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October 14th, 2014

M. Karén Kharatyan
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Nunavut Water Board
P.O. Box 119
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Re: NWB 2AM MEA0815: Response to NWB completeness reviews of the Type A water license renewal application.

Dear M. Kharatyan,

The following information is provided in response to the NWB completeness reviews made by the Kivalliq Inuit Association and their consultants, Aboriginal Affairs and Northern Development Canada, Environment Canada, and Fisheries and Oceans Canada, regarding the Meadowbank Gold Project Type A water license renewal application. AEM has provided responses to all completeness review related comments made by the NWB interveners. Many of the comments provided by KIA and DFO were technical in nature; AEM has provided responded to many of these recommendations and where noted, will address others during the technical meetings.

Should you have any questions or require further information, please contact Stephane Robert, Ryan Vanengen or Marie-Pier Marcil at marie-pier.marcil@agnicoeagle.com.

Regards,

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1 Environment Canada (EC) Comments and Recommendations

1.1 *Recommendation #1 – Vault Pit Expansion Concern*

- **EC has concerns about the review of this application, given the Proponent's expected intention to submit an amendment application in the near future regarding the Vault Pit Expansion and dewatering of Phaser Lake at the Meadowbank project site. EC encourages the Proponent to consider steps to consolidate applications wherever possible, thereby facilitating the review process.**

  This concern was also brought up by DFO. Unfortunately, this may not be possible until NIRB has completed their review of the Vault Expansion into Phaser Lake. AEM has submitted an application for a straight renewal with administrative updates; this will ensure that the renewal of the License is completed within the appropriate timelines. If the timing permits, AEM would prefer to include it and have discussed the possibility of merging the Vault Pit Expansion into Phaser Lake as part of the Type A Water License renewal.

1.2 *Recommendation #2 – Management Plan Concern*

- **EC found the following specific management plans to be poorly-labelled or missing:**

  - **Environmental Protection Plan**
  - **Shipping Management Plan**
  - **Fuel Management Plan**
  - **Oil Pollution Emergency Response Plan**
  - **Emergency Communications Plan**
  - **Accident and malfunction scenarios in the Spill Contingency Plan**

  While the above-mentioned management plans may be integrated into more general text, clear labelling of these management plans would significantly facilitate the review process.

  AEM has included all of the updated and applicable management plans requested by the Water License into the renewal application. The Environmental Protection Plan, Shipping Management Plan, Fuel Management Plan and Oil Pollution Emergency Response Plan that EC has referred to are required as part of the NIRB Environmental Impact Statement process, are the mandate of another regulatory authority (i.e. OPEP is under Transport Canada) and were therefore not included in the application as not requested by the Water License. The Emergency Communications Plan can be found into License renewal application document Appendix B7 - Emergency Response Plan in Section 3 and Section 4.10 of the Appendix B9- Spill Contingency Plan. Accident and Malfunction scenarios can be found into the Appendix B7 - Emergency Response Plan in Section 4, Appendix B9- Spill Contingency Plan in Section 7, Appendix B19 - Dewatering Dike: Operation, Maintenance and Surveillance Manuel in Section 12 and Appendix B20 – Tailings Storage Facility: Operation, Maintenance and Surveillance Manuel in Section 8. This will be explained further during the technical hearings.

2 Fisheries and Ocean Canada (DFO) Comments and Recommendations

2.1 *Appendix B3: Water Quality Monitoring and Management Plan for Dike Construction and Dewatering (WQMMPDCD), Version 4, April 2010*

2.1.1 Section 5.2: Lake Level monitoring during Dewatering Activities

"*Third Portage Lake and Second Potage Lake water levels will be surveyed at a location of sufficient distance from the outlets to limit potential lake level drawdown effects. Lake water levels will be monitored weekly during the freshet and ice-free period, and weekly during the ice-up period, dependent of the ice conditions and worker safety*."

- **DFO requests that Agnico-Eagle clarify whether a similar schedule and plan will be used during re-watering (re-flooding). If not, DFO request that the schedule and plans be provided. What are the specific threshold criteria that will be used to determine unacceptable low water lake levels?**

  As specified, currently AEM monitors both Third and Second Portage Lake on a weekly basis during freshet and ice-free period, and weekly during the ice-up period, dependent of the ice conditions and worker safety. This schedule and monitoring location will be maintained throughout the life of mine, post-production, during the re-flooding operation and concluded once pit re-flooding is completed. This also applies for Wally Lake in the Vault Pit area. During the technical meeting of the Type A Water License Freshwater Use Amendment, NWB requested that AEM establish a trigger and threshold value for Third Portage Lake drawdown to ensure no risks to the littoral area. See the attached AEM response letter (Appendix A) with accepted triggers and thresholds for monitoring lake levels.

2.2 *Appendix B14: Interim Closure and Reclamation Plan (IRCP), Version 2 (January 2014)*

2.2.1 Section 1.1 Interim Closure and Reclamation Plan Objectives

"*This ICRP document is an update to the closure and reclamation plan for the development phase of the Project (AEM 2008). … This document does not include detailed engineering closure designs, or specific post-closure monitoring programs as these will be developed in the future.*"

- **DFO requests that Agnico-Eagle provide a date for the final Closure and Reclamation Plan with detailed engineering closure designs, prior to the first re-flooding event beginning in 2015.**

  As per the NWB Water License Part J, Item 3, AEM will submit the Final Closure and Reclamation Plan at least twelve (12) months prior to the expected end of mining (targeted date of Q3 2016). As discussed with AANDC on October 6th, 2014, in addition to submitting the ICRP, for internal purposes, AEM is presently working with consultants on scoping, prefeasibility and closure execution studies, to determine detailed engineering closure designs. The detailed planning for reflooding of Goose Pit has started and details will be presented in the technical meetings.

Re-flooding of the Main Mining and Vault Areas constitutes habitat gains for offsetting, under the No Net Loss Plan (2012), yet the executive summary of the IRCP does not mention obligations to adhere to Fisheries Act Authorizations 03-HCAA-CA7-00191.3 and 03-HCAA-CA7-00191.4, with

respect to the lakes providing the source waters for re-watering (re-flooding) activities (Third Portage Lake, Wally Lake). (Specifically: Impacts to fish and fish habitat other than that specifically identified within those Authorizations are not permitted.).

- **DFO request that these obligations be added to the list beneath the "purpose of the ICRP".**

  AEM will add reference to the Fisheries Act Authorizations 03-HCAA-CA7-00191.3 and 03-HCAA-CA7-00191.4 in the next vision of the IRCP.

- **DFO also notes that the draft No Net Loss Plan (NNLP) Implementation Cost Estimate and Construction Schedule (May 2013) has been replaced by Version 2, November 2013. Please revise this reference.**

  AEM will change the reference of the Draft No Net Loss Plan, Implementation Cost Estimate and Construction Schedule May 2013 by the Final No Net Loss Plan, Implementation Cost Estimate and Construction Version 2, November 2013 in the next version of the IRCP.

2.2.2 Section 2.3 Permits and Authorizations

- **DFO notes that the Letter (Avoid and Mitigate) for NU-10-0049 is not an Authorization. Please correct this reference.**

  AEM understands that the Letter for NU-10-0049 is not an HADD authorization and will correct this reference in the next version of the IRCP.

- **DFO would also like to note that Environment Canada is now the Responsible Authority for MMER Schedule 2 TIA, which falls under Fisheries Act Subsections 36 (3 to 6), according to a Designation Order issued February 28, 2014. DFO requests that Agnico-Eagle note this in the table.**

  AEM will add this in the next version of the IRCP.

2.2.3 Section 2.4.2.5 Permafrost

"*Rock and soil-related terrain instability is a minor concern … The exception is the wetlands occupying lowlands adjacent to lakes and ponds where excess ground ice is present and thaw instability is foreseeable. These impacts can be mitigated using currently accepted permafrost engineering practices as part of dike construction, drawdown and re-watering of lakes…*"

- **DFO request that Agnico-Eagle provide details regarding engineering practices to be used to mitigate permafrost-related terrain instability during re-watering of lakes, with respect to the stability of shorelines (and avoidance or mitigation of associated erosion and slumping).**

  As per the NWB Water License Part J, Item 3, AEM will submit the Final Closure and Reclamation Plan at least twelve (12) months (targeted date of Q3 2016) prior to the expected end of mining (Q3 2017). As discussed with AANDC on October 6th, 2014, in addition to submitting the ICRP, for internal purposes, AEM is presently working with consultants on scoping, prefeasibility and closure execution studies, to determine detailed engineering closure designs and costs. The planning for reflooding of Goose Pit has already begun and details of this approach to ensure the stability and integrity of the shorelines is maintained; information on this will be presented in the technical meetings.

2.2.4 Section 2.5.7 Water Management Facilities

"*Pit flooding has been scheduled assuming the annual water volume withdrawn from Third Portage and Wally lakes for re-flooding purposes will be lower than the spring freshet volumes, resulting in no reduction to the lake water level (SNC 2013). The rate of transfer from source lakes will be controlled through pumps or engineered structures. Where possible, the water for flooding will be taken from deep areas of the source lakes to avoid the removal of oxygenated surface waters. Water intakes will be properly screened.*"

- **DFO requests that Agnico-Eagle clarify the data, modeling or other factors they have used to determine that the lake water levels will not be affected. DFO also notes that SNC 2013 (Meadowbank Gold Project Water Management Plan 2012) is cited in several locations in the IRCP with respect to re-flooding. Please append this document to the ICRP for ease of reference, or provide the relevant information supporting, in the context of avoiding or mitigating serious harm to fish in source lakes during re-watering. Appendix B17 (2013 Water Management Report and Plan, Version 1, March 2014), which DFO understands to be an update to SNC 2013, does not include sufficient detail as described below.**

  To ensure water levels in Third Portage Lake and Wally Lake will not be affected during pit flooding, in Section 4.6 of Golder (2009) Doc 833 0717_09 RTP-Updated Water Management Plan specifies that the maximum allowable drawdown of the source lakes (Wally and Third Portage Lakes) has been assumed to correspond to the water level necessary to maintain a minimum flow equal to the average annual (1:2-year return period) 60-day low flow at the outlet of the lakes over the four summer months (June through September). The low flow rates were computed based on regression curves developed by AMEC (2003) and presented in the original licensing hearings. The current water balance presented in the latest 2013 Water Management Plan shows rates reduced from the initial study conducted by AMEC as depicted in the table below.

Water Body	AMEC (2003) ($x10^6$ m^3)	AEM (2013) ($x10^6$ m^3)
Third Portage Lake	5.30	4.88
Wally Lake	4.20	4.18

2.2.5 Section 3.3.3.3 All-Weather Private Access Road (AWPAR) Planned Reclamation Approach and Activities

"*Decommissioning of the AWPAR will involve restoring, to the extent possible, the pre-development drainage patterns along the route. Natural drainage courses will be restored by removing the culverts and bridge … and removing in-stream works down to the original channel bed … Where affected watercourses are fish-bearing, channel beds will be re-constructed similar to baseline conditions. Work at these sites will consider appropriate timing for in-stream works and will be completed in accordance with DFO operational statements. Details on the channel bed reclamation will be included in the detailed engineering for closure.*"

- **DFO request the detailed plans for channel bed reclamation.**

  As per the NWB Water License Part J, Item 3, AEM will submit the Final Closure and Reclamation Plan at least twelve (12) months prior to the expected end of mining (targeted date of Q3 2016). This will include detailed decommissioning of the AWPAR to ensure the drainage patterns are restored. This will be discussed in the technical meetings.

2.2.6 Section 3.3.4.3 Dikes and Saddle Dams Planned Reclamation Approach and Activities

"*The location of breaching on the Bay-Goose Dike will be selected based on a desired attenuation period in which surface water runoff will mix with the pit lake water before discharge to Third Portage Lake. Currently, it is estimated that a total of about 200 m of the dike will be breached in two sections. The dike will be breached to 3 m below the average water level in Third Portage Lake (134.1 m elevation) to provide all-season aquatic access across the dike. Sides of the breached sections will be pulled back for long-term stability. Erosion control measures will be considered before breaching the dike…*"

- **DFO request that Agnico-Eagle clarify how fish passage needs have been taken into account when considering possible locations for dike breaches, given that fish habitat use and therefore location within the lake will vary seasonally.**

  As per the NWB Water License Part J, Item 3, AEM will submit the Final Closure and Reclamation Plan at least twelve (12) months prior to the expected end of mining (targeted date of Q3 2016). This will include detailed decommissioning to ensure the dike breach provides long term stability and that erosion is controlled.

2.2.7 Section 3.3.4.4 Uncertainties and Assessing Information Gaps

"*Although detailed design of the dike breaches is not currently available, this will be completed during the later stages of operations prior to closure.*"

- **DFO request the detailed designs of the dike breaches.**

  As per the NWB Water License Part J, Item 3, AEM will submit the Final Closure and Reclamation Plan at least twelve (12) months prior to the expected end of mining (targeted date of Q3 2016). This will include detailed decommissioning to ensure the dike breach provides long term stability and that erosion is controlled.

2.2.8 Section 3.3.5.3 Open Pits Planned Reclamation Approach and Activities

"*To minimize impacts to aquatic habitat in the surrounding lakes, it is anticipated that transfers from Third Portage and Wally lakes will be done during periods of higher water in the spring and summer months. Maximum fill rates will depend on acceptable draw down levels in each source lake.*"

- **DFO request that Agnico-Eagle clarify what the acceptable draw down levels in each source lake are, and how they were determined.**

  As previously stated, to ensure water levels in Third Portage Lake and Wally Lake will not be affected during pit flooding, in Section 4.6 of Golder (2009) Doc 833 0717_09 RTP-Updated Water Management Plan specifies that the maximum allowable drawdown of the source lakes (Wally and Third Portage Lakes) has been assumed to correspond to the water level necessary to maintain a minimum flow equal to the average annual (1:2-year return period) 60-day low flow at the outlet of the lakes over the four summer months (June through September). The low flow rates were computed based on regression curves developed by AMEC (2003) and presented in the original license hearings.

2.3 *Appendix B17: 2013 Water Management Report and Plan (March 2014)*

2.3.1 Section 3.3 Pit Reflooding Operation

- **Regarding this entire section and the associated Appendix A, DFO requests that Agnico-Eagle clarify how they selected their withdrawal volumes from Third Portage Lake (2016-2024) and Wally Lake (2018-2024) for the purposes of pit re-flooding. DFO request that Agnico-Eagle focus their answer specifically on how they determined that these selected volumes would not affect lake levels and littoral habitat. Lower lake levels would lead to the risk of exposure for littoral fish habitat that would normally be submerged due to spring freshet.**

  As previously stated, to ensure water levels in Third Portage Lake and Wally Lake will not be affected during pit flooding, in Section 4.6 of Golder (2009) Doc 833 0717_09 RTP-Updated Water Management Plan specifies that the maximum allowable drawdown of the source lakes (Wally and Third Portage Lakes) has been assumed to correspond to the water level necessary to maintain a minimum flow equal to the average annual (1:2-year return period) 60-day low flow at the outlet of the lakes over the four summer months (June through September). The low flow rates were computed based on regression curves developed by AMEC (2003) and presented in the original license hearings.

  Furthermore, AEM developed monitoring trigger and threshold levels that AEM proposes to be followed during pit reflooding. As per Meadowbank's Type A Water License conditions, AEM monitors water levels in Third Portage Lake on a monthly basis. As an example, AEM is proposing two trigger values, below which measures will be taken to prevent impacts to Third Portage Lake. The trigger values presented to the NWB for the freshwater use amendment were derived based on the maximum permissible winter water withdrawal volume of 10%, according to the DFO "Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut", June 21, 2010.

  For Third Portage Lake, if the water volume is decreased by 5%, or there is a water level decrease of 0.68m (133.0 masl), AEM will increase the water level monitoring from monthly to weekly. If the water volume in Third Portage Lake decreases by 10%, or there is a water level decrease of 1.35m (132.33 masl), AEM will initiate a review the mine site water balance, evaluate the natural contributing factors (e.g. precipitation) and engage in consultation with the NWB and DFO to determine measures to protect the aquatic ecosystem (i.e. decrease the rate of pit reflooding).

"*In 2016, additional reflooding efforts [for Goose Pit] will be added for the summer period to accelerate the flooding operation via the utilization of pumps or siphons from 2PL.*"

- **DFO request that Agnico-Eagle clarify whether Second Portage Lake is the intended source of water, as Second Portage Lake (2PL) is cited here for both Goose and Portage Pit, but Appendix A – Water Balance (sections concerning years 2016-2025) mention Third Portage Lake.**

  AEM would like to clarify that no water will be pumped from Second Portage Lake to reflood the pits. All water used for re-flooding operations in Goose and Portage Pits will originate from Third Portage Lake. An error was made within the text specified above.

"*The Vault area will follow a similar reflooding process, with an incoming flow rate from Wally Lake, equivalent to that of the spring freshet (4,182,604m^3) through pump stations or syphons.*"

- **DFO request that Agnico-Eagle clarify how this volume was calculated (i.e., from what data, and how were those data collected and/or modeled). How much does the volume of spring freshet vary from year to year? How much do lake levels rise during the spring freshet, and what quantity of the littoral zone is submerged?**

As previously stated, to ensure water levels in Third Portage Lake and Wally Lake will not be affected during pit flooding, in Section 4.6 of Golder (2009) Doc 833 0717_09 RTP-Updated Water Management Plan specifies that the maximum allowable drawdown of the source lakes (Wally and Third Portage Lakes) has been assumed to correspond to the water level necessary to maintain a minimum flow equal to the average annual (1:2-year return period) 60-day low flow at the outlet of the lakes over the four summer months (June through September). The low flow rates were computed based on regression curves developed by AMEC (2003) and presented in the original license hearings.

2.3.2 Section 8 Recommendations

"*Include the Phaser deposit in the application to renew the Type A Water License which is due to be submitted in June 2014, one year in advance of expiration of the current License. Also include this updated Plan in the application.*"

- **DFO note that this recommendation has not been fulfilled. Earlier in this Plan (2.2.3 Vault Pit Area), Agnico-Eagle states that "*the Phaser Pit … is conceptual and is not currently in the water management plan …should AEM decide to mine this area approval from NIRB and amendments to the NWB will be required*." In addition, in the 'Nunavut Water Board (NWB 2AM MEA0815) Type A Water License Renewal Application – Main Supporting Document', section 2.4 (Future Plans), Agnico-Eagle states that "*Vault Pit Expansion is not included in the License Renewal*" even though "*AEM has begun discussions regarding the Vault Pit expansion with the Baker Lake HTO, KIA and DFO.*" DFO request that Agnico-Eagle clarify why the dewatering of Phaser Lake, as well as the subsequent re-flooding, has been excluded from the entire License Renewal Application.**

This concern was brought up by EC. Unfortunately, this may not be possible until NIRB has completed their review of the Vault Expansion into Phaser Lake. AEM has submitted an application for a straight renewal with administrative updates; this will ensure that the renewal of the License is completed within the appropriate timelines. If the timing permits, AEM would prefer to include it and have discussed the possibility of merging the Vault Pit Expansion into Phaser Lake as part of the Type A Water License renewal.

3 Aboriginal Affairs and Northern Development Canada (AANDC) Comments and Recommendations

3.1 *Appendix B17 – 2013 Water Management Report and Plan, Version 1 (March 2014)*

The Freshet Action Plan is referred to in the Water Management Plan, and in particular, for managing RSF seepage water, but has not been included with the license application.

- **The proponent should include a copy of the Freshet Action Plan with the application. Many mine facilities around the mine site are vulnerable to excess water. Review of the Freshet Action Plan would provide a better understanding of the management plan for contact waters and their potential environmental impacts during operations and closure.**

  AEM agrees with the AANDC recommendations. You will find in Appendix B of this document the Freshet Action Plan (AEM, 2014).

3.2 *Appendix B14 – Interim Closure and Reclamation Plan, Version 2 (Jan 2014)*

The Interim Closure and Reclamation Plan provides a permanent closure and reclamation financial security estimate that was prepared using a dated version of the RECLAIM model (Version 6.1, March 2009).

The RECLAIM model has been revised (Version 7, March 26, 2014) to include unit costs that are benchmarked against actual abandoned mine site remediation projects situated in the Northwest Territories.

- **The Proponent should re-calculate its permanent closure and reclamation financial security estimate using the latest RECLAIM template (Version 7, March 26, 2014). Furthermore, the current mine operating costs, RECLAIM Version 7 unit costs, and inflation should be reflected in the security estimate.**

  A revised cost estimate should be provided to ensure that the requirements of the Mine Site Reclamation Policy for Nunavut are satisfied (i.e., adequate security should be provided to ensure the cost of reclamation, including shutdown, closure, and post-closure, is born by the operator of the mine rather than the Crown).

  As agreed upon by AEM and AANDC during a conference call on October 6th, 2014, AEM will complete a cost re-evaluation in RECLAIM 7.0, provide the results of the reanalysis as an addendum to the ICRP and provide an update prior to the Technical hearings. AEM will present information on closure during the technical meetings.

3.3 *July 2014 Monitoring Program Summary Report: Appendix C – Assay Road Seepage, Phase 2 Environmental Site Assessment and Engineering QA/QC (Aug 2014)*

The Phase 2 Environmental Site Assessment of the Assay Road Seepage and the Quality Assurance / Quality Control monitoring for the construction of the interception trench designed to contain cyanide impacted soil and groundwater is relevant to closure planning but has not been included in the licence application (was available until after AEM submitted its application).

This report was included in AEM's July 2014 monitoring program summary report

- **The Proponent should include a copy of the Assay Road Seepage Assessment and Engineering QA / QC Report with the application.**

  The management of cyanide impacted soil and groundwater will result in monitoring and possibly, additional mitigation measures that will affect AEM's closure plan.

  AEM agree with the AANDC recommendation. You will find in Appendix C of this document the Assay Road Seepage Phase 2: Environmental Site Assessment and Engineering QA/QC (Tetra Tech EBA, 2014).

4 Kivalliq Inuit Association (KIA) Comments and Recommendations

4.1 *Main Supporting Document*

4.1.1 KIA-01 Change in obtainable freshwater limit

- **The NWB should permit maximum yearly obtainable quantities of freshwater based on the yearly requirements anticipated by AEM. These should cover known water requirements and are not to encompass anticipated water use as part of the IVR site should AEM move forward with the environmental assessment process there.**

  This will be discussed during the technical meetings.

4.1.2 KIA-01-B Change in obtainable freshwater limit (p.22)

AEM has proposed an increase in annual water takings from Third Portage Lake and state that no significant impacts to the local aquatic ecosystem are anticipated as a result of the requested increase in fresh water use, because the total volume withdrawn for mining under maximum use for 2010 – 2018 would be less than 2.5% of the volume of Third Portage Lake. Withdrawal of 2.5% of the lake volume annually will represent a consumptive use of water until the pits are refilled and the rate of withdrawal needs to be considered against the annual inflow to the lake to determine its significance.

- **The KIA suggests that AEM provide a comparison of the projected increase in water volume taking against the annual volume of inflow to Third Portage Lake.**

  To ensure water levels in Third Portage Lake will not be affected during pit flooding, in Section 4.6 of Golder (2009) Doc 833 0717_09 RTP-Updated Water Management Plan specifies that the maximum allowable drawdown of Third Portage Lakes has been assumed to correspond to the water level necessary to maintain a minimum flow equal to the average annual (1:2-year return period) 60-day low flow at the outlet of the lakes over the four summer months (June through September). The low flow rates were computed based on regression curves developed by AMEC (2003) and presented in the original licensing hearings.

4.1.3 KIA-02 Discharge Limits and Determination of Environmental Effects (p.23-28)

AEM has concluded that the overall analysis of water quality is adequate based on internal monitoring stations and limits that are adequately protecting the receiving water environment. However, there have been a few periodic exceedances. The KIA is concerned that the assessment of impacts to receiving waters begins by comparison of monitoring results to Water License Limits. This presupposes that the Water License limits represent adequate protection of the receiving waters.

- **The KIA recommend that the assessment should begin by checking the CREMP results to:**

  a) determine if any changes were documented in the receiving waters, and
  b) if the changes were within the ranges predicted in the EIS.

This would allow checking of water quality for parameters for which no license limits were set and allow a better assessment of the adequacy of the existing license limits. This would provide a more robust approach to adaptive management as it is based on testing the hypothesis that "Water License limits are adequate to protect the environment" vs testing the implications of not meeting license limits.

The evaluation of the receiving environment presented annually in the CREMP does exactly what KIA has recommended. The CREMP evaluates monthly water quality data against triggers and thresholds to ensure CCME limits are respected or changes are not significantly different from reference or baseline data conditions; this is done irrespective of the license limits. It serves as a "checks and balance" to ensure the limits are protective of the environment. If exceedances of the thresholds or triggers occur in the receiving environment, AEM evaluates the potential sources and takes corrective or mitigative action. The approach that the KIA is proposing is what AEM completes on a monthly basis and is reported annually within the CREMP. AEM believes the methods used to evaluate the appropriateness of the limits in support of the Type A water license was adequate and that the evaluation of changes in the receiving environment are well documented in the actual CREMP.

4.1.4 KIA-03 Altered License Condition - Water License Part D, Item 11

AEM has proposed a changed wording from "in Third Portage Lake, Second Portage Lake and Wally Lake" to "nearby Lake". This may alleviate the need to sample each lake, particularly because lake has not been pluralized.

- **We request that AEM continue to name specific lakes they shall monitor to increase accountability in the AEMP.**

AEM agrees with the KIA recommendation and will continue to name the lakes by their specific names.

4.1.5 KIA-04 Altered License Condition - Water License Part E, Item 8

AEM has proposed to remove the following condition: "*The Licensee shall, on an annual basis during Operations, compare the predicted water quantity and quality within the pits, to the measured water quantity and quality. Should the difference between the predicted and measured values be 20% or greater, then the cause(s) of the difference(s) shall be identified and the implications of the difference shall be assessed and reported to the Board*."

We find it concerning that AEM will not be required to validate model predictions under the water license and that removal of the annual comparison will not provide the timely feedback that is necessary for effective adaptive management.

- **The KIA recommend that the current schedule of annual comparisons of predicted water quality and quantity within the pits to measured water quality and quantity be continued.**

As discussed during a WebEx on November 28th, 2013 with KIA, NWB, EC and AANDC, and agreed upon by all parties at the time, AEM will continue to monitor the pit water quality and model on an annual basis to ensure that pit water quality will meet CCME limits and ultimately protect aquatic biota, prior to breaching the dikes. See attached Appendix D for meeting minutes and presentations made.

4.1.6 KIA-05 Altered License Condition - Water License Part F, Item 2 and 3

Total cyanide does not have an associated CCME guideline. While it is helpful to measure the total within the water column, weak acid dissociable cyanide represents the toxic fraction and should be assessed as part of routine monitoring.

- **We request Portage Attenuation Pond effluent discharges monitored at Station ST-9 include weak acid dissociable cyanide as well as total cyanide in the suite of monitored parameters as it represents the toxic fraction of total cyanide and is associated with a CCME water quality guideline. We also request that effluent discharged from the Vault Attenuation Pond monitored Station ST-10 include the same provision for monitoring weak acid dissociable cyanide.**

  The following row should be added to Part F Item 2 and Part F Item 3:

Parameter	Maximum Average Concentration	Maximum Allowable Grab Sample Concentration
Free Cyanide	0.0025 mg/L	0.005 mg/L

AEM's strategy for cyanide includes complementary monitoring of both the receiving environment and effluent. As proposed in the renewal, AEM will continue to monitor cyanide in the receiving environment as part of the CREMP. Our approach is consistent with KIA's recommendation to ensure that receiving environment sampling includes the bioavailable/toxic forms of cyanide. To that end, the CREMP includes free cyanide (in addition to total cyanide), which is consistent with CCME's water quality guideline for the protection of aquatic life (i.e., based on free cyanide). The effluent monitoring program (for discharges at ST-9 and ST-10) is based on MMER requirements, which includes characterization of total cyanide and toxicity testing and stipulates standard decision criteria for management actions. AEM's position is that MMER requirements are protective of the environment, that the receiving environment is thoroughly monitored under the CREMP and that KIA's recommended addition stated above is not necessary.

4.1.7 KIA-06 Altered License Condition - Water License Part F, Item 3 and 23

AEM has removed Part F Item 3 stating it will be included under Part F Item 23. The parameter list for Part F Item 23 does not include all removed parameters and only applies to the "*Baker Lake Bulk Fuel Storage Facility and the Meadowbank Fuel Storage Facility (ST-37 through ST40)*".

AEM has also proposed removing total lead and ammonia from the parameter list. Increases in either of these parameters may impair aquatic life and should be included in the discharge criteria for fuel containment facilities discharging to Land. We recognize that, while MMER and CCME do not apply to discharges to land, the criteria provide a framework for assessing these discharges in the event that runoff reaches the aquatic environment.

- **AEM should harmonize the required criteria between Part F Item 3 and Part F item 23. The breadth of the updated Part F Item 23 should reflect Part F Item 6. The introductory text should read "Effluent from fuel containment facilities that require Discharge to land, shall not exceed the following Effluent quality limits:"**

  Lead and ammonia should continue to be part of parameter list for Baker Lake Bulk Fuel Storage Facility and the Meadowbank Fuel Storage Facility (ST-37 through ST40).

  AEM has removed Part F Item 6 (effluent from fuel containment facilities that require discharge to land) and not Part F Item 3 which is the list of parameters for discharge from the Vault Attenuation Pond.

  All the parameters deleted from Part F, Item 6 were included in Part F, Item 23. The discharge limits are the same for benzene, toluene and ethylbenzene and more stringent for oil and grease. The only change from Part F Item 6 to Part F Item 23 is the limit of Lead for which we ask a limit of 0.1mg/L instead of 0.001 mg/L. The rationale behind this request is that during the original license, water was planned to be centrally collected by a series of ditches and sumps and ultimately discharged directly into Baker Lake. However, this is not occurring, rather all of the secondary containment berms are

discharged to land, which is an improvement in the practices originally proposed, thus avoiding direct discharge into Baker Lake. As proposed in the Type A renewal, AEM will continue to monitor discharge from fuel containment for ammonia.

AEM agrees with the KIA and will include the proposed introductory text as it relates to secondary containment discharge to land in Baker Lake Bulk Fuel Storage Facility and the Meadowbank Fuel Storage Facility (ST-37 through ST40).

4.1.8 KIA-07 Altered License Condition - Water License Part I, Item 7

AEM has proposed rewording the condition to read: "*The Licensee shall confirm the locations and GPS coordinates for all monitoring stations referred to in Schedule I ~~with an Inspector~~.*" External accountability is a critical part of environmental protection and begins with site selection.

- **AEM should continue to confirm monitoring station locations with an Inspector if changes to the monitoring program are required to reflect current mine activity. Confirmation with an Inspector should also be required if any new stations are added during the proposed water license tenure.**

AEM is in agreement with KIA recommendations. All stations are currently approved by the inspector and it is for this reason that AEM removed this statement. In the case that future station are added, AEM will confirm the stations location with the Inspector.

4.1.9 KIA-28 Altered License Condition - Water License Part H, Item 3

AEM has proposed to remove Part H, item 3 of the water license renewal application as they feel it is covered off by Part D, item 29. In item 29 the word "fuel" is used while in item 3 the words 'petroleum products" are used. The words "petroleum products" are preferred as they are more inclusive (i.e. hydraulic fluid, motor oil, etc.) than the word "fuel".

- **The KIA requests that words "petroleum products" be included along with the word "fuel" in Part D, item 29.**

AEM agrees with the KIA recommendation.

4.1.10 KIA-IR-08 Altered License Condition - Water License Part I, Item 18

AEM has proposed removing this condition. Any new construction required over the next ten years will alter the existing environment. A photographic record will assist AEM in reclamation activities.

- **The Water License should continue to require a digital photographic record of all watercourse crossings before, during and after the construction has been completed under the water license. The condition should not be removed from the license as it is reasonable to expect that additional construction activities may occur.**

AEM agrees with the KIA recommendation.

4.1.11 KIA-29 Altered License Condition - Water License Part J, Item 6

AEM has proposed to add the words "if possible" to Part J, item 6. A significant effort should be put into re-vegetation of the tailings.

- **The KIA requests that words "if possible" be removed as a significant effort should be put into re-vegetation of the tailings.**

  AEM will put significant effort into the revegetation of the site, however does not agree with the KIA recommendation to remove "if possible". This has been discussed previously with the KIA; to AEM's knowledge there are no northern mines that have successfully revegetated their waste rock piles or capped areas.

4.1.12 KIA-09 Trend of Increasing Parameter Concentrations in Near Field sites (Review Freshwater Aquatic Environment between 2010 and 2013).

Several parameters of concern were identified as part of the water quality results review between 2010 and 2013. Sites in which water quality that may be of concern to the environment were identified were those which 1) had measured water quality parameters exceeding applicable criteria (MMER, CCME, BC MOE) or 2) trends in key parameters that are considered to be representative of mine activity (SO4, TDS, TSS, conductivity, NH3, Fe and cyanide) which were tracked to identify any apparent patterns.

Station locations with exceedances and parameters with increasing trends were:

- **Associated with the diversion ditches with water discharging to Third Portage Lake,**
- **The attenuation pond discharging to Third Portage Lake,**
- **Near the Tailing Storage Facility (TSF) eventually discharging to Second Portage Lake**
- **Stations which discharged to land. Note criteria may not be applicable as these discharges do not directly reach surface water but we note that the close proximity of surface water receivers to land and for inundation during the freshet suggest that any exceedances warrant concern.**

The aquatic ecosystem monitoring program also identified waterbodies and watercourses with changes resulting from mine activity. TSS exceeded criteria where indicated; other parameters indicate an increasing trend:

- **Third Portage Lake (East) – TSS, conductivity, calcium, TDS, sulphate, phytoplankton, benthic invertebrates**
- **Third Portage Lake (North) – conductivity, sulphate**
- **Third Portage Lake (South) – Sulphate, phytoplankton, benthic invertebrates, zinc in sediment**
- **Second Portage Lake – TSS, alkalinity, TDS, phytoplankton, benthic invertebrates**
- **and Tehek Lake (near field site) – TSS, sulphate, benthic invertebrates**

AEM indicated that several parameters were elevated during the dike construction. Elevated parameters during construction of the East Dike were nitrate, total phosphorus, total aluminum*, total chromium*, total copper*, total iron*, total manganese, total nickel, total titanium, and total uranium. Elevated parameters during construction of the Bay-Goose Dike were TSS, total aluminum*, total chromium*, total copper*, total iron*, total manganese, total nickel, total titanium, and total uranium. Parameters with a * exceeded CCME guidelines.

- **The KIA requests that AEM provide a discussion of mitigation measures which will be taken to address the trend of increasing key parameters in the Near Field sites. This discussion should provide modeled water quality in the Near Field receiving environment where appropriate and make comparisons of the observations with predictions made in the EIS.**

The Type A water license (2AM-MEA0815) for the project issued by the Nunavut Water Board (NWB) in 2008 required a revised AEMP, and specified some of the requirements for that revision. Beginning in 2009, AEM began collecting data in support of this revision to strengthen the ability of the CREMP to detect changes in the receiving environment. AEM hosted workshops with the NWB (including representatives from KIA, Environment Canada and Fisheries and Oceans Canada) in March (Yellowknife) and June (Edmonton) 2010 to review the redesign of the AEMP (now an overarching 'umbrella' that serves to integrate the results across AEM's individual, but related, monitoring programs in accordance with the Type A water license requirements) and the CREMP (the core receiving environment monitoring program). The workshops were followed up with the submission of draft design documents for both the AEMP (which showed the linkages between monitoring program results and management actions) and CREMP (which included details for receiving environment monitoring such as statistical design, station identification, proposed references, decision criteria [triggers and thresholds], sampling protocols, and DQOs) and final design documents submitted to the NWB in December 2012. These complementary documents provide details ranging from how/when samples are collected to how monitoring results are interpreted (e.g., employing early warning "triggers" that lead to action [see next paragraph] before the corresponding "thresholds" are reached) and linked to follow-up management actions (see Management Response Plan [Section 4] of the AEMP design document [AEMP 2012]).

The Management Response Plan consists of two main components: assessment and mitigation. The assessment process focuses on characterizing the situation (to determine magnitude, spatial scale and reversibility), assessing risks (to determine to ecological significance of any changes), and causality assessment (to ensure that the underlying mechanisms responsible for the change are understood and that it is related to the mine). The results of the assessment process inform whether the response needs to proceed to mitigation and provides clear direction on what needs to be done. Without rigorous assessment of apparent changes in the receiving environment the need for or effectiveness of any mitigation measures would be questionable. This process leads to informed decision making.

The CREMP includes a comprehensive spatial-temporal assessment monitoring results and has identified some mine-related changes with temporal trends at near-field stations in the receiving environment (CREMP 2013). Management actions to date have focused on further assessment (with rationale provided in CREMP 2013); data to date suggest that the observed changes are generally consistent with those predicted in the EIS.

4.2 *Review of existing CREMP Monitoring Program*

4.2.1 KIA-10 Wally Lake Reference Site (Main Supporting Document, CREMP Stations and Control/Impact Designations)

AEM states "*A reference station for Wally Lake has not been established. While the characteristics of Wally Lake are somewhat unique (it is much shallower than other lakes), further evaluation of the advantages and disadvantages of establishing a separate reference station (versus using existing reference stations) is needed in advance of the commencement of construction activities at Wally Lake.*"

The Vault Site is entering operation which may influence water quality in Wally Lake, the near field site. Despite lack of baseline information, establishment of an appropriate reference lake will discern changes in water quality resulting from year to year variation from mine related impacts.

- **The KIA recommends that AEM establish a reference site for Wally Lake. The evaluation of the advantages and disadvantages of establishing a separate reference station should be conducted and presented for review prior to water license renewal.**

The Type A water license (2AM-MEA0815) for the project issued by the Nunavut Water Board (NWB) in 2008 required a revised AEMP, and specified some of the requirements for that revision. Beginning in 2009, AEM began collecting data in support of this revision to strengthen the ability of the CREMP to detect changes in the receiving environment. AEM hosted workshops with the NWB (including representatives from KIA, Environment Canada and Fisheries and Oceans Canada) in March (Yellowknife) and June (Edmonton) 2010 to review the redesign of the AEMP (now an overarching 'umbrella' that serves to integrate the results across AEM's individual, but related, monitoring programs in accordance with the Type A water license requirements) and the CREMP (the core receiving environment monitoring program). The workshops were followed up with the submission of draft design documents for both the AEMP (which showed the linkages between monitoring program results and management actions) and CREMP (which included details for receiving environment monitoring such as statistical design, station identification, proposed references, decision criteria [triggers and thresholds], sampling protocols, and DQOs) and final design documents submitted to the NWB in December 2012.

The CREMP design document (2012) does state that "further evaluation of the advantages and disadvantages of establishing a separate reference station (versus using existing reference stations) is needed…" While not formally documented, AEM chose to rely on the existing reference stations for Wally Lake. The primary reason for this decision is that there are varying degrees of differences among the lakes surrounding the mine and that the before-after-control-impact (BACI) approach does not rely on the assumption that control (reference) and impact (nearfield) stations are the same, only that they respond in a similar way to broader natural changes (e.g., climate-induced changes affecting the region). The BACI takes baseline differences into account when testing for temporal changes related to mining. Given that monitoring continued at Wally Lake in the absence of local mining activity, there are many more years of "before" data available for this lake, making the design more robust for this lake. Furthermore, Wally Lake is the only sampling area where the second reference area (Pipedream Lake, which was added in 2009) can formally be used within the BACI framework. The addition of a new reference area for Wally Lake would preclude the use of BACI and force a reliance on control-impact (CI) type designs whose foundation is the assumption that the control and impact sites are inherently the same. Our experience with the Meadowbank lakes since the mid-1990s is not consistent with this assumption. Thus, the establishment of a unique reference area for Wally Lake is unwarranted.

4.2.2 KIA-11 Data Quality Objectives (CREMP QA/QC, Appendix B5 - QA/QC plan)

Data quality objectives used for the QA/QC program were less stringent than indicated by the USEPA.

The water sample Data Quality Objectives (DQOs) for this project were:

- **Laboratory Duplicate = 25% RPD for concentrations that exceed 10x the method detection limit (MDL).**
- **Field Duplicate = 50% RPD for concentrations that exceed 10 x MDL.**

The USEPA DQO is a 20% RPD for all concentrations that exceed 5x the MDL and is a more widely accepted standard.

AEM reported that "*Although there were some exceedences of the established DQOs, these exceedances represent much less than 1% of the total for QA samples and parameters measured.*" While this is an acceptably low rate of DQO failure, we are concerned the failure percentage may increase to an unacceptable level if more stringent DQOs are applied. Similarly the DQO failure rates for other sample types were:

- **0 of the sediment samples**
- **~1% in phytoplankton samples**
- **2.2% in benthic invertebrate samples**

Discussion of DQOs are also not provided in Appendix B5, the QA/QC plan.

- **The KIA recommends that future CREMP years should use a more stringent DQOs to evaluate blanks and duplicates. It is suggested that the USEPA DQO criteria should be used. A discussion should be provided if AEM proposes continued use of less stringent DQOs.**

- **Discussion of DQOs should also be added to Appendix B5. This discussion should also include what actions will be taken if data fails to achieve the DQO. Together this will ensure only high quality data is used to characterize the aquatic environment and provide the basis for management decisions.**

  The CREMP is a comprehensive monitoring program that results in the generation of substantial data in any given year. CREMP DQOs for duplicate samples and field duplicates were set in consideration of the realities of analytical laboratory performance and receiving environment heterogeneity (field duplicates). We have worked closely with the main laboratory (ALS) to understand their capabilities regarding replication of laboratory results and feel that the DQOs are appropriate for this program. AEM feels that understanding the inherent limitations in analytical methods is important in setting realistic DQOs and that blind application of more stringent criteria would not serve the program. To that end, we have also worked with ALS to ensure that detection limits are appropriate for each parameter. The success of this approach is exemplified by the CREMPs proven ability to identify mine-related changes over time, which is founded on the integrated interpretations CREMP data accumulated over the years. That said, AEM continues to work on improving overall data quality.

4.2.3 KIA-12 Hold Times (CREMP QA/QC)

AEM discussed several problems with sample transportation. Most issues appear to stem from mine proximity to an accredited laboratory. AEM identifies:

1. **Hold times were most often exceeded for the following parameters:**
   a. **Colour**
   b. **Turbidity**
   c. **Nitrate**
   d. **Nitrite**
   e. **Ortho-phosphate (dissolved as P)**

2. **Lack of temperature control resulted in broken bottles on route to analysis.**

We are concerned the violation of hold times may compromise data quality used to make management and mitigation decisions and characterize the aquatic environment.

- **The KIA recommends that AEM commit to Part I, Item 23 of the existing water license requiring establishment of an accredited laboratory on-site. AEM has not adhered to this condition. Use of an on-site accredited laboratory will likely alleviate issues associated with sample hold times. As an alternative, please elaborate on what measures are being undertaken to improve holding time compliance.**

  AEM recognizes that sample transport has been a logistical challenge for the CREMP. Drastic changes were implemented in 2014 to improve the sample transport process for the CREMP. Reducing hold times was a key driver of this initiative. To that end, AEM started working closely with Multilab in Val D'Or and ALS in Burnaby to address the holding time and other transport issues (e.g.,

temperature control). Multilab has taken on the analysis of time-sensitive parameters and coordination of shipments from site to ALS. ALS continues to conduct the highly specialized trace metals and other analyses requiring extremely low detection limits. We have already seen improvements and will continue to refine this process to achieve better results.

AEM does not think establishing an accredited lab onsite will improve overall data quality for the CREMP. Rather, keeping the practice of sending samples to highly specialized, third party, accredited labs ensures data quality and highly rigorous standards

4.2.4 KIA-IR-13 Hold Times (CREMP Data Evaluation Criteria)

Data was evaluated against trigger and threshold values. Trigger values for AEM consider that corrective actions are initiated:

1. **When a threshold (e.g., CCME guideline) was established, the trigger was set as the maximum of either (a) the value halfway between the baseline median and the threshold ("Method A"), or (b) the 95th percentile of the baseline data ("Method B").**
2. **When a threshold was not established, the trigger was set equal to the maximum of either the 95th percentile of the baseline data ("Method B") or two times the current detection limit ("Method C").**

In most cases, the threshold was equal to a given guideline. In cases where a water quality guideline exists but Method B was used for trigger development (i.e., cases where baseline data already exceed the guideline for > 5% of cases), it is possible for the trigger to equal or exceed the guideline. In such cases, the guideline is reported as the threshold but is not used as a criterion for action; rather, the trigger is the only criterion for action as is the case for variables lacking water quality guidelines.

This additional consideration was not needed for sediment data as threshold values could be developed for all parameters.

AEM states that the "*formal application of the trigger for decision-making purposes was to the yearly mean for each sampling area*". This is concerning as parameters concentrations vary more over the course of a year than a month making it difficult to statistically differentiate a yearly mean from a trigger concentration.

- **Yearly means are appropriate for sediment and benthic invertebrate samples as they are collected at a yearly frequency. Water quality samples are collected seasonally. Seasonal means should be used for decision making purposes or triggers should consider individual measurements or repeated individual measurements as decision criteria.**

  The Type A water license (2AM-MEA0815) for the project issued by the Nunavut Water Board (NWB) in 2008 required a revised AEMP, and specified some of the requirements for that revision. Beginning in 2009, AEM began collecting data in support of this revision to strengthen the ability of the CREMP to detect changes in the receiving environment. AEM hosted workshops with the NWB (including representatives from KIA, Environment Canada and Fisheries and Oceans Canada) in March (Yellowknife) and June (Edmonton) 2010 to review the redesign of the AEMP (now an overarching 'umbrella' that serves to integrate the results across AEM's individual, but related, monitoring programs in accordance with the Type A water license requirements) and the CREMP (the core receiving environment monitoring program). The workshops were followed up with the submission of draft design documents for both the AEMP (which showed the linkages between monitoring program results and management actions) and CREMP (which included details for receiving environment monitoring such as statistical design, station identification, proposed references, decision criteria [triggers and thresholds], sampling protocols, and DQOs) and final design documents submitted to the NWB in

December 2012. These complementary documents provide details ranging from how/when samples are collected to how monitoring results are interpreted (e.g., employing early warning "triggers" that lead to action [see next paragraph] before the corresponding "thresholds" are reached) and linked to follow-up management actions (see Management Response Plan [Section 4] of the AEMP design document [AEMP 2012]).

The application of triggers/thresholds and associated statistical testing for decision making purposes were presented and discussed in the aforementioned workshops. The CREMP Design Review (2012) provides more details. In short, program design contemplated identification of both short-term and longer-term changes in the receiving environment. For water quality samples, a detailed statistical power analysis was conducted to help inform what the design could be achieve (i.e., what the expected power would be for a range of time periods). The results suggested that formal application of the BACI design to single events provided low power to identify changes of interest and that 5 to 6 events provided good power. It should be noted that the formal BACI application includes paired events (i.e., events for near-field and reference areas occur at the same time), which serves to account for natural seasonal patterns. The trigger/threshold comparison process starts with the comparison of the results of each event to identify short-term, localized changes of interest. Temporal trends are also examined using time series plots that include the trigger/threshold values. These tools serve to identify cases where parameters exceed the triggers in one or more events; these are "flagged" for more scrutiny. The BACI-(paired) statistical model is formally applied to any parameters where the annual mean exceeds the trigger; these are indicative longer-term trends or a substantial short-term event. Combined, this approach provides a set of sensitive tools to identify mine-related changes in the receiving environment.

4.2.5 KIA-14 Water Chemistry Discussion Criteria (CREMP Water Chemistry Discussion)

Water quality parameters were only reported on when at least 10% of the samples exceeded the MDL. This presents a minimum threshold for discussion that may cause significant but acute changes to water quality to be overlooked. For example, a temporary failures in the treatment process may increase some water quality parameters in the effluent. These elevations still warrant discussion in the CREMP despite not exceeding license conditions.

- **AEM should alter the minimum criteria to discuss parameters to provide greater assurance that all potential adverse changes to water quality resulting from mine activity are highlighted. The KIA recommends that parameters are discussed in future CREMP reports when:**

  1. greater than 10% of the samples are above the MDL, and
  2) parameters that are detected less frequently than in 10% of samples but are >5x MDL in some samples where they were detected.

This will provide assurance that the mine has had no or reversible adverse impacts to the aquatic environment under current water license conditions. This is critical as the water license has not been significantly altered in the renewal application.

