106	0.0095	0.0105	<0.0030
Antimony (Sb)	<0.00010	<0.00010	<0.00010	0.00022	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)	0.00031	0.00034	0.00032	0.00029	0.00018	0.00017	0.00047	0.00045	0.00043	0.00043	<0.00010
Barium (Ba)	0.00373	0.00382	0.00375	0.00338	0.00295	0.00267	0.00350	0.00352	0.00349	0.00345	0.000058
Beryllium (Be)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)	2.29	2.28	2.35	2.05	1.56	1.47	1.92	1.89	1.91	1.89	<0.050
Chromium (Cr)	<0.00010	0.00016	0.00010	0.00012	0.00013	0.00013	0.00018	0.00012	0.00013	0.00011	<0.00010
Cobalt (Co)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)	<0.00050	<0.00050	<0.00050	0.00055	<0.00050	<0.00050	0.00051	0.00056	<0.00050	<0.00050	<0.00050
Iron (Fe)	<0.010	0.012	0.014	0.033	0.037	0.032	0.031	0.022	0.021	0.021	<0.010
Lead (Pb)	<0.000050	<0.000050	<0.000050	0.00686	<0.000050	<0.000050	<0.000050	0.000069	<0.000050	<0.000050	0.000054
Lithium (Li)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium (Mg)	1.07	1.06	1.07	0.79	0.72	0.68	0.78	0.73	0.74	0.74	<0.10
Manganese (Mn)	0.00200	0.00216	0.00226	0.00338	0.00159	0.00151	0.00150	0.00137	0.00139	0.00137	0.000084
Mercury (Hg)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel (Ni)	<0.00050	0.00054	0.00053	0.00066	<0.00050	<0.00050	0.00067	0.00051	0.00052	0.00050	<0.00050
Phosphorus (P)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)	0.58	0.57	0.58	0.44	0.40	0.36	0.48	0.48	0.53	0.55	<0.10
Selenium (Se)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)	0.212	0.212	0.232	0.310	0.311	0.311	0.381	0.323	0.322	0.327	<0.050
Silver (Ag)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)	0.468	0.489	0.479	0.534	0.546	0.522	0.505	0.495	0.497	0.502	<0.050
Strontium (Sr)	0.00979	0.00980	0.00990	0.00903	0.00756	0.00710	0.00814	0.00774	0.00776	0.00777	<0.00020
Sulfur (S)	1.15	1.14	1.12	0.91	0.61	0.56	0.95	0.94	0.96	0.93	<0.50

Lake	Nemo	Nemo	Nemo	Whale Tail	Whale Tail	Whale Tail	Mammoth	Mammoth	Mammoth	duplicate Mammoth	Equip. Blank
Sampling Location	**1**	**3**	**5**	**1**	**3**	**5**	**1**	**3**	**5**	**5**	
Thallium (Tl)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)	<0.000010	<0.000010	0.000010	0.000034	0.000039	0.000039	0.000032	0.000026	0.000024	0.000021	<0.000010
Vanadium (V)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030