The Type A water license (2AM-MEA0815) for the project issued by the Nunavut Water Board (NWB) in 2008 required a revised AEMP, and specified some of the requirements for that revision. Beginning in 2009, AEM began collecting data in support of this revision to strengthen the ability of the CREMP to detect changes in the receiving environment. AEM hosted workshops with the NWB (including representatives from KIA, Environment Canada and Fisheries and Oceans Canada) in March (Yellowknife) and June (Edmonton) 2010 to review the redesign of the AEMP (now an overarching 'umbrella' that serves to integrate the results across AEM's individual, but related, monitoring programs in accordance with the Type A water license requirements) and the CREMP (the core receiving environment monitoring program). The workshops were followed up with the submission of draft

design documents for both the AEMP (which showed the linkages between monitoring program results and management actions) and CREMP (which included details for receiving environment monitoring such as statistical design, station identification, proposed references, decision criteria [triggers and thresholds], sampling protocols, and DQOs) and final design documents submitted to the NWB in December 2012. These complementary documents provide details ranging from how/when samples are collected to how monitoring results are interpreted (e.g., employing early warning "triggers" that lead to action [see next paragraph] before the corresponding "thresholds" are reached) and linked to follow-up management actions (see Management Response Plan [Section 4] of the AEMP design document [AEMP 2012]).

AEM has worked hard over the past few years to make the CREMP a more user-friendly document while maintaining transparency. Given that results for the Meadowbank lakes and Baker Lake are reported separately and that there are over 70 parameters included in the analysis, a conservative rule set was adopted to identify parameters for the formal trend assessment that included consideration of: (1) overall detection frequency (>10%), (2) control-impact detection frequency - where the proportion of detected values did not differ by more than 0.1 between station types, and (3) for Meadowbank only, where the apparent pattern in detected values matched mining activity. Parameters for which <u>any</u> of these rules were met were included in the trend assessment; plots for all parameters that failed all rules are still provided in a CREMP appendix. AEM believes this approach is conservative, defensible and transparent. AEMs rule 1 is consistent with KIAs recommendation. AEMs rules 2 and 3 ensure that all parameters (even those less than 5x MDL) that possibly show a mine-related pattern are included in the trend assessment.

4.2.6 KIA-15 Elevated Sediment Concentrations: Zinc and Lead (CREMP Sediment Chemistry Discussion, Table 3.4-1)

There were a few trigger values exceeded at impact areas (e.g., copper [WAL], chromium [TPN] and zinc [SP, WAL]) but were within the range of baseline conditions. Interestingly zinc was not highlighted as a potential risk to the environment in the CREMP but was highlighted in the summary in the Main Supporting Document.

Lead was found at above both the trigger and threshold concentrations in WAL sediment samples in August 2013 but was not highlighted in the text.

- **The KIA recommends that AEM harmonize the existing aquatic environment summary presented in the Main Supporting Document with results and findings presented in the CREMP. A discrepancy has been noted for zinc. The CREMP also does not discuss elevated lead concentrations in the WAL sediment samples. These concentrations are above both the trigger and threshold concentrations and require management actions. It is recommended that a condition be included in the water license that requires management actions when concentrations are above a threshold value.**

- **The KIA also requests an explanation as to why elevated lead concentrations were overlooked in the CREMP discussion.**

  AEM will discuss these recommendations and comments related to sediment during the technical hearings.

4.2.7 KIA-16 Elevated Sediment Concentrations: chromium (CREMP Sediment Chemistry Discussion)

There was a temporal/spatial pattern observed in 2013 for chromium in TPE sediments which demonstrated a continued increase from the pattern highlighted in the 2012 CREMP. Chromium

exceeded the trigger concentration in 2013 TPE sediments. A coring study is currently planned for 2014 to confirm the trend. This study is timed to coincide with the year's EEM program.

- **The CREMP recommends management action to follow up with increased chromium concentrations. Management action can be coupled with more stringent discharge criteria for chromium in the water license. The KIA recommends a condition in the water license to address elevated chromium in TPE sediments prior to reaching the threshold value. We initially suggest more stringent discharge criteria for chromium. We invite AEM to provide other management options.**

  AEM will discuss these recommendations and comments related to sediment during the technical hearings.

4.2.8 KIA-17 Zooplankton Sampling (Appendix B2, Sampling Frequency)

AEM has indicated a violation of the water license condition requiring monthly water quality samples. We are sympathetic to this violation based on our understanding of challenges faced by arctic environmental sampling. Statements such as "*Sampling in June, October and early November is highly dangerous due to thin ice conditions*" reflect AEM's understanding of these challenges. Six months (April, May, July, Aug, Sept, plus November or December) of full water chemistry data for the annual period was proposed to support BACI analyses of the aquatic environment. AEM has also proposed collection of "basic field water quality data" in nearfield areas (i.e., TPN, TPE, SP and eventually Wally) at least once mid-winter.

AEM has provided a useful rationale for sampling frequency of each parameter based on expected response time to mine impacts.

- **Water quality – up to 6x/year**
- **Phytoplankton – up to 6x/year in open water season samples**
- **Sediment – yearly**
- **Benthic invertebrates – yearly**
- **Zooplankton and periphyton – discontinued due to variability in data collected to date**

- **The distribution of samples is acceptable as it adequately characterizes both under ice conditions and the open water. However, the KIA are concerned that zooplankton and periphyton sampling will be discontinued. The KIA recognizes that zooplankton sampling is not required by EEM under MMER. However, the inclusion of zooplankton monitoring is required by the NWT in Aquatic Effects Monitoring Programs (AEMPs) within similar environmental conditions. Furthermore zooplankton are important to young of the year fish and can help characterize changes related to mine impacts. The KIA recommends to continue including zooplankton as part of the AEMP for the project.**

  The Type A water license (2AM-MEA0815) for the project issued by the Nunavut Water Board (NWB) in 2008 required a revised AEMP, and specified some of the requirements for that revision. Beginning in 2009, AEM began collecting data in support of this revision to strengthen the ability of the CREMP to detect changes in the receiving environment. AEM hosted workshops with the NWB (including representatives from KIA, Environment Canada and Fisheries and Oceans Canada) in March (Yellowknife) and June (Edmonton) 2010 to review the redesign of the AEMP (now an overarching 'umbrella' that serves to integrate the results across AEM's individual, but related, monitoring programs in accordance with the Type A water license requirements) and the CREMP (the core receiving environment monitoring program). The workshops were followed up with the submission of draft design documents for both the AEMP (which showed the linkages between monitoring program results and management actions) and CREMP (which included details for receiving environment monitoring such as statistical design, station identification, proposed references, decision criteria [triggers and

thresholds], sampling protocols, and DQOs) and final design documents submitted to the NWB in December 2012. These complementary documents provide details ranging from how/when samples are collected to how monitoring results are interpreted (e.g., employing early warning "triggers" that lead to action [see next paragraph] before the corresponding "thresholds" are reached) and linked to follow-up management actions (see Management Response Plan [Section 4] of the AEMP design document [AEMP 2012]).

The potential inclusion of zooplankton was studied in detail in the CREMP Design Report (2012). Despite early discussions during the aforementioned workshops to drop zooplankton from further consideration, AEM decided to conduct further sampling to reassess the situation. Samples were collected in 2010 and 2011; these data were assessed for power using the BACI statistical framework. There was low power for detecting 20% (over any number of years) or 50% changes in zooplankton metrics in a single year. Power improved only when trying to detect a 50% change with two to three years of after data. Consequently, it was removed as a monitoring component of the CREMP. That said, it was acknowledged that zooplankton studies may still be appropriate for more intensive spatial-gradient designs as those employed for targeted studies (i.e. TSS Effects Assessment Studies (EAS)) where they might also be coupled with zooplankton-based toxicity testing. Considering the comprehensive and conservative approach applied to water in the CREMP, AEM does not feel that this decision detracts from the CREMPs ability to detect mine related changes in the receiving environment (i.e., as the assessment phase of the Management Response Plan would address the ecological significance of changes to water quality [e.g., as described for the EAS case above).

4.2.9 KIA-18 Depth Samples (Appendix B2, Experimental Design)

Depth water quality samples are not proposed for Meadowbank. They were collected in 2009-2010, to determine the potential importance of differences in measurements associated with depth but the magnitude of differences associated with depth was minimal compared to the magnitude of differences occurring naturally between samples and stations. AEM did document an earlier response of elevated TSS in Third Portage Lake resulting from dike construction. Concentrations during the curtain breach were elevated at surface but above the threshold for acute lethality to fish at depth, as shown in the special investigations undertaken by Azimuth in response to the silt curtain breach. Consistent sampling at depth may better inform mitigation decisions through increased probability of detection of any episodic changes to water quality.

This point will be further discussed in KIA-IR 23, Seepage at ST-16 and Lake NP2.

- **The KIA recommends that depth samples should be required from 1 meter off lake bottom as part of the CREMP at sample sites where stratification has been demonstrated through routine lake profiles of field temperature, conductivity, dissolved oxygen and pH.**

  The CREMP has been designed to detect changes in the receiving environment at the lake basin spatial scale. Complementary programs were developed specifically to monitoring changes requiring more spatially and temporally more intensive monitoring (e.g., dike construction monitoring). AEM agrees that there are times when sampling at depth would be useful to better characterize the receiving environment.

  Based on baseline limnological data, the Meadowbank lakes are generally considered to be well mixed. This assumption was formally tested in the CREMP Design Report (2012) to determine if a routinely collecting depth sample was warranted in the CREMP; the conclusion was that surface samples adequately characterized the water column. That said, it is recognized that stratification may occur and that sampling at depth may be appropriate. This has been incorporated into the CREMP by instructing field teams to take samples at depth when vertical profiling suggests the presence of stratification (e.g., abnormally high conductivity measurements).

4.2.10 KIA-19 Statistical comparison of Biological Monitors (Appendix B2, Experimental Design)

The use of Before-After-Control-Impact (BACI) analysis is an appropriate analysis framework to evaluate potential impacts in a particular lake or basin over a particular time period. It is also effectively used to identify long-term trends in data.

Benthic invertebrate and phytoplankton sample and statistical design are not problematic. We acknowledge the low statistical power of phytoplankton sample comparison resulting from high natural variability. Similarly as stated by AEM: "*zooplankton variables are not realistically capable of detecting effects in a given year*". However, we disagree with AEM's decision to remove zooplankton from the CREMP.

- **Biological monitoring is inherently variable but can be partially addressed using an approach recommended by Wiens and Parker and used in the Doris North AEMP analysis of benthos. This approach is an impact level-by-time analysis, where the benthos and other biological monitor trends at exposure sites are compared to the trends at reference sites to determine if there is evidence of non-parallelism over time. The KIA recommends the use of the Wiens and Parker approach in addition to the BACI assessment for biological monitoring results (benthic invertebrates, phytoplankton, zooplankton).**

  The Type A water license (2AM-MEA0815) for the project issued by the Nunavut Water Board (NWB) in 2008 required a revised AEMP, and specified some of the requirements for that revision. Beginning in 2009, AEM began collecting data in support of this revision to strengthen the ability of the CREMP to detect changes in the receiving environment. AEM hosted workshops with the NWB (including representatives from KIA, Environment Canada and Fisheries and Oceans Canada) in March (Yellowknife) and June (Edmonton) 2010 to review the redesign of the AEMP (now an overarching 'umbrella' that serves to integrate the results across AEM's individual, but related, monitoring programs in accordance with the Type A water license requirements) and the CREMP (the core receiving environment monitoring program). The workshops were followed up with the submission of draft design documents for both the AEMP (which showed the linkages between monitoring program results and management actions) and CREMP (which included details for receiving environment monitoring such as statistical design, station identification, proposed references, decision criteria [triggers and thresholds], sampling protocols, and DQOs) and final design documents submitted to the NWB in December 2012. These complementary documents provide details ranging from how/when samples are collected to how monitoring results are interpreted (e.g., employing early warning "triggers" that lead to action [see next paragraph] before the corresponding "thresholds" are reached) and linked to follow-up management actions (see Management Response Plan [Section 4] of the AEMP design document [AEMP 2012]).

  In addition to presentation/discussions at the two NWB workshops, the statistical approaches employed in the CREMP were also discussed with Dr. Carl Schwarz of Simon Fraser University. The BACI models employed in the CREMP take advantage of baseline data collected prior to mine development to provide an understanding of the natural dynamic state present at all stations; these models specifically incorporate natural initial differences among stations and track changes (non-parallelism) over time related to mining. We are familiar with Wiens and Parker (1995) and agree that the authors provide some practical approaches for environmental monitoring in cases when trying to assess the implications of environmental perturbations that were not envisioned (e.g., where baseline data do not exist and investigators need to make inferences regarding impacts). That said, the statistical approaches presented by Wiens and Parker are no less susceptible to reduced power; the authors quote Underwood (1994): "When natural variation in time and space is great, the only effects of human disturbance that are likely to matter are very large ones." While zooplankton was dropped from the CREMP, AEM acknowledges that zooplankton studies may still be appropriate for more intensive spatial-gradient designs as those employed for the targeted studies (i.e.TSS Effects

Assessment Studies (EAS)) where they might also be coupled with zooplankton-based toxicity testing. Considering the comprehensive and conservative approach applied to water in the CREMP, AEM does not feel that this decision detracts from the CREMPs ability to detect mine related changes in the receiving environment (i.e., as the assessment phase of the Management Response Plan would address the ecological significance of changes to water quality [e.g., as described for the EAS case above).

4.3 *Review of Management Plan and Report*

4.3.1 KIA-20 Lack of Event Monitoring Discussion (Appendix B6, Event Monitoring, Appendix B7 and Appendix B9)

A critical aspect of the water management plan is event monitoring. The reader is directed to Appendix B6 - Meadowbank Gold Project Spill Contingency Plan (November 2013); and Appendix B9 - Meadowbank Gold Project Emergency Response Plan (August 2013). Event monitoring has not been addressed in these appendices.

- **AEM should include the event monitoring requirements in Appendix B7 and Appendix B9 as discussed in Appendix B6.**

  AEM agrees and will make a clearly reference to the event monitoring requirements in the next revision of the Spill Contingency Plan (SCP) as discussed in the Water Quality and Flow Monitoring Plan. The Emergency Response Plan (EMR) is a consolidated source of information for employees, contractors, and site visitors to respond quickly and efficiently to any foreseeable emergency (for example major spill) that would likely occur at the Meadowbank project site and do not provide information on monitoring after response. Emergency Response Plan (ERP) already refers to the Spill Contingency Plan in which event monitoring requirement will be clarify. Both plan (SCP and ERP) are considered to be implement in the case of an event monitoring depending of the magnitude of the event.

4.3.2 KIA-21 Monitoring Parameters (Appendix B6, Event Monitoring Water License, Schedule I, Monitoring Group)

AEM has proposed to simplify the number of monitoring groups used at each sample site. The parameters included in each group are acceptable. This list has been presented in both Appendix B6 and as part of the Water License.

Use of adequate detection limits is a common problem when assessing environmental data. Detection limits used for silver, cadmium and total phosphorus are often too high to allow for a useful assessment of environmental conditions.

We also note that weak acid dissociable (WAD) cyanide has not been included in all parameter groups where cyanide will be assessed.

- **The KIA requests that AEM commit to use of the lowest commercially available detection limits for water quality parameters and present a list of what these will be.**

  AEM uses an accredited laboratory that use low detection limits for all parameters in the CREMP and additional AEMP receiving environment ponds. You will find in Appendix E a list of detection limits from our accredited laboratory in Val-D'Or and ALS.

- **WAD cyanide should be included in Group 1 and Group 3 or AEM should commit to taking a conservative approach and compare total cyanide with the CCME guideline for free cyanide: 0.005 mg/L free cyanide.**

  As proposed in the renewal, AEM will continue to collect free and total cyanide samples as part of the CREMP monitoring to ensure the protection of the receiving environment (i.e. group 3). As originally suggested by the KIA in 2013, AEM will continue to monitor free cyanide in the receiving environment and AEM will continue to monitor total cyanide at discharge points ST-9 and ST-10, as per MMER.

4.3.3 KIA-22 Impact of violating obtainable freshwater limit (Appendix B9, What is a Spill?, Appendix B9, Materials and reportable (to regulatory authorities) spills)

The plan provides guidance for addressing a spill and a hierarchical framework to progress through a spill response. Chemicals stored on site are described and a list of response equipment and locations is provided.

Materials and reportable (to regulatory authorities) spills on site are described. The substances and compulsory reporting amounts are provided in Table 1 of the appendix:

Table 1 - Spill quantities that must be reported to the NT-NU 24-HOUR SPILL REPORT LINE

Transportation Class	Type of Substance	Compulsory Reporting Amount
1	Explosives	Any amount
2.1	Compressed gas (flammable)	Any amount of gas from containers with a capacity exceeding 100 L
2.2	Compressed gas (non-corrosive, non- flammable)	Any amount from containers with a capacity exceeding 100 L
2.3	Compressed gas	Any amount
2.4	Compressed gas (corrosive)	Any amount
3.1, 3.2, 3.3	Flammable liquid	100 L
4.1	Flammable solid	25 kg
4.2	Spontaneously combustible solid	25 kg
4.3	Water reactant solids	25 kg
5.1	Oxidizing substances	50 L or 50 kg
5.2	Organic peroxides	1 L or 1 kg
6.1	Poisonous substances	5 L or 5 kg
7	Radioactive substances	Any amount
8	Corrosive substances	5 L or 5 kg
9.1 (in part)	Miscellaneous substances	50 L or 50 kg
9.2	Environmentally hazardous	1 L or 1 kg
9.3	Dangerous wastes	5L or 5 kg
9.1 (in part)	PCB mixtures of 5 ppm or more	0.5 L or 0.5 kg
None	Other contaminants	100 L or 100 kg

***Note**: L = litre; kg = kilogram; PCB = polychlorinated biphenyls; ppm = parts per million.*

Seepages have not been considered spills under the spill contingency plan. We are concerned that seepages like that from the waste rock storage facility to Lake NP2 was not immediately reported when changes were detected at sampling station ST-16.

- **The KIA requests that AEM provide a discussion of unanticipated seepages as part of the spill contingency plan. Seepages such as that in Lake NP2 was brought to the attention of regulatory bodies by an AANDC inspector rather than AEM itself. These seepages should be considered "spills" as they have unintentionally or accidently been allowed to breach their intended containment and may have an adverse impact on the environment. This is in line with AEM's definition of what a spill is: "*major spill is defined as an accidental release of product into the environment that has the potential for adverse impact*."**

  AEM agrees with KIA recommendation and will add a section in the updated version of the Spill Contingency Plan that will include unanticipated seepage that can occur on the mine site.

4.3.4 KIA-30 RSF Design (Appendix B10 section 2.3, page 4)

AEM has indicated that the Vault RSF is not expected to require capping, as the bulk of the material from this deposit is expected to be NPAG (Golder, 2005a).

- **The KIA requests that AEM report on and monitor the amount of PAG versus NPAG material in the Vault RSF in order to ensure that, if required, the RSF is capped with an appropriate amount of material to ensure that freezeback of the RSF occurs upon closure.**

  AEM also takes note of the request from KIA and will update the requested information in the Annual report. The quantity of PAG vs NPAG material is monitored and updated on a routine basis and geochemical testing on rock are conducted to ensure the ratio is still valid. From the prediction that are into the Updated Mine Waste Rock and Tailings Management Plan - 2013, AEM will mine from 2014 to 2017 43.1 Mt of waste rock from which approximately 95% will be NPAG and 5% will be PAG. This ratio will ensure no future ARD from the Vault Waste Rock Pile.

4.3.5 KIA-31 Waste Rock Storage Facilities (Appendix B14 section 3.3.6.3, page 61)

AEM has indicated that runoff water quality and water volume from the Portage and Vault Waste Rock Storage Facilities will be monitored throughout the mine life, including operations, closure and post-closure. Given that the height and crest elevation of these facilities is 13% to 17% higher than the surrounding topography will fugitive dust emissions also be monitored, in particular, during closure and post-closure.

- **The KIA requests that AEM include fugitive dust as part of closure and post-closure monitoring.**

  AEM agrees with the KIA recommendation and will continue to monitor fugitive dust as part of closure and post closure monitoring.

4.3.6 KIA-23 Impact of violating obtainable freshwater limit (Appendix B18, 3.2.1 Water Management Plan and Water Balance)

AEM outlines the water management strategy stating "*At Meadowbank, there are three major sources of water entering into the water management system: freshwater pumped from Third Portage Lake, natural pit groundwater inflow and freshet flows. The water is removed from the system through the following mechanisms: water treatment plants at the attenuations ponds (Portage ATP and Vault ATP), trapped in the capillary voids of the tailings fraction and ice entrapment at the TSF, East Dike seepage discharge into Second Portage Lake and water trapped within the in-pit central wasterock disposal area voids.*

***The AEM water balance is subdivided into the following sections: Fresh Water from Third Portage, Reclaim Tailings Water, Mill, North Cell TSF, South Cell TSF, ATPs (Portage and Vault), Portage Pit, Goose Pit, Water Transfers and East Dike Seepage pumped to Portage. The following sections will discuss each item and their inherent parameters.*"**

The strategy continues to outline exactly how water was used, a critical point in understanding why the current maximum quantity of obtainable freshwater outlined in the existing water license was exceeded in 2013 and earlier years. AEM attributes exceedances of the 700,000m^3/year license limit to "*problems associated with the booster pump and the reclaim barge at the North Cell TSF*".

The impact of the additional draw on Third Portage Lake is not discussed nor are the implications of unused reclaim water on the TSF capacity.

- **The KIA recommends that AEM provide a discussion of the impact additional use of freshwater from Third Portage Lake for milling purposes has had. Initial discussion should outline the influence on lake level and outflow. If there was a significant change to either, a follow up discussion should focus on impacts to aquatic life (particularly fish habitat) and water quality. AEM should also provide a discussion of the impact diminished use of reclaim water will have on the TSF and what measures are in place to prevent a significant loss of freeboard or unanticipated discharge volumes.**

  AEM refers the KIA to previous responses to DFO comments and recommendations related to pit reflooding and closure planning. To ensure water levels in Third Portage Lake will not be affected during pit flooding, in Section 4.6 of Golder (2009) Doc 833 0717_09 RTP-Updated Water Management Plan specifies that the maximum allowable drawdown of Third Portage Lakes has been assumed to correspond to the water level necessary to maintain a minimum flow equal to the average annual (1:2-year return period) 60-day low flow at the outlet of the lakes over the four summer months (June through September). The low flow rates were computed based on regression curves developed by AMEC (2003) and presented in the original licensing hearings. In response to the final point of this recommendation, it is important to note that as per the NWB Water License Part J, Item 3, AEM will submit the Final Closure and Reclamation Plan at least twelve (12) months prior to the expected end of mining (targeted date of Q3 2016). However, during the technical meetings, AEM will discuss conceptual plans to close the TSF.

4.3.7 KIA-24 Modeling Results and Mitigation (Appendix B18, Water Quality Modeling Report, Appendix D – Water Quality Report)

Condition Part E Item 6 of the existing water license requires AEM to compare predicted (originally modelled during the NWB Type A License) water quality parameters in the pits to actual measurements. Total cyanide has been modeled rather than free cyanide as is regulated by the CCME. The summary of water quality in the pits is presented in Table 4.1 from the Water Management Report and Plan below. The full SNC Water Quality Report is presented in Appendix D – Water Quality Report.

Table 4.1: Comparison of originally predicted pit water quality versus SNC(2014) modelled water quality

Parameter	CCME (mg/L)	Portage Pit (mg/L)				Goose Pit (mg/L)			
		Original Prediction		SNC, 2014		Original Prediction		SNC, 2014	
		Probable	Possible Poor end Scenario	Aug 2017	Dec 2025	Probable	Possible Poor end Scenario	July 2015	Dec 2025
Total Cyanide (CN)	0.005 as free CN	-	-	0.00	0.00	-	-	0.00	0.00
Copper (Cu)	0.004	0.0014	0.013	0.0042	0.06	0.001	0.001	0.0048	0.28
Iron (Fe)	0.3	-	-	0.00	0.006	-	-	0.00	0.029
Ammonia (NH3)	0.86 (mg N/L)	0.00057	0.0006	0.212	0.97	0.0006	0.0006	0.2956	3.38
Nitrate (NO3)	2.9 (mg N/L)	2.60	4.40	0.00	0.26	4.00	4.00	0.00	1.13
Chloride (Cl)	120	630	630	0.00	12.97	440	440	0.00	51.61

Grey shading indicates exceedances of CCME guidelines

Comparison of total cyanide concentrations to the free cyanide guideline is sufficiently conservative. Free cyanide is a component of the total thus use of the free cyanide guideline would over represent the risk posed to aquatic life. Mitigation would be required at lower concentrations of free cyanide.

The full SNC water quality report outlines the potential for elevated copper and ammonia concentrations in the pits after reflooding. This poses a risk to aquatic life in Third Portage Lake which will mix with pit water once water levels are equivalent to Second Portage Lake and the dike is breached. The water license stipulates that this will not occur until pit water quality meets CCME criteria.

- **The KIA recommends that AEM provide modeling results for free cyanide or commit to comparing total cyanide to the free cyanide guideline in all samples. The approach varies between reports and plans and should be harmonized prior to renewal of the water license.**

- **The KIA also recommends that AEM provide modeling results in the water management report and plan indicating when pit water quality will meet CCME guidelines. This will provide insight into management actions AEM may consider to mitigate copper and ammonia concentrations in the pit water.**

  AEM will discuss these recommendations and comments during the technical meetings.

4.3.8 KIA-25 Seepage at ST-16 and Lake NP2 (Appendix 18, Appendix D – Water Quality Report)

This report details AEM's response to the seepage discovered at the ST-16 site in Lake NP2 from the rock storage facility. The interim till plug was located on the upstream side of the access road to the North Cell Ditches, between the Waste Rock Storage Facility (RSF) and the NP2 lake.

A staff gauge was been placed at the seepage location to determine and visually quantify the water level increases. AEM has instructed a water truck to pump the water and dispose of it in the tailings pond should water levels become too high on the upstream side of the till plug as seen in Appendix A Figure 10.

Figure 10: photo of the final result of the entire till plug from West to East. The actual pumping station and the 2 active seepage channels are visible on the eastern abutment.

- **As indicated in HESL 2014, we conclude that both Golder and AEM have followed a reasonable approach in response to the seepage detected at ST-16. Monitoring ST-16 and Lake NP2 during and after the 2014 freshet will confirm if the mitigation measures were successful.**

  AEM acknowledges the KIA comment.

4.3.9 KIA-26 Depth sample collection for Dike Monitoring (Appendix B19)

AEM discusses the East Dike - Seepage Collection System stating its purpose is to collect and convey seepage and runoff away from the downstream toe area; and allow measurement of seepage through the dike. It was installed to capture and pump the seepage water that started in September 2011. Despite the potential risk posed to aquatic life, detection of seepages during construction rely on visual monitoring in combination with installed thermistors and piezometers for dike integrity. Assessment of TSS and turbidity concentrations are not conducted.

In a previous HESL (2013) review, TSS were reported to escape the silt curtains by movement beneath or between the curtain panels during routine operations and extremely high TSS values were recorded in a deep plume of TSS in Third Portage Lake in late August 2009. Elevated TSS was potentially acutely lethal at depth but not at the surface. TSS also escaped the silt curtains in the fall of 2008 during construction of the East Dike.

Reliance of visual inspections alone may be insufficient to detect implications of the TSS seepage of September 2011 allowing AEM to employ mitigation measures in a timely manner.

AEM states regarding water quality that "*Water quality of the seepage and runoff collected in the sumps and ditches at the toe of the Dewatering Dikes is to be monitored during operations. Daily inspections during dewatering and weekly inspections during operation are required as an indicator of dike performance to note whether seepage water is clear, cloudy or if fine material is present.*" As part of the seepage monitoring during operations, AEM also states "*the water quality should be monitored daily by visual observations for sediments (turbidity).*" Visual inspection should document sediment, ice or snow deposits in the ditches and sumps. This represents the detail of water quality monitoring which is employed during mine operation as described in the manual.

Further water quality monitoring will occur during dewatering as described in the water management plan as per the Water License.

- **The Samples collected at depth downstream of all dikes during operation are required to detect water chemistry changes resulting from seepages. Aquatic life downstream of the dikes is**

unnecessarily put at risk by reliance on visual monitoring of seepage water in the ditches and the toe rather than in the potential receiver should failures occur.

Water quality monitoring should be required as part of the emergency response plans when conditions for Threshold Criteria "Yellow" or above are met:

- **East dike: seepage through dike of > 3000 m^3/day and/or turbidity in seepage water.**
- **Bay Goose Dike at toe: seepage of > 300 m^3/day and/or turbidity in seepage water**
- **Bay Goose Dike at North Channel Area: seepage of > 150 m^3/day and/or turbidity in seepage water**
- **South Camp Dike: seepage of > 300 m^3/day and/or turbidity in seepage water**
- **Vault Dike: seepage of > 300 m^3/day and/or turbidity in seepage water**

The KIA understands that AEM has taken daily profiles using a hand held turbidity meter during dike construction downstream of the silt curtains. The KIA requests that a turbidity profile be collected downstream of the dike when the outlined Threshold Criteria "yellow" is met. Potential profile collection locations and mitigation measures should be evaluated and presented for review prior to renewal of the water license.

AEM is requesting clarification on the comments from KIA. There are statements throughout this comment such as "detection of seepage during construction rely on visual monitoring in combination with installed thermistors and piezometers for dike integrity" and the statement "Reliance of visual inspections alone may be insufficient to detect implications of the TSS" and "Aquatic life downstream of the dikes is unnecessarily put at risk by reliance on visual monitoring of seepage water in the ditches and the toe rather than in the potential receiver should failures occur." AEM would like to clarify the differences between dike seepage monitoring (which is monitoring the inflow of water quality and quantity for lake water that is seeping into the pit through the dike; this water most often reports to a down-gradient sump and is collected and pumped to the reclaim area, and therefore does not impact the receiving environment) and dike construction monitoring; the methods used for monitoring are different. AEM refers the KIA to the dike construction monitoring plan included in the Type A renewal and the associated annual monitoring reports that document the thoroughness of AEM's dike construction monitoring and subsequent targeted studies. As per the dike construction monitoring plan, AEM does not rely solely on visual observations. Rather as approved by the NWB, during dike construction, AEM uses calibrated turbidity meters at numerous stations outside of the turbidity curtains to collect depth profiles and real-time TSS data for immediate mitigation, we have used the onsite laboratory for TSS monitoring (including dewatering and seepage water monitoring) and routine sample collection at all depths in areas with maximum readings of turbidity / TSS for submission to an accredited laboratory. AEM also refers the KIA to the annual geotechnical inspections reports and the Meadowbank dike review board reports that ensure the geotechnical structures are constructed, monitored and that the integrity of the structure is not impacted by seepages.

4.3.10 KIA-27 Anomalous Thermistor or Piezometer Reading Response (Appendix B20, 6.2.2 Anomalous Readings)

AEM has provided a response progression when anomalous readings are recorded from thermistors or piezometers used to monitor the tailings storage facility (TSF). Operators are instructed to "*increase monitoring frequency to assess progression of [the] anomaly*" if they are able to confirm readings are not a relic of the instrumentation. While this is the appropriate response it provides no assurance monitoring will be sufficiently increased to detect failures that may results in increased seepage. This concern is bolstered by delayed detection of the seepage from the waste rock facility bordering the northeast side of the TSF.

- **The KIA requests that AEM describe the frequency of monitoring associated with their instruction to "*increase monitoring frequency*". This will provide assurance that the response**

to thermistor and piezometer reading changes is sufficient to protect the aquatic environment from potential seepages resulting from TSF structural deficiencies and wear over time.

AEM will discuss this request and comments during the technical meetings.

Appendix A

AEM Letter Proposed Water Level Trigger for Weekly Monitoring in TPL

AGNICO EAGLE

January 5, 2014

Karén Kharatyan
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0

Dear Karén

RE: Proposed Water Level Trigger for Weekly Monitoring

In response to the question during the Meadowbank Mine Type A Water License freshwater use Amendment technical meeting and to the email from the NWB dated February 3rd, 2014, AEM has developed trigger levels for increasing monitoring from monthly to weekly monitoring and to engage the NWB. These will also be included in the updated Water Management Plan.

Third Portage Lake has a pre-operation volume of 446,200,000m^3 and a pre-operation water level of 133.68 masl. As per Meadowbank's Type A Water License conditions, AEM monitors water levels in Third Portage Lake on a monthly basis. AEM is proposing two trigger values, below which measures will be taken to prevent impacts to Third Portage Lake. The trigger values were derived based on the maximum permissible winter water withdrawal volume of 10%, according to the DFO "Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut", June 21, 2010.

If the water volume is decreased by 5%, or there is a water level decrease of 0.68m (133.0 masl), AEM will increase the water level monitoring from monthly to weekly. If the water volume in Third Portage Lake decreases by 10%, or there is a water level decrease of 1.35m (132.33 masl), AEM will initiate a review of the mine site water balance, evaluate the natural contributing factors (eg. precipitation) and engage in consultation with the NWB to determine measures to protect the aquatic ecosystem.

Should you require any further information or questions please contact the below.

Regards,

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Appendix B

AEM Freshet Action Plan

AGNICO EAGLE

MEADOWBANK GOLD MINE

FRESHET ACTION PLAN

APRIL 2014

EXECUTIVE SUMMARY

The purpose of this Action Plan is to identify areas of concern around the Meadowbank mine site and the AWPR that need to be managed in an organized and timely manner during the annual freshet period to prevent adverse environmental and operational impacts. The freshet period typically occurs during the annual snow and ice melt sometime around mid-May and extending until the end of July. During this period excess water is created and must be managed through additional pumping and management practices at vulnerable areas around the site. Mitigation techniques, timeframes and specified roles and responsibilities are outlined in this document for each area of concern.

The main areas of concern are the mining pits and pit walls, the East and West diversion ditches, Vault Road culverts, the area around the Portage Waste Rock Storage Facility (WRSF) including the northern portions of the NPAG waste rock extension (part of the Waste Rock Storage Facility (WRSF), Northwest corner of the North Cell TSF, Saddle Dam 1 corner, Saddle Dam 2 sump, AWPR culverts near the site and along the road to Baker Lake, WRSF – ST-16 Seepage, Assay Road Seepage and the Vault Pit area.

It is important that all dewatering and associated infrastructure be in good working order and adequate to receive the expected water flows associated with the freshet period; this includes but is not limited to pumps, ditch and sump maintenance, critical piping system installation and inspection, adequate resource allocation for preparative work and establishing a viable monitoring program for the areas of concern. A concise summary of the 2014 preparation works and roles and responsibilities is presented in the attached Appendix 1 (2014 Freshet Action Plan Procedures). Appendix 1 will be updated yearly to reflect changes in conditions at the Meadowbank site. Appendix 2 contains diagrams depicting the areas of concern.

DOCUMENT CONTROL

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_____

Engineering and Environmental Department

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SECTION 1. INTRODUCTION

The purpose of this Action Plan is to ensure that AEM can address and manage excess water associated with the freshet season at the Meadowbank site. The freshet season is loosely defined as being a period of time from approximately May 15 – July 30; in some cases this period of time can extend up to early fall when freezing re-occurs (October 15). There are many areas around the site that are vulnerable to this excess water; the goal is to identify these areas and develop a clear plan with defined roles and responsibilities (among AEM Departments), and to manage the freshet flows.

In addition, several guiding principles are applicable to the formation of this plan. The highest priority principles are:

1) to ensure that mine contact water from runoff or seepage is managed to prevent adverse environmental impacts;

2) to ensure that the health and safety of AEM employees is protected, especially with respect to mining operations when excess water is present; and

3) to make sure the site is in compliance with the Nunavut Water Board (NWB) License, Part D, Item 33 and Part E, Item 9.

The plan will identify the areas of concern and discuss the potential risks as well as mitigation measures necessary to address the identified issues. Appendix 1 contains the actual defined 2014 procedures, the roles and responsibilities and associated timelines. AEM's intent is to update the Procedural Appendix on a yearly basis. For example, there may be additional mitigation measures for a defined problem area or in some cases a previously defined issue may be permanently rectified.

The main areas of concern are the mining pits and pit walls, the East and West diversion ditches, Vault Road culverts, the area around the Portage Waste Rock Storage Facility (WRSF) including the northern portions of the NPAG waste rock extension (part of the Waste Rock Storage Facility (WRSF), Northwest corner of the North Cell TSF, Saddle Dam 1 corner, Saddle Dam 2 sump, AWPR culverts near the site and along the road to Baker Lake, WRSF – ST-16 Seepage, Assay Road Seepage and the Vault Pit area.

Each area identified above will be discussed in detail below. All areas of concern are considered priorities based on the guiding principles.

SECTION 2. AREAS OF CONCERN

2.1 MINING PITS AND PIT WALLS

All permanent ramps, jump ramps, ditches and sumps must be cleaned of all ice and snow before the month of May in order to contain any water resulting from the snow melt. All pumps must be checked and serviced before the month of May. In addition, a check must be completed confirming that all piping systems starting from the different pits leading to the attenuation pond are free of ice by validating pumping values (if pumping systems are active) and/or performing an air test in the pipe with a compressor.

2.1.1 Goose pit

Water management in the Goose pit has been challenging for the mining operation. A significant section of the main access ramp is located in an ultramafic rock band called soapstone, a material that becomes fragile when it comes in contact with water. After each rain event, an inspection of the Goose pit west wall is required. To reduce health and safety risks and impact on production, proper water management must be executed during freshet.

2.1.1.1 Goose pit west wall

With the amount of ice present on the west walls in Goose pit, as shown in Figure 2-1, special attention must be taken when ice is removed from the walls. Periodically, ice removal is to be performed with an excavator to prevent any ice overhangs forming over the ramp.

Figure 2-1: Goose pit West Wall

2.1.1.2 Goose Pit ramp and switchbacks

The Goose pit ramp is located in the section of the pit associated with highly fractured rock. Water seeps continually from the west wall over the pit ramp leading to concentrated efforts in water management during normal operation of this mining area. Mine operations personnel have established sumps on each switchback to manage the water. Ditches located on the toe of the hauling road direct the water inflow into these sumps to avoid formation of ice on the ramp. Figure 2-2 presents the location of the ice over the walls as purple clouds, the ditches are identified by thick red lines and the sumps are represented by circles. Note that the sump located at the south switchback (black) is active however the sump on the north switchback (blue) still remains to be constructed.

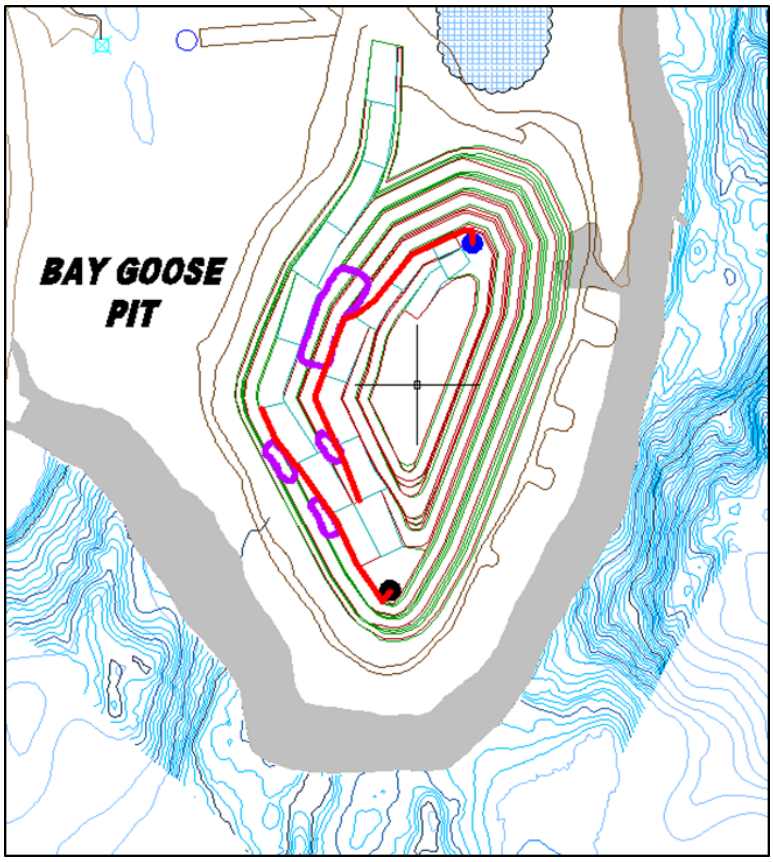


Figure 2-2: View of Goose pit with the associated sumps and trenches to be maintained before freshet

The existing ditch along the ramp on its first portion, between the 5102 bench and the first switchback at 5074, has to be maintained free of ice during winter as a part of an established procedure. The sump on the switchback at 5074 must be free of ice as well. The pump, already installed in the sump, must remain at this location and any maintenance to the pump or genset shall be completed before May. As the ramp is progressively established between the switchbacks at 5074 and 5028, a ditch must be constructed along the west wall to reach the switchback. This ditch must also be free of ice. A permanent sump (north) must be blasted on the 5028 switchback and a pump installed before May.

Mining operation in Goose pit may be suspended for an undefined period following the 2014 freshet due to safety concerns related to the ice formation on the west pit wall. The 5025 bench

will be mined and the decision to continue mining operations will be taken after daily inspections and assessment are performed by geotechnical and mining crews in the spring. If unsafe conditions, expected sometime in May are observed, the Goose pit mining operations will be suspended, all equipment and personnel will be evacuated and the monitoring program will continue until it is judged safe to return to normal operation. The pit could also be declared inoperable due to water affecting sampling in ore patterns. Operation will resume as normal once the geotechnical and mining crews agree that it is safe to do so.

2.1.2 Portage pit

Water management in the Portage pit has been simplified since the mining of pits B, C and D has been completed. These completed pits; located in the talik area had significant water inflows compared to the remaining Portage pit mining areas. However, the new pit design calls for a pushback of the Pit E area. This pushback will interfere with existing runoff water infrastructure (ditches) shown on the Figure 2-3. The channel between the sump number 8 and the pond GP8 is now blocked by the Portage pit E3 access ramp. A new sump area will be located near the GP8 pond.

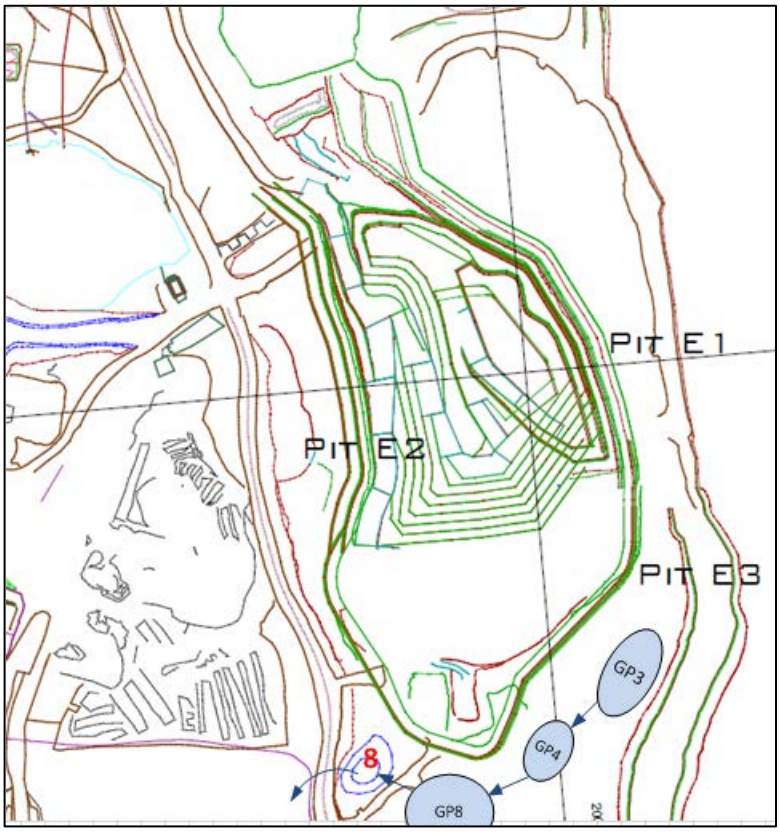


Figure 2-3: View of Portage Pit E area with the associated sumps and trenches to maintain before freshet

2.1.3 Vault Pit

In 2013, Vault Lake was partially dewatered leaving 4 isolated ponds (A, B, C & D) to collect water from freshet as shown in Figure 2-4. Pond A will be pumped into B during freshet to avoid runoff water to flow into the pit. The light blue surfaces in Figure 2-4 represent the final water elevation of each pond at the end of the 2013 dewatering season.

To avoid pumping mine contact water flowing into the Vault Lake, the water from Vault pit will be directed and/or pumped, and stored in the Vault quarry during next (2014) freshet. This quarry water was previously pumped into pond D at the end of the 2013 pumping season. No water flow into the quarry has been observed during the mining of Vault pit during winter 2013-2014, therefore this quarry only contains a small amount of snow accumulation. The Vault quarry will be used as the Vault attenuation sump until the dewatering plan established in 2013 (pumping of ponds A and B to Wally Lake as it is non-contact water) will be completed.

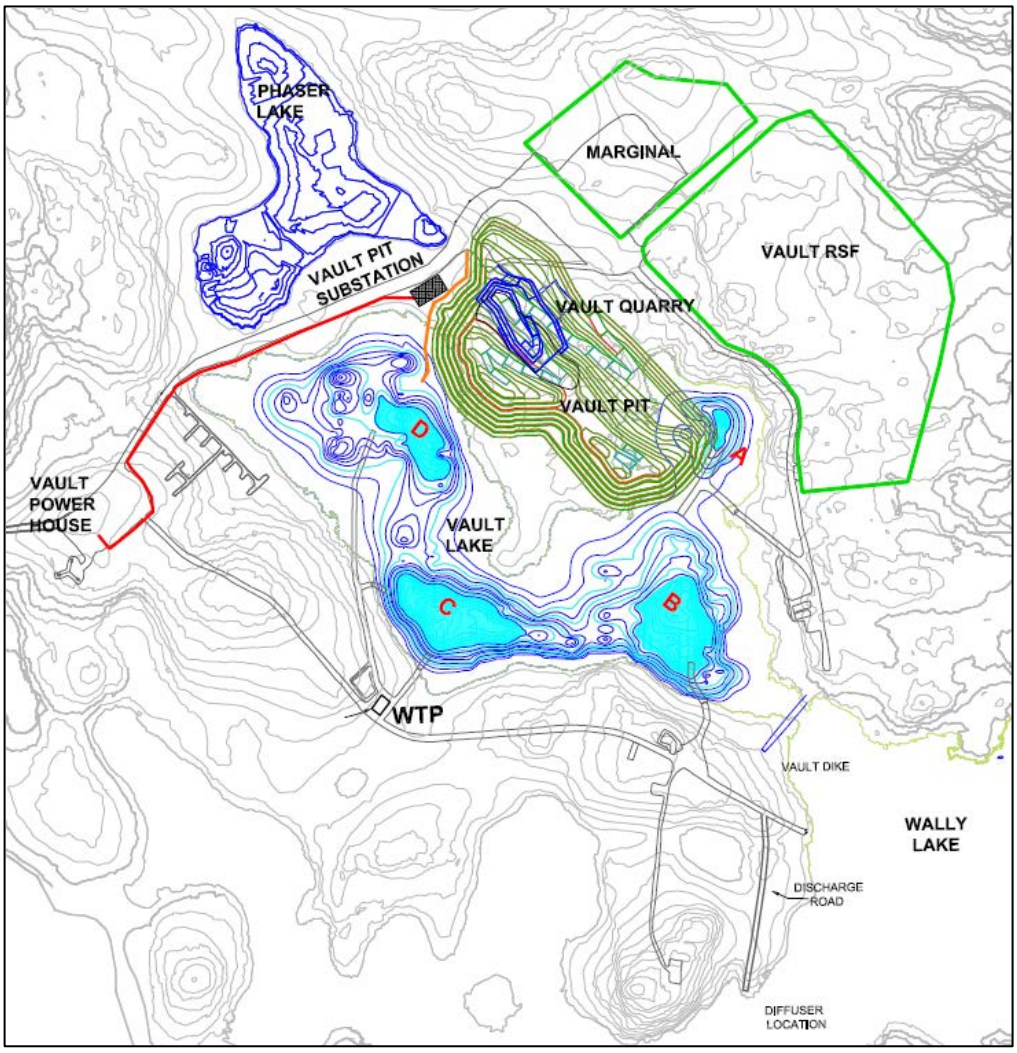


Figure 2-4: View of Vault Pit and Vault Lake with its associated ponds

When the quarry needs to be emptied, the entire volume of water will be pumped to pond D which is independent (non-contact) of ponds A, B and C. Pond D water is considered to be contact water and part of the Vault Attenuation Pond. At the elevation 137.5 m, the contact water in pond D will begin to overflow into pond C at which point it can be treated via the Vault Water Treatment Plant and discharged through the diffuser. The water elevation of each pond will be surveyed on a daily basis to avoid pond D water contacting ponds A, B and C.

Any discharge of pond D water requires treatment at the WTP prior to discharge, through the diffuser into Wally Lake as per the Type A Water License. It is anticipated that the dewatering of ponds A and B will be completed before any discharge of ponds C and D is required. The

Environmental department must be notified before discharging any water to Wally Lake for sampling purposes. All piping and the discharge diffuser must be inspected in April in order to have all installations in place to proceed with dewatering and/or treatment activities during freshet. The WTP will also be inspected and commissioned to be ready for the pumping season.

2.2 NORTH CELL TAILINGS STORAGE FACILITY

Water management around the North Cell Tailings Storage Facility (TSF) is required to maintain integrity of the tailings pond and to prevent any adverse environmental impacts. This section covers the different infrastructure in place to control runoff water and reduce its impact on this tailings storage facility and the environment.

2.2.1 Diversion Ditches

The East and West Diversion ditches were constructed in 2012 around the North Cell TSF and the Portage WRSF. The diversion ditches are designed to redirect the fresh water from the northern area watershed away from the tailings pond and WRSF and return it to the natural receivers, Second and Third Portage Lakes. As seen in Figure 2-5, seven zones have been identified where actions will be taken during or before freshet:

1) AWPR culvert – Discharge to Third Portage Lake;

2) West Diversion Ditch elbow;

3) Northwest corner of North Cell TSF;

4) East Diversion Ditch low point;

5) East Diversion Ditch Outlet to NP-2 Lake

6) North portion of NPAG waste rock expansion; and

7) Vault road culvert – NP-2 Lake exit to NP-1 Lake.

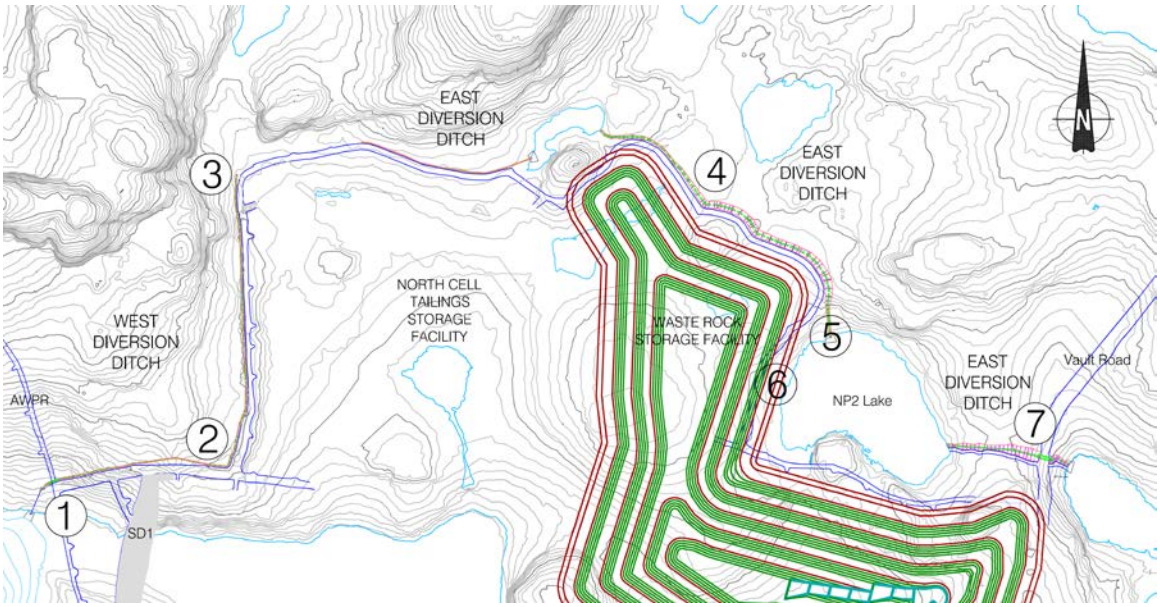


Figure 2-5: Location of the areas of interest for the 2014 diversion ditches freshet Action plan

2.2.1.1 AWPR culvert – discharge to Third Portage Lake

Ditch outflows are important to ensure proper flow of freshet drainage. The culvert under the AWPR (Figure 2-5 #1) is a critical section of the West Diversion Ditch. Snow removal must be performed to avoid ponding and damage to the ditch/trench structure as well as to maintain the integrity of the AWPR which, in turn, is critical to transportation at the Meadowbank mine site.

Figure 2-6 illustrates this culvert. Snow and/or ice must be removed using an excavator on each side of the culvert to allow water to flow through to prevent upstream ponding. The culvert may need to be steamed if blocked by ice. Before starting the cleaning operation, it is important to ensure that the electrical cable (5kV) location has been visually identified.

After flowing through the culvert the water discharges across the tundra into Third Portage Lake – see Figure 2-6 below. Snow and ice needs to be removed in early May to prevent any back up in the West Diversion ditch. This could increase water levels upstream in the ditch causing problems discussed in Section 2.2.1.2. In 2013 silt curtains were installed at the discharge area to Third Portage Lake to control elevated TSS during the freshet period. The elevated TSS was caused due to the back up of water caused by snow blockage. The higher water levels scoured the top portion of the ditch causing sediment release. Snow and ice removal should keep the water levels lower thus preventing the scouring effect observed in 2013.

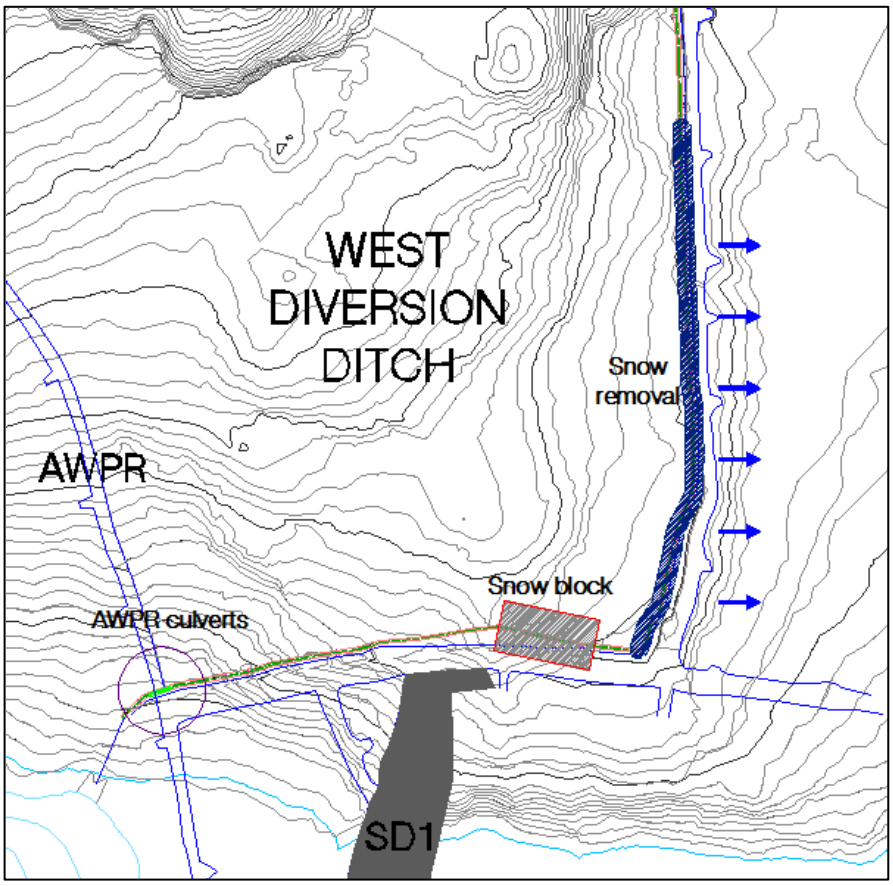


Figure 2-6: West diversion ditches area of interest

The turbidity barrier installed in 2013 was left in place over the winter. Additional barriers can be installed after ice melt as a contingency. Daily inspections will be conducted starting in mid-May. Sample monitoring will commence when open water is present in accordance with the Water License (ST-6). Sampling frequency of ST-6 may be increased if TSS results are near 30 mg/L (grab) and 15 mg/L (monthly average), or visually elevated. If a discharge of TSS occurs, the Environment Department will notify DFO.

2.2.1.2 West Diversion Ditch Elbow

One of the deepest sections of the West Diversion ditch is located in the corner next to the Saddle Dam 1 – see Figure 2-6 and Figure 2-5 #2 above. In 2013 a large accumulation of snow blocked the flow through this ditch at a location denoted by the red square. Water accumulated behind the blockage and raised upstream creating channels through the rockfill and into the North Cell TSF. In early May, AEM will remove the snow accumulation to allow the water to flow freely preventing the upstream from increasing in level and hydraulic head pressure. In addition, large flows can scour the ditch system causing sediment migration through the ditches which could impact Third Portage Lake. To prevent this, snow must be removed from the corner area with a long reach excavator before the month of May. A contingency in the event of high flows despite the snow removal will be to install a pump and then discharge the water directly in the tailings pond.

Another risk is the possibility of tailings reclaim water seeping, through the rockfill road perimeter that surrounds the north and west sections of the TSF, into the West Diversion ditch. To mitigate

that risk, AEM performed a seepage analysis to evaluate the maximum elevation of the tailings beach that could be raised at the toe of the North Cell ring road. Sections have been realized at each deposition point to determine if the tailings beach will reach the toe of the road. Results presented on the Figure 2-7 showed that no tailings should reach that elevation.

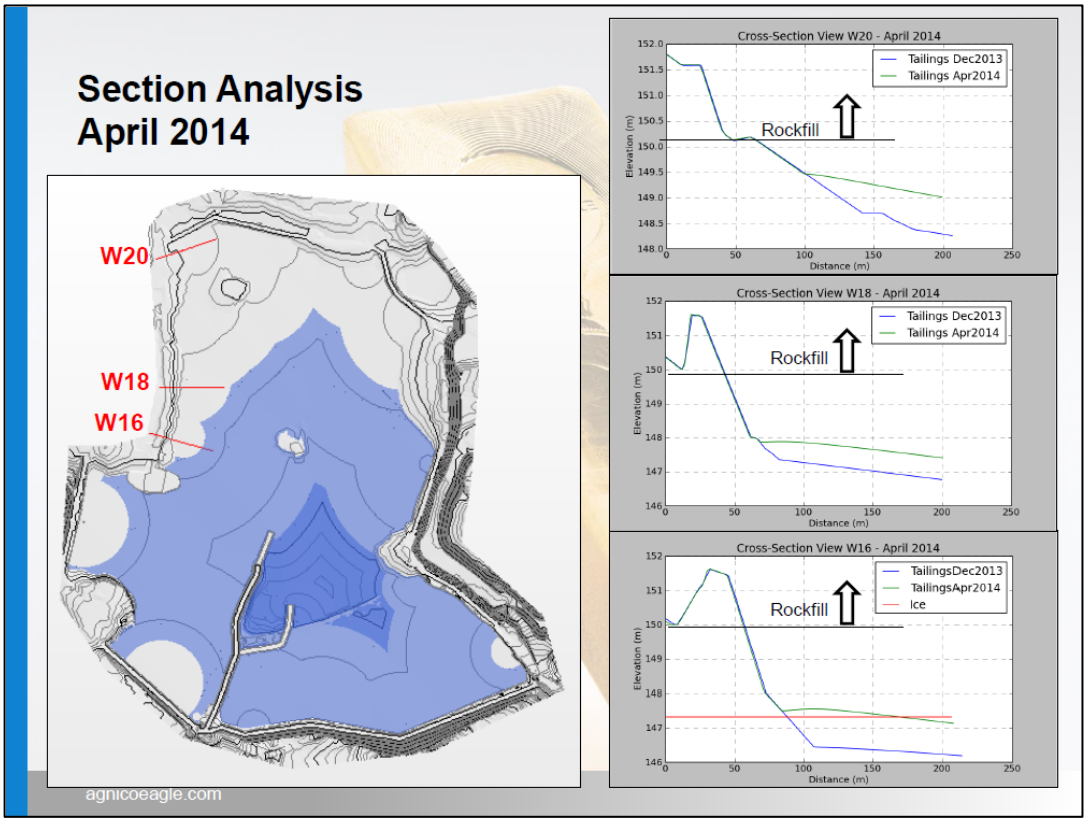


Figure 2-7: North Cell ring road seepage analysis

As a further precaution AEM constructed a retention sump located at the west diversion ditch elbow location. The sump has a capacity of 3000 m³. The sump is designed to intercept water coming from the most critical parts of the West Ditch. Sample monitoring will determine if there is any seepage from the TSF or elevated TSS. If seepage is detected a temporary dam will be placed in the ditch downstream from the sump and a pumping system will be installed which would discharge the water from the sump to the TSF. These measures will prevent any contaminated water from reaching Third Portage Lake. This sump will also act as a settling pond to prevent water with elevated TSS from reaching Third Portage Lake. Daily inspections will be conducted during the freshet. Figure 2-8 shows the North Cell interception/settling sump after the completion of the construction.

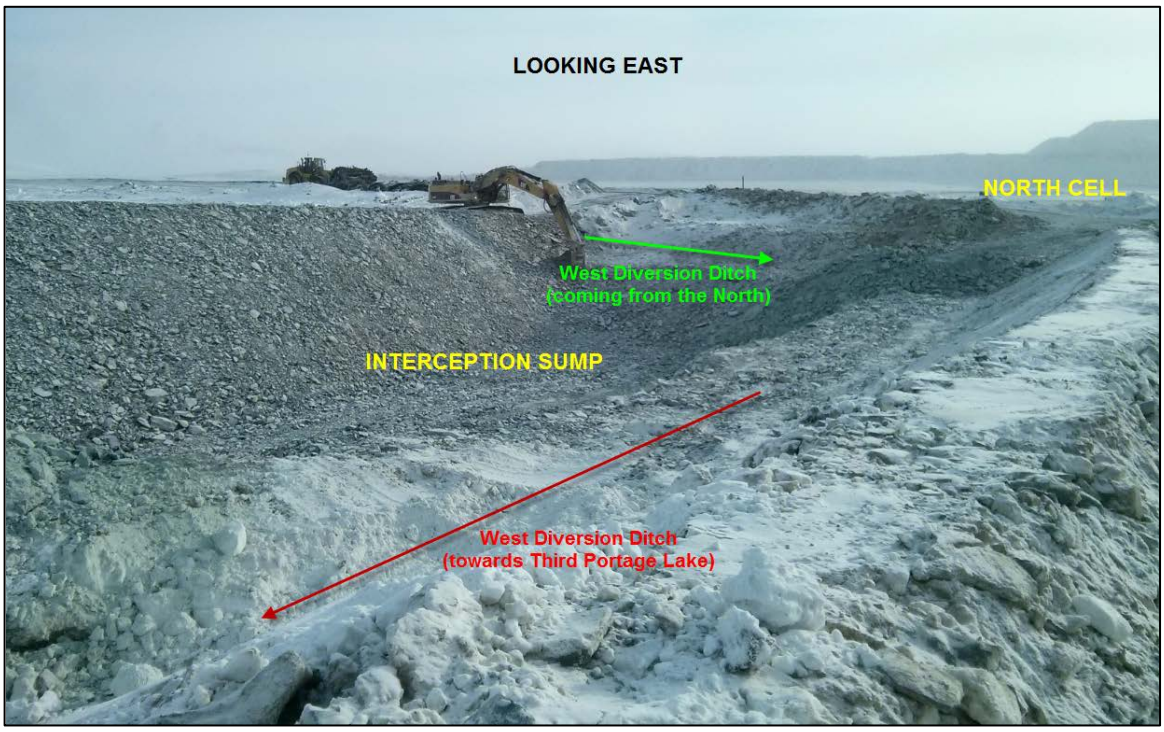


Figure 2-8: North Cell West Diversion ditch interception sump

2.2.1.3 Northwest Corner of North Cell TSF

The construction access road at the Northwest corner of the North Cell TSF (see Figure 2-9 and Figure 2-5 #3) is vulnerable to damage from the freshet water flow from the northern watershed (see watercourse flow in Figure 2-9 denoted by light blue dotted line). The start of the West Diversion ditch is also located in this area and is designed to collect most of the freshet flow – note arrows in Figure 2-9. In order to prevent the water from accumulating against the access construction road and possible overflow to the tailings pond, the snow and ice must be removed in early May from the areas indicated by the red circle in Figure 2-9. This is very important as the start of the West ditch is shallow, must manage a high initial flow rate and can plug easily (with snow). Also, note in the Figure 2-9 two areas where water ponded during the 2013 freshet. As a contingency, a pump can be utilized to transfer this water to the North Cell TSF or the West Diversion ditch (non-contact water only). In addition, to prevent any contamination of Third Portage Lake, daily inspections will be completed and samples will be taken if AEM suspects that any seepage contamination is migrating out of the TSF (analysis for CN and metals). If water is contaminated with tailings, the water will pumped back to the TSF.

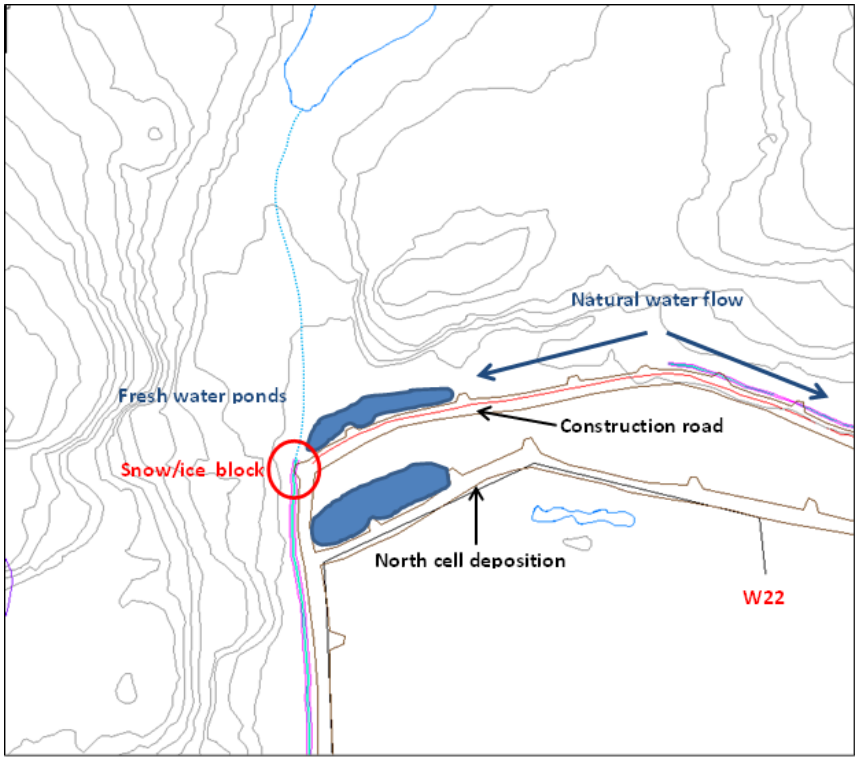


Figure 2-9: View of the northwest corner of the ditches

2.2.1.4 East Diversion Ditch Low Point

There is a low point located on the northernmost portion of the East Diversion ditch – see Figure 2-10 below and Figure 2-5 #4. Snow needs to be removed from this area, denoted by the blue arrow, to prevent watershed flow from following the historical watercourse (dotted line) and reaching the toe of the NPAG Waste Rock extension (WRSF). In 2013, a snow plug was created in this area (red circle on diagram) preventing the water from flowing from the area which caused the runoff to overflow the East Diversion ditch, into the historical watercourse and ultimately into the WRSF. Removing the accumulated snow in early May at a downstream location referenced by the blue arrow will allow the runoff to flow freely through the East Diversion ditch to NP-2 Lake. Daily inspections will be undertaken to ensure the watershed non-contact water flows freely in this section of the East Diversion Ditch.

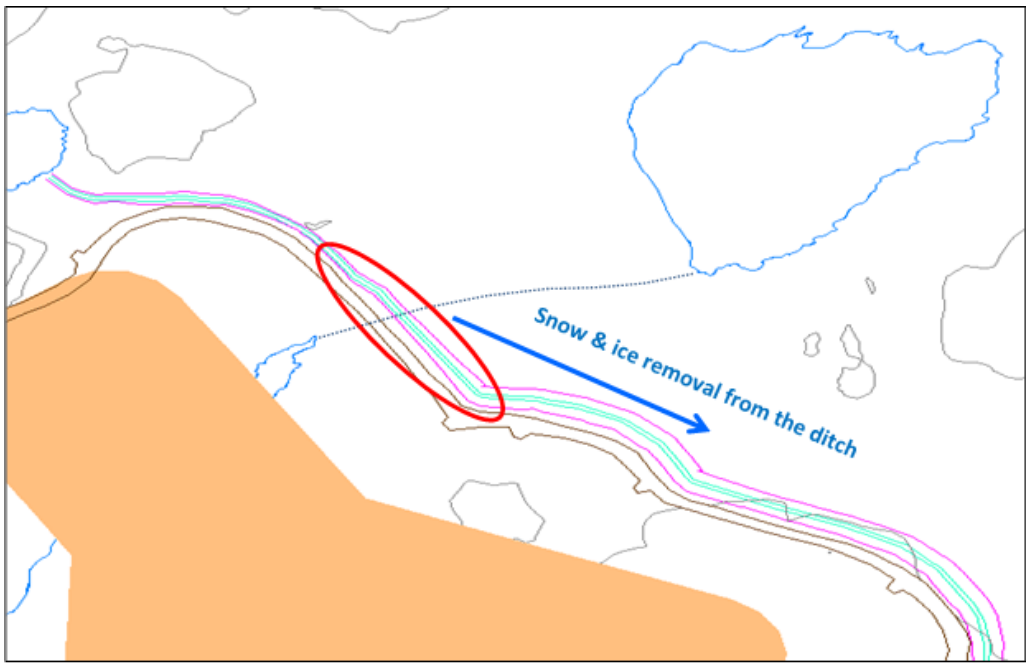


Figure 2-10: View of the north low area where a snow build up retained water in spring 2013

2.2.1.5 East Diversion ditch outlet to NP-2 Lake

This area of the East Diversion ditch, seen in Figure 2-11 and Figure 2-5 #5, is critical as it acts as the outflow of the North part of the East Diversion ditch into NP-2 Lake. This outlet must be cleared of obstructions – snow and ice in early May to promote drainage through the ditch and into NP-2 Lake. The presence of ice blocks will be be mitigated using the steam machine to melt away the obstruction. Daily inspections will commence in early May and sample monitoring will be conducted monthly during open water in accordance with the Water License (location ST-5). Sampling frequency of ST-5 may be increased if TSS results are near 30 mg/L (grab) and 15 mg/L (monthly average), or visually elevated. Turbidity barriers will be available for installation at the ditch outlet into NP-2 to mitigate elevated TSS if needed. If a discharge of TSS occurs, the Environmental Department will notify DFO.

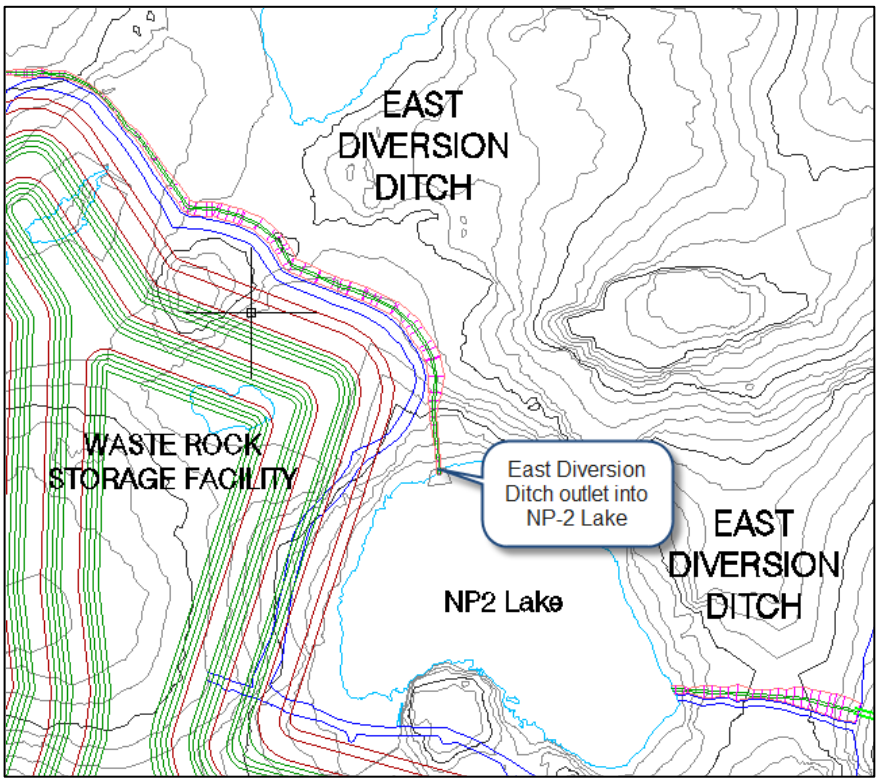


Figure 2-11: View of the East Diversion ditch outlet into NP-2 Lake

2.2.1.6 NP-2 Outlet and Vault Road Culvert

This area of the East Diversion ditch is critical as it acts as the outflow of NP-2 Lake through the Vault Road culvert (see Figure 2-5 #7). The culvert seen in Figure 2-12 connects the East Diversion ditch from Lake NP-2 to NP-1. Snow and ice must be removed from the area, including upstream at the exit of NP-2 Lake in early May to ensure that the outlet of NP-2 flows freely to NP-1 and ultimately to Dogleg Lake. Back up could cause upstream water raises in Lake NP-2 which could cause overflow into the WRSF at ST-16. First, snow from the ditch between NP1 and the road (1) would be removed in early May. Next, any obstruction between the road and NP2 Lake (2) would be removed. After, if needed, the steam machine would be used to remove the ice and snow from inside the culvert (3) and ensure that any other ice obstructions were removed from the outlet of NP2 Lake (4) to allow free flow of melt water. Daily inspections will commence in early May and TSS sample monitoring will be conducted monthly. Sampling frequency may be increased if TSS results are near 30 mg/L (grab) and 15 mg/L (monthly average), or visually elevated. Turbidity barriers will be available for installation at the ditch outlet into NP-1 to mitigate elevated TSS if needed. If a discharge of TSS occurs, the Environmental Department will notify DFO.

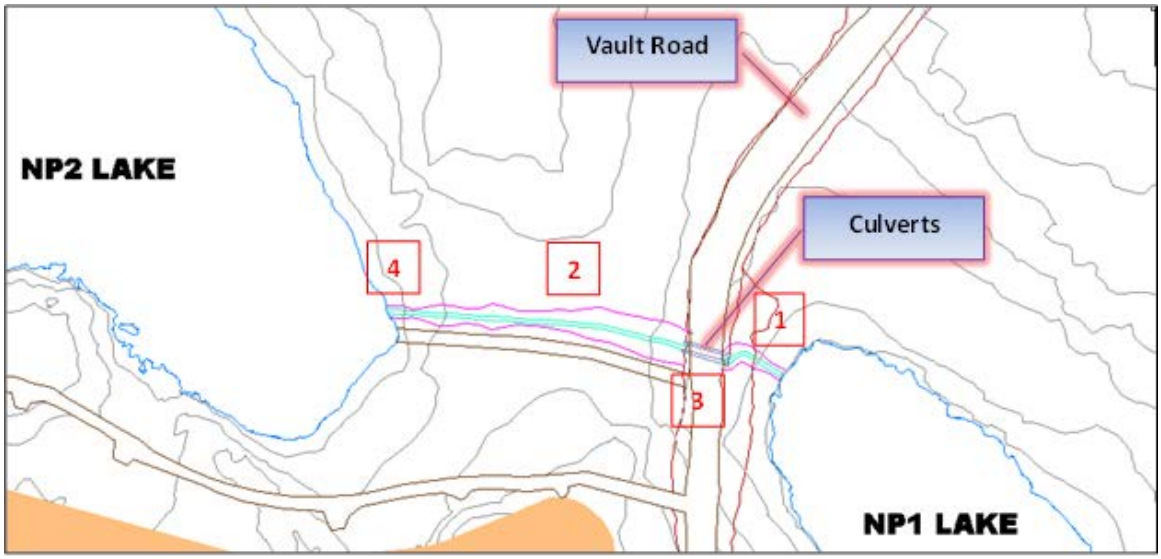


Figure 2-12: View of the diversion ditches at the Vault road area

2.2.1.7 North Portion of NPAG Waste Rock Expansion

The northwestern area of the WRSF, which consists entirely of NPAG material, extends towards the East Diversion ditch as shown in Figure 2-5 #6. Runoff from this area, while not anticipated to be contaminated could, if significant, discharge to NP-2 lake after crossing the tundra. A natural depression should capture most of the NPAG runoff. Daily inspections will be conducted by the Environmental Department. Sample monitoring will be undertaken when water is observed in order to determine water quality. Contaminated water must be kept from reaching NP-2 Lake. Ditching can be undertaken as a mitigation measure if required.

2.2.2 Saddle Dams

2.2.2.1 Saddle Dam 1

This dam, peripheral to the North Cell TSF, is critical to the normal operation of the North Cell TSF. Daily inspections starting mid-May will be required for Saddle Dam 1 (SD1) to ensure that water does not pool against the toe of the dike. A pumping station located along the toe of the dike was installed previously to mitigate the pooling of water at the toe. This pumping station must be operational once water is observed at the toe to pump the water to the TSF. The pumping system must be checked in early May to ensure proper operation. Monthly sampling will be conducted at this station (ST-S-2) during open water conditions in accordance with the Water License.

2.2.2.2 Saddle Dam 2

This dam, just South of SD1, is also critical to the normal operation of the North Cell TSF. Historically, this structure has not had any issues with water pooling at the toe, therefore monthly inspections starting mid-May will be required for Saddle Dam 2 (SD2) to ensure that water does not pool against the toe of the dike. If water is observed at the toe, a mitigation plan will be determined and implemented by the Geotechnical department.

2.3 VAULT ROAD CULVERT

The Vault road crosses over a connection between two water bodies, Turn Lake and Drill Trail Lake, at approximately km 2. A system of culverts was installed to allow flow to occur between the two waterbodies. Beginning in mid-May it will be important to complete daily inspections. In the case that excessive TSS is observed, samples will be taken and analyzed. In the case, where the TSS levels go beyond 30mg/L, a report will be made to the DFO. Turbidity barriers will be installed as a mitigation measure if needed.

2.4 RSF SEEPAGE

2.4.1 General RSF Inspection

The Portage Rock Storage Facility (WRSF) will require weekly inspections around the perimeter beginning in mid-May to identify any seepage. As will be noted in the following section, seepage was identified in 2013 at location ST-16. In the event that additional seepage is observed from the RSF, it must be reported to the Engineering Department and samples must be taken to determine the water quality and source. A mitigation plan will be prepared and implemented if necessary.

2.4.2 ST-16 Seepage

In July 2013, it was noted that seepage from the Waste Rock Storage Facility (RSF) had migrated through a rockfill road at a seepage sump located on the north-east side of the RSF (see ST-16 on Figure 2-13). The seepage, which contained elevated copper, nickel, ammonia and cyanide entered NP-2 Lake. It was determined through investigation that the likely source of the contaminants was reclaim water from the North Cell TSF. This water migrated underneath the RSF through a former watercourse into the seepage sump area (ST-16). AEM took immediate measures to stop the seepage and implement corrective measures to prevent a recurrence. This included, keeping the sump area pumped to a low level, installing an impermeable barrier (till plug) in the rockfill road, implementing a comprehensive monitoring program and ensuring tailings deposition was enhanced in the North Cell to create beaches that would stop any water egress (this activity is continuous as it is part of AEM's Tailings Deposition Plan). In order to mitigate the expected seepage this summer, a permanent pumping system will be established prior to freshet. The piping for this system will be installed no later than the second week of April, with the final installation of the pump and associated equipment (i.e. pig launcher) completed before mid-May. Pumping will begin once the melt begins. Any large snow accumulation will be removed before May if necessary. Pumped volumes will be documented and daily inspections of the area will be undertaken. Once pumping begins, the existing RSF seep monitoring program will commence. This includes:

A. Monthly : ST-16 and NP-2 South/West/East testing at Multi Lab for metals, CN Total, CN Free (SGS), ST-16 metals requirements and to include new KIA requested parameters and locations (NP1, Dogled, SPL); and

B. Bi-weekly (2x a week): On site assay lab for CN WAD at ST-16 and NP-2 South. Sampling frequency change to weekly (1x a week) after 1 month.

In the event that seepage water flows through the rockfill road reaching NP-2 Lake, the Environmental Department will notify authorities.

To complement the work done with the tailings deposition, which ensures adequate beaches along RF1 and RF2, thermistors, installed in 2013, will be closely monitored to identify unusual events. All the information collected from the inspections, pumping, thermistors, and sampling results will be compiled and submitted as progress reports to regulators. These actions

correspond to recommendations made by Golder Associates, "*Rock Storage Facility Seepage – Meadowbank Gold Mine, Nunavut*" (January, 2014). This document can be found as an Appendix to AEM's 2014 Water Management Plan.

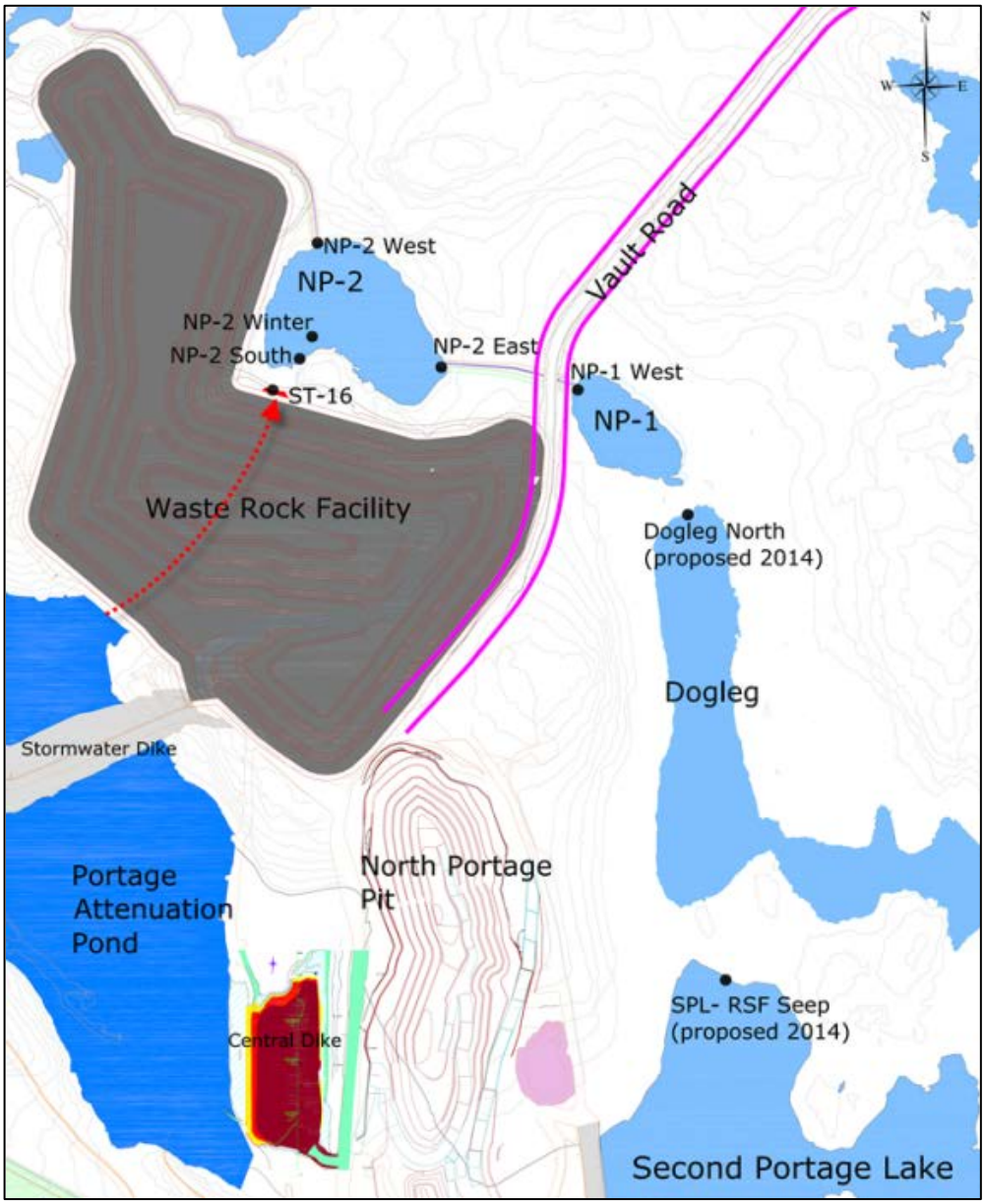


Figure 2-13: View of the RSF seepage observed at the ST-16 station with a red arrow representing the flow of the seepage

2.5 MILL SEEPAGE

In November 2013, AEM observed seepage discharging at a location West of the site access road in front of the Assay Lab (see Figure 2-14). Initial sample results revealed elevated cyanide and copper which is indicative of mill processes. After an investigation, which included sample monitoring, the source was determined to be seepage from several containment areas within the mill, the worst being the CIP tank overflow collection sump. Repairs are underway to seal all the

mill sumps thus stopping the source of the seep. AEM engaged Tetra Tech in December, 2013 to propose a drilling delineation program and further steps necessary to control the seepage and prevent offsite migration to Third Portage Lake – see Figure 2-14 for the seep location. AEM completed drilling program and is committed to implementing the construction of a permanent interception/collection trench prior to the freshet season which is anticipated to begin in mid-May. A comprehensive monitoring program will also be implemented.

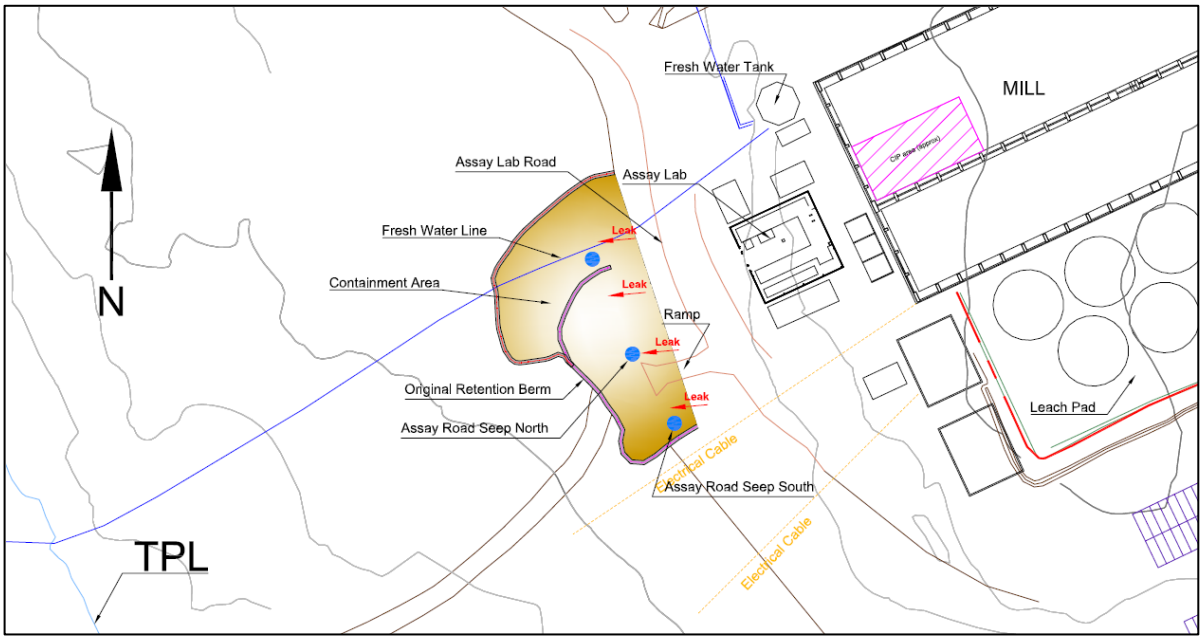


Figure 2-14: View of the mill seepage area and initial retention berm construction

The construction of the permanent interception trench will be completed by the first week of May, 2014. The design of the trench can be seen in Figure 2-15. Once completed, a pump will be installed in the interception trench. Any collected water will be pumped to the mill and discharged with the tailings to the TSF. In addition, pumping of any seepage will also occur at the original containment area constructed in November, 2013 (see gold colour in Figure 2-14). A final report will be completed by Tetra Tech upon completion of the trench outlining all drilling and construction activities. Daily inspections will be conducted of the pumping, collection systems and perimeter area and the pumped volumes will be recorded. The water sampling monitoring program that will be implemented once open water is present is as follows:

A. Monthly : testing at Multi Lab for Cn Free (SGS), Cn Total, Copper, and Iron for Trench, MW's 4, 5, 6, 7, 8, original retention area and Third Portage Lake; and

B. Bi-weekly (2x a week): on-site testing for CN WAD from original retention area, trench, and MW's 02, 03, 08, 201, 202, 203.

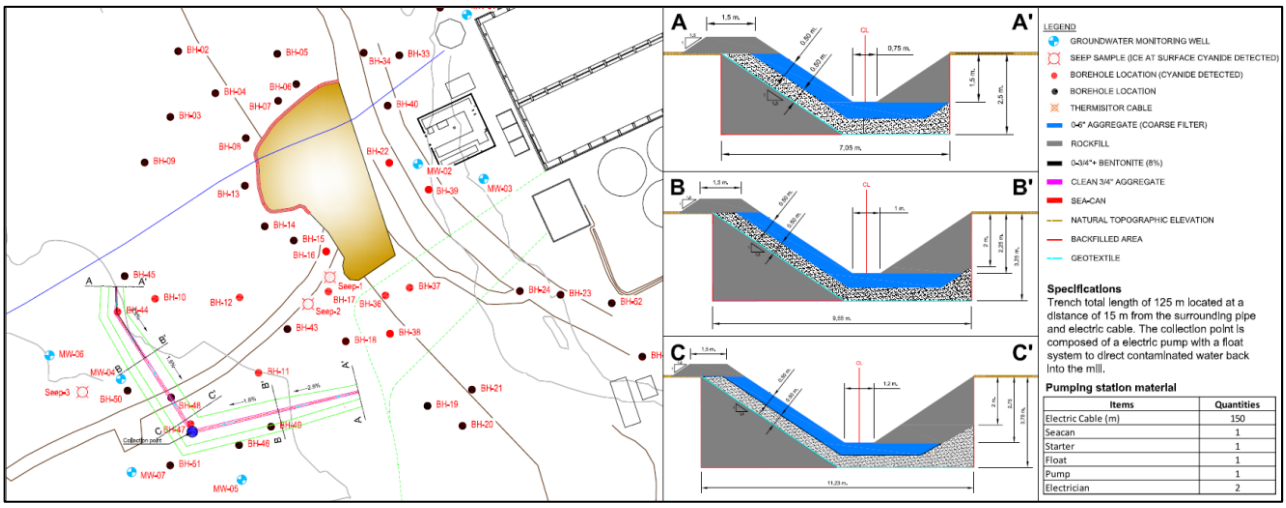


Figure 2-15: View of the mill seepage area and interception trench design

2.6 STORMWATER MANAGEMENT POND

The Stormwater Management Pond is a small shallow and fishless water body that can be seen in Figure 2-16 adjacent to Portage Pit. Treated sewage is discharged into this pond before being transferred to the active TSF. The quantity of water transferred each year, occurring only during the summer months, is recorded. Weekly inspections will be undertaken to determine the commencement of pumping.

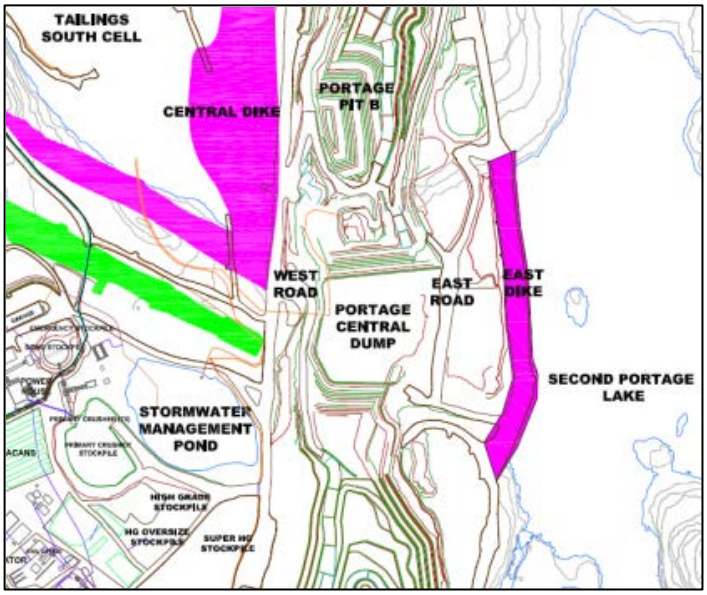


Figure 2-16: Portage Pit area with the Stormwater Management Pond

2.7 FUEL TANK FARMS

2.7.1 Meadowbank Tank Farm

Snow and ice accumulation within the fuel tank farm must be adequately managed to prevent overflow to the environment and/or damage to the fuel handing systems. The Site Service Department will advise the Environmental Department of their intent to pump the containment area once ice/snow begins to melt. Water samples will be taken in accordance with the Water License to ensure compliance prior to its release. A notice must be provided to the Inspector 10 days prior to this pumping activity. Once sample results have been obtained, the Environmental Department will advise the Site Service Department if pumping can begin. If sample results permit, the pumping may begin; to direct water to the tundra/ground. In the event that the water sample results do not meet discharge criteria the water can be pumped to the Stormwater Management Pond.

2.7.2 Baker Lake Tank Farms

Snow and ice accumulation within the fuel tank farms at Baker Lake must be adequately managed to prevent overflow to the environment and/or damage to the fuel handling systems. The Site Service Department will advise the Environmental Department of their intent to pump the containment area once ice/snow begins to melt. Water samples will be taken in accordance with the Water License to ensure compliance prior to its release. A notice must be provided to the Inspector 10 days prior to this pumping activity. Once sample results have been obtained, the Environmental Department will advise the Site Service Department if pumping can begin. If sample results permit, the pumping may begin; to direct water to the tundra but the flow rate shall be such to avoid erosion or damage to the tundra. **In the event that the water sample results do not meet discharge criteria the water cannot be pumped to the tundra.**

2.7.3 Vault Tank Farm

Snow and ice accumulation around the fuel tank farms must be adequately managed to prevent overflow to the environment and/or damage to the fuel handling systems. The Site Service Department will advise the Environmental Department of their intent to pump the containment area once ice/snow begins to melt. Water samples will be taken in accordance with the Water License to ensure compliance prior to its release. A notice must be provided to the Inspector 10 days prior to this pumping activity. Once sample results have been obtained, the Environmental Department will advise the Site Service Department if pumping can begin. If sample results permit, the pumping may begin to direct water to the tundra but the flow rate shall be such to avoid erosion or damage to the tundra. In the event that the water sample results do not meet discharge criteria the water can be pumped and trucked to the Stormwater Management Pond.

2.8 VAULT RSF

Much like the WRSF located near Portage pit, the Vault RSF will require some monitoring during the freshet period to ensure adequate water management. Weekly inspections around the RSF perimeter will be conducted to identify any seepage. In the event that seepage is observed, the Engineering Department must be notified and samples taken to determine water quality. The sample monitoring will be in accordance with the Water License requirements. It is anticipated that there will be no water quality issues as primary drainage is toward the Vault Pit and Attenuation Pond; as well the waste rock from the Vault Pit is primarily NPAG.

2.9 AWPR CULVERTS ON THE BAKER LAKE PORTION

Weekly inspections will be undertaken at all culverts along the AWPR to ensure that water during freshet is flowing freely and no erosion is occurring. If elevated TSS levels are observed

sampling will occur and the results assessed. In addition snow and ice removal may be required to allow the water to flow as per design specifications.

2.10 MEADOWBANK ASSAY LAB

The Assay Lab needs to be advised of the extra sampling that will occur during the freshet period, well in advance. Consideration should be given to reducing the initial sampling after one month period if sample results are consistent or results indicate no elevated contaminant levels. The onsite laboratory, although not accredited, can provide indicative results quickly so that mitigation measures can be implemented in a timely manner.

APPENDIX 1

2014 Freshet Action Plan Procedure

Section	Area of Concern	Role/Action	Resposabilities	Dates
2.1	**Mining Pits and Pit Walls**			
2.1	Mining Pit and Pit walls - General	1) Clean all ice and snow on all permanent ramps, jump ramps, ditches and sump.	Mine Operations	Before May
		2) Check and service all pumps.	Dike/Dewatering and Maintenance	Before May
		3) Check that all piping systems starting from the different pits leading to the attenuation pond are free of ice by validating pumping values (if pumping systems is active) and/or performing an air test in the pipe with a compressor.	Dike/Dewatering	Before May
2.1.1	**Goose Pit**			
2.1.1.1	Goose Pit West Wall	1) Periodically remove ice from the wall with an excavator to prevent any ice overhang to form over the ramp.	Mine Operations	Periodically before spring melt
2.1.1.2	Goose Pit Ramp and Switchbacks	1) Make sure that the sump on the switchback at 5074 is free of ice during winter. The pump already installed in the sump must remain at this location.	Mine Operations	Before May
		2) Make sure that the ditch along the ramp on the first portion between the 5102 bench and the first switchback at 5074 is maintained free of ice during winter.	Mine Operations	Continually during winter before freshet

		3) Perform any maintenance to the pump or genset.	Dike/Dewatering and Maintenance	Before May
		4) Construct a ditch along the west wall to reach the switchback (between the switchbacks at 5074 and 5028). This ditch must be free of ice.	Mine Operations	May/June
		5) A permanent sump (North) must be blasted on the 5208 switchback and a pump be installed.	Dike/Dewatering	Before May
2.1.2	**Portage Pit**			
2.1.2	Portage Pit	1) Once the ring road construction is completed, inspection of this area should be performed to evaluate the work needed in order to prevent the water from accumulating on the dike toe and eventually overflowing into the Portage pit extension	Geotech tech and Engineering	Before June
2.1.3	**Vault Pit**			
2.1.3	Vault Pit	1) Set-up pumping from pond A to B to prevent water from flowing into the Vault pit area	Water engineers and Engineering	Freshet 2014
		2) Pump contact water from Vault pit into the Vault quarry.	Dike/Dewatering	Freshet 2014
		3) Finalize dewatering of Ponds A and B & C	Dike/Dewatering	Freshet/Summer 2014

		4) Once Vault Quarry needs to be emptied, the entire volume will be pumped to pond D	Dike/Dewatering	Freshet/Summer 2014
		5) Daily water level survey of pond A, B, C and D (to avoid pond D contracting pond A, B and C)	Engineering	Freshet/Summer 2014
		6) Notify Environmental Department before discharging any water to Wally Lake. **NOTE: Any discharge of contact water must be through the Diffuser.**	Water engineers and Engineering	Freshet/Summer 2014
		7) Inspect all piping and discharge diffuser	Dike/Dewatering	April
		8) Inspect and commission the WTP	Dike/Dewatering	April
2.2	**NORTH CELL TAILINGS STORAGE FACILITY**			
2.2.1	**North Cell Tailings Storage Facility (Diversion Ditch areas)**			
2.2.1.1	AWPR Culvert - West Diversion ditch exit to TPL	1) Snow and/or ice must be removed with an excavator on each side of the culvert to allow water flow.	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Before May 20
		2) If needed, steam to free any ice blockage.	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Before May 20

		3) Before starting snow clearing operation, make sure the electrical cable location has been visually identified in the field	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Before May 20
		4) Daily inspection - keep record	Env. Department	May 15 - until Freshet complete and after rain events
		5) ST-6 sampling as per Water License and monthly inspection	Env. Department	Monthly as soon as freshet start and until water freeze
		6) Increase frequency of ST-6 sampling if TSS near 30 mg/L (grab) and 15 mg/L (monthly average), or visually elevated, can use onsite assay lab for this (provide notice). Extra sample to Multilab if needed.	Env. Department	Depend of TSS result
		7) Have turbidity barriers in place at TPL (2) and maintain	Env. Department	May 15 - before freshet start and until water freeze up
		8) Report any discharge of TSS to DFO/NWB (grab > 30 mg/L)	Env. Department	May 15 - as soon as freshet start and until water freeze up
2.2.1.2	West Diversion Ditch elbow near Saddle Dam 1	1) Snow and/or ice must be removed with an excavator to allow water flow and prevent ponding upstream	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Early May

		2) Daily inspection - keep record	Env. Department	May 15 - until Freshet complete and after rain events
		3) Sample for TSS monthly (Multi Lab) and as needed for Turbidity - can use on site lab for TSS if necessary. Increase frequency of sampling if TSS near 30 mg/L (grab) and 15 mg/L (monthly average)	Env. Department	May 15 - until Freshet complete and after rain events
		4) If water exceeds Water License criteria (TSS - 30 mg/L (grab) and 15 mg/L (monthly average), contact Engineering to pump water to tailings and temporarily stop (dam) flow through ditch to prevent impact to TPL.	Env Dept/ Eng Dept if limits exceeded, Dikes/Dewatering if pumping needed	May 15 - as soon as freshet start and until water freeze up
2.2.1.3	Northwest corner of North Cell TSF (West Diversion ditch)	1) Snow and/or ice must be removed with an excavator to allow water flow to enter West Diversion Ditch	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Early May
		2) Daily inspection - keep record	Env. Department	May 15 - until Freshet complete and after rain events
		3) Sample if suspect Tailings - analyse for Cn, Copper, Iron - can use onsite lab for CN WAD as indicator	Env. Department	May 15 - until Freshet complete and after rain events
		4) If tailings water present - water to be pumped back to TSF, and contact engineering and dikes/dewatering	Env. Dept Eng. Dept if limits exceeded, Dikes/Dewatering if pumping needed	May 15 - as soon as freshet start and until water freeze up

		5) Tailings beach to be maintained in TSF	Water engineers to ensure tailings deposition	All year
2.2.1.4	East Diversion Ditch low point (E 638418, N7216815). **(area where former pipe was through road)**	1) Snow removal to allow free water flow	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Early May
		2) Daily inspection - keep record	Env. Department	May 15 - until Freshet complete and after rain events
2.2.1.5	East Diversion ditch outlet to NP-2 Lake	1) Snow and/or ice must be removed with an excavator on each side of the culvert to allow water flow.	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Early May
		2) If needed, steam to free any ice blockage.	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Before May 20
		3) Daily inspection - keep record	Env. Department	May 15 - until Freshet complete and after rain events
		4) ST-5 sampling as per Water License and monthly inspection (keep record)	Env. Department	Monthly as soon as freshet start and until water freeze up
		5) Increase frequency of ST-5 sampling if TSS near 30 mg/L (grab) and 15 mg/L (monthly average), or visually elevated, can use on site assay lab for this (provide notice). Extra samples to Multi lab if necessary.	Env. Department	Depend of TSS result

		6) Install turbidity barriers in NP-2, if needed, and maintained	Env. Department	May 15 - before freshet start and until freeze up
		7) Report any discharge of TSS to DFO/NWB (grab > 30 mg/L)	Env. Department	May 15 - as soon as freshet start and until water freeze up
2.2.1.6	East Diversion Ditch - NP2 Oulet and Vault Road culvert to NP-1 Lake	1) Snow and/or ice must be removed with an excavator on each side of the culvert and upstream at the exit of NP-2 Lake to allow water flow.	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Early May
		2) If needed, steam to free any ice blockage.	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Before May 20
		3) Daily inspection - keep record	Env. Department	May 15 - until Freshet complete and after rain events
		4) Install turbidity barriers in NP-1, if needed, and maintain - see # 5 below.	Env. Department	May 15 - before freshet start and until freeze - up

		5) Sample for TSS monthly (Multi Lab) and as needed for Turbidity. Increase frequency of sampling if TSS near 30 mg/L (grab) and 15 mg/L (monthly average) - use on site assay lab as this location is not regulated. Multi Lab to verify levels >30 mg/l - install turbidity barrier for elevated levels	Env. Department	May 15 - until Freshet complete and after rain events
2.2.1.7	North portion of NPAG Waste Rock Expansion	1) Daily inspection - kept record	Env. Department	May 15 until runoff complete
		2) Sample for ST-S-5 and ST-16 metals when water observed; sample upstream (background)in diversion ditch for same parameters and compare results (rush analysis). If results indicate potential for impact, ie results are > background, meet with engineering and determine necessity of ditching	Env. Dept + Eng Dept assistance if ditches needed	May 15 until runoff complete
		3) Prevent **contaminated** contact water from reaching NP-2	Env. Department	May 15 until runoff complete
2.2.2	**Saddle Dams**			
2.2.2.1	Saddle Dam 1	1) Inspect pumping system	Dikes/Dewatering	Early May
		2) Daily inspection - kept record	Eng Dept and Dikes/Dewatering	May 15 and until water freeze
		3) Start pumping to TSF when water observed. Kept volume pumped out.	Eng Dept and Dikes/Dewatering	After May 15 and until water freeze

		4) ST-S-2 sampling as per Water License	Env. Department	Monthly as soon as freshet start and until water freeze
2.2.2.2	Saddle Dam 2	1) Monthly Inspection - kept record	Geotech engineer and Engineering	May 15 until water freeze
2.3	**VAULT ROAD CULVERT**			
2.3	Vault road culvert from Turn Lake to Drill Trail Lake (~km 2 on Vault road)	1) Daily inspection - kept record	Env. Department	May 15 - until Freshet complete and after rain events
		2) Install turbidity barriers, if needed, and maintain	Env. Department	May 15 - until freshet complete and after rain events
		3) Sample monitoring for TSS, if excess turbidity observed - use onsite assay lab and Multi Lab to verify levels >30 mg/l	Env. Department	May 15 - until freshet complete and after rain events
		4) Report any discharge of TSS to Drill Tail to DFO (grab > 30 mg/L)	Env. Department	May 15 - until freshet complete and after rain events

2.4	**RSF SEEPAGE**			
2.4.1	General Portage RSF Inspection	1) Weekly inspection around the RSF perimeter to identify any seepage	Env. Department	May 15 - as soon as freshet start and until freeze up
		2) If seepage observed notify Eng Department AND sample for Cn, ST-16 parameters	Env. Department	May 15 - as soon as freshet start and until freeze up
2.4.2	ST-16 Seepage	1) Piping for discharge to TSF to be installed	Engineering and Dikes/Dewatering	2nd week of April
		2) If the snow accumulation is judged to be too great, then snow rmust be remove	Engineering to coordinate with Site Service, Mine and Dikes/Dewatering	Early May
		3) Pump installation and pumping - volumes must be documented, snow removal if necessary	Engineering and Dikes/Dewatering, Mine Dept if snow removal necessary	May 15 - as soon as freshet starts until freeze up
		4) Daily inspection - keep record	Env. Dept, Eng Dept and Dikes/Dewatering	May 15 - as soon as freshet starts until freeze up

	5) Notify Eng. Dept and Dikes/Dewatering when water present and pumping can start. **Water level to be maintained, as a minimum, below the till plug elevation. Water should not pond against the Till plug for extended time periods - ie < 2 - 3 hours. For emergencies the mine water trucks can be requested.**	Env. Department	May 15 - as soon as freshet starts until freeze up
	6) Water sampling program start when water present in accordance with Water Mgt Plan and RSF Seep Monitoring program: a) Monthly (ST-16, NP2 South/West/East) at Multi Lab for CN Total, CN Free (SGS), ST - 16 metals requirements and to include new KIA requested parameters and locations (NP1, Dogleg, SPL) b) Initially on site assay lab 2x/week for CN WAD at ST - 16 and NP-2 South, 1x/week after one month	Env. Department	May 15 - as soon as freshet starts until freeze up
	7) Any seepage through rockfill road to NP-2 must be reported to Env Dept and authorities.	Env. Dept, Eng Dept and Dikes/Dewatering	May 15 - as soon as freshet starts until freeze up
	8) Tailings beach at RF-1 and RF-2 to continue	Engineering and Dikes/Dewatering	Ongoing throughout the year - Tailings Deposition Plan
	9) Thermistor Monitoring	Env. Department	Ongoing throughout the year
	10) Submit progress/update report to regulators	Env. Department	Fall 2014

2.5	**MILL SEEPAGE**			
		1) Construct Interception trench as per design prepared by Engineering and approved by Tetra Tech	-Design - Enginnering -Construction - Env. Dept with assistance from Eng. Dept -QA/QC Tetra Tech	10-May-14
		2) Pump/piping installation at interception trench and pumping - volumes documented	Env Dept., Eng. Dept and Power Plant	Before end of May - operates seasonally until freeze - up
		3) Pumping/collection of water from Assay Road berm (original) - volumes documented	Env. Dept with assistance from Site Services	May 15 until complete
2.5	Mill Seepage	4) Daily inspection of pumping, collection systems, bermed areas and perimeter area - documented. **For emegencies the mine water trucks can be requested.**	Env. Department	Start May 15 until freeze-up (Oct 15)
		5) Monitoring Program - includes but not limited to (trecnh, original retention area and lake): a) Monthly send to Multi Lab - Cn Free (SGS), Cn Total, Copper,and Iron for Trench, MW's 4, 5, 6, 7, 8, original sump and TPL b) Assay Lab - initial 2x weekly for CN WAD from original sump, interception trench, and MW's 02, 03, 08, 201, 202, 203.	Env. Department	As soon as freshet start until water freeze

		6) After snow subsides, if possible, remove ice pockets identified in Tetra Tech (EBA) March drilling program as having CN present and dispose of in TSF.	Env Dept with assistance of Site Services	Late May - Early June
		7) Submit final Tetra Tech report to regulators as well as progress report	Env. Department	June, 2014
2.6	**STORMWATER MANAGEMENT POND**			
2.6	Stormwater Management Pond	1) Pump Stormwater to applicable TSF in Spring -pumped volume must be kept	Site Services and Dike/Dewatering	When required in Spring
2.7	**FUEL TANK FARMS**			
2.7.1	Meadowbank Tank Farm	1) Site Service to advise Env Dept of intent to pump once ice melts in containment area	Sites Servies and Env. Department	Probably mid-June and September
		2) Sample water in accordance with Water License to ensure compliance with limits prior to release	Env. Department	Probably mid-June and September
		3) Provide notice to Inspector 10 days prior to pumping	Env. Department	Probably mid-June and September
		4) Advise Site Services if pumping can begin based on sample results	Env. Department	Probably mid-June and September

		5) Pump to tundra/ground or Stormwater Mgt Pond (note pumping to Stormwater Mgt Pond does not requi:re compliance with limits - at Meadowbank only). **NOTE: The water cannot be pumped out to the tundra if it does not meet the Water License criteria.**	Site Services	Probably mid-June and September
2.7.2	Baker Lake Tank Farms	1) Site Service to advise Env Dept of intent to pump once ice melts in containment area	Sites Servies and Env. Department	Probably mid-June and September
		2) Sample water in accordance with Water License to ensure compliance with limits prior to release	Env. Department	Probably mid-June and September
		3) Provide notice to Inspector 10 days prior to pumping	Env. Department	Probably mid-June and September
		4) Advise Site Services if pumping can begin based on sample results	Env. Department	Probably mid-June and September
		5) Once approval given by Env Dept, Site Services can pump to tundra but must avoid erosion during pumping, ie., low flow, the volume must also be determined by Site Services personnel **NOTE: The water cannot be pumped out to the tundra if it does not meet the Water License criteria.**	Site Services	Probably mid-June and September

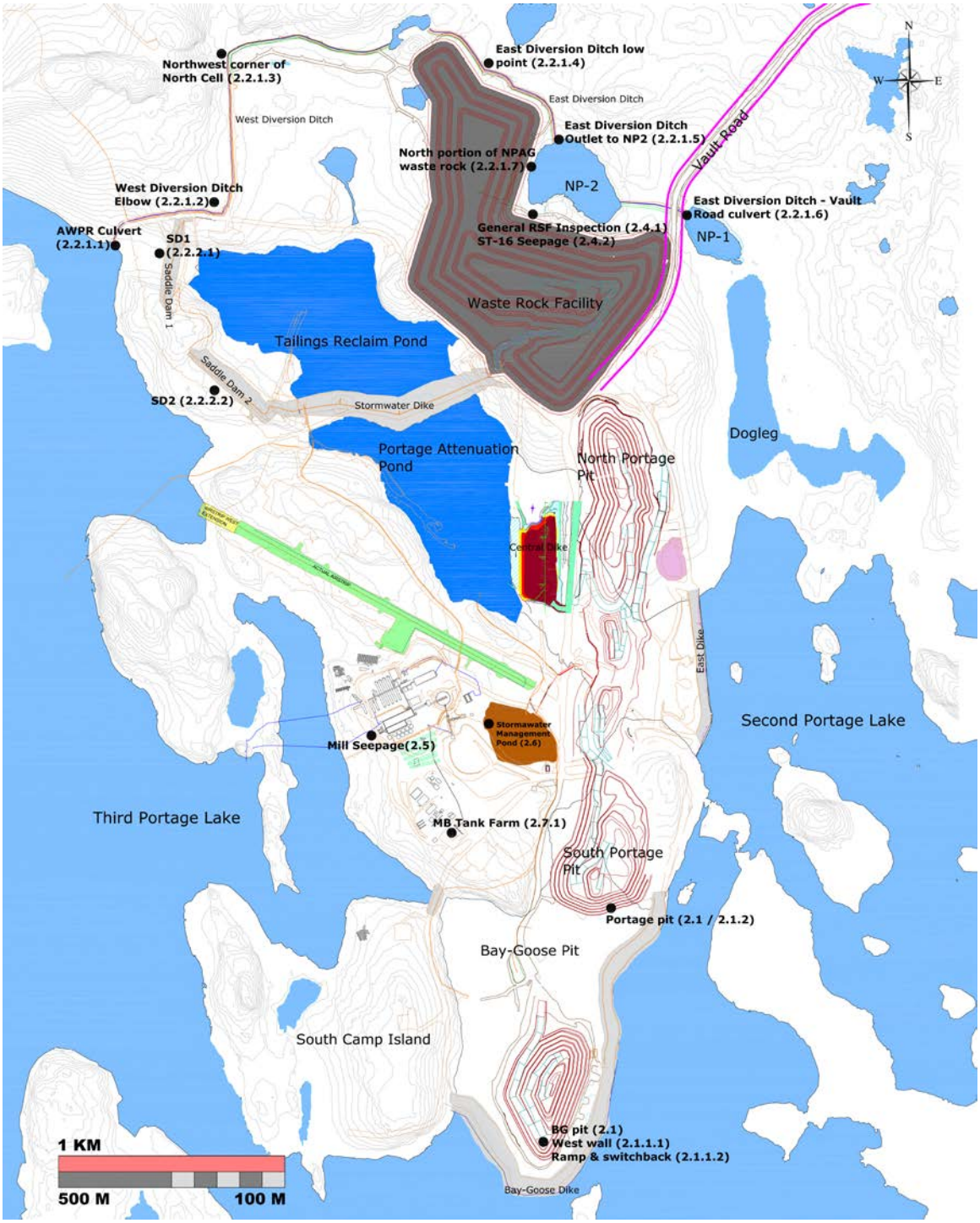
2.7.3	Vault Tank Farm	1) Site Service to advise Env Dept of intent to pump once ice melts in containment area	Sites Servies and Env. Department	Probably mid-June and September
		2) Sample water in accordance with Water License to ensure compliance with limits prior to release	Env. Department	Probably mid-June and September
		3) Provide notice to Inspector 10 days prior to pumping	Env. Department	Probably mid-June and September
		4) Advise Site Services if pumping can begin based on sample results	Env. Department	Probably mid-June and September
		5) Once approval given by Env Dept, Site Services can pump to tundra but must avoid erosion during pumping, ie., low flow, the volume must also be determined by Site Services personnel **NOTE: The water cannot be pumped out to the tundra if it does not meet the Water License criteria.**	Site Services	Probably mid-June and September
2.8	**VAULT RSF**			
2.8	Vault RSF	1) Weekly inspection around the RSF perimeter to identify any seepage	Env. Department	May 15 - as soon as freshet starts until freeze up
		2) If seepage observed notify Eng Department AND sample for Cn and Water License Parameters	Env. Department	May 15 - as soon as freshet starts until freeze up

2.9	**AWPR Culverts on the Baker Lake Portion**			
2.9	AWPR Culverts on the Baker Lake Portion	1) Weekly inspection of culverts along AWPR to Baker Lake	Env. Department	May 2014
		2) Sample for TSS and Turbidity if elevated TSS observed	Env. Department	May 9 - until freeze up
		3) Notify Site Services if severe erosion/scouring observed - for repair action	Env. Department	May 9 - until freeze up
		4) Install turbidity barriers if required	Env. Department	May 9 - until freeze up
2.10	**ASSAY LAB**			
2.10	Meadowbank Assay Lab	1) The Assay Lab needs to be advised of the extra sampling that will occur well in advance of the freshet. 2) Consideration should be given to reducing the initial sampling after an initial one month period. If we are managing the water as planned (ie on site) there is no need to require extra sampling	Env. Department	May 2014

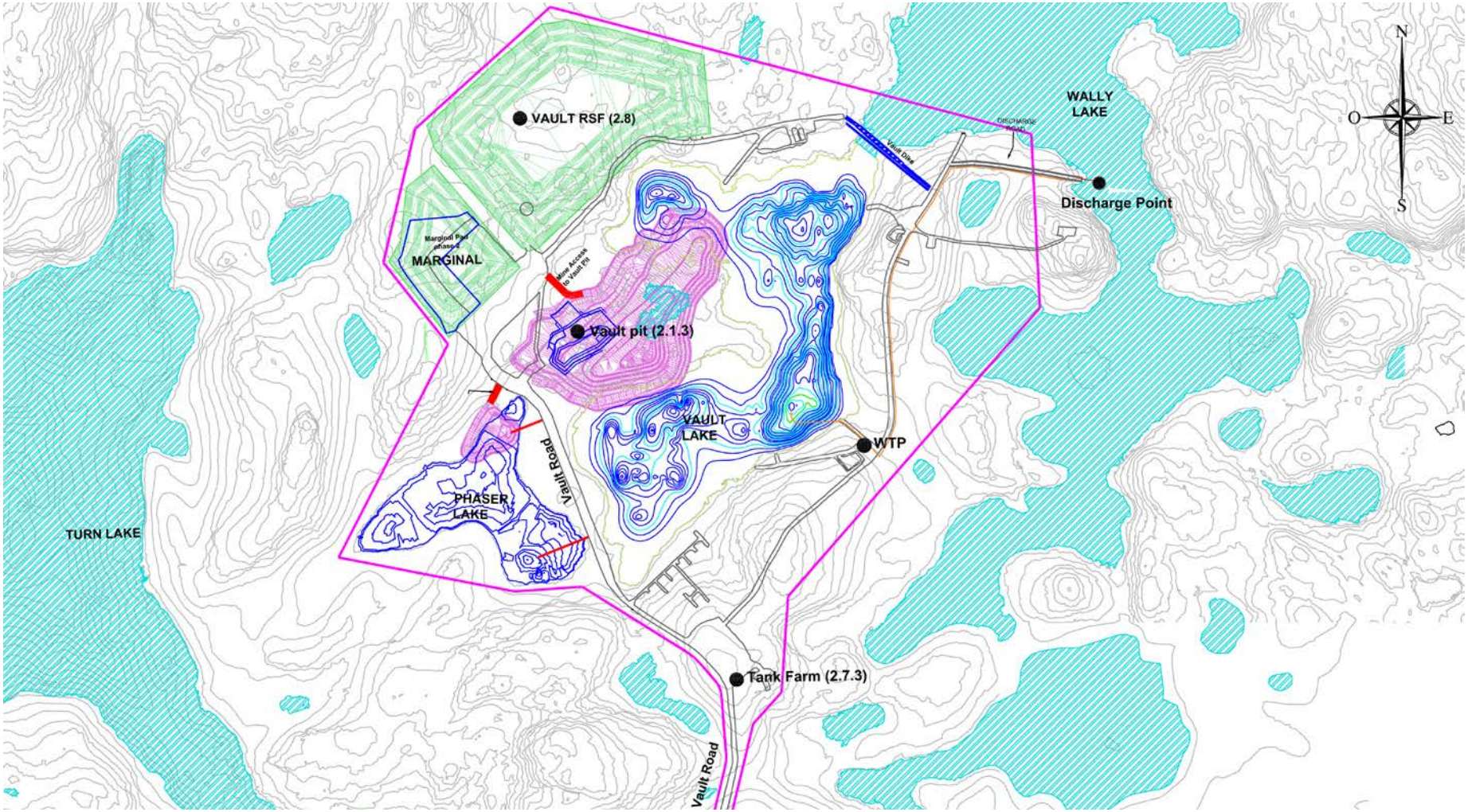
APPENDIX 2

2014 Monitoring Location for the Freshet Action Plan

Meadowbank areas of concern



Vault areas of concern



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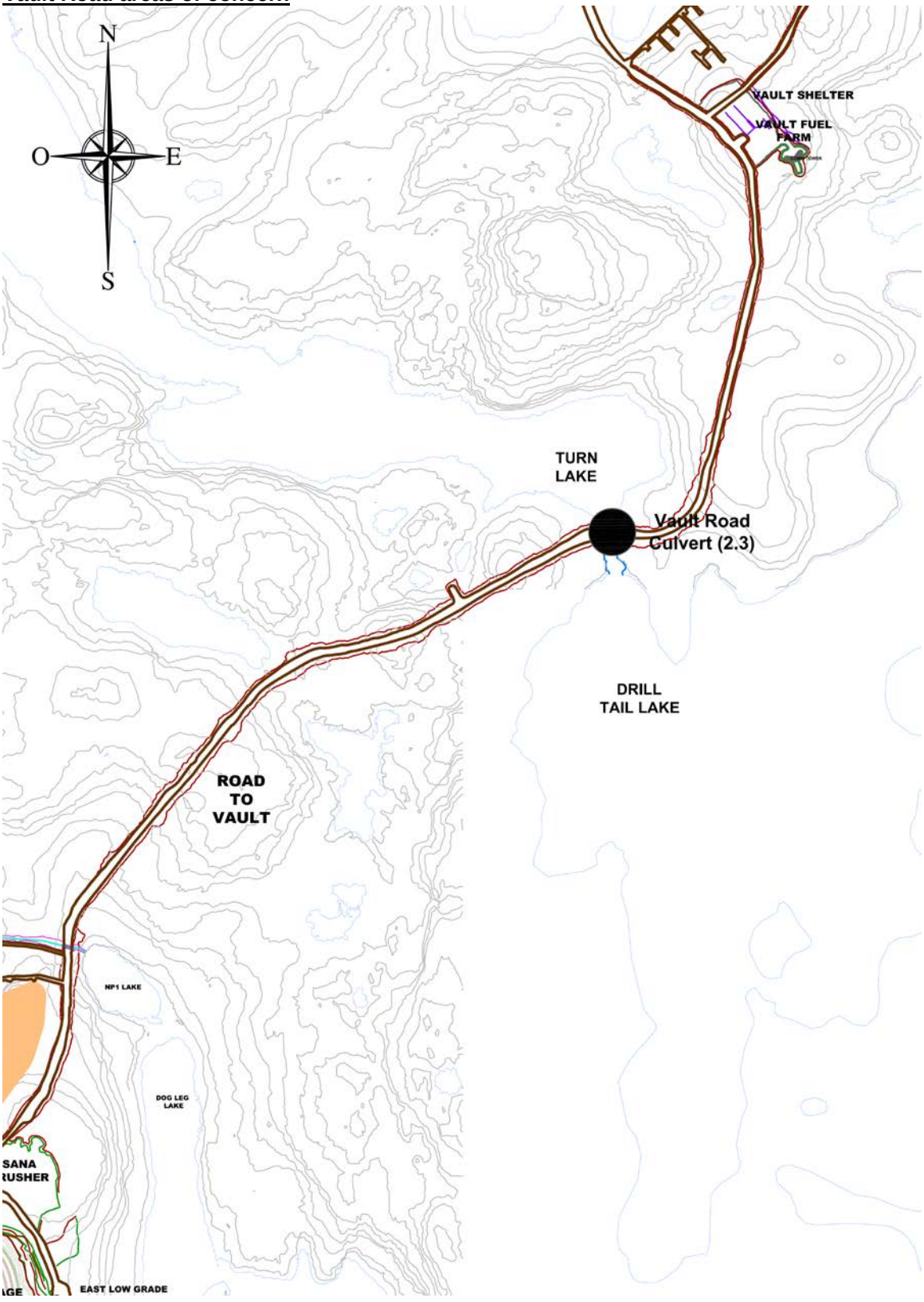

Appendix C

Meadowbank Mine, Assay Road Seepage Phase 2: Environmental Site Assessment and Engineering QA/QC

TETRA TECH EBA

MEADOWBANK MINE, ASSAY ROAD SEEPAGE PHASE 2: ENVIRONMENTAL SITE ASSESSMENT AND ENGINEERING QA/QC

PRESENTED TO

Agnico Eagle Mines Limited

AUGUST 2014
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CONSULTING ENGINEERS & SCIENTISTS · www.eba.ca

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EXECUTIVE SUMMARY

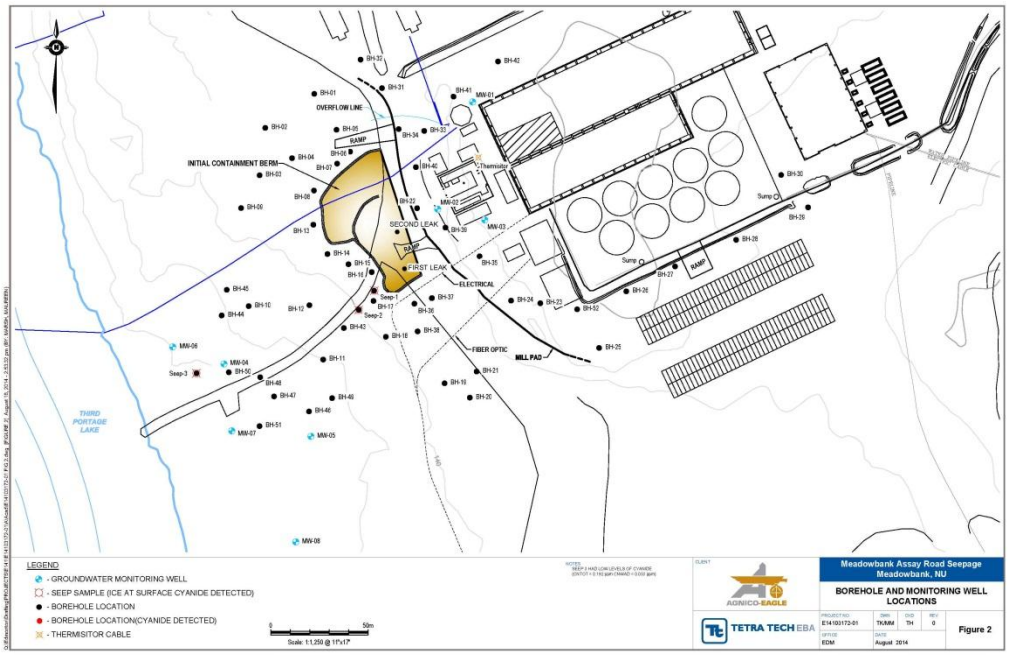
Tetra Tech EBA Inc. is pleased to provide this report to Agnico Eagle Mines (AEM) summarizing our findings from our Environmental Site Assessment of the Assay Road Seepage and the Quality Assurance/Quality Control (QA/QC) monitoring for the construction of the interception trench at the Meadowbank Mine, about 80 km north of Baker Lake, Nunavut. The purpose of this project was to identify cyanide impacted soil and groundwater; provide monitoring suggestions for cyanide impacted soil and groundwater; and perform QA/QC for the construction of an interception trench. The objectives of this work were as follows:

- Evaluate the extent of the soil impacted by the cyanide leak from the Meadowbank Mine Mill, with the goal of selecting a location for an interception trench;
- Provide recommendations for soil and groundwater monitoring after installation of the interception trench;
- Provide QA/QC services for the construction of the interception trench, and
- Provide a report summarizing the findings of the Environmental Site Assessment and the QA/QC services.

Phase 2 Environmental Evaluation

Tetra Tech EBA conducted an Environmental Site Assessment from February 19, 2014 to March 6, 2014 to investigate and evaluate the extent of ground impacted by the cyanide leak with the goal of selecting a location for an interception trench and to allow future determination of clean-up requirements of the contaminated materials.

The Environmental Site Assessment was conducted with a downhole hammer-air rotary drill without water. A total of 52 boreholes were drilled in various areas located on the tundra and pad. In addition to the boreholes, eight (8) monitoring wells were installed, three (3) on the pad and five (5) on the tundra (Figure 2). Soil samples were collected from each borehole and analysed for pH, Total (Strong Acid Dissociable) Cyanide and Weak Acid Dissociable (WAD) Cyanide. Where possible, ice or water samples were collected and analyzed for Total Cyanide and WAD Cyanide.



There are no guidelines for Total and WAD Cyanide in the Canadian Council of Ministers of the Environment (CCME), "*Soil Quality Guideline for the Protection of Environmental and Human Health*" or the Environmental Protection Division, Department of Environment, Government of Nunavut, "*Environmental Guideline for Contaminated Site Remediation*" (March 2009 Revised). Free cyanide was not analyzed in this assessment since WAD Cyanide includes free cyanide and this was an initial investigation to determine the extent of cyanide impacted soil down the grade from the Assay Lab. Therefore, the British Columbia Environmental Management Act for Contaminated Sites Regulations, Schedule 4 and 6 for Total and WAD Cyanide were used to evaluate the level of contamination.

A total of 62 soil samples collected from the natural area downslope of the mill pad were submitted for analysis of Total and WAD Cyanide, of which 17 samples detected Total Cyanide with values ranging from 0.5 to 51 mg/kg. Only one location (BH-38, 51 mg/kg) was greater than the British Columbia guidelines for Total Cyanide. As for WAD Cyanide, there were only three samples where WAD Cyanide was detected, with values ranging from 0.9 to 3 mg/kg. A total of 30 soil samples were collected from the mill pad and submitted for analysis of Total and WAD Cyanide, of which there was one sample (BH-22, 1.7 mg/kg) where Total Cyanide was detected. No WAD Cyanide was detected.

A total of 6 water (ice) samples collected from the natural area outside of the mill pad were submitted for analysis of Total and WAD Cyanide. Total Cyanide was detected with values ranging from 0.192 to 2.23 ppm. All water samples analyzed, except one (Seep 3), exceed Meadowbank's Water License No. 2AM-MEA0815 for Total Cyanide in effluent. On the mill pad, there was one water sample (BH-22) submitted where Total Cyanide (24.59 ppm) and WAD Cyanide (10.6 ppm) was detected.

Phase 2 Engineering

Tetra Tech EBA agreed with AEM's suggestion that an interception trench needed to be constructed downstream of the temporary containment berms that were rapidly constructed downslope of the mill pad when the seepage was first observed. AEM designed the interception trench, with consultation by Tetra Tech EBA, and Tetra Tech EBA was selected to perform geotechnical QA/QC during its construction. The purpose of the geotechnical engineering QA/QC program was to verify that geotechnical related construction activities were undertaken in accordance with the project drawings and specifications, and that the design intent was satisfied.

The AEM design for the interception trench utilizes shallow ditches and a sump. To mitigate anticipated thaw in permafrost the final design for the interception trench included significant over excavation and replacement with thaw stable materials, and a liner and cut-off system that is keyed in deep enough below the ditch or sump bottom to be below the depth of anticipated thaw. However, to insure thermal stability, it will be essential that water not be allowed to pond in the ditches or sump.

Conclusions

During this investigation cyanide was detected at a depth of 1.68 mbgs near the location where the seep was initially identified. Down gradient of the initial containment, cyanide was detected to depths of 0.7 mbgs. Cyanide was not detected approximately 60 m from the lake (BH-47) in the soil, but was found at low levels in water (ice) that accumulated on the surface (Seep 3). Seep 3 is located about 30 m from the lakes edge and had low levels of cyanide (Total cyanide - 0.192 mg/L; WAD cyanide - 0.033 mg/L). This information suggests that the cyanide initially infiltrated into the soil close to the initial seepage area; however further away from the seepage location cyanide may have accumulated only in the topsoil with little or no penetration into the underlying till overburden or bedrock.

It was decided that the interception trench would be installed between Seep 3 and BH-47. The location of the interception trench was based on the desire to minimize disturbance to the natural tundra downslope of the mill pad, and so it would act as a barrier between areas with detected cyanide contamination and the lake, while staying at least 30 m away from Third Portage Lake. An interception trench at this location should prevent the cyanide contamination from reaching Third Portage Lake. It is recommended that any water pooling within the collection area of the interception trench be pumped out within one day.

Spills from the CIP tanks were not being contained by the secondary containment system and hence cyanide impacted water was leaking into the foundation soils below the mill building and then out through the mill pad fill materials to the natural area downslope of the mill.. In order to remove the source of contamination, AEM has taken steps to repair/reseal areas in the secondary containment that were identified to be leaking and that lead to the observed seepage. The main area of concern was the secondary containment system around the CIP tanks, which has now been repaired.

A ground temperature monitoring cable (thermistor cable) was installed near the mill to determine ground temperatures in the pad. The cable indicates that the pad fill materials and underlying native ground have refrozen and the active layer was determined to be about 1.5 m thick in June. Therefore, repairs to the containment system in the mill in conjunction with the presence of frozen ground indicate that the potential for continued seepage should be minimal.

Recommendations

AEM has established a Freshet Action Plan (April 2014), which outlines work that AEM will undertake to monitor the interception trench and the sampling protocols. AEM will conduct daily inspections of the pumping, collection systems and perimeter area and will record all pumped volumes of water from the interception trench. Any of the water collected will be pumped to the mill and discharged with the tailings to the tailings storage facility (TSF). The sampling program in this action plan states that on a monthly basis AEM will submit water samples to Multi Lab for analysis of Free Cyanide, Total Cyanide, Copper and Iron from the interception trench, monitoring wells 14MW04, 14MW05,14MW06, 14MW07, and 14MW08, the original containment area and Third Portage Lake. Bi-weekly they will collect waters twice a week from the original containment berm, the interception trench, and monitoring wells 14MW02, 14MW03, 14MW08, 201, 202, and 203 to be submitted to the AEM on-site lab for WAD cyanide analysis.

After reviewing the information from this Environmental Site Assessment and AEM's Freshet Action Plan (April 2014), the following recommendations apply:

- Continue to sample the original containment berm, interception trench, Third Portage Lake and monitoring wells 14MW01 to 14MW08, 201, 202 and 203, if water is present and not frozen, for analysis of Free and Total cyanide, Copper, and Iron;
- In monitoring wells with known detected cyanide, collect water samples once in the spring and fall for analysis of ammonium, nitrate/nitrite, and pH. The purpose for the ammonium and nitrate/nitrite is that these compounds increase in response to biodegradation of cyanide;
- If water is ponding down gradient of the interception trench, water samples should be collected and submitted for analysis of Free and Total cyanide, Copper, and Iron;
- During the investigation, no seep (water) samples or soil samples were collected within 30 m of the lake. Cyanide was detected at Seep 3, thus further sampling should be conducted down gradient of the trench in

the soil and water. Water should be analyzed for Free and Total Cyanide, Copper, and Iron, while soils should be analyzed for Free and Total cyanide;

- Depending on the results of the soil samples collected and potentially ponded water samples collected within 30 m of Third Portage Lake it is recommended that sediment samples be collected from the shore of Third Portage Lake. These sediment samples should be analyzed for Free and Total Cyanide, Copper and Iron.
- AEM should install sumps inside the original containment berm to aid in the collection of water. This water can be pumped up to the mill and discharged with the TSF. This should improve collection of water in the spring near the mill pad;
- AEM should continue with the repairs to the mill to ensure seepage sources are eliminated; and
- Collect additional soil samples on the northeast side of the mill in the direction of Tear Drop Lake to confirm if any cyanide travelled in that direction. If water is observed in a drill hole a well should be installed.

The following soil sampling recommendations should be implemented at closure of the mine:

- Soil samples should be collected and tested for Free Cyanide in the areas where known cyanide was detected, as free cyanide was not analyzed in this investigation. These areas should be delineated in order to produce a remedial action plan, if needed;

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ACRONYMS & ABBREVIATIONS

AEM	Agnico Eagle Mines
CCME	Canadian Council of Ministers of the Environment
mbgs	metres below ground surface
QA/QC	Quality Assurance/Quality Control
TSF	Tailings Storage Facility
SAD	Strong Acid Dissociable
WAD	Weak Acid Dissociable

LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of Agnico Eagle Mines Limited and their agents. Tetra Tech EBA Inc. (Tetra Tech EBA) does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than Agnico Eagle Mines Limited, or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this report is subject to the terms and conditions stated in Tetra Tech EBA's Services Agreement. Tetra Tech EBA's General Conditions are provided in Appendix G of this report.

1.0 INTRODUCTION

Tetra Tech EBA Inc. (Tetra Tech EBA) is pleased to provide this report to Agnico Eagle Mines (AEM) summarizing our findings from our Environmental Site Assessment of the Assay Road Seepage and the quality assurance/quality control (QA/QC) monitoring of the construction of the interception trench at the Meadowbank Mine, about 80 km north of Baker Lake, Nunavut,. The purpose of this project was to identify cyanide impacted soil and groundwater; provide monitoring suggestions for cyanide in soil and groundwater; and perform quality assurance/quality control (QA/QC) during construction of an interception trench. The objectives of this work were as follows:

- Evaluate the extent of the soil impacted by a cyanide leak from the Meadowbank Mine Mill, with the goal of selecting a location for an interception trench;
- Provide recommendations for soil and groundwater monitoring after installation of the interception trench;
- Provide QA/QC services for the construction of the interception trench, and
- Provide a report summarizing the findings of the Environmental Site Assessment and the QA/QC services.

The Environmental Site Assessment was conducted in general accordance with the "*Environmental Guideline for Contaminated Site Remediation*" (Government of Nunavut 2009).

2.0 SCOPE OF WORK

2.1 Phase 2 Environmental Evaluation

Tetra Tech EBA conducted an Environmental Site Assessment from February 19, 2014 to March 6, 2014 to investigate and evaluate the extent of ground impacted by the cyanide leak with the goal of selecting a location for an interception trench and to allow future determination of clean-up requirements of the contaminated materials. During the drilling program there were some modifications made to the work plan. These changes included additional boreholes and monitoring wells and some proposed borehole locations were moved as the program progressed.

2.1.1 Scope of Environmental Site Assessment

The scope of work for the Environmental Site Assessment included the following:

- Conducting a safety meeting with AEM and Tetra Tech EBA representatives to review the Safety Plan and identify all hazards, PPE requirements, emergency contacts, and safe work practices.
- Determining where all underground utilities such as electrical and water lines are located on site prior to drilling.
- A total of 52 boreholes were drilled in various areas located on the tundra and pad. In addition to the boreholes, eight (8) monitoring wells were installed, three (3) on the pad, and five (5) on the tundra. All holes were drilled using a downhole hammer-air rotary drill without water.
- Samples were collected in most boreholes and monitoring well locations, where possible. There were some locations on the pad where soil samples could not be collected due to voids underneath or in the pad. Each borehole and monitoring well was drilled to bedrock.

- Samples were collected at the drill using either plywood or a metal pan and then scooped into plastic bags using a metal spoon. After each sample was collected, the pans, spoon, and plywood were brushed off to minimize cross contamination. In addition, before drilling each hole, the drill was purged using compressed air to clean off the drill bit. When moved from a known contaminated site on the pad to the tundra, the drill rod and drill bit where exchanged for clean rods and drill bits.
- A total of 92 soil samples were submitted to Maxxam Analytics in Montreal Quebec for analysis of Total (Strong Acid Dissociable) Cyanide and Weak Acid Dissociable (WAD) Cyanide. There were 10 samples submitted for soil pH. All soil samples were maintained below 4°C.
- Where possible, ice or water samples were collected and placed into plastic containers for analysis. A total of 7 samples were sent to Multi-Lab Direct in Val-d'Or Quebec for analysis of Total Cyanide and WAD Cyanide. All water/ice samples were maintained below 4°C. An additional sample was taken at the same time for each of the 7 water/ice samples and submitted to the on-site Assay Lab for analysis of WAD Cyanide.
- All borehole locations and monitoring well locations were determined using a handheld Trimble GPS.

2.2 Phase 2 Engineering

Tetra Tech EBA agreed with AEM's suggestion that an interception trench needed to be constructed downstream of the temporary containment berms. AEM designed the interception trench and Tetra Tech EBA performed geotechnical QA/QC during its construction. The QA/QC for the interception trench was carried out between April 24, 2014 and May 1, 2014. The purpose of the geotechnical engineering QA/QC program was to verify that geotechnical related construction activities were undertaken in accordance with the project drawings and specifications, and that the design intent was satisfied. This section provides Tetra Tech EBA's scope for the engineering work.

2.2.1 Phase 2 Engineering Scope of Work

The proposed Phase 2 engineering scope of work included the following:

- Reviewing AEM's Engineering design plan for the interception trench and providing feedback in a memo;
- Performing a visual inspection of the interception trench excavation and cleaning/preparation prior to 20 mm crushed aggregate/8% bentonite fill placement;
- Observing 20 mm crushed aggregate/8% bentonite fill placement and compaction;
- Providing geotechnical design clarifications and verification that the design intent was being achieved; and
- Overseeing the construction of the permanent interception trench in a QA/QC only capacity.

3.0 BACKGROUND INFORMATION

3.1 Site Details and Background

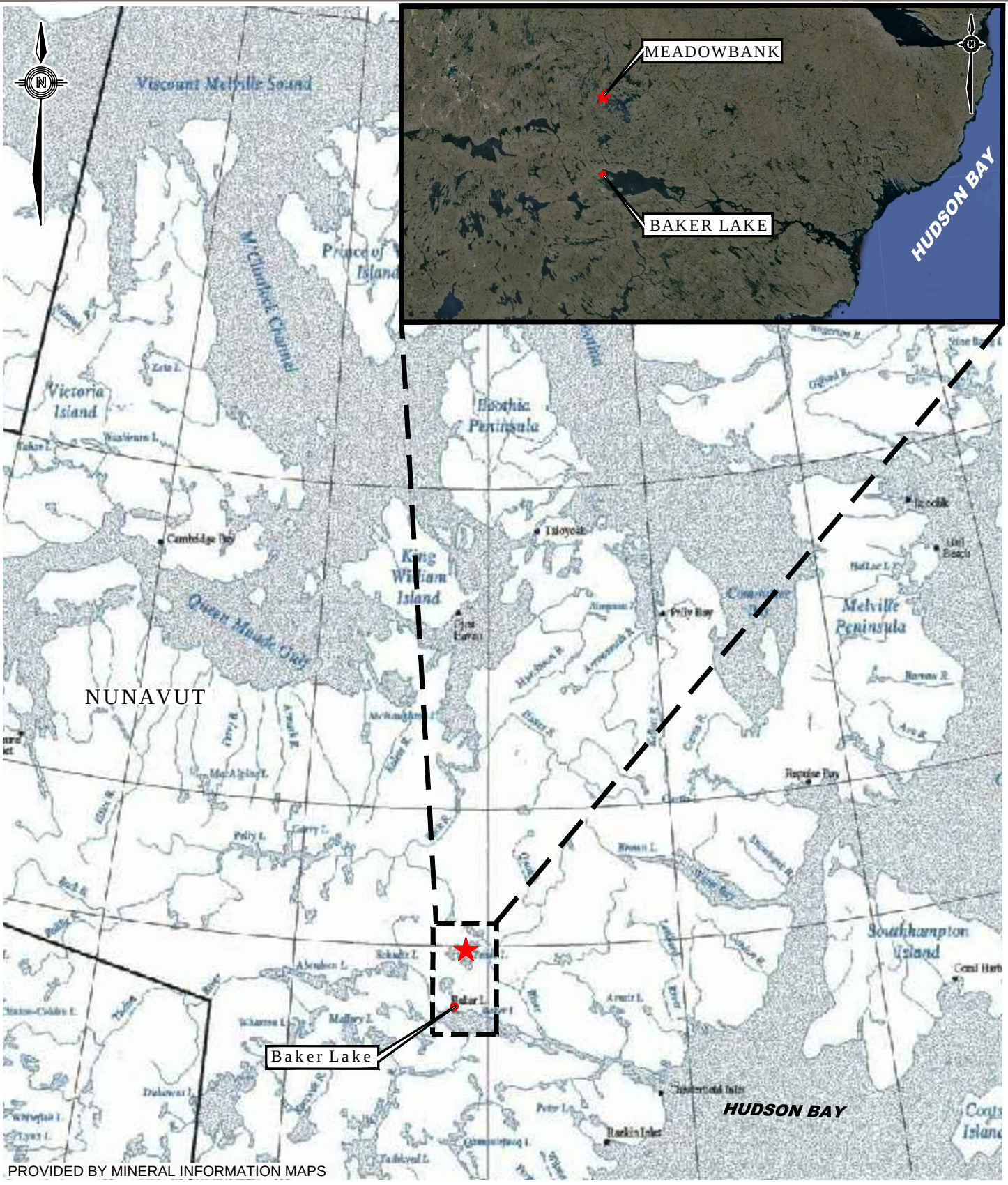
The Meadowbank Mine is located approximately 80 km north of Baker Lake, Nunavut (Figure 1) in the Kivalliq Region (formerly District of Keewatin). It is located near Third Portage Lake approximately 190 m northeast from the edge of the lake (65°1'30"N, 96°4'14"W). On November 26, 2013, Tetra Tech EBA was provided with a detailed report, "*Preliminary AEM Report – Assay Road Seepage*" (AEM, November 2013) discussing the seepage issue identified at the Meadowbank Mine. This report noted that on November 4, 2013, seepage was

first observed coming through the road embankment in front of the Assay Lab. Testing of the seepage water identified that it was process water, as indicated by the presence of cyanide, copper, and iron.

After the seepage was identified by AEM, a temporary containment berm was constructed downstream of the road to contain the water. Because of winter conditions, the seepage water froze relatively quickly and the ice was regularly removed from the containment area using a backhoe. As winter conditions continued, the amount of seepage decreased, due to freezing within the road embankment. The seepage was thought to be primarily originating from the mill, particularly from the CIP secondary containment system.

AEM drilled a number of boreholes on the mill pad, but only water samples were collected from holes that had enough water. AEM also collected water samples from groundwater wells installed by AEM (201, 202, and 203) located on the pad in front of the CIP area behind the Assay Lab. In the area where the cyanide leaked onto the ground surface downslope of the mill pad, three samples were collected from inside the temporary containment berm, along with an additional sample collected from the surface water of the lake downgrade of the leak. Cyanide was detected from the water samples collected from the wells and inside the temporary containment berm. Cyanide was not detected in the sample that was taken from the lake. Additional samples were taken from the lake near the water tank intake pipe intermittently from November 26, 2013 to May 26, 2014 and submitted to Multi Lab for analysis of Total Cyanide. Cyanide values ranged from less than 0.005 (detection limit is 0.005 mg/L) to 0.087 mg/L. These values are very low, as well, the Total Cyanide values have been below detection limits since April 1, 2014.

AEM conducted an assessment program inside the mill and determined that there were several secondary containment systems that required repair. AEM is currently undertaking an extensive repair/reseal program within the mill to ensure integrity of these containment systems that were identified to be leaking and which lead to the seepage. The main area of concern identified in this assessment program was the CIP tank secondary containment system which was designed to contain spills from the CIP tanks. This containment system has now been repaired.



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TETRA TECH EBA

Meadowbank Assay Road Seepage
Meadowbank, NU

SITE LOCATION

PROJECT NO.	DWN	CKD	REV
E14103172-01	TK	TH	0

OFFICE	DATE
EDM	June 2014

Figure 1

3.2 Climate

Based on meteorological data from weather stations at Baker Lake, the mean annual temperature is -11°C. Based on 153 complete months of data at the Baker Lake Airport, the mean monthly air temperatures for Baker Lake ranged from -38.2°C in January 2004 to 13.7°C in June 2007. Total annual rainfall from 2000 to 2012 averaged 26 mm and 11 mm of snow water equivalent (Government of Canada 2014).

3.3 Site Topography and Vegetation

The Meadowbank Mine is located adjacent to Third Portage Lake in the Low Arctic ecoclimatic zone, characterized with low relief, having an elevation range of 0 to 70 m above the lake level. The site is predominantly covered in heath tundra interspersed with lichen-dominated bedrock outcroppings and boulder fields (Cumberland Resources Ltd. 2005).

3.4 Regional Bedrock Geology

The Meadowbank Mine is located on the Canadian Shield, which consists of Archean rocks. Archean rocks are greater than 2.5 billion years old and the Shield contains the largest area in the world of Archean rocks. The mine site is underlain with Archaean greenstone and metasedimentary rocks consisting of iron formation, intermediate volcanic and ultramafic rocks with quartzite in some areas. Enclosed within the greenstone are volcaniclastic sediments, felsic-to-intermediate flows and tuffs, sediments and oxide iron formations, and sericite schists. The ultramafic rocks contain serpentinite, chlorite, actinolite, and talc. There are two main faults identified in the Meadowbank Mine region, the Bay Zone Fault and the Second Portage Fault. There are areas where bedrock outcrops are found and the bedrock appears to follow the surface topography, with some local relief in the bedrock surface of 0.5 meters (Cumberland Resources Ltd. 2005).

3.5 Regional Surficial Soils

The area is partially covered with glacial till that has a sandy silty till with gravel matrix. The percent fines for silt and clay are typically 20 to 40%. Both boulders and cobbles are present in the till with the cobble content ranging from 0 to 35% with an average of 12% by volume. The colour of the till in this area ranges from dark brown to reddish brown (Cumberland Resources Ltd. 2005; Golder Associates. 2008).

3.6 Hydrogeology

The Meadowbank Mine is located near the surface water divide between the Back River basin, which flows north to northwest towards the Arctic Ocean and the Thelon River basin, which flows east to southeast into Hudson Bay. The regional deep groundwater flows northwest from the northwestern end of Third Portage Lake and in the southeast direction from the southeast end of Third Portage Lake and Second Portage Lakes.

Continuous permafrost depth extends between 450 and 550 m. Ground temperature measurements in the project area indicate an active zone thickness averaging 1.3 m in shallow overburden and up to 4 m adjacent to the lakes (Cumberland Resources Ltd. 2005). The shallow groundwater flow has little to no hydraulic connection with the groundwater regime located below the deep permafrost. Based on the regional geology and the presence of permafrost, the groundwater flow is likely complex and controlled by topography, surface water bodies, and bedrock structure. Vertical groundwater flow is limited by the permafrost. The period of groundwater flow is highly influenced by climatic conditions and flow is also likely limited to the short summer season when the active layer thaws, thus allowing water to flow in this horizon. It is expected that the surface water bodies are expressions of the water table.

Based on the site topography, it is expected that flow of water in the active layer is towards Third Portage Lake. Third Portage Lake is located approximately 190 m from the Mill Pad. From photos taken in the fall, there are areas located near the lake where water ponds, thus water in the active layer is close to surface in this area, and the grassy vegetation observed reflects wetland conditions.

3.7 Cyanide

Cyanide is a general term that refers to a group of chemicals where carbon and nitrogen combine to form compounds (CN). The chemistry of cyanide is complex, as there are different cyanide compounds, which have been grouped into five groups: free cyanide, simple cyanide compounds, weakly complexed cyanide, moderately strong complexed cyanide and strong complexed cyanide. These five groups have then been categorized into three common names: free cyanide, WAD cyanide, and Total cyanide. Most cyanide in solution combines with metals and metalloids and form dissolved complexes (Lottermoser, Bernd. 2007).

Free Cyanide

Free cyanide refers to two species: the cyanide anion (CN^-) dissolved in water and the hydrocyanic acid (HCN) formed in solution (Lottermoser, Bernd. 2007):

$$CN^-_{(aq)} + H_2O_{(l)} \longleftrightarrow HCN_{(aq)} + OH^-_{(aq)}$$

The amount of cyanide converted to hydrogen cyanide depends on the salinity and pH of the solution. At alkaline pH greater than 10.5, most of the free cyanide is present as the cyanide anion. Equal concentrations of CN and HCN are present at a pH of 9.3. At neutral to acidic pH conditions (pH < 8.3), all free cyanide is present as hydrogen cyanide. Hydrogen cyanide is volatile and can be dispersed to the atmosphere. As for the salinity, hydrogen cyanide is promoted in high saline conditions (Lottermoser, Bernd. 2007).

WAD Cyanide

Weak acid dissociable (WAD) cyanide consists of free cyanide, simple cyanide compounds, and weak to moderately strong complexes. Simple cyanide compounds are the salts of hydrocyanic acid (e.g.: NaCN, KCN, $Ca(CN)_2$, Cu(CN), Ni(CN)). These compounds exist as solid cyanides, some of which are water soluble, which can form free cyanide and dissolved cations. The weak to moderately strong complexes are metal complexes (e.g. $Zn(CN)^{-2}_4$, $Cd(CN)^-_3$, $Cu(CN)^-_2$, $Ni(CN)^{-2}_4$ and $Ag(CN)^-_2$) which create free cyanide when the pH is lowered to approximately 4.5 (Lottermoser, Bernd. 2007)

Total Cyanide

Total Cyanide consists of free cyanide, simple compounds, weak to moderately strong complexes and strong complexes. These strong complexes include complexes of gold, iron, and cobalt, and their destruction is slow under natural conditions. A change in environmental conditions such as pH, water temperature, salinity, complex concentration, oxidant concentration, and intensity of sunlight or UV radiation reduces the stability of the strong cyanide complexes (Lottermoser, Bernd. 2007).

Toxicity

Free cyanide is the most toxic cyanide form, since it causes toxicity at low concentrations. For the other cyanide species, WAD and Total, higher concentrations are required to induce toxicity. Hydrogen cyanate and cyanate ions are less toxic than hydrogen cyanide, while thiocyanate is relatively non-toxic compared to free cyanide. The stability of the cyanide influences the toxicity of the different cyanides. The more stable the cyanide, the less toxic

it is, particularly to aquatic life. Therefore, WAD cyanide is an appropriate measure for assessing potential toxicity of cyanide solutions to humans and animals (Lottermoser Bernd. 2007).

Fate and Transport in Soil

Transport and distribution of cyanide is mainly affected by volatilization and biodegradation in soils. Volatilization of cyanide increases in acidic soils and can be the dominant mechanism for cyanide loss from soil surfaces. Cyanide can also create metal complexes with heavy metals, especially iron, and precipitate out of solution. Hydrogen cyanide is not affected by photolysis in soils, but complex cyanides may rapidly photo dissociate and release free cyanide when exposed to sunlight. Cyanide can be absorbed to soil particles, particularly to clays and organic matter. The rate at which hydrogen cyanide and metal cyanide adsorb to soils in not significant when compared to volatilization and biodegradation. The high volatility of cyanide and the action of soil microbes do not permit high levels of cyanide to persist or accumulate in the soil under natural conditions. Biodegradation of cyanide in the soil by microbes tends to generate carbonates and ammonia. Cyanide in the soil will decompose to ammonia, carbon dioxide, and nitrogen (nitrate) in aerobic conditions and nitrogen (ammonium), thiocyanate, and carbon dioxide under anaerobic conditions (CCME. 1999).

Mobility of cyanide in the soil changes with stability and dissociation of the compound, soil type, soil permeability, soil chemistry, and presence of aerobic and anaerobic conditions. The following soil characteristics increase the mobility of cyanide: low pH, high negative soil charges, and low clay content. Whereas soils with neutral to alkaline pH, high clay content, high positive soil charges, presence of organic matter, iron, or other metal oxides can increase soil attenuation. Attenuation may be increased under aerobic conditions, since biodegradation is higher in aerobic conditions. Some comparisons were completed for different cyanide complexes for mobility, in that aqueous simple cyanide and ferricyanides tend to be very mobile in soil, while cyanides dissolved in leachate move slower than those in the aqueous solution. Copper, cobalt, zinc, and nickel-cyanide complexes were found to be more mobile than iron and manganese complexes (CCME. 1999).

4.0 ENVIRONMENTAL CRITERIA

The following subsections outline the rationale for the selection of applicable generic risk management guidelines for soil.

4.1 Regulatory Guidelines

The regulatory guideline documents that were consulted are summarized below. These documents provide a generic set of guidelines against which the analytical results are compared to provide a general site condition.

- Canadian Council of Ministers of the Environment, Soil Quality Guideline for the Protection of Environmental and Human Health (2007) - Wildland Land Use;
- Canadian Council of Ministers of the Environment, Canadian Water Quality Guidelines for Protection of Fresh/ Marine Water Aquatic Life (2007);
- Environmental Protection Division, Department of Environment, Government of Nunavut, Environmental Guideline for Contaminated Site Remediation (March 2009 Revised) - Wildland Land Use;
- British Columbia Environmental Management Act for Contaminated Sites Regulations, Schedule 4 Generic Numerical Soil Standards (2014) – Wildland Use and;
- British Columbia Environmental Management Act for Contaminated Sites Regulations, Schedule 6 Generic Numerical Water Standards (2014).

4.2 Criteria for Cyanide in Soil

Currently, there are no soil guidelines for Total and WAD Cyanide under the Canadian Council of Ministers of the Environment (CCME), "*Soil Quality Guideline for the Protection of Environmental and Human Health*" or the Environmental Protection Division, Department of Environment, Government of Nunavut, "*Environmental Guideline for Contaminated Site Remediation*" (March 2009 Revised). Only free cyanide is regulated under these guidelines, in which for Wildland land use, the guideline is 0.9 mg/kg. Free cyanide was not analyzed in this assessment since WAD Cyanide includes free cyanide and this was an initial investigation to determine the extent of cyanide impacted soil downgrade of the Assay Lab.

There are guidelines under the British Columbia (BC) Environmental Management Act for Contaminated Sites Regulations, Schedule 4 for Total and WAD Cyanide. Under these guidelines there are five (5) land use categories, Agriculture, Commercial Residential, Industrial, and Urban Park (Wildlands). Below are the definitions for each land use:

- **Agricultural:** means the use of land for the primary purpose of producing agricultural products for human or animal consumption including, without limitation, livestock raising operations, croplands, orchards, pastures, greenhouses, plant nurseries and farms;
- **Commercial:** means the use of land for the primary purpose of buying, selling or trading of merchandise or services including, without limitation, shopping malls, office complexes, restaurants, hotels, motels, grocery stores, automobile service stations, petroleum distribution operations, dry cleaning operations, municipal yards, warehouses, law courts, museums, churches, golf courses, government offices, air and sea terminals, bus and railway stations, and storage associated with these uses;
- **Residential:** means the use of land for the primary purpose of a residence by persons on a permanent, temporary or seasonal basis, including, without limitation, single family dwellings, cabins, apartments, condominiums or townhouses, or institutional facilities, including, without limitation, schools, hospitals, daycare operations, prisons, correctional centres and community centres;
- **Urban Park:** means the use of urban land for the primary purpose of outdoor recreation including, without limitation, municipal parks, fairgrounds, sports fields, rifle ranges, captive wildlife parks, biking and hiking areas, community beaches and picnic areas, but does not mean Wildlands such as ecological reserves, national or provincial parks, protected wetlands or woodlands, native forests, tundra and alpine meadows;
- **Wildlands:** means the use of land for the primary purpose of supporting natural ecosystems, including the use of land for ecological reserves, national or provincial parks, protected wetlands or woodlands, native forests, tundra and alpine meadows, but does not include uses defined as urban park land use. The land use of the site is Wildlands land use when the concentration of any substance in the soil at a depth of less than 3 metres is greater than the numerical standards for soil that would apply if the land use of the site were urban park land use.

For the purposes of this comparison, the urban park (Wildland) land use values from British Columbia (BC) Environmental Management Act for Contaminated Sites Regulations, Schedule 4 for Total and WAD Cyanide were used as a guideline. Maximum Total and WAD Cyanide from this act are 50 and 10 mg/kg, respectively.

4.3 Criteria for Cyanide in Water

4.3.1 Water Licence

As per Water Licence No. 2AM-MEA0815 (see Table A below), all effluent shall not exceed the following criteria for Cyanide:

Table A – Cyanide Effluent Criteria

Parameter	Max. Average Concentration	Max. Allowable Grab Sample Concentration
Total Cyanide (mg/L)	0.5	1.0

4.3.2 General Criteria

In this investigation Total and WAD cyanide were measured on site, but not free cyanide. The reason for this is that WAD cyanide includes free cyanide. Thus, free cyanide was not included in the analysis as the purpose of this investigation was to determine the extent of the cyanide impacted material. Also, WAD cyanide is an appropriate measure for assessing potential toxicity of cyanide solutions to humans and animals.

Currently, there are no water guidelines for Total, WAD and Free Cyanide under the Under the Government of Nunavut's Contaminated Guidelines, "*Environmental Guideline for Contaminated site Remediation*" (March 2009 Revised) for water. As for CCME's, "*Canadian Water Quality Guidelines for Protection of Fresh/ Marine Water Aquatic Life*" guideline, there are only standards for free cyanide for freshwater aquatic life (5 µg/l or 0.005 mg/L). Therefore the BC Environmental Management Act for Contaminated Sites Regulations (CSR), Schedule 6-Generic Numerical Water standards were utilized as it contains standards for both Total (Drinking Water: 200 mg/L) and WAD cyanide (Aquatic Life: 50 mg/L-freshwater or 10 mg/L for marine/estuary). Therefore the water licence criteria for Total Cyanide in effluent are utilized to evaluate the results from the testing on recovered water samples.

5.0 SITE WORK

5.1 Site Safety

In accordance with AEM's policies, Tetra Tech EBA staff completed AEM's online site orientation and safety training. Pre-job hazard assessments were completed prior to going in the field, and were updated with a field-level assessment once on site. In conjunction with AEM, Tetra Tech EBA completed a job hazard analysis form (See Appendix D) prior to conducting any field work. Each day, Tetra Tech EBA, AEM, and the driller conducted a safety meeting prior to drilling and completed a Safe Work Form, which was updated and signed daily. Tetra Tech EBA participated in the staff safety meetings at the beginning of the program with various mine manager representatives to go over the job hazard analysis and to review the scope of the project. Prior to drilling, the electrical and water lines were located on site. During the course of the work, Tetra Tech EBA met with the electrical supervisor to confirm holes located near the buildings and that when drilling near electrical lines, the power to these lines were locked out and tagged out.

For the geotechnical QA/QC work, Tetra Tech EBA staff completed AEM's online site orientation and safety training. Pre-job hazard assessments were completed prior to going in the field, and were updated with a field-level assessment once on site.

5.2 Soil Sampling Program

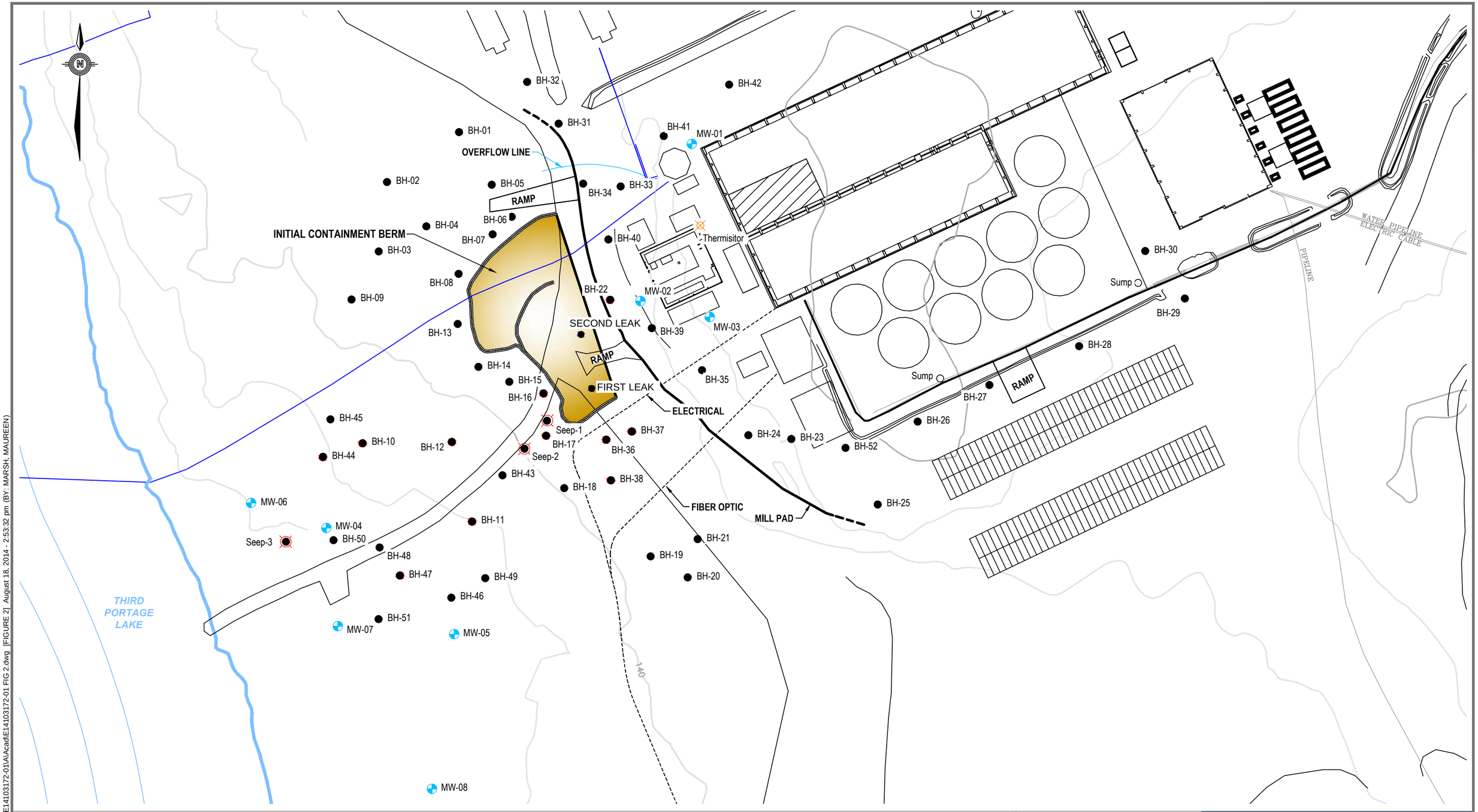
Prior to the drilling program, Tetra Tech EBA completed a walkthrough of the site with an AEM employee to explain where the leaks originated and where the water was originally coming out of the pad. After the walkthrough it was decided to begin drilling in front of the Assay Lab first then continue to drill on either side of the Assay Lab. Photos were taken throughout the drilling program (Photos 1-8).

A total of 52 boreholes were drilled in various areas (Figure 2). All holes were drilled using a downhole hammer-air rotary drill without water. Samples were collected from the drill using either plywood or a metal pan and then scooped into plastic bags using a metal spoon. After the collection of each sample, the pans, spoon, and plywood were brushed off to minimize cross contamination. In addition, before drilling each hole, the drill was purged using compressed air to clean off the drill bit. When moving from a known contaminated site on the pad to the tundra, the drill rod and drill bit were exchanged for clean rods and drill bits.

All borehole locations had the total depth recorded, and depth of refusal. The colour of the cuttings was noted at some, but not all borehole locations, during the drilling program. Cuttings collected from the pad were grey in colour, while cuttings collected from the native terrain downslope of the mill pad were brown to reddish brown in colour. There were some locations on the pad where soil samples could not be collected due to voids in the rockfill materials used to construct the pad or underneath the pad.

Soil samples were placed into plastic Ziploc bags supplied by the laboratory, stored in an insulated cooler and kept cold for transport to Maxxam Analytics International Corporation in Montreal, Quebec. Holding times for all soil samples were within acceptable limits. The temperature of the samples upon being received by the laboratory was below 4°C. No samples were broken or lost during transport.

A total of 92 samples were analyzed for Total and WAD cyanide and 8 samples were analyzed for soil pH.



LEGEND

- GROUNDWATER MONITORING WELL
- SEEP SAMPLE (ICE AT SURFACE CYANIDE DETECTED)
- BOREHOLE LOCATION
- BOREHOLE LOCATION(CYANIDE DETECTED)
- THERMISITOR CABLE

0 50m

Scale: 1:1,250 @ 11"x17"

NOTES

SEEP 3 HAD LOW LEVELS OF CYANIDE
(CNTOT = 0.192 ppm CNWAD = 0.033 ppm)

CLIENT

AGNICO-EAGLE

TETRA TECH EBA

Meadowbank Assay Road Seepage
Meadowbank, NU

BOREHOLE AND MONITORING WELL LOCATIONS

PROJECT NO.	DWN	CKD	REV
E14103172-01	TK/MM	TH	0
OFFICE: EDM	DATE: August 2014		

Figure 2

5.3 Water Sampling Program

Where possible, ice or water samples were collected during drilling and placed into plastic containers for analysis. Samples were stored in an insulated cooler and were kept cold for transport to Multi-Lab Direct in Val-d'Or Quebec. A total of seven samples were sent to Multi-Lab Direct for analysis of Total Cyanide and WAD Cyanide. All water/ice samples were maintained below 4°C. An additional sample was taken at the same time for each of the seven water/ice samples and submitted to the Assay Lab on site for analysis of WAD Cyanide.

In addition to the sampled boreholes, eight (8) monitoring wells were installed, three (3) on the pad and five (5) in the natural terrain downslope of the mill pad. Monitoring wells were completed with 2" PVC solid pipe with a slotted screen at the bottom. These screens vary in depth, depending on the borehole depth (See Appendix B). The screen was surrounded by a silica sand filter pack followed by bentonite to grade. There were no metal coverings placed on the wells at the time of installation. After installation, no water samples could be obtained at the time of the investigation, due to frozen ground conditions.

5.4 Thermistor Cable

A thermistor cable was installed to 15.5 mbgs behind the Assay Lab near old monitoring wells 201, 202, and 203. The thermistor cable was completed with a 3" PVC solid pipe with caps at the bottom and top. The inside of the PVC pipe was filled with fine crushed gravel to the top of the PVC pipe. Readings were taken at the time of installation and every few days afterwards to determine the ground temperature. Appendix E presents the measured ground temperature and the calibration for the thermistor cable.

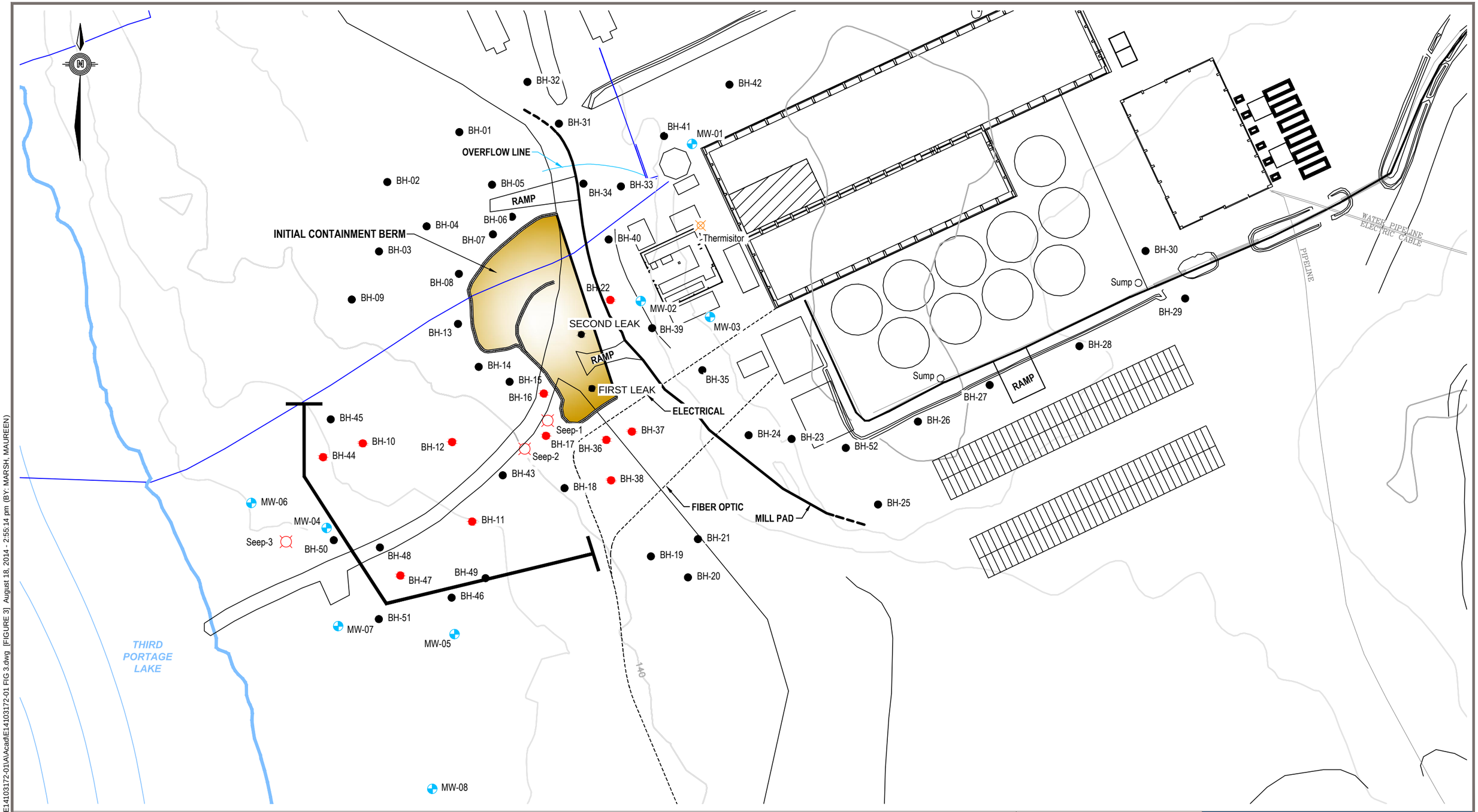
6.0 DESIGN AND CONSTRUCTION OF THE INTERCEPTION TRENCH

6.1 Interception Trench Location, Design and As-Built Construction

The interception trench design was developed by AEM with consultation by Tetra Tech EBA. The trench was located to minimize disturbance to the natural terrain, act as a barrier between detected cyanide and the lake, while staying at least 30 m away from Third Portage Lake. The approximate location of the interception trench is shown on Figure 3.

The initial design was to have a culvert within a rockfill mound and seacan placed on top for housing pumping equipment. The idea was to allow permafrost to aggrade into the bentonite material, providing a secondary impermeable boundary if water was allowed to pool in the collection area and started to slowly seep through the bentonite. This design was altered with input from Tetra Tech EBA and AEM, since the trench was over-blasted, and if the collection area was covered by rockfill to the original ground level, there was potential that the permafrost would aggrade too high and potentially freeze any pooled water before it could be pumped out. As a result, AEM committed that any pooled water in the collection area will be immediately pumped out to limit the possibility of long term pooling and seeping through the bentonite material, therefore the rockfill mound and seacan were abandoned.

Construction of the interception trench generally followed the intended design with a few changes made to "field-fit" to site conditions. As-built drawings provided by AEM are presented in Appendix C.



LEGEND

- GROUNDWATER MONITORING WELL
- SEEP SAMPLE (ICE AT SURFACE CYANIDE DETECTED)
- BOREHOLE LOCATION
- BOREHOLE LOCATION(CYANIDE DETECTED)
- THERMISITOR CABLE
- INTERCEPTION TRENCH

0 50m

Scale: 1:1,250 @ 11"x17"

NOTES

SEEP 3 HAD LOW LEVELS OF CYANIDE
(CNTOT = 0.192 ppm CNWAD = 0.033 ppm)

CLIENT

AGNICO-EAGLE

TETRA TECH EBA

Meadowbank Assay Road Seepage
Meadowbank, NU

INTERCEPTION TRENCH LOCATION

PROJECT NO.	DWN	CKD	REV
E14103172-01	TK/MM	TH	0

OFFICE: EDM

DATE: August 2014

Figure 3

The AEM design for the interception trench utilizes shallow ditches and a sump. To mitigate anticipated thaw in permafrost conditions, the final design for the interception trench includes significant over excavation and replacement with thaw stable materials, and a cut-off system keyed in deep enough below the ditch or sump bottom to be below the depth of anticipated thaw. However, to insure thermal stability, it will be essential that water not be allowed to pond in the ditches or sump for longer than 1 day.

6.1.1 Interception Trench Preparation

The excavation of blast debris from the interception trench was ongoing when Tetra Tech EBA arrived on site on April 24, 2014. Excavation was carried out with a Caterpillar (CAT) 365 excavator positioned parallel to the trench. Excavation removed the bulk of the blast material down to refusal on bedrock. The contractor was directed to remove all smaller rock fragments and unsound rock that remained at the bottom of the interception trench with the smaller CAT 345 backhoe equipped with a small (1 m wide) bucket fitted with “duck teeth”. Almost the entire excavation was located within sound bedrock. The bottom of the trench was somewhat irregular as a result of the inaccuracies of blasting. Photos 9 and 10 show the interception trench after the initial removal of blast material and after final cleaning, respectively.

6.1.2 Geotextile Placement

Geotextile was placed on the downstream slope of the interception trench under observation of Tetra Tech EBA. The geotextile was placed with a minimum panel overlap of 300 mm, and with approximately 1000 mm tied in at the top of the downstream slope. Photo 11 shows the geotextile on the downstream slope as it is being tied in.

6.1.3 20 mm Aggregate/8% Bentonite Material Placement

Bottom of Interception Trench

A mixture of 20 mm crushed aggregate with 8% bentonite (bentonite material) was placed on the bottom of the interception trench following inspection by Tetra Tech EBA. The bentonite material was compacted using a Wacker DPU 5045H Vibrating Plate with a minimum of four passes per lift; compaction activities are shown in Photo 12.

The aggregate/bentonite material was first placed to fill in the low (over-blasted) areas of the interception trench. Lift thicknesses between 200 and 300 mm were used. The bottom of the interception trench was built up in this manner until the desired thicknesses and grades were reached, as measured by the on-site surveyor. To meet the design intent, a minimum bentonite material thickness of 500 mm above the bedrock and minimum grades of 1.5 percent towards the collection area were achieved.

Downstream (Lake Side) Slope

Bentonite material was placed on the downstream slope of the trench in two lifts (300 mm and 200 mm) and compacted with the CAT 365 excavator bucket for a total thickness of 500 mm. Photo 13 shows the CAT 365 excavator compacting two lifts of bentonite material on the downstream slope.

Upstream (Mill side) Slope

Bentonite material was placed along the upstream slope to direct any flowing subsurface water (most likely flowing in the active layer at the overburden/bedrock contact) into the interception trench. Compaction was carried out with the CAT 365 excavator bucket. The contractor was directed to ensure there was no gap or “gutter” between the upstream wall and bentonite material. Care was taken so that the top of the bentonite material was below the overburden/bedrock contact. Photos 13 to 16 show bentonite placement on the upstream slope.

6.1.4 150 mm and Rock Fill Material Placement

The placement of the 150 mm and Rock Fill material was done after Tetra Tech EBA had left the site. This stage was not as crucial to the performance of the interception trench as the bentonite material placement. Photo 17 shows the interception trench at completion, photos courtesy of AEM.

6.1.5 Testing of 20 mm Crushed Aggregate/8% Bentonite Material

One sample (sample 1) of bentonite material was subjected to constant head hydraulic conductivity testing in Tetra Tech EBA's Edmonton laboratory in accordance with ASTM D5084. To get a sample representative of in-situ conditions, the sample was taken directly out of the bottom of the interception trench as the contractor was placing the bentonite material. In-situ moisture content prior to testing was 3.7%, moisture content after testing was 12.7%, with an average dry density of 1875 kg/m^3. The hydraulic conductivity of the bentonite material was determined to be 2.2 x 10^{-5} cm/s, which is adequate to minimize water seepage out of the interception trench. Detailed constant head hydraulic conductivity test results are presented in Appendix F.

7.0 RESULTS AND DISCUSSIONS

The results of the 2014 Meadowbank Mine Assay Seepage Environmental Site Assessment are presented in the following section and in Tables 1 to 3. The laboratory reports are in Appendix A.

7.1 Soil

Natural Terrain

There were a total of 62 soil samples submitted for analysis of Total and WAD Cyanide from the boreholes drilled in the natural terrain downslope of the mill pad. Of those 62 samples, there were 17 samples where Total Cyanide was detected, with values ranging from 0.5 to 51 mg/kg. When compared to the British Columbia (BC) Environmental Management Act: Contaminated Sites Regulations for Urban Park (Wildlands), Schedule 5, only one location (BH-38, 51 mg/kg) was greater than the BC guidelines (50 mg/kg) for Total Cyanide.

For WAD Cyanide, there were only three samples where WAD Cyanide was detected, with values ranging from 0.9 to 3 mg/kg. All of these samples were below the British Columbia (BC) Environmental Management Act: Contaminated Sites Regulations for Urban Park (Wildlands), Schedule 5 (10 mg/kg).

The pH of the soil on the tundra ranged from 6.89 to 7.20, which meets applicable guidelines.

Mill Pad

There were a total of 30 soil samples submitted for analysis of Total and WAD Cyanide from boreholes drilled through the pad. Of those 30 samples, there was one sample (BH-22, 1.7 mg/kg) where Total Cyanide was detected. No WAD Cyanide was detected. Water was observed in BH-22 and MW-02, which was located in front of the Assay Lab.

The pH of the material on the pad ranged from 8.58 to 9.38 which is greater than the applicable guidelines. This material is created mainly of crushed blast rock, which would have been pulverized during drilling. In gold mines there are issues with having waste rock having low pH causing acid drainage, thus having higher than neutral pH values is better than lower pH values. Therefore, the pH values observed in the pad should not be a concern.

7.2 Water

Natural Terrain

There were a total of 6 water (ice) samples submitted for analysis of Total and WAD Cyanide from the natural terrain downslope of the mill pad. Total and WAD Cyanide was detected at all six sample locations. Total Cyanide was detected with values ranging from 0.192 to 2.23 ppm. The Water Licence No. 2AM-MEA0815 provides effluent discharge for Total Cyanide at 0.5 ppm for maximum average concentration and 1.0 pm for maximum allowable grab sample concentration. Using this value as a guideline, all samples analyzed, except Seep 3, exceed the water License for Total Cyanide. Seep 3 is located approximately 30 m from the edge of the lake, where cyanide was detected.

The Water Licence No. 2AM-MEA0815 does not have effluent discharge values for WAD Cyanide. Using the BC guidelines as a guide, none of the water samples exceeded the BC guidelines to protect freshwater aquatic life (50 ppm).

Mill Pad

There was one water sample (BH-22) submitted for analysis of Total and WAD Cyanide from boreholes drilled in the pad. The Total Cyanide detected was 24.59 ppm and WAD Cyanide was 10.6 ppm. The Total Cyanide exceeds the effluent discharge established in the Water Licence No. 2AM-MEA0815.

Monitoring well MW-02 did contain water, but no sample was collected, as it was adjacent to BH-22.

7.3 Ground Temperature

Regular readings have been obtained from the thermistor cable between March 5, 2014 and June 16, 2014 to determine changes in the ground temperature regime and determine the thickness of the active layer. The active layer depth is approximately 1.5 mbgs and ground temperature at the depth of zero annual amplitude (approximately 12 mbgs) is -2.0°C.

8.0 CONCLUSIONS AND RECOMMENDATIONS

During this investigation cyanide was detected at a depth of 1.68 mbgs near the location where the seep was initially identified. Down gradient of the initial containment, cyanide was detected to depths of 0.7 mbgs. Cyanide was not detected approximately 60 m from the lake (BH-47) in the soil, but was found at low levels in water (ice) that accumulated on the surface (Seep 3). Seep 3 is located about 30 m from the lakes edge and had low levels of cyanide (Total cyanide- 0.192 mg/L; WAD cyanide-0.033 mg/L). This information suggests that the cyanide initially infiltrated into the soil close to the initial seepage area; however further away from the seepage cyanide may have accumulated in the topsoil with little infiltration into the mineral soil (till overburden) or bedrock.

It was decided that the interception trench be installed between Seep 3 and BH-47. The decision for the location of the interception trench was based on the premise to minimize disturbance to the natural terrain, and act as a barrier between detected cyanide and the lake, while staying at least 30 m away from Third Portage Lake. An interception trench at this location should prevent cyanide contamination reaching Third Portage Lake. It is recommended that any pooled water within the collection area of the interception trench be pumped out immediately.

In order to remove the source of contaminant, AEM has taken steps to repair/reseal the containment systems that have been identified to be leaking and lead to the seepage. The main area of concern was the CIP tank containment system, which has been repaired. A ground temperature cable (thermistor cable) was installed near

the mill to determine the ground thermal regime. The fact that the mill pad has refrozen and there is only a thin active layer in the pad indicates that the repairs to the containment system have been effective in limiting seepage to the point that the ground has refrozen as significant continued seepage would likely preclude freezing.

AEM has currently established a Freshet Action Plan (April 2014), which outlines protocols AEM will take to monitor the interception trench and sampling protocols. AEM will conduct daily inspections of the pumping, collection systems and perimeter area and will record all pumped volumes of water from the interception trench. Any of the water collected will be pumped to the mill and discharged with the tailings to the tailings storage facility (TSF). The sampling program in this action plan states that on a monthly basis AEM will submit water samples to Multi Lab for analysis of Free Cyanide, Total Cyanide, Copper and Iron from the interception trench, monitoring wells 14MW04, 14MW05, 14MW06, 14MW07, and 14MW08, the original containment area and Third Portage Lake. AEM will collect waters twice a week from the area within the original containment berm, the interception trench, and monitoring wells 14MW02, 14MW03, 14MW08, 201, 202, and 203 to be submitted to the AEM on-site lab for WAD cyanide analysis.

After reviewing the information from this Environmental Site Assessment and AEM's Freshet Action Plan (April 2014), the following recommendations apply:

- Continue to sample water ponding within the original containment berm, interception trench, Third Portage Lake and monitoring wells 14MW01 to 14MW08, 201, 202 and 203, if water is present and not frozen, for analysis by Multi Lab of Free and Total cyanide, Copper, and Iron;
- In monitoring wells with known detected cyanide, collect and submit water samples to Multi Lab once in the spring and fall for analysis of ammonium, nitrate/nitrite, and pH. The purpose for the ammonium and nitrate/nitrite is that these compounds increase with the biodegradation of cyanide;
- If water is ponding down gradient of the interception trench, water samples should be collected and submitted to Multi Lab for analysis of Free and Total cyanide, Copper, and Iron;
- During the investigation no seep (water) samples or soil samples were collected within 30 m of the lake. Cyanide was detected at Seep 3, thus further sampling should be conducted down gradient of the trench in the soil and water. Water should be analyzed by Multi Lab for Free and Total Cyanide, Copper, and Iron, while soils should be analyzed for Free and Total cyanide;
- Depending on the results of the soil samples collected and potentially ponded water samples collected within 30 m of Third Portage Lake then sediment samples should be collected from the shore of Third Portage Lake. These sediment samples should be analyzed by Multi Lab for Free and Total Cyanide, Copper and Iron.
- AEM should install sumps inside the original containment berm to aid in the collection of water. This water can be pumped up to the mill and discharged to the TSF. This should improve collection of water in the spring near the mill pad;
- If not already complete, AEM should continue with the repairs to the secondary containment systems within the mill to ensure seepage sources are eliminated; and
- Collect additional soil samples on the northeast side of the mill in the direction of Tear Drop Lake to confirm if any cyanide travelled in that direction. If water is observed in the boreholes during this recommended investigation a well should be installed.

The following soil sampling recommendations should be implemented at closure of the mine:

- Soil samples should be collected for Free cyanide in the areas where known cyanide was detected, as free cyanide was not analyzed in this investigation. These areas should be delineated in order to produce a remedial action plan, if needed;

9.0 CLOSURE

We trust this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech EBA Inc.

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PERMIT TO PRACTICE
TETRA TECH EBA INC.
Signature
Date August 19, 2014
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

REFERENCES

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TABLES

Table 1 Analytical Results for Tundra Soil - AEM- Meadowbank Assay Seepage
Table 2 Analytical Results for Mill Pad Soil - AEM- Meadowbank Assay Seepage
Table 3 Water/Ice Analytical Results - AEM - Meadowbank Assay Seepage

Table 1: Analytical Results Tundra Soil - AEM- Meadowbank Assay Seepage

Parameters	Units	Guidelines	Downgradient of the Assay Lab														
		Wildland/ Urban Park	BH-01	BH-02	BH-03	BH-04	BH-05	BH-06	BH-07	BH-08	BH-09	BH-10	BH-11		BH-12		BH-13	BH-14
			40-60	0-44	40-60	0-39	0-45	40-75	40-60	40-60	40-52	0-40	0-40	40-62	0-40	40-70	40-70	40-70
pH[2]		6 to 8								6.91			7.20					
Total Cyanide[1]	mg/kg	50	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	13	30	0.6	1.5	1.4	<0.5	<0.5
WAD Cyanide[1]	mg/kg	10	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Moisture Content	%	NG	20	56	14	16	15	18	12	13	6.6	17	25	15	16	6.9	5.6	4.4
Laboratory Identification No.			X63656	X63657	X63658	X63659	X63660	X63661	X63662	X63663	X63664	X63665	X63666	X63667	X63668	X68074	X63669	X68075

Parameters	Units	Guidelines	Downgradient of the Assay Lab														
		Wildland/ Urban Park	BH-14	BH-15		BH-16			BH-17				BH-18		BH-19	BH-20	BH-21	BH-36
			70-112	40-70	70-100	0-40	70-100	100-140	40-70	70-100	100-140	140-168	40-70	70-100	40-59	40-70	70-90	40-70
pH[2]		6 to 8							7.12				6.89				7.93	
Total Cyanide[1]	mg/kg	50	<0.5	<0.5	<0.5	1.9	14	0.6	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	27
WAD Cyanide[1]	mg/kg	10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3
Moisture Content	%	NG	4.2	14	9.4	11	7.9	8.2	12	9.9	7.0	3.8	13	12	3.7	6.8	2.9	9.4
Laboratory Identification No.			X63670	X63671	X68076	X68077	X63672	X68078	X63673	X68079	X68080	X63674	X63683	X68081	X63684	X63685	X63686	X68105

Parameters	Units	Guidelines	Downgradient of the Assay Lab															
		Urban Park (Wildland)	BH-36		BH-37		BH-38	BH-43			BH-44		BH-45	BH-46		BH-47	BH-48	
			70-100	100-129	40-70	70-109	0-29	0-40	70-100	100-121	40-70	70-94	40-52	40-70	100-139	0-41	40-70	100-140
pH[2]		6 to 8																
Total Cyanide[1]	mg/kg	50	1.7	0.9	1	0.9	**51**	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	4	<0.5	<0.5
WAD Cyanide[1]	mg/kg	10	<0.5	<0.5	1.2	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Moisture Content	%	NG	6.3	7.4	13	6.0	30	41	6.9	9.9	9.9	6.4	16	7.6	5.6	19	9.4	7.3
Laboratory Identification No.			X68106	X68107	X68114	X68115	X68116	X71668	X71669	X71670	X71671	X71672	X71673	X71674	X71675	X71676	X71677	X71678

Parameters	Units	Guidelines	Downgradient of the Assay Lab								Monitoring Wells					
		Urban Park (Wildland)	BH-49		BH-50			BH-51			MW-04	MW-05	MW-06	MW-07	MW-08	
			40-70	70-100	0-40	70-100	100-133	0-40	70-100	100-133	70-91	70-100	70-122	40-70	40-70	70-100
pH[2]		6 to 8														
Total Cyanide[1]	mg/kg	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
WAD Cyanide[1]	mg/kg	10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Moisture Content	%	NG	6.0	5.5	19	7.7	6.3	22	9.0	4.4	7.6	8.4	8.0	16	9.1	6.2
Laboratory Identification No.			X71679	X71680	X71681	X71682	X71683	X71684	X71685	X71686	X71690	X71691	X71692	X71693	X71694	X71695

Notes:

[1] Environmental Management Act: Contaminated Sites Regulations, British Columbia (updated January 31, 2014); Urban Park (Wildlands). The BC guidelines are in µg/g which are equal to mg/kg

[2] Environmental Guidelines for Contaminated Site Remediation, Nunavut. Wildland

Blank-Not analyzed

NG- No Guideline

Bold - Greater than the referenced guideline

Cyanide Detected

Table 2: Analytical Results for Mill Pad Soil - AEM- Meadowbank Assay Seepage

Parameters	Units	Guidelines	North of Mill			Northwest of Assay Lab				In Front of Assay Lab					Southwest of Assay Lab			
		Urban Park (Wildland)	BH-41		BH-42	BH-33		BH-34		BH-40		BH-22	BH-39		BH-35		BH-23	BH-24
			300-350	400-450	300-350	300-350	400-450	300-350	500-577	400-450	550-645	500-550	300-350	400-450	300-350	400-450	450-500	400-450
pH[2]		6 to 8														**9.28**		
Total Cyanide[1]	mg/kg	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
WAD Cyanide[1]	mg/kg	10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Moisture Content	%	NG	7.2	0.8	1.1	14	2.7	4.8	5.2	12	4.5	16	3.6	3.0	3.2	3.4	0.8	2.3
Laboratory Identification No.			X68121	X68122	X68123	X68099	X68100	X68101	X68102	X68119	X68120	X63687	X68117	X68118	X68103	X68104	X68082	X68083

Parameters	Units	Guidelines	Southwest of Assay Lab		Southwest side of Tanks								Northwest of Tanks		Monitoring Wells	
		Urban Park (Wildland)	BH-24	BH-52	BH-25			BH-26	BH-27	BH-28	BH-29		BH-30		MW-01	MW-03
			500-530	300-350	250-300	400-450	500-530	400-450	500-550	500-550	300-350	500-550	400-450	550-690	400-450	400-450
pH[2]		6 to 8			**9.30**						**8.58**			**9.38**		
Total Cyanide[1]	mg/kg	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
WAD Cyanide[1]	mg/kg	10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Moisture Content	%	NG	1.2	0.3	1.9	0.8	0.5	0.8	0.2	0.8	1.0	0.3	3.3	1.0	2.2	2.4
Laboratory Identification No.			X68088	X71687	X68089	X68090	X68091	X68092	X68093	X68094	X68095	X68096	X68097	X68098	X71688	X71689

Notes:

[1] Environmental Management Act: Contaminated Sites Regulations, British Columbia (updated January 31, 2014); Urban Park (Wildlands). The BC guidelines are in µg/g which are equal to mg/kg

[2] Environmental Guidelines for Contaminated Site Remediation, Nunavut. Wildland

Blank-Not analyzed

Bold - Greater than the referenced guideline

Cyanide Detected

Table 3: Water/Ice Analytical Results - AEM - Meadowbank Assay Seepage

Parameters	Unit	Guidelines			In Front of Assay Lab	Downgradient of Assay Lab-Tundra					
		Drinking Water [1]	Aquatic Life [1]	Licence No. 2AM-MEA0815	BH-22	BH-36	Seep 1	Seep 2	BH-11	BH-47	Seep 3
Total Cyanide[2]	mg/L	200	NG	0.5 (1.0)[4]	**24.59**	**2.23**	**2.31**	**1.59**	**1.76**	**1.05**	0.192
WAD Cyanide[2]	mg/L	NG	50	NG	10.6	0.644	0.944	0.935	1.48	0.101	0.033
WAD Cyanide[3]	mg/L	NG	50	NG		1.31	1.05	0.883	4.91	0.237	0.544
Laboratory Identification No.					V-32663	V-32719	V-32716	V-32717	V-32662	V-32758	V-32718

Notes:

[1] Environmental Management Act: Contaminated Sites Regulations, British Columbia (updated January 31, 2014); Schedule 6 Generic Numerical Water Standards

[2] Multi-lab Direct Analytical Results

[3] Meadowbank Assay Lab Analytical Results

[4] Maximum Average Concentration (Maximum Allowable Grab Sample Concentration)

Blank-Not analyzed

Bold = Greater than the referenced guideline or Water License

Cyanide Detected

PHOTOGRAPHS

Photo 1	Southwest view of the downhole hammer-air rotary drill drilling BH-18
Photo 2	Metal containers underneath the curtain of the drill to collect soil samples
Photo 3	Ice (~12 cm thick) located at BH-11.
Photo 4	Northwest view of drill, drilling BH-39 in front of the Assay Lab
Photo 5	View from MW-04 facing northeast towards the Assay Lab
Photo 6	Northwest view of the location for the three old wells (201, 202, and 203) located in the tires and the location of the thermistor cable just southeast of the tires. This area is located between the Assay Lab and the Mill.
Photo 7	View of the North side of the Mill, illustrating the location of monitoring well MW01 behind the two cement blocks
Photo 8	View on the south side of the tank farm drilling BH-27
Photo 9	West End of Interception Trench Facing Northwest, Trench Bottom Prior to Cleaning
Photo 10	West End of Interception Trench Facing Northwest, Trench Bottom after Cleaning, Contractors Laying Geotextile on Downstream Slope
Photo 11	East End of Interception Trench Facing Northeast, Geotextile Placement with Overlap and Tie-in at Top
Photo 12	West End of Interception Trench Facing North, Contractor Filling in and Compacting Low Areas
Photo 13	West End of Interception Trench Facing Northwest, Background: CAT 365 Excavator Bucket Compacting Two Lifts of Bentonite Material on Downstream Slope. Foreground: Two Lifts of Bentonite Material Visible
Photo 14	West End of Interception Trench Facing Southeast, CAT 365 Excavator Bucket Compacting Upstream Bentonite Material Slope below the Bedrock Contact
Photo 15	East End of Interception Trench Facing Northwest, Bentonite Material on Upstream Slope below Bedrock Contact
Photo 16	West End of Interception Trench Facing Northwest, Completed Bentonite Placement
Photo 17	East End of Interception Trench Facing Southwest, Completed Interception Trench Covered in Rockfill (Photo courtesy AEM)

Photo 1: Southwest view of the down hole air hammer drill drilling BH-18.

Photo 2: Metal containers underneath the curtain of the drill to collect soil samples.

Photo 3: Ice (~12 cm thick) located at BH-11.

Photo 4: Northwest view of drill, drilling BH-39 in front of the Assay Lab.

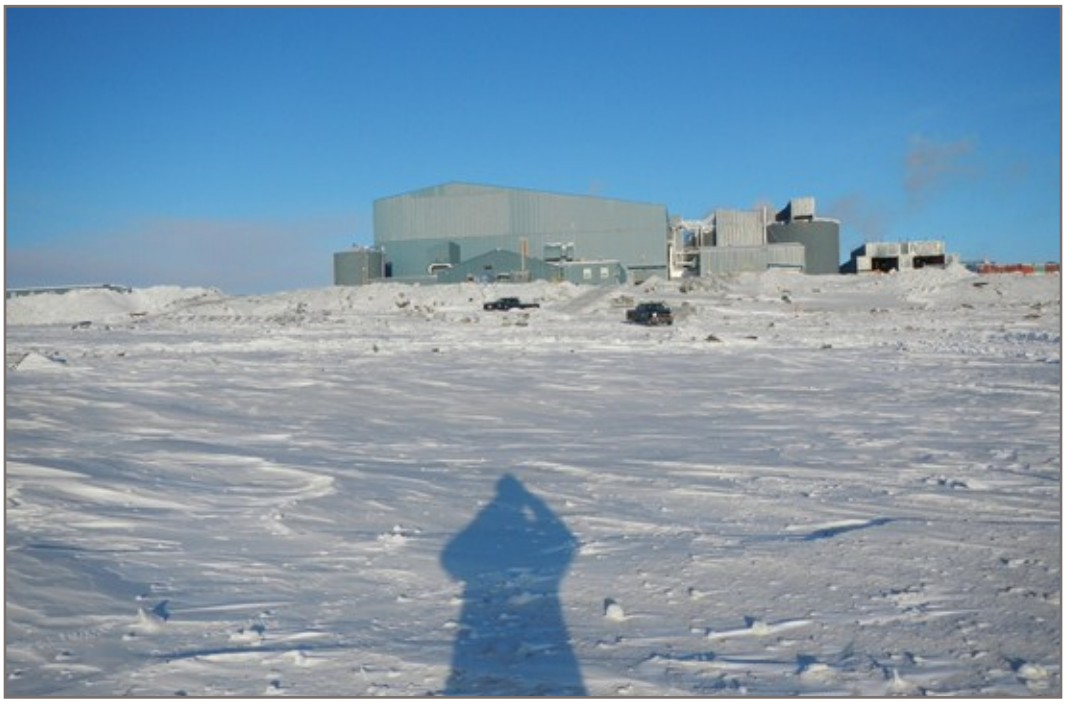

Photo 5: View from MW-04 facing northeast towards the Assay Lab.

Photo 6: Northwest view of the location for the three old wells (201, 202, and 203) located in the tires and the location of the thermistor cable just southeast of the tires. This area is located between the Assay Lab and the Mill.

Photo 7: View of the North side of the Mill , illustrating the location of monitoring well MW01 behind the two cement blocks.

Photo 8: View on the south side of the tank farm drilling BH-27.

Photo 9: West End of Interception Trench Facing Northwest
Trench Bottom Prior to Cleaning

Photo 10: West End of Interception Trench Facing Northwest
Trench Bottom after Cleaning. Contractors Laying Geotextile on Downstream Slope

Photo 11: East End of Interception Trench Facing Northeast
Geotextile Placement with Overlap and Tie-in at Top

Photo 12: West End of Interception Trench Facing North
Contractor Filling in and Compacting Low Areas

Photo 13: West End of Interception Trench Facing Northwest
Background: CAT 365 Excavator Bucket Compacting Two Lifts of Bentonite Material on Downstream Slope. Foreground: Two Lifts of Bentonite Material Visible

Photo 14: West End of Interception Trench Facing Southeast
CAT 365 Excavator Bucket Compacting Upstream Bentonite Material Slope Below the Bedrock Contact

Photo 15: East End of Interception Trench Facing Northwest
Bentonite Material on Upstream Slope Below Bedrock Contact

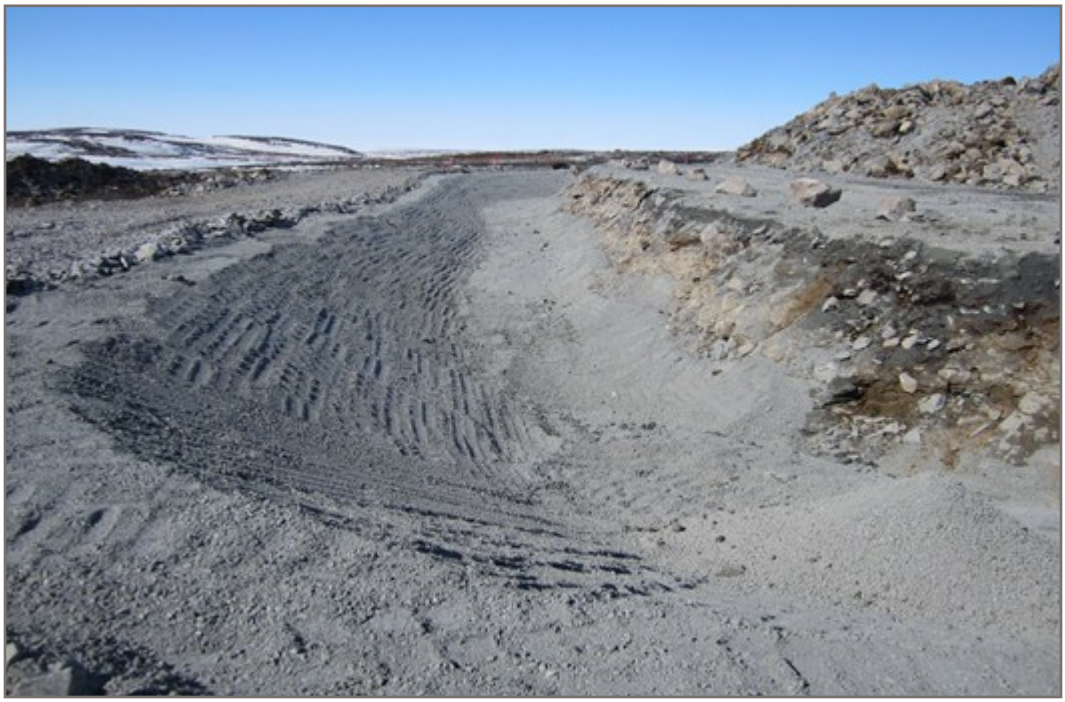

Photo 16: West End of Interception Trench Facing Northwest
Completed Bentonite Placement

Photo 17: East End of Interception Trench Facing Southwest
Completed Interception Trench Covered in Rockfill
(Photo courtesy AEM)

APPENDIX A
LABORATORY DATA

Analytical Report

Company: **Agnico Eagle Division Meadowbank**

Client: M. Stéphane Robert
Address: General Delivery
Baker Lake Nunavut X0C 0A0
Phone: (604) 677-0689 (--)
Fax: (604) 677-0687

Lab number: V-32716

Sampling location: Seep 1
Sampling date: February 27, 2014

Sample name: Seep 1
Sampling hour: N/D

Sampled by: Tyrel Hemsley
Date received: March 04, 2014

Matrix: Waste Water

Drinking water distribution:

Reported on: March 04, 2014

Unless otherwise stated, all samples were received in acceptable condition.

Results relate only to the sample tested.

All samples will be disposed of after 30 days following analysis.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Lab number: V-32716

Sample name: Seep 1
Sampling location: Seep 1
Sampling date: February 27, 2014
Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Cyanide W.A.D.	0.944 mg/L	Sous-traitance\Multilab Direct	March 04, 2014
Total Cyanide (CNt)	2.31 mg/L	M-CN-1.0	March 04, 2014

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
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Courriel:
multilab@cablevision.qc.ca

Detection limit

Lab number: V-32716

Sample name: Seep 1
Sampling location: Seep 1
Sampling date: February 27, 2014
Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Cyanide W.A.D.	0.005	mg/L	Sous-traitance	Yes
Total Cyanide (CNt)	0.005	mg/L	M-CN-1.0	Yes

125, boul Industriel
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Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Quality control Report

Lab number: V-32716

Sample name: Seep 1 | Sampling date: February 27, 2014

Sampling location: Seep 1 | Sampling hour: N/D

Parameter		
Total Cyanide (CNt) mg/L	Blank	<0.005
	Standard name	DMR-0025-2014-7
	Result	0.0780
	Accuracy	95.7%
	Limit	0.0693 - 0.0937

125, boul Industriel
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Additional information

Lab number: V-32716
Sample name: Seep 1
Sampling location: Seep 1
Sampling date: February 27, 2014
Sampling hour: N/D

Lab method	Method reference
M-CN-1.0	MA.300-CN 1.2

125, boul Industriel
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Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Company: **Agnico Eagle Division Meadowbank**

Client: M. Stéphane Robert
Address: General Delivery
Baker Lake Nunavut X0C 0A0
Phone: (604) 677-0689 (--)
Fax: (604) 677-0687

Lab number: V-32717

Sampling location: Seep 2
Sampling date: February 27, 2014

Sample name: Seep 2
Sampling hour: N/D

Sampled by: Tyrel Hemsley
Date received: March 04, 2014

Matrix: Waste Water

Drinking water distribution:

Reported on: March 04, 2014

Unless otherwise stated, all samples were received in acceptable condition.

Results relate only to the sample tested.

All samples will be disposed of after 30 days following analysis.

125, boul Industriel
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Courriel:
multilab@cablevision.qc.ca

Analytical Report

Lab number: V-32717

Sample name: Seep 2
Sampling location: Seep 2
Sampling date: February 27, 2014
Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Cyanide W.A.D.	0.935 mg/L	Sous-traitance\Multilab Direct	March 04, 2014
Total Cyanide (CNt)	1.59 mg/L	M-CN-1.0	March 04, 2014

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Courriel:
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Detection limit

Lab number: V-32717

Sample name: Seep 2
Sampling location: Seep 2
Sampling date: February 27, 2014
Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Cyanide W.A.D.	0.005	mg/L	Sous-traitance	Yes
Total Cyanide (CNt)	0.005	mg/L	M-CN-1.0	Yes

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

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Quality control Report

Lab number: V-32717

Sample name: Seep 2 | Sampling date: February 27, 2014

Sampling location: Seep 2 | Sampling hour: N/D

Parameter		
Total Cyanide (CNt) mg/L	Blank	<0.005
	Standard name	DMR-0025-2014-7
	Result	0.0780
	Accuracy	95.7%
	Limit	0.0693 - 0.0937

125, boul Industriel
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Courriel:
multilab@cablevision.qc.ca

Additional information

Lab number: V-32717
Sample name: Seep 2
Sampling location: Seep 2
Sampling date: February 27, 2014
Sampling hour: N/D

Lab method	Method reference
M-CN-1.0	MA.300-CN 1.2

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Company: **Agnico Eagle Division Meadowbank**

Client: M. Stéphane Robert
Address: General Delivery
Baker Lake Nunavut X0C 0A0
Phone: (604) 677-0689 (--)
Fax: (604) 677-0687

Lab number: V-32718

Sampling location: Seep 3
Sampling date: February 27, 2014

Sample name: Seep 3
Sampling hour: N/D

Sampled by: Tyrel Hemsley
Date received: March 04, 2014

Matrix: Waste Water

Drinking water distribution:

Reported on: March 04, 2014

Unless otherwise stated, all samples were received in acceptable condition.

Results relate only to the sample tested.

All samples will be disposed of after 30 days following analysis.

125, boul Industriel
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J9X 6P2
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Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Lab number: V-32718

Sample name: Seep 3
Sampling location: Seep 3
Sampling date: February 27, 2014
Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Cyanide W.A.D.	0.033 mg/L	Sous-traitance\Multilab Direct	March 04, 2014
Total Cyanide (CNt)	0.192 mg/L	M-CN-1.0	March 04, 2014

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
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Courriel:
multilab@cablevision.qc.ca

Detection limit

Lab number: V-32718

Sample name: Seep 3
Sampling location: Seep 3
Sampling date: February 27, 2014
Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Cyanide W.A.D.	0.005	mg/L	Sous-traitance	Yes
Total Cyanide (CNt)	0.005	mg/L	M-CN-1.0	Yes

125, boul Industriel
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Courriel:
multilab@cablevision.qc.ca

Quality control Report

Lab number: V-32718

Sample name: Seep 3 | Sampling date: February 27, 2014

Sampling location: Seep 3 | Sampling hour: N/D

Parameter		
Total Cyanide (CNt) mg/L	Blank	<0.005
	Standard name	DMR-0025-2014-7
	Result	0.0780
	Accuracy	95.7%
	Limit	0.0693 - 0.0937

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Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Additional information

Lab number: V-32718

Sample name: Seep 3
Sampling location: Seep 3

Sampling date: February 27, 2014
Sampling hour: N/D

Lab method	Method reference
M-CN-1.0	MA.300-CN 1.2

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Company: **Agnico Eagle Division Meadowbank**

Client: M. Stéphane Robert
Address: General Delivery
Baker Lake Nunavut X0C 0A0
Phone: (604) 677-0689 (--)
Fax: (604) 677-0687

Lab number: V-32719

Sampling location: BH-36
Sampling date: March 02, 2014
Sample name: BH-36
Sampling hour: N/D
Sampled by: Tyrel Hemsley
Date received: March 04, 2014
Matrix: Waste Water
Drinking water distribution:

Reported on: March 04, 2014

Unless otherwise stated, all samples were received in acceptable condition.

Results relate only to the sample tested.

All samples will be disposed of after 30 days following analysis.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Lab number: V-32719

Sample name: BH-36
Sampling location: BH-36
Sampling date: March 02, 2014
Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Cyanide W.A.D.	0.644 mg/L	Sous-traitance\Multilab Direct	March 04, 2014
Total Cyanide (CNt)	2.23 mg/L	M-CN-1.0	March 04, 2014

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Detection limit

Lab number: V-32719

Sample name: BH-36
Sampling location: BH-36
Sampling date: March 02, 2014
Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Cyanide W.A.D.	0.005	mg/L	Sous-traitance	Yes
Total Cyanide (CNt)	0.005	mg/L	M-CN-1.0	Yes

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Quality control Report

Lab number: V-32719

Sample name: BH-36 | Sampling date: March 02, 2014

Sampling location: BH-36 | Sampling hour: N/D

Parameter		
Total Cyanide (CNt) mg/L	Blank	<0.005
	Standard name	DMR-0025-2014-7
	Result	0.0780
	Accuracy	95.7%
	Limit	0.0693 - 0.0937

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Additional information

Lab number: V-32719
Sample name: BH-36
Sampling location: BH-36
Sampling date: March 02, 2014
Sampling hour: N/D

Lab method	Method reference
M-CN-1.0	MA.300-CN 1.2

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Your P.O. #: OP-310962-J
Your Project #: E14103172-01

Attention: Kevin Buck

Agnico Eagle Ltée-Division Meadowbank
Meadowbank
Baker Lake, Nunavut, Canada
Meadowbank
Nunavut, QC
CANADA X0C 0A0

Report Date: 2014/02/28
Report #: R1834795
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B410248
Received: 2014/02/27, 08:10

Sample Matrix: SOIL
Samples Received: 24

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Primary Reference
Weak Acid Dissociable Cyanides*	24	2014/02/27	2014/02/28	STL SOP-00035	MA. 300 - CN 1.2
Total Cyanide*	24	2014/02/27	2014/02/28	STL SOP-00035	MA. 300 - CN 1.2
pH*	5	2014/02/27	2014/02/27	STL SOP-00016	MA.100- pH1.1

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

* Maxxam is accredited as per the MDDEFP program.

Encryption Key

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

Rita Kurdoghlanian, Project Manager
Email: RKurdoghlanian@maxxam.ca
Phone# (514) 448-9001 Ext:4272

==========

This report has been generated and distributed using a secure automated process.
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.

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Maxxam Job #: B410248
Report Date: 2014/02/28

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X63656		X63657		X63658		
Sampling Date					2014/02/21		2014/02/21		2014/02/21		
	Units	**A**	**B**	**C**	**BH-01 (40-60)**	**RDL**	**BH-02 (0-44)**	**RDL**	**BH-03 (40-60)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	20	N/A	56	N/A	14	N/A	N/A
CONVENTIONALS											
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	0.5	<1	1	<0.5	0.5	1275367
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	0.5	<1	1	<0.5	0.5	1275397

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

Maxxam ID					X63659	X63660	X63661	X63662		
Sampling Date					2014/02/21	2014/02/22	2014/02/22	2014/02/22		
	Units	**A**	**B**	**C**	**BH-04 (0-39)**	**BH-05 (0-45)**	**BH-06 (40-75)**	**BH-07 (40-60)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	16	15	18	12	N/A	N/A
CONVENTIONALS										
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	0.5	1275367
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1275397

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

Maxxam ID					X63663	X63664		X63665		
Sampling Date					2014/02/22	2014/02/22		2014/02/22		
	Units	**A**	**B**	**C**	**BH-08 (40-60)**	**BH-09 (40-52)**	**RDL**	**BH-10 (0-40)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	13	6.6	N/A	17	N/A	N/A
CONVENTIONALS										
pH	pH	**-**	-	-	6.91	N/A	N/A	N/A	N/A	1275318
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	<0.5	0.5	**13**	5	1275367
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	0.5	<0.5	0.5	1275397

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

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Maxxam Job #: B410248
Report Date: 2014/02/28

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X63666		X63667	X63668	X63669		
Sampling Date					2014/02/22		2014/02/22	2014/02/22	2014/02/22		
	Units	**A**	**B**	**C**	**BH-11 (0-40)**	**RDL**	**BH-11 (40-62)**	**BH-12 (0-40)**	**BH-13 (40-70)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	25	N/A	15	16	5.6	N/A	N/A
CONVENTIONALS											
pH	pH	-	-	-	7.20	N/A	N/A	N/A	N/A	N/A	1275318
Total Cyanide (CN)	mg/kg	**2**	50	500	**30**	10	0.6	1.5	<0.5	0.5	1275367
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	0.5	<0.5	<0.5	<0.5	0.5	1275397

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

Maxxam ID					X63669	X63670	X63671		X63672		
Sampling Date					2014/02/22	2014/02/22	2014/02/23		2014/02/23		
	Units	**A**	**B**	**C**	**BH-13 (40-70) Lab-Dup**	**BH-14 (70-112)**	**BH-15 (40-70)**	**RDL**	**BH-16 (70-100)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	5.6	4.2	14	N/A	7.9	N/A	N/A
CONVENTIONALS											
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	0.5	**14**	5	1275367
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	0.5	<0.5	0.5	1275397

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

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Maxxam Job #: B410248
Report Date: 2014/02/28

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X63673	X63674	X63683	X63683		
Sampling Date					2014/02/23	2014/02/23	2014/02/23	2014/02/23		
	Units	**A**	**B**	**C**	**BH-17 (40-70)**	**BH-17 (140-168)**	**BH-18 (40-70)**	**BH-18 (40-70) Lab-Dup**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	12	3.8	13	13	N/A	N/A
CONVENTIONALS										
pH	pH	-	-	-	7.12	N/A	6.89	N/A	N/A	1275318
Total Cyanide (CN)	mg/kg	2	50	500	<0.5	0.5	<0.5	<0.5	0.5	1275367
Weak Acid Dissociable Cyanide (CN-)	mg/kg	2	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1275397

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

Maxxam ID					X63684	X63685	X63686	X63687		
Sampling Date					2014/02/23	2014/02/23	2014/02/23	2014/02/23		
	Units	**A**	**B**	**C**	**BH-19 (40-59)**	**BH-20 (40-70)**	**BH-21 (70-90)**	**BH-22 (500-550)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	3.7	6.8	2.9	16	N/A	N/A
CONVENTIONALS										
pH	pH	-	-	-	N/A	N/A	7.93	N/A	N/A	1275318
Total Cyanide (CN)	mg/kg	2	50	500	<0.5	<0.5	<0.5	1.7	0.5	1275367
Weak Acid Dissociable Cyanide (CN-)	mg/kg	2	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1275397

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

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Maxxam Job #: B410248
Report Date: 2014/02/28

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X63687		
Sampling Date					2014/02/23		
	Units	**A**	**B**	**C**	**BH-22 (500-550) Lab-Dup**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	16	N/A	N/A
CONVENTIONALS							
Total Cyanide (CN)	mg/kg	**2**	50	500	1.7	0.5	1275367
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	0.5	1275397

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

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Maxxam Job #: B410248
Report Date: 2014/02/28

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J

GENERAL COMMENTS

Condition of sample(s) upon receipt: GOOD

All results are calculated on a dry weight basis except where not applicable.

A,B,C: Criteria following appendix 2 of the " Soil Protection and Contaminated Sites Rehabilitation Policy " entitled " Generic criteria for soils and groundwater ". For all metals analyses in soil, the criterion A refers to " Background Level of St. Lawrence Lowlands Sector ".

For groundwaters:
The A and B criteria follow the appendix 2 of the " Soil Protection and Contaminated Sites Rehabilitation Policy " entitled " Generic criteria for soils and groundwater ". The criterion A refers to " Drinking Water " and the criterion B refers to "Seepage into Surface Water or Infiltration into Sewers ".

These criteria references are shown for visual aid only, and should not be interpreted otherwise.
- = This parameter is not part of the regulation.

CONVENTIONAL PARAMETERS (SOIL)

Please note that the results have not been corrected for QC recoveries nor for the method blank results.
Reported detection limits are multiplied by dilution factors used for sample analysis.

Results relate only to the items tested.

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Agnico Eagle Ltée-Division Meadowbank
Attention: Kevin Buck
Client Project #: E14103172-01
P.O. #: OP-310962-J
Site Location:

Quality Assurance Report

Maxxam Job Number: B410248

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units
1275318	KV1	QC Standard	pH	2014/02/27		99	%
		Spiked Blank	pH	2014/02/27		101	%
1275367	DB2	QC Standard	Total Cyanide (CN)	2014/02/28		103	%
		Spiked Blank	Total Cyanide (CN)	2014/02/28		111	%
		Method Blank	Total Cyanide (CN)	2014/02/28	<0.5		mg/kg
1275397	DB2	Spiked Blank	Weak Acid Dissociable Cyanide (CN-)	2014/02/28		105	%
		Method Blank	Weak Acid Dissociable Cyanide (CN-)	2014/02/28	<0.5		mg/kg

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.

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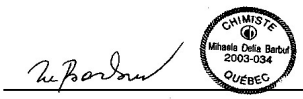
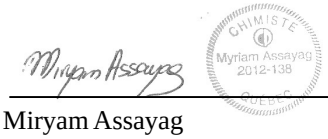
Validation Signature Page

Maxxam Job #: B410248

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



Delia Barbul, B.Sc., Chemist



Miryam Assayag

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27-Feb-14 08:10
Alain Lemieux
B410248
RG2 MTL-0124

Maxxam Analytique

☒ 889 Montée de Liesse, Ville St-Laurent
☐ 2690 Avenue Dalton, Sainte-Foy, Qué
☐ 737 boul. Barette, Chicoutimi, Québec

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ample Analysis and Chain of Custody Record

-9199 Toll Free: 1-877-4MA-XXAM (462-9926) Page 1 of 3

-6594

-8994

E-

Invoice Information	Report Information (if differs from invoice)
Company Name: AEM Meadowbank	Company Name:
Address: 10200 route de Preissac, Rouyn-Noranda, J0Y 1C0	Address:
Contact Name: Kevin Buck	Contact Name:
Telephone: 819-759-3555 ext. 6838	Phone:
Fax: 819 (759)-36603	Fax:
Sampler: Tyrel/Tom Thomson	Sampler:

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Order No.: Project / Site:

Quotation No.: Project No.: E1410372-01

Sample Identification (sampling point)	Sample: Soil	Water	Other	Sampling (date / time)	To be filtered	Number of samples	pH	CN TOTAL	CN, WAD
BH-01 (40-60)	X			21/02/14		1		X	X
BH-02 (0-44)	X			21/02/14		1		X	X
BH-03 (40-60)	X			21/02/14		1		X	X
BH-04 (0-39)	X			21/02/14		1		X	X
BH-05 (0-45)	X			22/02/14		1		X	X
BH-06 (40-75)	X			22/02/14		1		X	X
BH-07 (40-60)	X			22/02/14		1		X	X
BH-08 (40-60)	X			22/02/14		1	X	X	X
BH-09 (40-52)	X			22/02/14		1		X	X
BH-10 (0-40)	X			22/02/14		1		X	X

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn),
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater P = Potable LW = Liquid Waste
Sur = Surface E = Effluent C = Catchment

Applicable Regulations: (To complete)

Turnaround Time: ☒ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date:

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception: 3 1 0

Chain of Custody

Relinquished by: Marie-Pier Marcil	Date: 25/02/14	Time: 9h30	Received by:
Relinquished by:	Date: 2014-02-27	Time: 08:10	Received by: Robbie Gingel

Number of coolers: Temperature upon reception:

Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☒ Courier (Specify):

Remarks: Ice-yes Seal-yes

KEENWCOCFORMQE - Saint-Laurent - 07/09 WHITE: MAXXAM ANALYTICS INC BLUE: INVOICING YELLOW: RETURN TO CLIENT WITH FINAL REPORT PINK: CLIENT

Maxxam Analytique

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☐ 737 boul. Barette, Chicoutimi, Québec G7J 4C4 Telephone: (418) 543-3788 Fax: (418) 543-8994
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Sample Analysis and Chain of Custody Record

Page 2 of 3

E-

Invoice Information	Report Information (if differs from invoice)
Company Name:	Company Name:
Address:	Address:
Contact Name:	Contact Name:
Telephone:	Telephone:
Fax:	Fax:
Sampler:	Sampler:

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Order No.: Project / Site:
Quotation No.: Project No.:

Sample Identification (sampling point)	Sample: Soil	Water Type	Other	Sampling (date / time)	To be filtered	Number of samples	PH (C10-C50)	O & G Min. / O & G Tot.	VOC (EPA 624) / BTEX / MAH	Phenols (GC/MS) / Phenols (Color.)	PAH	PCB (Congeners) (GC-MS)	Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn)	Metals ICP regulation - 13 ele.-soil** / 16 ele. water***	Mercury / Selenium-soil / Others:	F / Cl / SO4 / NO2 / NO3 / NO2 + NO3	TKN / NH3 / P-Tot.	pH / Conductivity / TSS	Sulfide (SH) / Total Sulphur (S)	Tot.-CN / Ox.-CN / Free CN	BOD5 / COD / Turbidity / TOC	RDS / RMD	CUM ART. 10 / ART. 11	Potable Water: ORG. / INOR. / THM	COLIF (Fec.) / COLIF (Tot.) / TOTAL-PC	Explosive EPA 8095 / EPA 8330	Other (specify):	PH	CN TOTAL	CN WAD
BH-11 (0-40)	X			22/02/14		1																						X	X	X
BH-11 (40-62)	X			22/02/14		1																							X	X
BH-12 (0-40)	X			22/02/14		1																							X	X
~~[illegible]~~				~~[illegible]~~		[illegible]																							[illegible]	[illegible]
BH-13 (40-70)	X			22/02/14		1																							X	X
BH-14 (70-112)	X			22/02/14		1																							X	X
BH-15 (40-70)	X			23/02/14		1																							X	X
BH-16 (70-100)	X			23/02/14		1																							X	X
BH-17 (40-70)	X			23/02/14		1																						X	X	X
BH-17 (140-168)	X			23/02/14		1																							X	X

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn).
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater P = Potable LW = Liquid Waste Sur = Surface E = Effluent C = Catchment

Applicable Regulations: ______ (To complete)

Turnaround Time: ☐ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date: ______

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception: 3°1°0°

Chain of Custody

Relinquished by:	Date: 2014-02-27	Time: 08:10	Received by: Robbie Gingel	Remarks: Ice-yes Seal-yes
Relinquished by:	Date:	Time:	Received by:	

Number of coolers: ______ Temperature upon reception:

Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☐ Courier (Specify):

KEENVCOCFORMQE - Saint-Laurent - 07/09 WHITE: MAXXAM ANALYTICS INC BLUE: INVOICING YELLOW: RETURN TO CLIENT WITH FINAL REPORT PINK: CLIENT

Maxxam Analytique

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Sample Analysis and Chain of Custody Record

Page 3 of 3

E-

Invoice Information	Report Information (if differs from invoice)
Company Name:	Company Name:
Address:	Address:
Contact Name:	Contact Name:
Telephone:	Telephone:
Fax:	Fax:
Sampler:	Sampler:

Order No.: Project / Site:

Quotation No.: Project No.:

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Sample Identification (sampling point)	Sample Soil	Water Type	Other	Sampling (date / time)	To be filtered	Number of samples
BH-18 (40-70)	X			23/02/14		1
BH-19 (40-59)	X			23/02/14		1
BH-20 (40-70)	X			23/02/14		1
BH-21 (70-90)	X			23/02/14		1
BH-22 (500-550)	X			23/02/14		1

Sample Identification	PH (C_{10}-C_{50})	O & G Min. ☐ O & G Tot. ☐	VOC (EPA 624) ☐ BTEX ☐ MAH ☐	Phenols (GC/MS) ☐ Phenols (Color.) ☐	PAH	PCB (Congeners) (GC-MS)	Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn)	Metals ICP regulation - 13 ele.-soil** ☐ 16 ele. water*** ☐	Mercury ☐ Selenium-soil ☐ Others:	F ☐ Cl ☐ SO_4 ☐ NO_2 ☐ NO_3 ☐ NO_2 + NO_3 ☐	TKN ☐ NH_3 ☐ P-Tot. ☐	pH ☐ Conductivity ☐ TSS ☐	Sulfide (SH_2) ☐ Total Sulphur (S) ☐	Tot.-CN ☐ Ox-CN ☐ Free CN ☐	BOD_5 ☐ COD ☐ Turbidity ☐ TOC ☐	RDS ☐ RMD ☐	CUM ART. 10 ☐ ART. 11 ☐	Potable Water: ORG. ☐ INOR. ☐ THM ☐	COLIF (Fec.) ☐ COLIF (Tot.) ☐ TOTAL-PC ☐	Explosive EPA 8095 ☐ EPA 8330 ☐	Other (specify):	PH	CN TOTAL	CN WAD
BH-18 (40-70)																						X	X	X
BH-19 (40-59)																							X	X
BH-20 (40-70)																							X	X
BH-21 (70-90)																						X	X	X
BH-22 (500-550)																							X	X

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn).
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: **G = Groundwater** **P = Potable** **LW = Liquid Waste**
Sur = Surface **E = Effluent** **C = Catchment**

Applicable Regulations: ____________ **(To complete)**

Turnaround Time: ☐ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date:

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception: 3'1'0'

Chain of Custody

Relinquished by:	Date: 2014-02-27	Time: 08:10	Received by: [signature] / Robbie Gringell
Relinquished by:	Date:	Time:	Received by:

Number of coolers: ____________ Temperature upon reception:

Remarks: Ice - yes
Seal - yes

Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☐ Courier (Specify):

KEENVCOCFORMQE - Saint-Laurent - 07/09 WHITE: MAXXAM ANALYTICS INC BLUE: INVOICING YELLOW: RETURN TO CLIENT WITH FINAL REPORT PINK: CLIENT

Your P.O. #: OP-310962-J
Your Project #: E14103172-01

Attention: Kevin Buck

Agnico Eagle Ltée-Division Meadowbank
Meadowbank
Baker Lake, Nunavut, Canada
Meadowbank
Nunavut, QC
CANADA X0C 0A0

Report Date: 2014/03/07
Report #: R1836907
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B411247
Received: 2014/03/05, 08:10

Sample Matrix: SOIL
Samples Received: 40

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Primary Reference
Weak Acid Dissociable Cyanides*	40	2014/03/06	2014/03/07	STL SOP-00035	MA. 300 - CN 1.2
Total Cyanide*	40	2014/03/05	2014/03/06	STL SOP-00035	MA. 300 - CN 1.2
pH*	4	2014/03/06	2014/03/06	STL SOP-00016	MA.100- pH1.1

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

* Maxxam is accredited as per the MDDEFP program.

Encryption Key

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

Rita Kurdoghlanian, Project Manager
Email: RKurdoghlanian@maxxam.ca
Phone# (514) 448-9001 Ext:4272

==========

This report has been generated and distributed using a secure automated process.
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Maxxam Job #: B411247
Report Date: 2014/03/07

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J
Sampler Initials: TT

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X68074	X68074	X68075	X68076		
Sampling Date					2014/02/22	2014/02/22	2014/02/22	2014/02/23		
	Units	**A**	**B**	**C**	**BH-12 (40-70)**	**BH-12 (40-70) Lab-Dup**	**BH-14 (40-70)**	**BH-15 (70-100)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	6.9	6.9	4.4	9.4	N/A	N/A
CONVENTIONALS										
Total Cyanide (CN)	mg/kg	**2**	50	500	1.4	1.6	<0.5	<0.5	0.5	1277739
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1277819

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

Maxxam ID					X68077	X68078	X68079	X68080		
Sampling Date					2014/02/23	2014/02/23	2014/02/23	2014/02/23		
	Units	**A**	**B**	**C**	**BH-16 (0-40)**	**BH-16 (100-140)**	**BH-17 (70-100)**	**BH-17 (100-140)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	11	8.2	9.9	7.0	N/A	N/A
CONVENTIONALS										
Total Cyanide (CN)	mg/kg	**2**	50	500	1.9	0.6	<0.5	<0.5	0.5	1277739
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1277819

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

Maxxam ID					X68081	X68082	X68083	X68088		
Sampling Date					2014/02/23	2014/02/25	2014/02/25	2014/02/25		
	Units	**A**	**B**	**C**	**BH-18 (70-100)**	**BH-23 (450-500)**	**BH-24 (400-450)**	**BH-24 (500-530)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	12	0.8	2.3	1.2	N/A	N/A
CONVENTIONALS										
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	0.5	1277739
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1277819

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

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Maxxam Job #: B411247
Report Date: 2014/03/07

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J
Sampler Initials: TT

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X68089	X68090	X68091	X68091		
Sampling Date					2014/02/25	2014/02/25	2014/02/25	2014/02/25		
	Units	**A**	**B**	**C**	**BH-25 (250-300)**	**BH-25 (400-450)**	**BH-25 (500-530)**	**BH-25 (500-530) Lab-Dup**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	1.9	0.8	0.5	0.5	N/A	N/A
CONVENTIONALS										
pH	pH	**-**	-	-	9.30	N/A	N/A	N/A	N/A	1277885
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	0.5	1277739
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1277819

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

Maxxam ID					X68092	X68093	X68094	X68095		
Sampling Date					2014/02/27	2014/02/27	2014/02/27	2014/02/27		
	Units	**A**	**B**	**C**	**BH-26 (400-450)**	**BH-27 (500-550)**	**BH-28 (500-550)**	**BH-29 (300-350)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	0.8	0.2	0.8	1.0	N/A	N/A
CONVENTIONALS										
pH	pH	**-**	-	-	N/A	N/A	N/A	8.58	N/A	1277885
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	0.5	1277739
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1277819

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

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Maxxam Job #: B411247
Report Date: 2014/03/07

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J
Sampler Initials: TT

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X68096	X68097		X68098		
Sampling Date					2014/02/27	2014/02/27		2014/02/27		
	Units	**A**	**B**	**C**	**BH-29 (500-550)**	**BH-30 (400-450)**	**QC Batch**	**BH-30 (550-690)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	0.3	3.3	N/A	1.0	N/A	N/A
CONVENTIONALS										
pH	pH	-	-	-	N/A	N/A	1277885	9.38	N/A	1277885
Total Cyanide (CN)	mg/kg	2	50	500	<0.5	<0.5	1277739	<0.5	0.5	1277740
Weak Acid Dissociable Cyanide (CN-)	mg/kg	2	10	100	<0.5	<0.5	1277819	<0.5	0.5	1277816

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

Maxxam ID					X68099	X68100	X68101	X68102		
Sampling Date					2014/03/01	2014/03/01	2014/03/01	2014/03/01		
	Units	**A**	**B**	**C**	**BH-33 (300-350)**	**BH-33 (400-450)**	**BH-34 (300-350)**	**BH-34 (500-577)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	14	2.7	4.8	5.2	N/A	N/A
CONVENTIONALS										
Total Cyanide (CN)	mg/kg	2	50	500	<0.5	<0.5	<0.5	<0.5	0.5	1277740
Weak Acid Dissociable Cyanide (CN-)	mg/kg	2	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1277816

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

Maxxam ID					X68103	X68104		X68105		
Sampling Date					2014/03/02	2014/03/02		2014/03/02		
	Units	**A**	**B**	**C**	**BH-35 (300-350)**	**BH-35 (400-450)**	**RDL**	**BH-36 (40-70)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	3.2	3.4	N/A	9.4	N/A	N/A
CONVENTIONALS										
pH	pH	-	-	-	N/A	9.28	N/A	N/A	N/A	1277885
Total Cyanide (CN)	mg/kg	2	50	500	<0.5	<0.5	0.5	**27**	10	1277740
Weak Acid Dissociable Cyanide (CN-)	mg/kg	2	10	100	<0.5	<0.5	0.5	**3**	1	1277816

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

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Maxxam Job #: B411247
Report Date: 2014/03/07

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J
Sampler Initials: TT

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X68106	X68107		X68114	X68114		
Sampling Date					2014/03/02	2014/03/02		2014/03/02	2014/03/02		
	Units	**A**	**B**	**C**	**BH-36 (70-100)**	**BH-36 (100-129)**	**RDL**	**BH-37 (40-70)**	**BH-37 (40-70) Lab-Dup**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	6.3	7.4	N/A	13	13	N/A	N/A
CONVENTIONALS											
Total Cyanide (CN)	mg/kg	**2**	50	500	1.7	0.9	0.5	1	1	1	1277740
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	0.5	1.2	1.1	0.5	1277816

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

Maxxam ID					X68115		X68116		X68117		
Sampling Date					2014/03/02		2014/03/02		2014/03/02		
	Units	**A**	**B**	**C**	**BH-37 (70-109)**	**RDL**	**BH-38 (0-29)**	**RDL**	**BH-39 (300-350)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	6.0	N/A	30	N/A	3.6	N/A	N/A
CONVENTIONALS											
Total Cyanide (CN)	mg/kg	**2**	50	500	0.9	0.5	51	10	<0.5	0.5	1277740
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	0.9	0.5	<0.5	0.5	<0.5	0.5	1277816

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

Maxxam ID					X68118	X68119	X68119	X68120		
Sampling Date					2014/03/02	2014/03/02	2014/03/02	2014/03/02		
	Units	**A**	**B**	**C**	**BH-39 (400-450)**	**BH-40 (400-450)**	**BH-40 (400-450) Lab-Dup**	**BH-40 (550-645)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	3.0	12	12	4.5	N/A	N/A
CONVENTIONALS										
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	0.5	1277740
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1277816

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

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Maxxam Job #: B411247
Report Date: 2014/03/07

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J
Sampler Initials: TT

CONVENTIONAL PARAMETERS (SOIL)

Maxxam ID					X68121	X68122	X68123		
Sampling Date					2014/03/02	2014/03/02	2014/03/02		
	Units	**A**	**B**	**C**	**BH-41 (300-350)**	**BH-41 (400-450)**	**BH-42 (300-350)**	**RDL**	**QC Batch**
% Moisture	%	-	-	-	7.2	0.8	1.1	N/A	N/A
CONVENTIONALS									
Total Cyanide (CN)	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	0.5	1277740
Weak Acid Dissociable Cyanide (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	0.5	1277816

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

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Maxxam Job #: B411247
Report Date: 2014/03/07

Agnico Eagle Ltée-Division Meadowbank
Client Project #: E14103172-01

Your P.O. #: OP-310962-J
Sampler Initials: TT

GENERAL COMMENTS

Condition of sample(s) upon receipt: GOOD

All results are calculated on a dry weight basis except where not applicable.

A,B,C: Criteria following appendix 2 of the " Soil Protection and Contaminated Sites Rehabilitation Policy " entitled " Generic criteria for soils and groundwater ". For all metals analyses in soil, the criterion A refers to " Background Level of St. Lawrence Lowlands Sector ".

For groundwaters:
The A and B criteria follow the appendix 2 of the " Soil Protection and Contaminated Sites Rehabilitation Policy " entitled " Generic criteria for soils and groundwater ". The criterion A refers to " Drinking Water " and the criterion B refers to "Seepage into Surface Water or Infiltration into Sewers ".

These criteria references are shown for visual aid only, and should not be interpreted otherwise.
- = This parameter is not part of the regulation.

CONVENTIONAL PARAMETERS (SOIL)

Please note that the results have not been corrected for QC recoveries nor for the method blank results.
Reported detection limits are multiplied by dilution factors used for sample analysis.

Results relate only to the items tested.

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Agnico Eagle Ltée-Division Meadowbank
Attention: Kevin Buck
Client Project #: E14103172-01
P.O. #: OP-310962-J
Site Location:

Quality Assurance Report

Maxxam Job Number: B411247

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units
1277739	CC6	QC Standard	Total Cyanide (CN)	2014/03/06		109	%
		Spiked Blank	Total Cyanide (CN)	2014/03/06		104	%
		Method Blank	Total Cyanide (CN)	2014/03/06	<0.5		mg/kg
1277740	DB2	QC Standard	Total Cyanide (CN)	2014/03/06		117	%
		Spiked Blank	Total Cyanide (CN)	2014/03/06		103	%
		Method Blank	Total Cyanide (CN)	2014/03/06	<0.5		mg/kg
1277816	DB2	Spiked Blank	Weak Acid Dissociable Cyanide (CN-)	2014/03/07		108	%
		Method Blank	Weak Acid Dissociable Cyanide (CN-)	2014/03/07	<0.5		mg/kg
1277819	CC6	Spiked Blank	Weak Acid Dissociable Cyanide (CN-)	2014/03/07		106	%
		Method Blank	Weak Acid Dissociable Cyanide (CN-)	2014/03/07	<0.5		mg/kg
1277885	KV1	QC Standard	pH	2014/03/06		100	%
		Spiked Blank	pH	2014/03/06		102	%

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.

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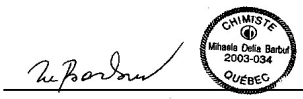
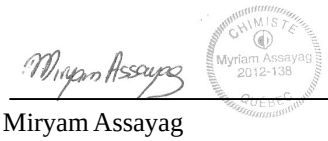
Validation Signature Page

Maxxam Job #: B411247

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



Delia Barbul, B.Sc., Chemist



Miryam Assayag

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5-Mar-14 08:10
Alain Lemieux
B411247
MF5 MTL-0024

Maxxam Analytique

☒ 889 Montée de Liesse
☐ 2690 Avenue Dalton, S
☐ 737 boul. Barette, Chico

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Fax: (418) 658-6594
Telephone: (418) 543-3788 Fax: (418) 543-8994
www.maxxamanalytics.com

Sample Analysis and Chain of Custody Record

E-

Invoice Information	Report Information (if differs from invoice)
Company Name: AEM Meadowbank	Company Name:
Address: 10200 route de Preissac, Rouyn-Noranda J0Y 1C0	Address:
Contact Name: Kevin Buck	Contact Name:
Telephone: 819. 759. 3555 x6838	Telephone:
Fax: 819. 759. 3663	Fax:
Sampler: Tyrel / Tom	Sampler:

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Order No.: Project / Site:
Quotation No.: Project No.: E14103172-01

Sample Identification (sampling point)	Sample: Soil	Water	Other	Sampling (date / time)	To be filtered	Number of samples	CN TOTAL	CN WAD	pH
BH-12 (40-70)	X			Feb 22/14		1	X	X	
BH-14 (40-70)				Feb 22/14		1	X	X	
BH-15 (70-100)				Feb 23/14		1	X	X	
BH-16 (0-40)						1	X	X	
BH-16 (100-140)						1	X	X	
BH-17 (70-100)						1	X	X	
BH-17 (100-140)						1	X	X	
BH-18 (70-100)						1	X	X	
BH-23 (450-500)				Feb 25/14		1	X	X	
BH-24 (400-450)	V			V		1	X	X	

PH (Cn-Cle) ☐ | O & G Min. ☐ | O & G Tot. ☐ | VOC (EPA 624) ☐ | BTEX ☐ | MAH ☐ | Phenols (GC/MS) ☐ | Phenols (Colorc) ☐ | PAH ☐ | PCB (Congeners) (GC-MS) ☐ | Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn) ☐ | Metals ICP regulation - 13 ele.-tox** ☐ | 16 ele. water*** ☐ | Mercury ☐ | Selenium-soil ☐ | Others: ☐ | F- ☐ | Cl ☐ | SO4 ☐ | NO2 ☐ | NO3 ☐ | NO2 + NO3 ☐ | NH3 ☐ | TKN ☐ | P-Tot. ☐ | pH ☐ | Conductivity ☐ | TSS ☐ | Sulfide (SH-) ☐ | Total Sulphur (S) ☐ | Tot.-CN ☐ | Ox.-CN ☐ | Free CN ☐ | BODs ☐ | COD ☐ | Turbidity ☐ | TOC ☐ | RMD ☐ | CUM. ART. 10 ☐ | ART. 11 ☐ | Potable Water ☐ | ORG. ☐ | INORG. ☐ | THM ☐ | COLIF (Fec.) ☐ | COLIF (Tot.) ☐ | TOTAL-PC ☐ | Explosive ☐ | EPA 8095 ☐ | EPA 8330 ☐ | Other (specify):

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn),
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater P = Potable LW = Liquid Waste Sur = Surface E = Effluent C = Catchment

Applicable Regulations: (To complete)

Turnaround Time: ☒ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date:

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception:

Chain of Custody

Relinquished by: Tyrel Hemsley Tyrel Hemsley	Date: Mar 2/14	Time: 1807	Received by:	Remarks: ICE-YES SEAL-NO
Relinquished by:	Date:	Time:	Received by:	

Number of coolers: 2 Temperature upon reception: 0° 0° 0° / 0° 1° 0°

Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☒ Courier (Specify):

KEENVCOCFORMQE - Saint-Laurent - 07/09 WHITE: MAXXAM ANALYTICS INC BLUE: INVOICING YELLOW: RETURN TO CLIENT WITH FINAL REPORT PINK: CLIENT

Mario Franca MARIO FRANCA 2014/03/05 08:10

Sample Analysis and Chain of Custody Record

Page 2 of 4

Maxxam Analytique

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☐ 737 boul. Barette, Chicoutimi, Québec G7J 4C4 — Telephone: (418) 543-3788 — Fax: (418) 543-8994
www.maxxamanalytics.com

E-

Invoice Information	Report Information (if differs from invoice)
Company Name:	Company Name:
Address: Same as Page 1	Address:
Contact Name:	Contact Name:
Telephone:	Telephone:
Fax:	Fax:
Sampler:	Sampler:

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Order No.: _____ Project / Site: _____
Quotation No.: _____ Project No.: E14103172-01

Sample Identification (sampling point)	Sample Type: Soil	Water	Other	Sampling (date / time)	To be filtered	Number of samples	CN TOTAL	CN WAD	pH
BH-24 (500-530)	X			Feb 25/14		1	X	X	
BH-25 (250-300)						1	X	X	X
BH-25 (400-450)						1	X	X	
BH-25 (500-550)				↓		1	X	X	
BH-26 (400-450)				Feb 27/14		1	X	X	
BH-27 (500-550)						1	X	X	
BH-28 (500-550)						1	X	X	
BH-29 (300-350)						1	X	X	X
BH-29 (500-550)						1	X	X	
BH-30 (400-450)	↓			↓		1	X	X	

Columns: PH (Cn-Cle) | O & G Min. | O & G Tot. | BTEX | MAH | VOC (EPA 624) | Phenols (GC/MS) | Phenols (Colour) | PAH | PCB (Congeners) (GC-MS) | Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn) | Metals ICP regulation - 13 ele.-soil** | 16 ele. water*** | Mercury | Selenium-soil | Others: | F | Cl | SO4 | NO2 | NO3 | NO2 + NO3 | TKN | NH3 | P-Tot. | pH | Conductivity | TSS | Sulfide (SH) | Total Sulphur (S) | Tot.-CN | Ox.-CN | Free CN | BOD5 | COD | TOC | Turbidity | RMD | CUM | ART. 10 | ART. 11 | Potable Water: | ORG. | INOR. | THM | COLIF (Fec.) | COLIF (Tot.) | TOTAL-PC | Explosive | EPA 8095 | EPA 8330 | Other (specify):

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn),
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater, Sur = Surface, P = Potable, E = Effluent, LW = Liquid Waste, C = Catchment

Applicable Regulations: _____ (To complete)

Turnaround Time: ☒ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date: _____

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception:

Chain of Custody

Relinquished by: Tyrel Hemsley Tyrel Hemsley	Date: Mar 2/14	Time: 1807	Received by:
Relinquished by:	Date:	Time:	Received by:

Number of coolers: 2 — Temperature upon reception: 0° 0° 0° / 0° 1° 0°

Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☒ Courier (Specify):

Remarks: ICE - YES SEAL - NO

KEENVCOCFORMQE - Saint-Laurent - 07/09 — WHITE: MAXXAM ANALYTICS INC — BLUE: INVOICING — YELLOW: RETURN TO CLIENT WITH FINAL REPORT — PINK: CLIENT

Marc Frisch MARC FRISCH 2014/03/05 08:10

Maxxam Analytique

Sample Analysis and Chain of Custody Record

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E-

Invoice Information	Report Information (if differs from invoice)
Company Name:	Company Name:
Address: Same as Page 1	Address:
Contact Name:	Contact Name:
Telephone:	Telephone:
Fax:	Fax:
Sampler:	Sampler:

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Order No.: Project / Site:

Quotation No.: Project No.: E141031 72-01

Sample Identification (sampling point)	Sample: Soil	Water	Other	Sampling (date / time)	To be filtered	Number of samples	CN TOTAL	CN WAD	pH
BH-30 (550-690)	X			Feb 27/14		1	X	X	X
BH-33 (300-350)				Mar 1/14		1	X	X	
BH-33 (400-450)						1	X	X	
BH-34 (300-350)						1	X	X	
BH-34 (500-577)						1	X	X	
BH-35 (300-350)				Mar 2/14		1	X	X	
BH-35 (400-450)						1	X	X	X
BH-36 (40-70)						1	X	X	
BH-36 (70-100)						1	X	X	
BH-36 (100-129)						1	X	X	

PH (Cn-Cn) ☐ | O & G Min. ☐ | O & G Tot. ☐ | VOC (EPA 624) ☐ | BTEX ☐ | MAH ☐ | Phenols (GC/MS) ☐ | Phenols (Colour) ☐ | PAH ☐ | PCB (Congeners) (GC-MS) ☐ | Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn) ☐ | Metals ICP regulation - 13 ele.-soil** ☐ | 16 ele.-water*** ☐ | Mercury ☐ | Selenium-soil ☐ | Others: | F ☐ | Cl ☐ | SO4 ☐ | NO3 ☐ | NO2 + NO3 ☐ | TKN ☐ | NH3 ☐ | P-Total ☐ | pH ☐ | Conductivity ☐ | TSS ☐ | Sulfide (SH) ☐ | Total Sulphur (S) ☐ | Tot.-CN ☐ | Ox.-CN ☐ | Free CN ☐ | BOD5 ☐ | COD ☐ | Turbidity ☐ | TOC ☐ | RDS ☐ | RMD ☐ | CUM ☐ | ART. 11 ☐ | ART. 19 ☐ | Potable Water: ORG. ☐ | INOR. ☐ | THM ☐ | COLIF (Fec.) ☐ | COLIF (Tot.) ☐ | TOTAL-PC ☐ | Explosive ☐ | EPA 8260 ☐ | EPA 8095 ☐ | Other (specify): ☐

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn),
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater P = Potable LW = Liquid Waste
Sur = Surface E = Effluent C = Catchment

Applicable Regulations: (To complete)

Turnaround Time: ☒ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date:

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception:

Chain of Custody

Relinquished by: Tyrel Hemsley Tyrel Hemsley	Date: Mar 2/14	Time: 1807	Received by:	Remarks: ICE-4/5 SLMC-NO
Relinquished by:	Date:	Time:	Received by:	

Number of coolers: 2 Temperature upon reception: 0° 0° 0° / 0° 1° 0°

Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☒ Courier (Specify):

KEENVCOCFORM0E - Saint-Laurent - 07/09 WHITE: MAXXAM ANALYTICS INC BLUE: INVOICING YELLOW: RETURN TO CLIENT WITH FINAL REPORT PINK: CLIENT

Mario Fraser MARIO FRASER 2014/03/05 08:10

Maxxam Analytique

Sample Analysis and Chain of Custody Record Page 4 of 4

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E-

Invoice Information	Report Information (if differs from invoice)
Company Name:	Company Name:
Address: Same as Page 1	Address:
Contact Name:	Contact Name:
Telephone:	Telephone:
Fax:	Fax:
Sampler:	Sampler:

Order No.: _____ Project / Site: _____
Quotation No.: _____ Project No.: E14/03172-01

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Sample Identification (sampling point)	Sample Type: Soil	Water	Other	Sampling (date / time)	To be filtered	Number of samples	PH (Cn-Cs) ☐	O & G Min. ☐	O & G Tot. ☐	VOC (EPA 624) ☐	BTEX ☐	MAH ☐	Phenols (GC/MS) ☐	Phenols (Colorc) ☐	PAH	PCB (Congeners) (GC-MS)	Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn)	Metals (ICP regulation - 13 ele.-soil)** ☐	Metals 16 ele. water*** ☐	Mercury ☐	Selenium-soil ☐	Others:	F- ☐	Cl ☐	SO4 ☐	NO2 ☐	NO3 ☐	NO3 + NO2 ☐	TKN ☐	NH3 ☐	P-Tot. ☐	pH ☐	Conductivity ☐	TSS ☐	Sulfide (SH-) ☐	Total Sulphur (S) ☐	Tot.-CN ☐	Ox.-CN ☐	Free CN ☐	BOD5 ☐	COD ☐	Turbidity ☐	TOC ☐	RDS ☐	RMD ☐	CUM. ART. 10 ☐	ART. 11 ☐	Potable Water: ORG. ☐	INOR. ☐	THM ☐	COLIF (Fec.) ☐	COLIF (Tot.) ☐	TOTAL-PC ☐	Explosive	EPA 8330 ☐	EPA 8095 ☐	Other (specify):	CN TOTAL	CN WAD	pH
BH-37 (40-70)	X			Mar 2/14		1																																																				X	X	
BH-37 (70-109)	↓			↓		1																																																			X	X	
BH-38 (0-29)						1																																																		X	X	
BH-39 (300-350)						1																																																		X	X	
BH-39 (400-450)						1																																																		X	X	
BH-40 (400-450)						1																																																		X	X	
BH-40 (550-645)						1																																																		X	X	
BH-41 (300-350)						1																																																		X	X	
BH-41 (400-450)						1																																																		X	X	
BH-42 (300-350)	↓			↓		1																																																		X	X	

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn),
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater P = Potable LW = Liquid Waste
Sur = Surface E = Effluent C = Catchment

Applicable Regulations: _____ (To complete)

Turnaround Time: ☒ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date: _____

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception:

Chain of Custody

Relinquished by: Tyrel Hensley Tyrel Hensley	Date: Mar 2/14	Time: 1807	Received by:	Remarks: ICE-YES SEAL-NO
Relinquished by:	Date:	Time:	Received by:	

Number of coolers: 2 Temperature upon reception: 0° 0° 0° / 0° 1° 0°

Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☒ Courier (Specify):

KEENVCOCFORM08 - Saint-Laurent - 07/09 WHITE: MAXXAM ANALYTICS INC BLUE: INVOICING YELLOW: RETURN TO CLIENT WITH FINAL REPORT PINK: CLIENT

2014/03/07 14:26

Marie France MARIE FRANCE 2014/03/05 08:10

Votre # de commande: OP-310962-J
Votre # du projet: E14103172-01

Attention: Kevin Buck

Agnico Eagle Ltée-Division Meadowbank
Meadowbank
Baker Lake, Nunavut, Canada
Meadowbank
Nunavut, QC
CANADA X0C 0A0

Date du rapport: 2014/03/12
 # Rapport: R1838755
Version: 1

CERTIFICAT D'ANALYSES

 # DE DOSSIER MAXXAM: B412113
Reçu: 2014/03/10, 08:00

Matrice: SOL
Nombre d'échantillons reçus: 28

Analyses	Quantité	Date de l' extraction	Date Analysé	Méthode de laboratoire	Référence Primaire
Cyanures disponibles*	28	2014/03/10	2014/03/12	STL SOP-00035	MA. 300 - CN 1.2
Cyanures Totaux*	28	2014/03/10	2014/03/11	STL SOP-00035	MA. 300 - CN 1.2

Notez: Les données brutes sont utilisées pour le calcul du RPD (% d'écart relatif). L'arrondissement des résultats finaux peut expliquer la variation apparente.

* Maxxam détient l'accréditation pour cette analyse selon le programme du MDDEFP.

clé de cryptage

Veuillez adresser toute question concernant ce certificat d'analyse à votre chargé(e) de projets

Rita Kurdoghlanian, Chargée de projets
Email: RKurdoghlanian@maxxam.ca
Phone# (514) 448-9001 Ext:4272

==========

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Dossier Maxxam: B412113
Date du rapport: 2014/03/12

Agnico Eagle Ltée-Division Meadowbank
Votre # du projet: E14103172-01

Votre # de commande: OP-310962-J

PARAMÈTRES CONVENTIONNELS (SOL)

Identification Maxxam					X71668	X71669	X71670	X71671	X71671		
Date d'échantillonnage					2014/03/03	2014/03/03	2014/03/03	2014/03/03	2014/03/03		
	UNITÉS	**A**	**B**	**C**	**BH-43 (0-40)**	**BH-43 (70-100)**	**BH-43 (100-121)**	**BH-44 (40-70)**	**BH-44 (40-70) Dup. de Lab.**	**LDR**	**Lot CQ**
% Humidité	%	-	-	-	41	6.9	9.9	9.9	9.9	N/A	N/A
CONVENTIONNELS											
Cyanures Totaux	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	0.6	0.6	0.5	1279232
Cyanures disponibles (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	1279273

N/A = Non Applicable
LDR = Limite de détection rapportée
Lot CQ = Lot Contrôle Qualité

Identification Maxxam					X71672	X71673	X71674	X71675		
Date d'échantillonnage					2014/03/03	2014/03/03	2014/03/03	2014/03/03		
	UNITÉS	**A**	**B**	**C**	**BH-44 (70-94)**	**BH-45 (40-52)**	**BH-46 (40-70)**	**BH-46 (100-139)**	**LDR**	**Lot CQ**
% Humidité	%	-	-	-	6.4	16	7.6	5.6	N/A	N/A
CONVENTIONNELS										
Cyanures Totaux	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	0.5	1279232
Cyanures disponibles (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	0.5	1279273

N/A = Non Applicable
LDR = Limite de détection rapportée
Lot CQ = Lot Contrôle Qualité

Identification Maxxam					X71676		X71677	X71678	X71679		
Date d'échantillonnage					2014/03/03		2014/03/03	2014/03/03	2014/03/03		
	UNITÉS	**A**	**B**	**C**	**BH-47 (0-41)**	**LDR**	**BH-48 (40-70)**	**BH-48 (100-140)**	**BH-49 (40-70)**	**LDR**	**Lot CQ**
% Humidité	%	-	-	-	19	N/A	9.4	7.3	6.0	N/A	N/A
CONVENTIONNELS											
Cyanures Totaux	mg/kg	**2**	50	500	**4**	1	<0.5	<0.5	<0.5	0.5	1279232
Cyanures disponibles (CN-)	mg/kg	**2**	10	100	<0.5	0.5	<0.5	<0.5	<0.5	0.5	1279273

N/A = Non Applicable
LDR = Limite de détection rapportée
Lot CQ = Lot Contrôle Qualité

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Dossier Maxxam: B412113
Date du rapport: 2014/03/12

Agnico Eagle Ltée-Division Meadowbank
Votre # du projet: E14103172-01

Votre # de commande: OP-310962-J

PARAMÈTRES CONVENTIONNELS (SOL)

Identification Maxxam					X71680	X71681	X71682	X71683	X71683		
Date d'échantillonnage					2014/03/03	2014/03/03	2014/03/03	2014/03/03	2014/03/03		
	UNITÉS	**A**	**B**	**C**	**BH-49 (70-100)**	**BH-50 (0-40)**	**BH-50 (70-100)**	**BH-50 (100-133)**	**BH-50 (100-133) Dup. de Lab.**	**LDR**	**Lot CQ**
% Humidité	%	-	-	-	5.5	19	7.7	6.3	6.3	N/A	N/A
CONVENTIONNELS											
Cyanures Totaux	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	1279232
Cyanures disponibles (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	1279273

N/A = Non Applicable
LDR = Limite de détection rapportée
Lot CQ = Lot Contrôle Qualité

Identification Maxxam					X71684	X71685	X71686	X71687	X71688		
Date d'échantillonnage					2014/03/03	2014/03/03	2014/03/03	2014/03/03	2014/03/04		
	UNITÉS	**A**	**B**	**C**	**BH-51 (0-40)**	**BH-51 (70-100)**	**BH-51 (100-133)**	**BH-52 (300-350)**	**MW-01 (400-450)**	**LDR**	**Lot CQ**
% Humidité	%	-	-	-	22	9.0	4.4	0.3	2.2	N/A	N/A
CONVENTIONNELS											
Cyanures Totaux	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	1279232
Cyanures disponibles (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	1279273

N/A = Non Applicable
LDR = Limite de détection rapportée
Lot CQ = Lot Contrôle Qualité

Identification Maxxam					X71689	X71690	X71691	X71692	X71693		
Date d'échantillonnage					2014/03/04	2014/03/05	2014/03/05	2014/03/05	2014/03/05		
	UNITÉS	**A**	**B**	**C**	**MW-03 (400-450)**	**MW-04 (70-91)**	**MW-05 (70-100)**	**MW-06 (70-122)**	**MW-07 (40-70)**	**LDR**	**Lot CQ**
% Humidité	%	-	-	-	2.4	7.6	8.4	8.0	16	N/A	N/A
CONVENTIONNELS											
Cyanures Totaux	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	1279232
Cyanures disponibles (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	1279273

N/A = Non Applicable
LDR = Limite de détection rapportée
Lot CQ = Lot Contrôle Qualité

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Dossier Maxxam: B412113
Date du rapport: 2014/03/12

Agnico Eagle Ltée-Division Meadowbank
Votre # du projet: E14103172-01

Votre # de commande: OP-310962-J

PARAMÈTRES CONVENTIONNELS (SOL)

Identification Maxxam					X71694	X71695	X71695		
Date d'échantillonnage					2014/03/05	2014/03/05	2014/03/05		
	UNITÉS	**A**	**B**	**C**	**MW-08 (40-70)**	**MW-08 (70-100)**	**MW-08 (70-100) Dup. de Lab.**	**LDR**	**Lot CQ**
% Humidité	%	-	-	-	9.1	6.2	6.2	N/A	N/A
CONVENTIONNELS									
Cyanures Totaux	mg/kg	**2**	50	500	<0.5	<0.5	<0.5	0.5	1279232
Cyanures disponibles (CN-)	mg/kg	**2**	10	100	<0.5	<0.5	<0.5	0.5	1279273

N/A = Non Applicable
LDR = Limite de détection rapportée
Lot CQ = Lot Contrôle Qualité

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Dossier Maxxam: B412113
Date du rapport: 2014/03/12

Agnico Eagle Ltée-Division Meadowbank
Votre # du projet: E14103172-01

Votre # de commande: OP-310962-J

REMARQUES GÉNÉRALES

État des échantillons à l'arrivée: BON

Tous les résultats sont calculés sur une base sèche excepté lorsque non-applicable.

A,B,C: Ces critères proviennent de l'Annexe 2 de la « Politique de protection des sols et de réhabilitation des terrains contaminés ». Pour les analyses de métaux(et métalloides) dans les sols, le critère A désigne la « Teneur de fond Secteur Basses-Terres du Saint-Laurent ».
A,B-eau souterraine: A=Critère pour fin de consommation; B=Critère pour la résurgence dans les eaux de surface ou infiltration dans les égouts.
Ces références ne sont rapportées qu'à titre indicatif et ne doivent être interprétées dans aucun autre contexte.

- = Ce composé ne fait pas parti de la réglementation.

PARAMÈTRES CONVENTIONNELS (SOL)

Veuillez noter que les résultats n'ont pas été corrigés ni pour la récupération des échantillons de contrôle qualité, ni pour le blanc de méthode.
Les limites de détections indiquées sont multipliées par les facteurs de dilution utilisés pour l'analyse des échantillons.

Les résultats ne se rapportent qu'aux échantillons soumis pour analyse

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Agnico Eagle Ltée-Division Meadowbank
Attention: Kevin Buck
Votre # du projet: E14103172-01
P.O. #: OP-310962-J
Adresse du site:

Rapport Assurance Qualité

Dossier Maxxam: B412113

Lot Num	Lot Init	Type CQ	Groupe	Date Analysé aaaa/mm/jj	Valeur	Réc	UNITÉS
1279232	DB2	MRC	Cyanures Totaux	2014/03/11		96	%
		Blanc fortifié	Cyanures Totaux	2014/03/11		109	%
		Blanc de méthode	Cyanures Totaux	2014/03/11	<0.5		mg/kg
1279273	CC6	Blanc fortifié	Cyanures disponibles (CN-)	2014/03/12		109	%
		Blanc de méthode	Cyanures disponibles (CN-)	2014/03/12	<0.5		mg/kg

MRC: Un échantillon de concentration connue préparé dans des conditions rigoureuses par un organisme externe. Utilisé pour vérifier la justesse de la méthode.
Blanc fortifié: Un blanc, d'une matrice exempte de contaminants, auquel a été ajouté une quantité connue d'analyte provenant généralement d'une deuxième source. Utilisé pour évaluer la précision de la méthode.
Blanc de méthode: Une partie aliquote de matrice pure soumise au même processus analytique que les échantillons, du prétraitement au dosage. Sert à évaluer toutes contaminations du laboratoire.
Réc = Récupération

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Page des signatures de validation

Dossier Maxxam: B412113

Les résultats analytiques ainsi que les données de contrôle-qualité contenus dans ce rapport furent vérifiés et validés par les personnes suivantes:

Delia Barbul, B.Sc., Chimiste

==========

Maxxam a mis en place des procédures qui protègent contre l'utilisation non autorisée de la signature électronique et emploie les «signataires» requis, conformément à la section 5.10.2 de la norme ISO/CEI 17025:2005(E). Veuillez vous référer à la page des signatures de validation pour obtenir les détails des validations pour chaque division.

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10-Mar-14 08:00
Alain Lemieux
B412113
ICB MTL-0084

Maxxam Analytique

☒ 889 Montée de Liesse, Ville St-Laurent, Québec H4T 1P
☐ 2690 Avenue Dalton, Sainte-Foy, Québec G1P 3S4
☐ 737 boul. Barette, Chicoutimi, Québec G7J 4C4

Analysis and Chain of Custody Record

: 1-877-4MA-XXAM (462-9926) Page 1 of 3

E-

Invoice Information	Report Information (if differs from invoice)
Company Name: AEM Meadowbank	Company Name:
Address: 10200 route de Preissac, Rouyn-Noranda J0Y 1C0	Address:
Contact Name: Kevin Bach	Contact Name:
Telephone: 819.759.3555 x6838	Telephone:
Fax: 819.759.3613	Fax:
Sampler: Tyrel / Tom / Martin	Sampler:

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Order No.: Project / Site:

Quotation No.: Project No.: E14103172-01

Sample Identification (sampling point)	Sample: Soil	Water	Type	Other	Sampling (date / time)	To be filtered	Number of samples	PH [Cc-Cc]	O & G Tot.	O & G Min.	VOC (EPA 624)	BTEX	MAH	Phenols (GC/MS)	Phenols (Colour)	PAH	PCB (Congeners) (GC-MS)	Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn)	16 ele. water***	Metals (ICP regulation - 13 ele.-soil**	Selenium-soil	Others:	Mercury	F	Cl	SO4	NO2	NO3 + NO2	TKN	P-Tot.	NH3	Conductivity	TSS	pH	Sulfide [S2-]	Total Sulphur [S]	Tot-CN	Ox.-CN	Free CN	BODs	COD	Turbidity	TOC	RBS	RMD	CUM	AST.10	AST.11	TKM	INOR.	ORG.	Potable Water	COLIF [Fec.]	TOTAL-PC	COLIF [Tot.]	Explosive	EPA 8330	EPA 8095	Other (specify):	CN Total	CN WAD
BH-43 (0-40)	X				Mar. 3/14		1																																																		X	X
BH-43 (70-100)							1																																																	X	X
BH-43 (100-121)							1																																																	X	X
BH-44 (40-70)							1																																																	X	X
BH-44 (70-94)							1																																																	X	X
BH-45 (40-52)							1																																																	X	X
BH-46 (40-70)							1																																																	X	X
BH-46 (100-139)							1																																																	X	X
BH-47 (0-41)							1																																																	X	X
BH-48 (40-70)	↓				↓		1																																																	X	X

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn),
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater P = Potable LW = Liquid Waste
Sur = Surface E = Effluent C = Catchment

Applicable Regulations: (To complete)

Turnaround Time: ☒ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date:

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception:
ICE NO
seal NO

Chain of Custody

Relinquished by: Tyrel Hemsley Tyrel Hemsley	Date: Mar 5/14	Time: 1824	Received by:
Relinquished by:	Date: 2014/03/10	Time: 08:00	Received by: CATALINA BORGEA
Number of coolers: 2	Temperature upon reception:		2° 2° 2° 1° 1° 1°
Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☒ Courier (Specify):			

Remarks:

KEENVCOCFORMQE - Saint-Laurent - 07/09 WHITE: MAXXAM ANALYTICS INC BLUE: INVOICING YELLOW: RETURN TO CLIENT WITH FINAL REPORT PINK: CLIENT

Maxxam Analytique
☒ 889 Montée de Liesse, Ville St-Laurent, Québec H4T 1P5 Telephone: (514) 448-9001 Fax: (514) 448-9199 Toll Free: 1-877-4MA-XXAM (462-9926)
☐ 2690 Avenue Dalton, Sainte-Foy, Québec G1P 3S4 Telephone: (418) 658-5784 Fax: (418) 658-6594
☐ 737 boul. Barette, Chicoutimi, Québec G7J 4C4 Telephone: (418) 543-3788 Fax: (418) 543-8994
www.maxxamanalytics.com

Sample Analysis and Chain of Custody Record

Invoice Information	Report Information (if differs from invoice)
Company Name:	Company Name:
Address: Same as page 1	Address:
Contact Name:	Contact Name:
Telephone:	Telephone:
Fax:	Fax:
Sampler:	Sampler:

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Order No.: Project / Site:

Quotation No.: Project No.: E14103172-01

Sample Identification (sampling point)	Sample Type: Soil	Sample Type: Water	Sample Type: Other	Sampling (date / time)	To be filtered	Number of samples	CN TOTAL	CN WAD
BH-48 (100-140)	X			Mar. 3/14		1	X	X
BH-49 (40-70)	|			|		1	X	X
BH-49 (70-100)	|			|		1	X	X
BH-50 (0-40)	|			|		1	X	X
BH-50 (70-100)	|			|		1	X	X
BH-50 (100-133)	|			|		1	X	X
BH-51 (0-40)	|			|		1	X	X
BH-51 (70-100)	|			|		1	X	X
BH-51 (100-133)	|			|		1	X	X
BH-52 (300-350)	V			V		1	X	X

PH [Cr-Cr6] ☐ | O & G Min. ☐ | O & G Tot. ☐ | VOC [EPA 624] ☐ | BTEX ☐ MAH ☐ | Phenols [GC/MS] ☐ | Phenols (Colour) ☐ | PAH ☐ | PCB [Congeners] [GC-MS] ☐ | Heavy Metals [Cd, Cr, Cu, Ni, Pb, Zn] ☐ | Metals ICP regulation - 13 ele.-soil** ☐ | 16 ele.-water*** ☐ | Mercury ☐ | Selenium-soil ☐ | Others: ☐ | F ☐ | Cl ☐ | SO4 ☐ | NO2 ☐ | NO3 ☐ | NO2 + NO3 ☐ | TKN ☐ | NH3 ☐ | P-Tot. ☐ | pH ☐ | Conductivity ☐ | TSS ☐ | Total Sulphur (S) ☐ | Sulfide (SH-) ☐ | Tot.-CN ☐ | Ox.-CN ☐ | Free CN ☐ | BOD5 ☐ | COD ☐ | Turbidity ☐ | TOC ☐ | BDS ☐ | RMD ☐ | CUM ☐ | ART.-10 ☐ | ART.-11 ☐ | Potable Water: ORG. ☐ | INORG. ☐ | THM ☐ | COLIF (Fec.) ☐ | COLIF (Tot.) ☐ | TOTAL-PC ☐ | Explosive ☐ | EPA 8260 ☐ | EPA 8330 ☐ | Other (specify): ☐

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn),
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater P = Potable LW = Liquid Waste Sur = Surface E = Effluent C = Catchment

Applicable Regulations: _____ (To complete)

Turnaround Time: ☒ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date: _____

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception: ICE NO Real NO

Chain of Custody

Relinquished by: Tyrel Hemsley Tyrel Hemsley	Date: Mar 5/14	Time: 1824	Received by:
Relinquished by:	Date: 2014/03/10	Time: 08:00	Received by: CATALINA BORGES

Number of coolers: 2 Temperature upon reception: 2° 2° 2° 1° 1° 1°

Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☒ Courier (Specify):

Remarks:

KEENVCOCFORM0E - Saint-Laurent - 07/09 WHITE: MAXXAM ANALYTICS INC BLUE: INVOICING YELLOW: RETURN TO CLIENT WITH FINAL REPORT PINK: CLIENT

Sample Analysis and Chain of Custody Record

Maxxam Analytique

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☐ 2690 Avenue Dalton, Sainte-Foy, Québec G1P 3S4 — Telephone: (418) 658-5784 — Fax: (418) 658-6594
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www.maxxamanalytics.com

E:

Invoice Information	Report Information (if differs from invoice)
Company Name:	Company Name:
Address: Same as	Address: Page 1
Contact Name:	Contact Name:
Telephone:	Telephone:
Fax:	Fax:
Sampler:	Sampler:

Order No.: _____ Project / Site: _____
Quotation No.: _____ Project No.: E14(03172-01

I hereby acknowledge the understanding and acceptance of Maxxam's terms and conditions as listed on the back of this form.

Sample Identification (sampling point)	Sample: Soil	Water	Other	Sampling (date / time)	To be filtered	Number of samples	PH (Ox-Cx)	O & G Min.	O & G Tot.	VOC (EPA 624)	BTEX	MAH	Phenols (Colloz)	Phenols (GC/MS)	PAH	PCB (Congeners) (GC-MS)	Heavy Metals (Cd, Cr, Cu, Ni, Pb, Zn)	16 eléments***	Metals (CCP regulation - 13 eléments**)	Others:	Mercury	Selenium-soil	F	Cl	SO4	NOx	NO2	NO3 + NO2	TKN	P-Tot.	Conductivity	TSS	pH	Sulfide (Strl.)	Total Sulphur (S)	Ox.-Cn	Free Cn	Tot.-Cn	BOD5	COD	Turbidity	TOC	RDS	RMD	CUM	ART. 10	Potable Water: ORG.	INORG.	THM	COLIF (Fec.)	COLIF (Tot.)	TOTAL-PC	Explosive	EPA 8260	EPA 8270	Other (specify):			
MW-01 (400-450)	X			Mar 4/14		1																																																	X	X
MW-03 (400-450)				↓		1																																																X	X
MW-04 (70-91)				Mar. 5/14		1																																																X	X
MW-05 (70-100)						1																																																	X	X
MW-06 (70-122)						1																																																	X	X
MW-07 (40-70)						1																																																	X	X
MW-08 (40-70)						1																																																	X	X
MW-08 (70-100)	↓			↓		1																																																	X	X

LEGEND: ** Metals 13 elements (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Zn),
*** Metals 16 elements (Al, Sb, Ag, As, Ba, Cd, Cr, Co, Cu, Mn, Mo, Ni, Pb, Se, Na, Zn).

Types of Water: G = Groundwater P = Potable LW = Liquid Waste Sur = Surface E = Effluent C = Catchment

Applicable Regulations: _____ (To complete)

Turnaround Time: ☒ 24h ☐ 48h ☐ 72h ☐ Regular ☐ Date: _____

Unless clearly identified all water samples received at Maxxam analytics will be treated as non-potable and will not be subject to the requirements under the Quebec Drinking Water Regulation.

General Condition at Reception: Real NO ICE NO

Chain of Custody

Relinquished by: Tyrel Hemsley Tyrel Hemsley	Date: Mar. 5/14	Time: 1824	Received by:
Relinquished by:	Date: 2014/03/10	Time: 08:00	Received by: CATALINA BORGEA
Number of coolers: 2	Temperature upon reception:		2° 2° 2° 1° 1° 1°
Sample Transport: ☐ By Client ☐ MAXXAM Personnel ☒ Courier (Specify):			

Remarks:

KEEN/COCFORMOE - Saint-Laurent - 07/09 — WHITE: MAXXAM ANALYTICS INC — BLUE: INVOICING — YELLOW: RETURN TO CLIENT WITH FINAL REPORT — PINK: CLIENT

Analytical Report

Company: **Agnico Eagle Division Meadowbank**

Client: M. Stéphane Robert
Address: General Delivery
Baker Lake Nunavut X0C 0A0
Phone: (604) 677-0689 (--)
Fax: (604) 677-0687

Lab number: V-32662

Sampling location:	BH-11	Sampling date:	February 22, 2014
Sample name:	BH-11	Sampling hour:	N/D
Sampled by:	Tom Thomson / Tyrel	Date received:	February 26, 2014
Matrix:	Water		

Drinking water distribution:

Reported on: February 28, 2014

Unless otherwise stated, all samples were received in acceptable condition.

Results relate only to the sample tested.

All samples will be disposed of after 30 days following analysis.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Lab number: V-32662

Sample name: BH-11
Sampling location: BH-11
Sampling date: February 22, 2014
Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Total Cyanide (CNt)	1.76 mg/L	M-CN-1.0	February 26, 2014
Cyanide W.A.D.	1.48 mg/L	Sous-traitance\Multilab Direct	February 26, 2014

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Detection limit

Lab number: V-32662

Sample name: BH-11
Sampling location: BH-11
Sampling date: February 22, 2014
Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Total Cyanide (CNt)	0.005	mg/L	M-CN-1.0	Yes
Cyanide W.A.D.	0.005	mg/L	Sous-traitance	Yes

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Quality control Report

Lab number: V-32662

Sample name: BH-11 | Sampling date: February 22, 2014

Sampling location: BH-11 | Sampling hour: N/D

Parameter		
Total Cyanide (CNt) mg/L	Blank	<0.005
	Standard name	DMR-0025-2014-7
	Result	0.0800
	Accuracy	98.2%
	Limit	0.0693 - 0.0937

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Additional information

Lab number: V-32662

Sample name: BH-11
Sampling location: BH-11
Sampling date: February 22, 2014
Sampling hour: N/D

There was no bottle for the analysis of pH.

Lab method	Method reference
M-CN-1.0	MA.300-CN 1.2

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Company: **Agnico Eagle Division Meadowbank**

Client: M. Stéphane Robert
Address: General Delivery
Baker Lake Nunavut X0C 0A0
Phone: (604) 677-0689 (--)
Fax: (604) 677-0687

Lab number: V-32663

Sampling location:	BH-22	Sampling date:	February 23, 2014
Sample name:	BH-22	Sampling hour:	N/D
Sampled by:	Tom Thomson / Tyrel	Date received:	February 26, 2014
Matrix:	Water		

Drinking water distribution:

Reported on: February 28, 2014

Unless otherwise stated, all samples were received in acceptable condition.

Results relate only to the sample tested.

All samples will be disposed of after 30 days following analysis.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Lab number: V-32663

Sample name: BH-22
Sampling location: BH-22
Sampling date: February 23, 2014
Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Total Cyanide (CNt)	24.59 mg/L	M-CN-1.0	February 26, 2014
Cyanide W.A.D.	10.6 mg/L	Sous-traitance\Multilab Direct	February 26, 2014

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Detection limit

Lab number: V-32663

Sample name: BH-22
Sampling location: BH-22
Sampling date: February 23, 2014
Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Total Cyanide (CNt)	0.005	mg/L	M-CN-1.0	Yes
Cyanide W.A.D.	0.005	mg/L	Sous-traitance	Yes

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Quality control Report

Lab number: V-32663

Sample name: BH-22
Sampling location: BH-22
Sampling date: February 23, 2014
Sampling hour: N/D

Parameter		
Total Cyanide (CNt) mg/L	Blank	<0.005
	Standard name	DMR-0025-2014-7
	Result	0.0800
	Accuracy	98.2%
	Limit	0.0693 - 0.0937

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Additional information

Lab number: V-32663

Sample name: BH-22
Sampling location: BH-22
Sampling date: February 23, 2014
Sampling hour: N/D

There was no bottle for the analysis of pH.

Lab method	Method reference
M-CN-1.0	MA.300-CN 1.2

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Company: **Agnico Eagle Division Meadowbank**

Client: M. Stephane Robert
Address: General Delivery
Baker Lake Nunavut X0C 0A0
Phone: (604) 677-0689 (--)
Fax: (604) 677-0687

Lab number: V-32758

Sampling location:	BH-47	Sampling date:	March 03, 2014
Sample name:	BH-47	Sampling hour:	N/D
Sampled by:	Tyrel Hemsley	Date received:	March 07, 2014
Matrix:	Waste Water		

Drinking water distribution:

Reported on: March 10, 2014

Unless otherwise stated, all samples were received in acceptable condition.

Results relate only to the sample tested.

All samples will be disposed of after 30 days following analysis.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Analytical Report

Lab number: V-32758

Sample name: BH-47
Sampling location: BH-47
Sampling date: March 03, 2014
Sampling hour: N/D

Parameter	Result	Method name	Analysis date
Cyanide W.A.D.	0.101 mg/L	Sous-traitance\Multilab Direct	March 07, 2014
Total Cyanide (CNt)	1.05 mg/L	M-CN-1.0	March 07, 2014

Sauf indication contraire, tous les échantillons ont été reçus en bon état.

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Detection limit

Lab number: V-32758

Sample name: BH-47
Sampling location: BH-47
Sampling date: March 03, 2014
Sampling hour: N/D

Parameter	Value	Unit	Method	Accreditation
Cyanide W.A.D.	0.005	mg/L	Sous-traitance	Yes
Total Cyanide (CNt)	0.005	mg/L	M-CN-1.0	Yes

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Quality control Report

Lab number: V-32758

Sample name: BH-47 | Sampling date: March 03, 2014

Sampling location: BH-47 | Sampling hour: N/D

Parameter		
Total Cyanide (CNt) mg/L	Blank	<0.005
	Standard name	DMR-0025-2014-7
	Result	0.0820
	Accuracy	99.4%
	Limit	0.0693 - 0.0937

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

Additional information

Lab number: V-32758
Sample name: BH-47
Sampling location: BH-47
Sampling date: March 03, 2014
Sampling hour: N/D

Lab method	Method reference
M-CN-1.0	MA.300-CN 1.2

125, boul Industriel
Rouyn-Noranda (Québec)
J9X 6P2
Tél: (819) 797-0550
Fax:(819) 797-2155
Courriel:
multilab@cablevision.qc.ca

APPENDIX B
BOREHOLE NOTES AND MONITORING WELL LOGS

MEADOWBANK ASSAY ROAD SEEPAGE	AGNICO EAGLE MINES LIMITED	PROJECT NO. - BOREHOLE NO.
	DRILL: DOWN HOLE HAMMER - AIR ROTARY	E14103172-01.002-MW-01
MEADOWBANK. NU		

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (PLASTIC / M.C. / LIQUID)	STANDARD PENETRATION (N) 20 40 60 80; UNC. COMPRESSIVE STRENGTH (kPa) 50 100 150 200; POCKET PEN. (kPa) 100 200 300 400	MW01	Depth (ft)
0	FILL - grey, frozen to 1.90 metres					0
1						5
2						
3						10
4						
5	BEDROCK					15
	END OF BOREHOLE (5.23 metres) Monitoring well installed to 5.23 metres					
6						20
7						
7.5						25

TETRA TECH EBA

LOGGED BY: TH	COMPLETION DEPTH: 5.23 m
REVIEWED BY: MB	COMPLETE: 14/03/04
DRAWING NO:	Page 1 of 1

MEADOWBANK ASSAY ROAD SEEPAGE	AGNICO EAGLE MINES LIMITED	PROJECT NO. - BOREHOLE NO.
	DRILL: DOWN HOLE HAMMER - AIR ROTARY	E14103172-01.002-MW-02
MEADOWBANK. NU		

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT: PLASTIC / M.C. / LIQUID (20 40 60 80)	STANDARD PENETRATION (N) 20 40 60 80; UNC. COMPRESSIVE STRENGTH (kPa) 50 100 150 200; POCKET PEN. (kPa) 100 200 300 400	MW02	Depth (ft)
0	FILL - frozen to 2.40 metres					0
1						5
2						
3						10
4	- water at installation					
5						15
6						20
7	BEDROCK END OF BOREHOLE (6.50 metres) slough - 5.43 metres at 0 hrs. Monitoring well installed to 5.43 metres					
7.5						25

TETRA TECH EBA

LOGGED BY: TH	COMPLETION DEPTH: 6.5 m
REVIEWED BY: MB	COMPLETE: 14/03/04
DRAWING NO:	Page 1 of 1

MEADOWBANK ASSAY ROAD SEEPAGE	AGNICO EAGLE MINES LIMITED	PROJECT NO. - BOREHOLE NO.
	DRILL: DOWN HOLE HAMMER - AIR ROTARY	E14103172-01.002-MW-03
MEADOWBANK. NU		

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT	PLASTIC / M.C. / LIQUID (20 40 60 80)	STANDARD PENETRATION (N) 20 40 60 80; UNC. COMPRESSIVE STRENGTH (kPa) 50 100 150 200; POCKET PEN. (kPa) 100 200 300 400	MW03	Depth (ft)
0	FILL - grey, frozen to 2.70 metres						0
1							5
2							
3							10
4							
5							15
	BEDROCK						
	END OF BOREHOLE (5.29 metres) Monitoring well installed to 5.29 metres						
6							20
7							
7.5							25

TETRA TECH EBA

LOGGED BY: TH	COMPLETION DEPTH: 5.29 m
REVIEWED BY: MB	COMPLETE: 14/03/04
DRAWING NO:	Page 1 of 1

MEADOWBANK ASSAY ROAD SEEPAGE	AGNICO EAGLE MINES LIMITED	PROJECT NO. - BOREHOLE NO.
	DRILL: DOWN HOLE HAMMER - AIR ROTARY	E14103172-01.002-MW-04
MEADOWBANK. NU		

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (PLASTIC / M.C. / LIQUID; 20 40 60 80)	STANDARD PENETRATION (N) 20 40 60 80; UNC. COMPRESSIVE STRENGTH (kPa) 50 100 150 200; POCKET PEN. (kPa) 100 200 300 400	MW04	Depth (ft)
0	TUNDRA - undisturbed soil, reddish brown, frozen					0
1	BEDROCK					5
	END OF BOREHOLE (1.03 metres) Monitoring well installed to 1.03 metres					
2						10
3						
4						15
5						
6						20
7						
7.5						25

TETRA TECH EBA

LOGGED BY: TH	COMPLETION DEPTH: 1.03 m
REVIEWED BY: MB	COMPLETE: 14/03/05
DRAWING NO:	Page 1 of 1

MEADOWBANK ASSAY ROAD SEEPAGE	AGNICO EAGLE MINES LIMITED	PROJECT NO. - BOREHOLE NO.
	DRILL: DOWN HOLE HAMMER - AIR ROTARY	E14103172-01.002-MW-05
MEADOWBANK. NU		

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (PLASTIC / M.C. / LIQUID)	STANDARD PENETRATION (N) / UNC. COMPRESSIVE STRENGTH (kPa) / POCKET PEN. (kPa)	MW05	Depth (ft)
0	TUNDRA - undisturbed soil, reddish brown, frozen					0
1	BEDROCK					5
	END OF BOREHOLE (1.32 metres) Monitoring well installed to 1.32 metres					
2						10
3						
4						15
5						
6						20
7						
7.5						25

STANDARD PENETRATION (N): 20 40 60 80

UNC. COMPRESSIVE STRENGTH (kPa): 50 100 150 200

POCKET PEN. (kPa): 100 200 300 400

PLASTIC M.C. LIQUID: 20 40 60 80

TETRA TECH EBA

LOGGED BY: TH	COMPLETION DEPTH: 1.32 m
REVIEWED BY: MB	COMPLETE: 14/03/05
DRAWING NO:	Page 1 of 1

MEADOWBANK ASSAY ROAD SEEPAGE	AGNICO EAGLE MINES LIMITED	PROJECT NO. - BOREHOLE NO.
	DRILL: DOWN HOLE HAMMER - AIR ROTARY	E14103172-01.002-MW-06
MEADOWBANK. NU		

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (PLASTIC / M.C. / LIQUID)	STANDARD PENETRATION (N) 20 40 60 80; UNC. COMPRESSIVE STRENGTH (kPa) 50 100 150 200; POCKET PEN. (kPa) 100 200 300 400	MW'06	Depth (ft)
0	TUNDRA - undisturbed soil, reddish brown, frozen					0
1						5
	BEDROCK					
	END OF BOREHOLE (1.36 metres) Monitoring well installed to 1.36 metres					
2						10
3						
4						15
5						
6						20
7						
7.5						25

TETRA TECH EBA

LOGGED BY: TH	COMPLETION DEPTH: 1.36 m
REVIEWED BY: MB	COMPLETE: 14/03/05
DRAWING NO:	Page 1 of 1

MEADOWBANK ASSAY ROAD SEEPAGE	AGNICO EAGLE MINES LIMITED	PROJECT NO. - BOREHOLE NO.
	DRILL: DOWN HOLE HAMMER - AIR ROTARY	E14103172-01.002-MW-07
MEADOWBANK. NU		

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (PLASTIC / M.C. / LIQUID)	STANDARD PENETRATION (N) 20 40 60 80; UNC. COMPRESSIVE STRENGTH (kPa) 50 100 150 200; POCKET PEN. (kPa) 100 200 300 400	MW07	Depth (ft)
0	TUNDRA - undisturbed soil, reddish brown, frozen					0
1						5
	BEDROCK					
	END OF BOREHOLE (1.62 metres) Monitoring well installed to 1.62 metres					
2						
3						10
4						
5						15
6						20
7						
7.5						25

TETRA TECH EBA

LOGGED BY: TH	COMPLETION DEPTH: 1.63 m
REVIEWED BY: MB	COMPLETE: 14/03/05
DRAWING NO:	Page 1 of 1

MEADOWBANK ASSAY ROAD SEEPAGE	AGNICO EAGLE MINES LIMITED	PROJECT NO. - BOREHOLE NO.
	DRILL: DOWN HOLE HAMMER - AIR ROTARY	E14103172-01.002-MW-08
MEADOWBANK. NU		

SAMPLE TYPE: DISTURBED | NO RECOVERY | SPT | A-CASING | SHELBY TUBE | CORE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	MOISTURE CONTENT (PLASTIC / M.C. / LIQUID)	STANDARD PENETRATION (N) 20 40 60 80 / UNC. COMPRESSIVE STRENGTH (kPa) 50 100 150 200 / POCKET PEN. (kPa) 100 200 300 400	MW08	Depth (ft)
0	TUNDRA - undisturbed soil, reddish brown, frozen					0
1						5
	BEDROCK					
	END OF BOREHOLE (1.33 metres) Monitoring well installed to 1.33 metres					
2						
3						10
4						
						15
5						
6						20
7						
7.5						25

TETRA TECH EBA

LOGGED BY: TH	COMPLETION DEPTH: 1.33 m
REVIEWED BY: MB	COMPLETE: 14/03/05
DRAWING NO:	Page 1 of 1

APPENDIX C
INTERCEPTION TRENCH AS-BUILT DRAWINGS

FORMAT ANSI B–PORTRAIT

Site Service building

Wing 12

Wing 7

Assay lab

First containment

Freshwater pipe

Interception trench

Electric cable

Collection point

BH-01 BH-02 BH-03 BH-04 BH-05 BH-06 BH-07 BH-08 BH-09 BH-10 BH-11 BH-12 BH-17 BH-18 BH-19 BH-20 BH-21 BH-22 BH-23 BH-24 BH-25 BH-26 BH-31 BH-32 BH-33 BH-34 BH-36 BH-37 BH-38 BH-39 BH-40 BH-41 BH-43 BH-44 BH-45 BH-46 BH-47 BH-48 BH-49 BH-50 BH-51 BH-52

MW-01 MW-02 MW-03 MW-04 MW-05 MW-06 MW-07

Seep-1 Seep-2 Seep-3

A A' B B' C C' D D'

LEGEND

- GROUNDWATER MONITORING WELL
- SEEP SAMPLE (ICE AT SURFACE CYANIDE DETECTED)
- BOREHOLE LOCATION
- BOREHOLE LOCATION(CYANIDE DETECTED)
- THERMISITOR CABLE

REV	DESCRIPTION	DATE	BY

REVISIONS

AGNICO EAGLE MEADOWBANK

DRAWN BY	ROBERT CLOUATRE	DATE	15–05–2014
CHECKED BY			
APPROVED BY			
PROJECT NO.			
DATE			

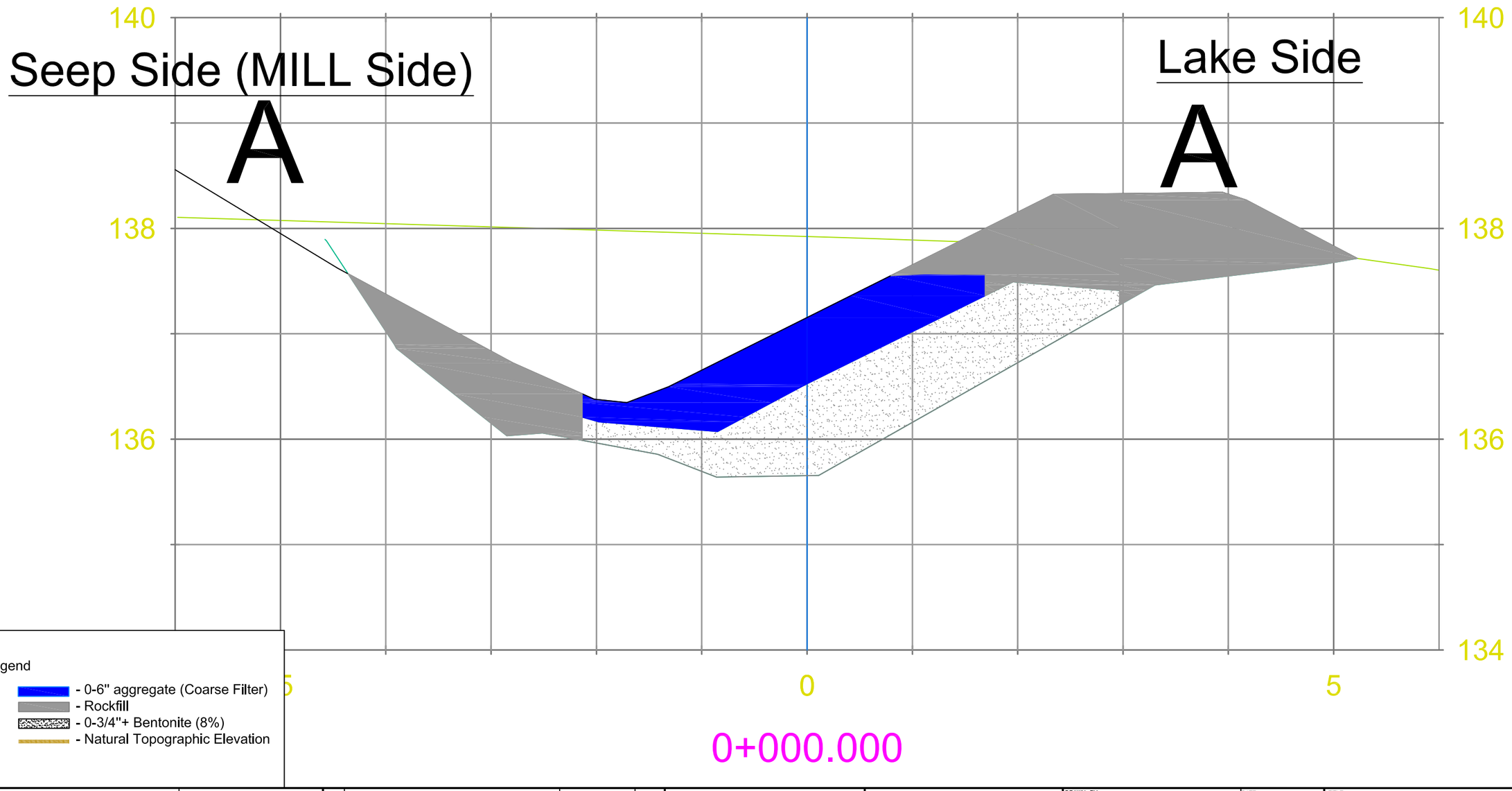
TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
MILL SEEPAGE
INTERCEPTION TRENCH
PLAN VIEW

SCALE	FILE
N.T.S.	.DWG

DRAWING NO.	REVISION	SHEET
		7 / 7

E:\MILL TRENCH AS BUILT1.dwg, 20 Mai 2014

FORMAT ANSI B – LANDSCAPE



TITLE	# DWG	REV	DESCRIPTION	DATE	BY

REFERENCE DRAWINGS

REVISIONS

AGNICO EAGLE
MEADOWBANK

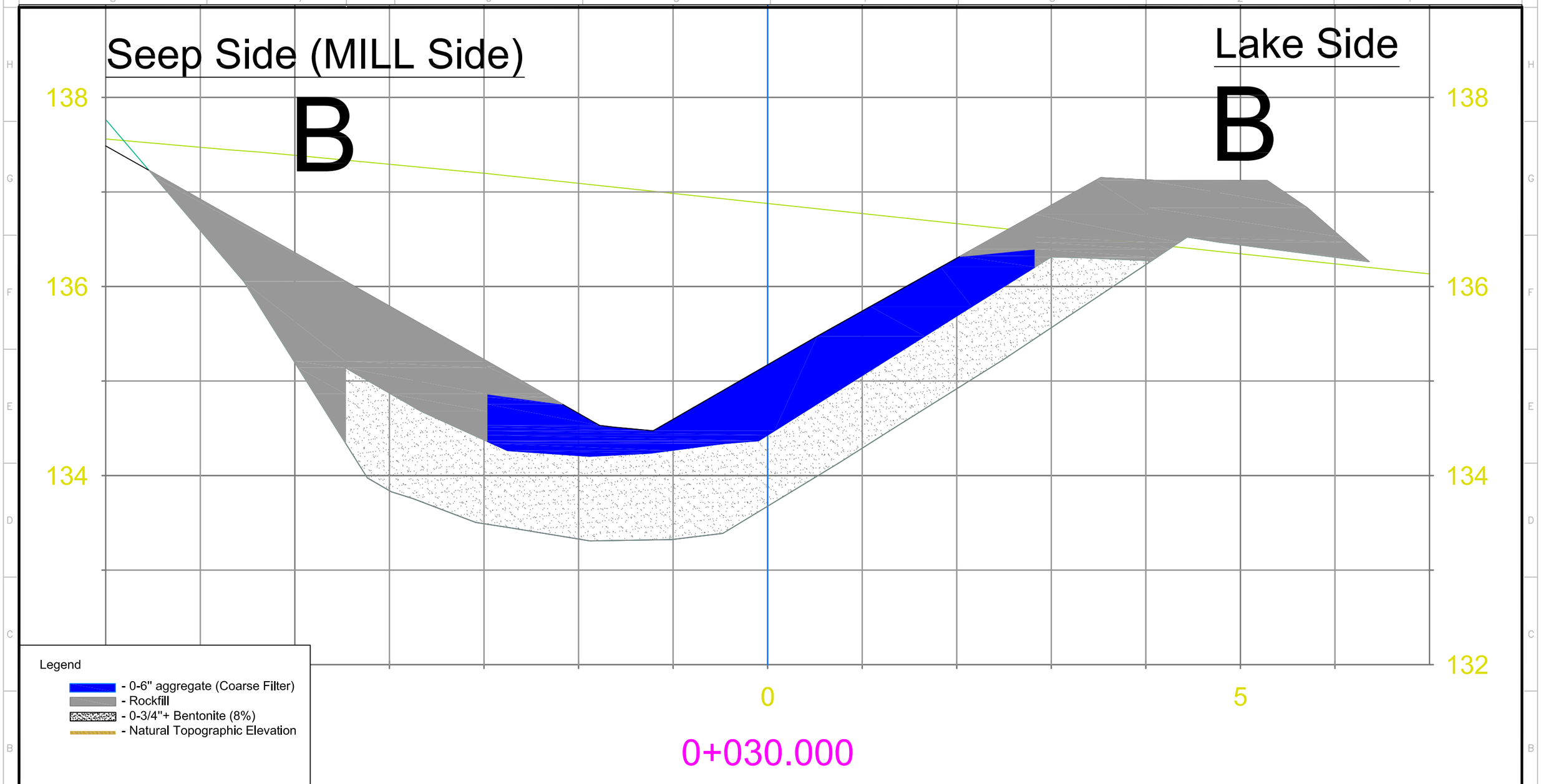
DRAWN BY	ROBERT CLOUATRE	DATE	15–05–2014
CHECKED BY			
APPROVED BY			
PROJECT NO.			
DATE			

TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
MILL SEEPAGE
INTERCEPTION TRENCH
SECTION A–A'

SCALE	FILE		
N.T.S.	.DWG		
DRAWING NO.		REVISION	SHEET
			2 / 7

E:\MILL TRENCH AS BUILT1.dwg, 20 Mai 2014

FORMAT ANSI B – LANDSCAPE



TITLE	# DWG	REV	DESCRIPTION	DATE	BY

REFERENCE DRAWINGS

REVISIONS

AGNICO EAGLE
MEADOWBANK

DRAWN BY	ROBERT CLOUATRE	DATE	15-05-2014
CHECKED BY			
APPROVED BY			
PROJECT NO.			
DATE			

TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
MILL SEEPAGE
INTERCEPTION TRENCH
SECTION B–B'

SCALE	FILE	REVISION	SHEET
N.T.S.	.DWG		3 / 7

DRAWING NO.

E:\MILL TRENCH AS BUILT1.dwg, 20 Mai 2014

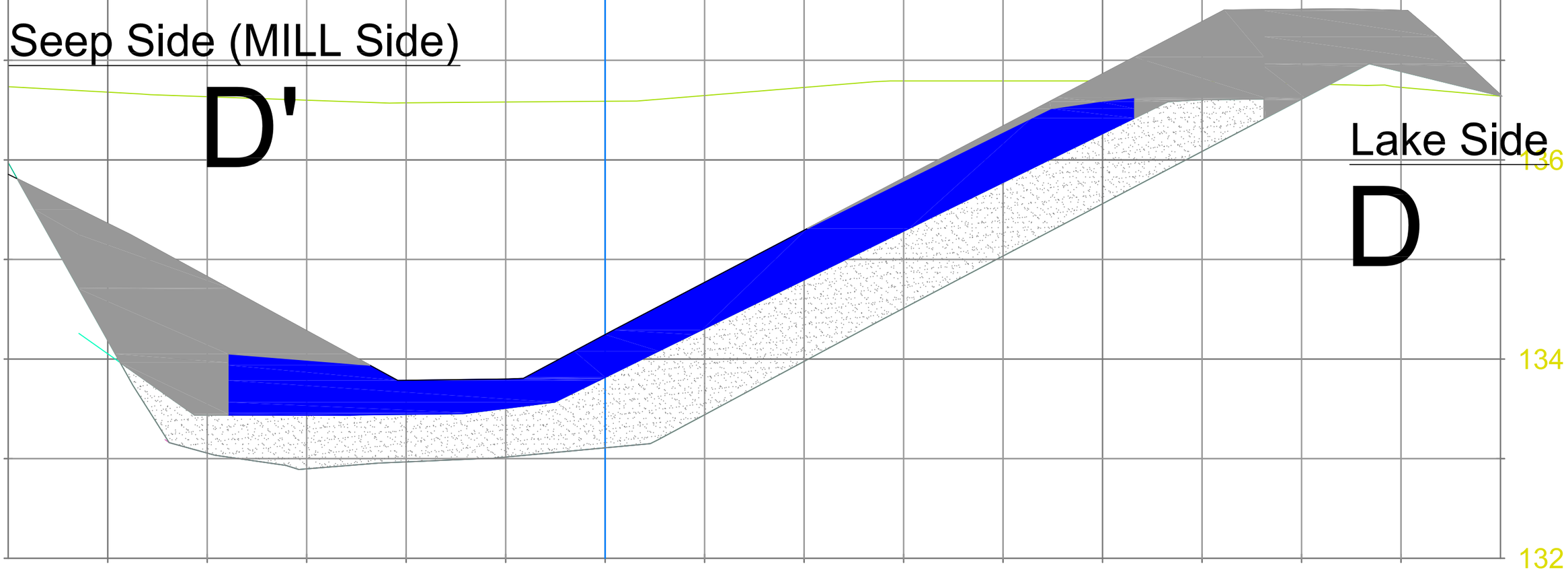
FORMAT ANSI B – LANDSCAPE

Seep Side (MILL Side)

D'

Lake Side

D



0+070.000

Legend

- 0-6" aggregate (Coarse Filter)
- Rockfill
- 0-3/4"+ Bentonite (8%)
- Natural Topographic Elevation

TITLE	# DWG	REV	DESCRIPTION	DATE	BY

REFERENCE DRAWINGS

REVISIONS

AGNICO EAGLE
MEADOWBANK

DRAWN BY	ROBERT CLOUATRE	DATE	15-05-2014
CHECKED BY			
APPROVED BY			
PROJECT NO.			
DATE			

TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
MILL SEEPAGE
INTERCEPTION TRENCH
SECTION D–D'

SCALE	FILE
N.T.S.	.DWG

DRAWING NO.	REVISION	SHEET
		5 / 7

E:\MILL TRENCH AS BUILT1.dwg, 20 Mai 2014

APPENDIX D
JOB HAZARD ANALYSIS

AGNICO EAGLE
MEADOWBANK

JOB HAZARD ANALYSIS WORKSHEET

Form

DRAFT Rev 0

FACILITY / SITE:	Meadowbank	**DATE:**	09-02-2014
DEPARTMENT:	ENG/ENV/MINE/SITE SERVICE/ ELEC	**REVIEW DATE(S):**	As needed
JOB BEING ANALYSED:	Drilling Investigation – Assay Road Leakage	**TEAM LEADER:**	Tom Thomson/ Ryan VanEngen/ Jeff Pratt

Step	Describe Job Steps	Hazards/Potential Incidents	Risk Control Methods Required
	List the natural steps of the job (not too broad and not too fine)	*What can happen at each step? Can an employee be struck by/caught on/contacted by/struck against/contact with/caught between?*	*Describe how hazards will be managed or removed. Consider elimination/substitution, engineering controls, administrative controls, personal protective equipment.*
1	Check the bootlegs before stake out of the holes.	1.1 Hit an old drilled hole.	1.1 Surveyor will validate the position of the holes to be drilled to ensure that there are no old holes in the vicinity of them. If yes, the regulation 14.52 of the mine act should then be apply (No drilling to be conducted within 1 m. of a bootleg)
2	Remove snow from drill locations.	2.1 Get equipment stuck, in deep snow 2.2 Slip, trips, and Falls in deep snow.	2.1 Site Services will remove snow a day or two prior to the drill program along mill, leach pad and tundra locations. 2.2 ensure stable footing and use proper ppe
3	Close the Road.	3.1 Equipment going through the road while drilling. 3.2 Access for emergency vehicles in assay lab and mill	3.1 Site service will close the road before staking out the holes. Site service will send an e-mail to all Meadowbank about the closure of the road. 3.2 Pick up trucks w keys will be placed and red-tap will be installed to indicate road closure.
4	Stake out the holes and electrical cables (surveyor)	4.1 Slips Trips and Falls 4.2 Weather – dress accordingly and take necessary breaks to warm up	4.1 Watch footing. 4.2 See Cold weather Manual.
5	Power off on electrical cable close to the drilling area	5.1 **Electrocution - death**	5.1 Power will be shut-off by electrical group and the **Driller will lockout the power supply before drilling.** *NOTE: If electrical group is unavailable to shut off power, drilling in the vicinity of power lines will

			not occur. Drilling in vicinity of electrical lines will be put off until February 24th. Electrical department is aware of the plan and will assist Environment on February 24th with power shut down
6	Drilling	6.1 Dust and potential exposure to CN gases and liquids 6.2 Electrical cables and building 6.3 Communication cable 6.4 Grounding cable 6.5 Noise 6.6 Working outside mill doors	6.1 Wear dust mask at all time when close to the drill (within 10 meters) and ensure multi gas vapour cartridges are used; wear Tyvek suits, nitrile gloves and goggles at all times; use mill decontamination area at all times; no eating or drinking while near the contamination site. Be sure to take your time and stay warm under cold conditions – use decontamination for warming up. Wash-up after work is complete. 6.2 Underground electrical cable to be stake-out by surveyor. Power cable to be power-off before drilling. Minimal distance between a hole and an electrical cable fix at 3 meters. Before starting drilling, the Environmental Technician in charge will have to wait for the confirmation from the electrical group that the power has been shut down and driller is locked out the power supply. **All work near electrical cable will be completed on February 24th** 6.3 Minimal distance between a hole and a communication cable fix at 3 meters. 6.4 Minimal distance between a hole and a grounding cable fix at 3 meters if possible but must be greater than 1.5 meters. 6.5 Wear hearing protection at all time when close

			to the drill (within 10 meters) 6.6 When drilling outside any of the access doors to the mill the inside of the man door or overhead door will need to be taped off with RED DANGER TAPE, so no one exits the door. This will be completed and coordinated with Mill employees.
7	Moving the drill in between each holes	7.1 Collision in between drill and Environment technician 7.2 Overhead collisions and drill mast balance issues	7.1 Always have a good communication between the driller and the Environment Technician when moving. Communication will be on Surface Channel 5 or with loud verbal communication. Environment technician should always be at a minimal distance of 10 meters of the drill when moving. 7.2 Ensure mast of drill is in a safe position while moving.
8	Environment technician drilling follow-up	8.1 Heavy equipment running (drill) that could injure the Environment Technician.	8.1 Always keep a minimal distance of 5 meters from the drill when drilling. Always have good communication between the driller and the Environment Technician when drilling. Communication will be on Surface Channel 5 or loud verbal communication.
9	Sample of water/cuttings (Environment Technician)	9.1 Heavy equipment running (drill) that could injure the Environment Technician. 9.2 DUST 9.3 CN gases or liquid contaminate exposure	9.1 The drill must stop any activity when the Environment Technician will perform his sampling. Always have a good communication between the driller and the Environment Technician when drilling. Communication will be on Channel 5. 9.2 Fine samples will contain dust that could potentially contain Asbestos, so a half mask must be worn when sampling.

			9.3 Use Tyvek suit at all times, nitrile gloves, goggles and face mask with multi gas vapour cartridges. Be sure to use decontamination area and wash up after work is completed.
10	Fill-up of the holes with steaming	10.1 Heavy equipment running (loader); 10.2 Lifting and digging with hand held shovel	10.1 A spotter should be there at all time when the loader will perform is job. The Road will remain closed at that time as well. 10.2 Use proper techniques for shoveling and stay within your means. If needed a loader could be made available around the mill. On the tundra, it is preferable to complete the filling by hand to avoid disturbing the tundra.
11	Turning power back after drilling near electrical cable is completed	11.1 Electrical hazard	11.1 Before putting the power back, the Environmental Technician in charge will advise the electrical group that the drilling is completed in the vicinity of the electrical cable. The driller will then remove lock from lock out.
12	Keep departments aware of drilling plan	12.1 Create a busy work area with too many groups working in one area. 12.2 Create a stop in production for mill if certain areas are blocked off and they cannot plan around it.	12.1 Relay work locations at morning management meeting to all departments. ~~12.2 Attend Mill morning meeting 7:15 a.m. in mill boardroom to relay the drill locations for the day.~~

AGNICO EAGLE
MEADOWBANK

JOB HAZARD ANALYSIS WORKSHEET

Form

DRAFT Rev 0

Permits Required (check all that apply)

LOTO:	X	Confined Space	
Hot work		Pre Excavation	Review Drilling pattern and follow it. Meet with Mill and Electrical department.
Electrical Work		Lift Permit	

PPE (check all that apply)

Safety Glasses	X	Safety Boots	
Hardhat	X	Face shield	
Gloves	X	Welding helmet	
Kevlar Gloves		Earplugs X	
Chemical gloves		Ear muffs	
Apron		Chemical clothing	Tyvek suits
Goggles		Respirator X	Half mask respirator with P100 filters if exposed to dust. 6000 3m multigas and goggles

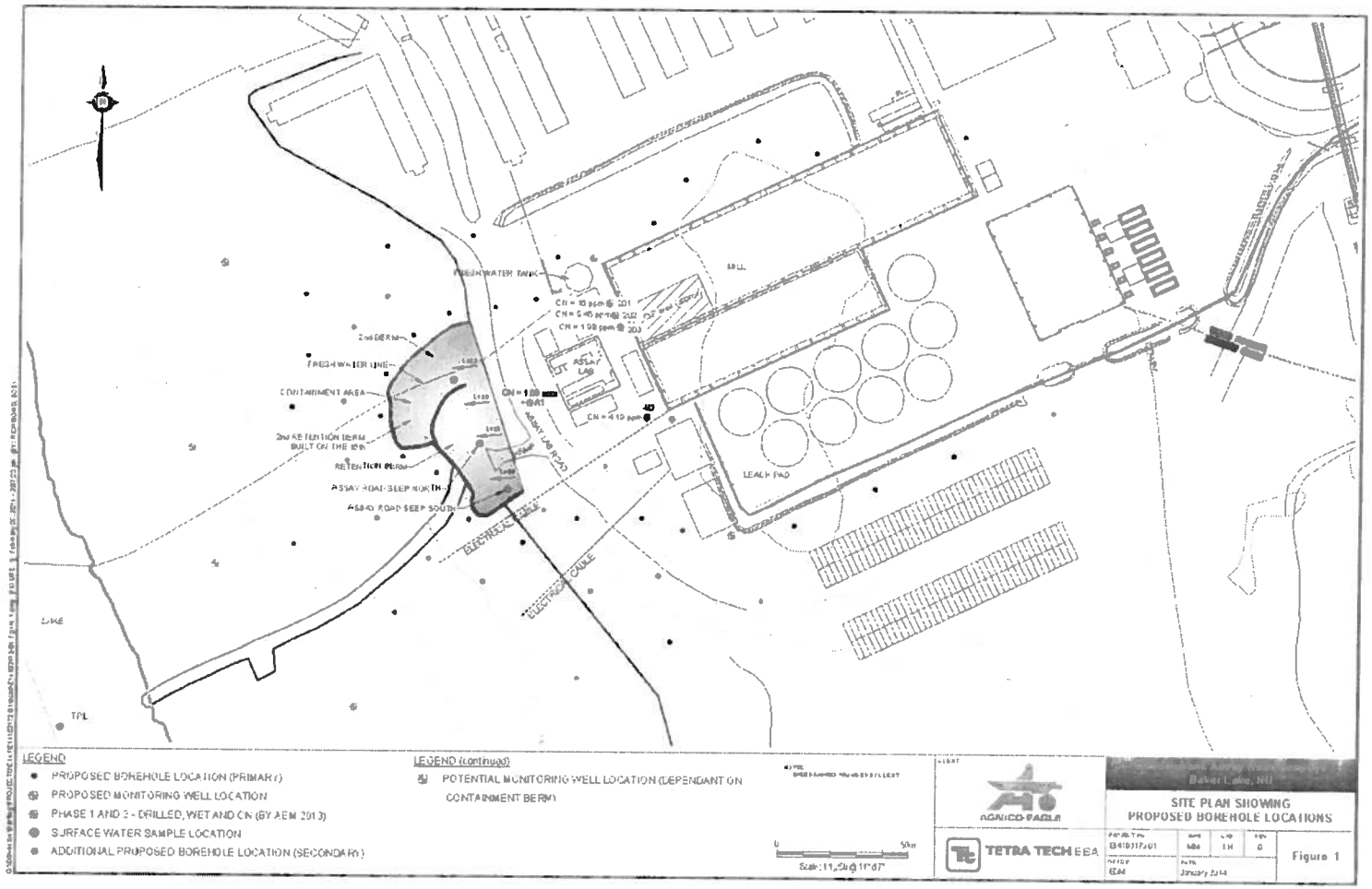
Emergency Information :

Evacuation Route:	
Evacuation Signal:	Fire alarm or While on channel 5 switch to Channel 3 "Code 1, Code 1, Code 1"
Assembly Point:	Arctic corridor
Location of Eyewash/shower:	
Emergency phone number:	6911
First aid location:	Medical Center

Note: LOTO acronym for Lock out tag out

Team Member	Tom Thomson	Signature	
Team Member	Tyrel Hemsley	Signature	Tyrel Hemsley Feb 21/14
Team Member	Jon Oliver	Signature	
Team Member	STEPHEN POTVIN	Signature	
Team Member	DOUGLAS PICARD	Signature	
Team Member	Martin Thériault Médérick Gagnon	Signature	

Team Member		Signature	
Supervisor	RYAN VANENGEN	Signature	
H&S Coordinator		Signature	
H&S Superintendent		Signature	



APPENDIX E
GROUND TEMPERATURE DATA

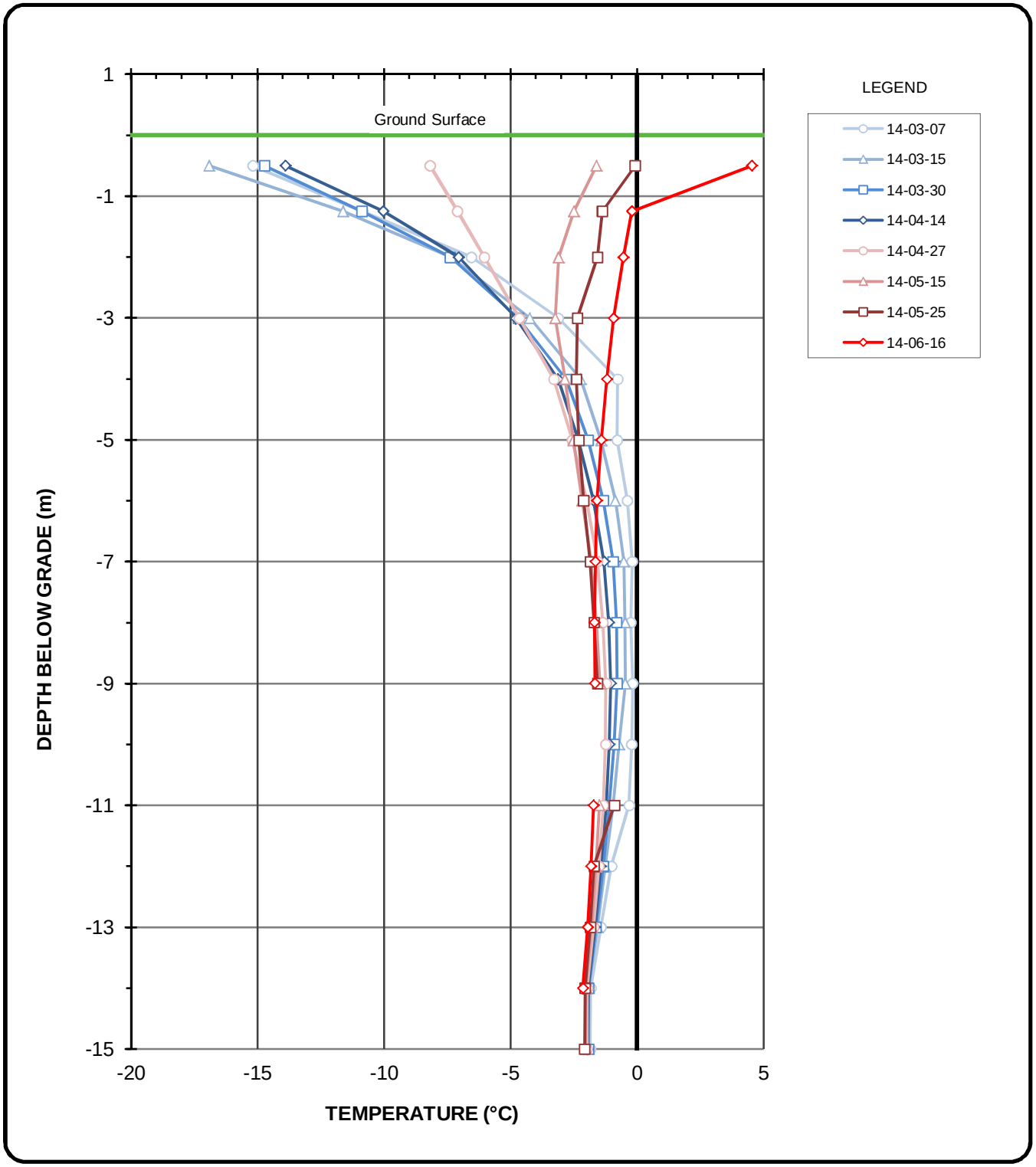
THERMISTOR STRING CALIBRATION

Project:	GTC Fabrication	Thermistor String No.:	2496
Project No.:	E14103172-01	Client String No.:	
Client:	Agnico-Eagle Mines Limited	Location of Installation:	
Attention:		Calibration Temp.:	0.02
Email:		Date of Calibration:	February 18, 2014

Depth of Thermistor (meters)	Colour of Wire	Plug Letter	Calibration Resistance (kΩ)			Temperature (ºC)	Calibration Factor (ºC)
			Trial 1	Trial 2	Trial 3		
0.5	Black	A	16.31	16.32	16.32	0.00	0.02
1.25	Purple	B	16.29	16.30	16.30	0.03	-0.01
2.0	Tan	C	16.32	16.32	16.32	0.00	0.02
3.0	Grey	D	16.33	16.34	16.34	-0.02	0.04
4.0	Red	E	16.34	16.34	16.34	-0.02	0.04
5.0	Brown	F	16.34	16.35	16.35	-0.03	0.05
6.0	Pink	G	16.30	16.31	16.31	0.02	0.00
7.0	Blue	H	16.32	16.32	16.32	0.00	0.02
8.0	Green	J	16.29	16.30	16.30	0.03	-0.01
9.0	Yellow	K	16.37	16.38	16.38	-0.07	0.09
10.0	Silver	L	16.31	16.31	16.31	0.02	0.00
11.0	Orange	N	16.33	16.34	16.34	-0.02	0.04
12.0	Orange/White	P	16.31	16.32	16.32	0.00	0.02
13.0	Black/White	R	16.30	16.30	16.30	0.03	-0.01
14.0	Brown/White	S	16.30	16.31	16.31	0.02	0.00
15.0	Red/White	T	16.35	16.35	16.35	-0.03	0.05
	White	M					

Lead Length: 1.5m

Carrier:		Date Shipped:	
W/B Number:		Shipped by:	


Ground Surface
LEGEND
14-03-07
14-03-15
14-03-30
14-04-14
14-04-27
14-05-15
14-05-25
14-06-16
DEPTH BELOW GRADE (m)
TEMPERATURE (°C)
1
-1
-3
-5
-7
-9
-11
-13
-15
-20
-15
-10
-5
0
5

APPENDIX F

CONSTANT HEAD PERMEABILITY TEST RESULTS, 20 MM CRUSHED AGGREGATE/8% BENTONITE

CONSTANT HEAD HYDRAULIC CONDUCTIVITY TEST REPORT

ASTM D5084

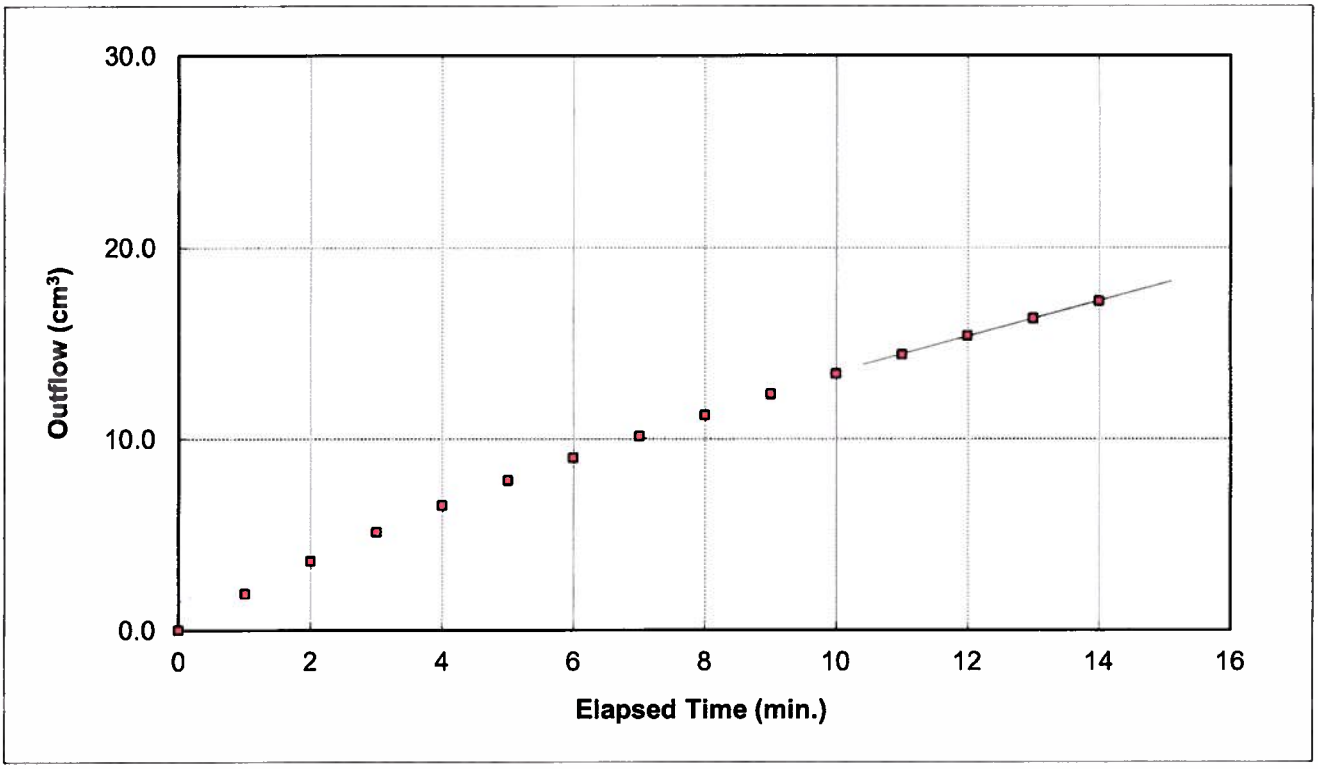
Project:	Assay Road Seepage Trench	Test No.:	P-1
Project No.:	E14103172-01.003	Sample No.:	1
Client:	Agnico-Eagle Mines Ltd.	Sample Depth:	
Attention:		Date Tested:	May 20, 2014
		Tested By:	SK

Soil Description: SAND & GRAVEL, 20 mm max., some silt with 8% bentonite

	Initial	Final
Moisture Content (%)	3.7	12.7
Dry Density (kg/m3)	1875	1875
Compaction SPD (if applicable)	NA	NA

Sample Height =	17.02	cm
Sample Diameter =	9.86	cm
Head Differential =	15	kPa
Flow Q =	0.016	cm^3/sec
Hydraulic Gradient i =	8.99	
Area of Sample A =	76.28	cm^2
Slope =	0.015	cm^3/sec

Hydraulic Conductivity k_{20} = 2.2E-05 cm/sec



Remarks: Sample remolded at moisture content as received

Reviewed By: _____ P.Eng.

TETRA TECH

APPENDIX G

TETRA TECH EBA GENERAL TERMS AND CONDITIONS

GENERAL CONDITIONS

GEOTECHNICAL REPORT

This report incorporates and is subject to these “General Conditions”.

1.0 USE OF REPORT AND OWNERSHIP

This geotechnical report pertains to a specific site, a specific development and a specific scope of work. It is not applicable to any other sites nor should it be relied upon for types of development other than that to which it refers. Any variation from the site or development would necessitate a supplementary geotechnical assessment.

This report and the recommendations contained in it are intended for the sole use of Tetra Tech EBA’s Client. Tetra Tech EBA does not accept any responsibility for the accuracy of any of the data, the analyses or the recommendations contained or referenced in the report when the report is used or relied upon by any party other than Tetra Tech EBA’s Client unless otherwise authorized in writing by Tetra Tech EBA. Any unauthorized use of the report is at the sole risk of the user.

This report is subject to copyright and shall not be reproduced either wholly or in part without the prior, written permission of Tetra Tech EBA. Additional copies of the report, if required, may be obtained upon request.

2.0 ALTERNATE REPORT FORMAT

Where Tetra Tech EBA submits both electronic file and hard copy versions of reports, drawings and other project-related documents and deliverables (collectively termed Tetra Tech EBA’s instruments of professional service), only the signed and/or sealed versions shall be considered final and legally binding. The original signed and/or sealed version archived by Tetra Tech EBA shall be deemed to be the original for the Project.

Both electronic file and hard copy versions of Tetra Tech EBA’s instruments of professional service shall not, under any circumstances, no matter who owns or uses them, be altered by any party except Tetra Tech EBA. Tetra Tech EBA’s instruments of professional service will be used only and exactly as submitted by Tetra Tech EBA.

Electronic files submitted by Tetra Tech EBA have been prepared and submitted using specific software and hardware systems. Tetra Tech EBA makes no representation about the compatibility of these files with the Client’s current or future software and hardware systems.

3.0 ENVIRONMENTAL AND REGULATORY ISSUES

Unless stipulated in the report, Tetra Tech EBA has not been retained to investigate, address or consider and has not investigated, addressed or considered any environmental or regulatory issues associated with development on the subject site.

4.0 NATURE AND EXACTNESS OF SOIL AND ROCK DESCRIPTIONS

Classification and identification of soils and rocks are based upon commonly accepted systems and methods employed in professional geotechnical practice. This report contains descriptions of the systems and methods used. Where deviations from the system or method prevail, they are specifically mentioned.

Classification and identification of geological units are judgmental in nature as to both type and condition. Tetra Tech EBA does not warrant conditions represented herein as exact, but infers accuracy only to the extent that is common in practice.

Where subsurface conditions encountered during development are different from those described in this report, qualified geotechnical personnel should revisit the site and review recommendations in light of the actual conditions encountered.

5.0 LOGS OF TESTHOLES

The testhole logs are a compilation of conditions and classification of soils and rocks as obtained from field observations and laboratory testing of selected samples. Soil and rock zones have been interpreted. Change from one geological zone to the other, indicated on the logs as a distinct line, can be, in fact, transitional. The extent of transition is interpretive. Any circumstance which requires precise definition of soil or rock zone transition elevations may require further investigation and review.

6.0 STRATIGRAPHIC AND GEOLOGICAL INFORMATION

The stratigraphic and geological information indicated on drawings contained in this report are inferred from logs of test holes and/or soil/rock exposures. Stratigraphy is known only at the locations of the test hole or exposure. Actual geology and stratigraphy between test holes and/or exposures may vary from that shown on these drawings. Natural variations in geological conditions are inherent and are a function of the historic environment. Tetra Tech EBA does not represent the conditions illustrated as exact but recognizes that variations will exist. Where knowledge of more precise locations of geological units is necessary, additional investigation and review may be necessary.

7.0 PROTECTION OF EXPOSED GROUND

Excavation and construction operations expose geological materials to climatic elements (freeze/thaw, wet/dry) and/or mechanical disturbance which can cause severe deterioration. Unless otherwise specifically indicated in this report, the walls and floors of excavations must be protected from the elements, particularly moisture, desiccation, frost action and construction traffic.

8.0 SUPPORT OF ADJACENT GROUND AND STRUCTURES

Unless otherwise specifically advised, support of ground and structures adjacent to the anticipated construction and preservation of adjacent ground and structures from the adverse impact of construction activity is required.

9.0 INFLUENCE OF CONSTRUCTION ACTIVITY

There is a direct correlation between construction activity and structural performance of adjacent buildings and other installations. The influence of all anticipated construction activities should be considered by the contractor, owner, architect and prime engineer in consultation with a geotechnical engineer when the final design and construction techniques are known.

10.0 OBSERVATIONS DURING CONSTRUCTION

Because of the nature of geological deposits, the judgmental nature of geotechnical engineering, as well as the potential of adverse circumstances arising from construction activity, observations during site preparation, excavation and construction should be carried out by a geotechnical engineer. These observations may then serve as the basis for confirmation and/or alteration of geotechnical recommendations or design guidelines presented herein.

11.0 DRAINAGE SYSTEMS

Where temporary or permanent drainage systems are installed within or around a structure, the systems which will be installed must protect the structure from loss of ground due to internal erosion and must be designed so as to assure continued performance of the drains. Specific design detail of such systems should be developed or reviewed by the geotechnical engineer. Unless otherwise specified, it is a condition of this report that effective temporary and permanent drainage systems are required and that they must be considered in relation to project purpose and function.

12.0 BEARING CAPACITY

Design bearing capacities, loads and allowable stresses quoted in this report relate to a specific soil or rock type and condition. Construction activity and environmental circumstances can materially change the condition of soil or rock. The elevation at which a soil or rock type occurs is variable. It is a requirement of this report that structural elements be founded in and/or upon geological materials of the type and in the condition assumed. Sufficient observations should be made by qualified geotechnical personnel during construction to assure that the soil and/or rock conditions assumed in this report in fact exist at the site.

13.0 SAMPLES

Tetra Tech EBA will retain all soil and rock samples for 30 days after this report is issued. Further storage or transfer of samples can be made at the Client's expense upon written request, otherwise samples will be discarded.

14.0 INFORMATION PROVIDED TO TETRA TECH EBA BY OTHERS

During the performance of the work and the preparation of the report, Tetra Tech EBA may rely on information provided by persons other than the Client. While Tetra Tech EBA endeavours to verify the accuracy of such information when instructed to do so by the Client, Tetra Tech EBA accepts no responsibility for the accuracy or the reliability of such information which may affect the report.

Appendix D

November 28th, 2013, Meadowbank Annual report workshop minutes

AGNICO EAGLE

AANDC, EC, KIA, NWB & AEM – Meadowbank Annual Report Review

Date: November 28, 2013 – 14:00 – 15:30
Subject: Meadowbank Annual report workshop
Location: Hosted by AEM via WebEx
Participants: AEM - Ryan VanEngen (WebEx host), Stephane Robert, Kevin Buck, Marie-Pier Marcil; NWB – Karen Kharatyan, Phyllis Beaulieu; KIA- Luis Manzo; AANDC- David Abernathy, Murray Ball, Ian Parsons; EC- Anne Wilson, Michael Mohammed

Attachments – see PDF presentation sent to participants on November 27th.

Introduction – Ryan VanEngen

"Round table"; introduction of all parties.

The group reviewed the purpose of the meeting:

- Review Type A water license annual report requirements and the AEM annual report format;
- Respond to issues raised by AANDC in PHC;
- Open discussion about how to proceed with annual reporting.

Review NWB License Requirements for the Annual Report and 2012 Annual Report format– Ryan VanEngen

AEM reviewed the License 2AM-MEA0815: Schedule B – General Condition. This schedule describes what the annual report shall include sections related to Construction, Water, Waste, Spills, Modifications, Monitoring and Closure. Since 2008, AEM has structured the annual report to meet these conditions.

AEM reviewed the Table of Contents of the 2012 annual report and illustrated that all of the requirements stated in Schedule B are presented in the annual report. AEM also stressed the overlap between many of the conditions in the Type A water license, NIRB project certificate, DFO authorizations, KIA annual reporting and federal regulations, that in AEM's opinion are met in the annual report. AEM has provided Table 1.1 that list annual report requirements for all of our licenses and authorizations; this provides a guide to the reader on where to find text that responds to the specific conditions in all of the licenses.

AANDC appreciated the effort that goes into the annual report and feel that AEM is meeting the conditions of the Type A License related to the annual report.

Overall, all participants (EC, AANDC, KIA, NWB) agreed with the format of the 2012 annual report and think it was easy to read.

AANDC suggested that, in consideration of the renewal, terms of reference should be established for the content of the Water Management and Waste Management Plan (separate) (i.e. balance, model predictions, quality info). The main concern from AANDC was that the water management information (balance and water quality predictions) was not presented in the annual report but was found in the SNC (2012) revised water management plan. AANDC noted that their annual reporting concerns and site water management are not related to AEMs freshwater use amendment application and that AANDC does not think the increased freshwater consumption rate will cause significant impacts to local aquatic ecosystem.

Review and discussion of AANDC water license amendment main points/ issues – Ryan VanEngen/ Kevin Buck – refer to AANDC email dated November 18th, 2013.

Issue #1: No stand alone Water Balance and Water Quality Monitoring Reports

Issue #2: Separation of the Mine Waste and Water Management Plan into Two Plans

Issue #3: Part E, Item 7 of the License References a Dated Monitoring Plan

Mine Waste and Water Management Plans

Issue #2: Separation of the Mine Waste and Water Management Plan into two Plans:

AANDC Recommendation stated that the amended water licence should remove any reference made to a Mine Waste and Water Management Plan. Rather, reference should be made to the Mine Waste Management and Water Management Plans that have been implemented by Agnico Eagle. In 2009, Agnico Eagle replaced the 2007 Mine Waste and Water Management Plan with a Mine Waste Management Plan and Water Management Plan. These plans address Part F, Item 16 of the licence. This change in management planning should be incorporated into an amended water licence.

AEM agrees and this will be part of the Type A water license renewal and not part of the actual amendment request.

Water Balance and Water Quality Modeling Reports – Discussion and AEM responses to AANDC's issues.

Issue #1: No stand- alone Water Balance and Water Quality Monitoring Reports

Issue #3: Part E, Item 7 of the License References a Dated Monitoring Plan

Applicable licence conditions were reviewed:

Part E, Item 6: The Licensee shall submit a Water Balance and Water Quality Monitoring Reports to the Board for review, biannually (twice a year) for two years following the commencement of operations and annually thereafter. The Report shall include a comparison of predicted and measured parameters.

AEM presented all of the water balance data (section 4 of the 2012 annual report) and water quality monitoring data (section 8 of the 2012 annual report to meet Part I Schedule I). More specifically collection systems, dewatering, and mine site water quality data are presented in 8.1.2, 8.1.3, and 8.1.5 per type A water license.

Part E, Item 7: The Water Balance and Water Quality Model shall be re-calibrated as necessary in accordance with the action plan outlined in section 3.2.5.2 of the Water Quality and Flow Monitoring Plan (August 2007), and at a minimum of once every two years following the commencement of Operations. The results and implications of the re-calibrated model shall be reported to the Board.

The water balance and water quality model were re-calibrated in 2012 and submitted in the Annual Report.

AANDC appreciated this review but had difficulty to find this information in the2012 annual report and had concerns that the modelling was not meeting the water license.

AEM will improve the reporting on water balance and water quality in our next annual report.

AEM noted that until 2012, the water management was primarily focused on dewatering and managing freshwater use and reclaim water optimization. As Meadowbank has progressed, our water management has transitioned to optimizing our operations and water management. We now have a dedicated team of water management engineers that routinely update the site wide water balance.

Discussion of Water Quality Modeling

AEM explained the reason for a quality model update in the Water license. Water quality modelling assists AEM (and regulators) to ensure the water will meet discharge criteria. This will assist us in - determining pit water quality, planning water treatment, evaluate discharge timing, etc.

AGNICO EAGLE

As we approach pit reflooding we will be reviewing our water quality model annually to ensure that CCME criteria to protect aquatic biota prior to breaching the dikes are met. The SNC forecasted water quality predictions for the pit and the downward trend of 2013 water quality data at ST-21, that will be used to predict future water quality in our 2013 model was reviewed as part of this workshop.

AANDC-requested that during the water license renewal the annual reporting conditions is clarified.

AEM agreed to discuss these issues during the water license renewal. AEM requested clarification on what predictions AANDC want AEM to compare to. AANDC asked to compare with the original model and give explanation in the difference between the two models.

KIA needs a comparison and summary table that states why there are differences. This will assist KIA in making a comparison.

AEM will include this information in our 2013 Annual Report – a comparison of results vs. predicted and offer explanations for significant changes.

KIA had some outstanding issues related to freshwater license amendment 1) waste rock use 2) and the effects of increased waste rock tonnage has on water compensation and water use. AEM and KIA will send a joint letter of agreement on compensation to NWB to allow the license amendment to proceed.

Closing – Stephane Robert

AEM is of the opinion that the annual report requirements of Schedule B of the Type A water license were met. All parties (AANDC, EC, KIA, and NWB) agree with the format and did not have specific suggestions on how to improve the annual report.

Separate from this License amendment, EC and AEM suggest that we host a workshop in mid-January (after Jan 17th) to review our water management plan. This would be a technical meeting to review specifics related to water balance and water quality to improve the revision of the plan. EC suggested that DFO also attend.

ANNUAL REPORT REVIEW AND WORKSHOP- NOV 28TH, 2013 - AEM, AANDC, KIA

AGNICO EAGLE

WORKSHOP AGENDA

Introduction - Stephane Robert

- “Round table” introduction
- Purpose of the meeting

Review NWB License Requirements for the Annual Report – Ryan VanEngen

- Schedule B – General Condition: the annual report shall include…

Review 2012 Annual Report – Ryan VanEngen

- Table of Contents
- Ideas for future reports and discussion

Review and Discussion of AANDC water license amendment main points/ issues – Ryan VanEngen/ Kevin Buck

Closing – Stephane Robert

PURPOSE OF THE WORKSHOP

The purpose for hosting this workshop is mainly to:

- Review Type A water license annual report requirements and the AEM annual report format
- Respond to issues raised by AANDC
- Open discussion

NWB TYPE A LICENSE – SCHEDULE B

Schedule B - General Conditions

The Annual Report referred to in Part B Item 5, shall include:

CONSTRUCTION

1. For the dikes and dams:
   a. An overview of methods and frequency used to monitor deformations, seepage and geothermal responses;
   b. A comparison of measured versus predicted performance;
   c. A discussion of any unanticipated observations including changes in risk and mitigation measures implemented to reduce risk;
   d. As-built drawings of all mitigative works undertaken;
   e. Any changes in the design and/or as-built condition and respective consequences of any changes to safety, water balance and water quality;
   f. Data collected from instrumentation used to monitor earthworks and an interpretation of that data;
   g. A summary of maintenance work undertaken as a result of settlement or deformation of dikes and dams; and
   h. The monthly and annual quantities of seepage from dikes and dams in cubic metres;

WATER

2. Results of lake level monitoring conducted under the protocol developed as per Part D Item 11.

3. Summary of reporting results for the Water Balance Water Quality model and any calibrations as required in Part E Items 6 and 7.

4. The bathymetric survey(s) conducted prior to each year of shipping at the Baker Lake Marshalling Facility;

WASTE

5. Geochemical monitoring results including:
   a. Operational acid/base accounting and paste pH test work used for waste rock designation (PAG and NPAG rock);
   b. As-built volumes of waste rock used in construction and sent to the Waste Rock Storage Facilities with estimated balance of acid generation to acid neutralization capacity in a given sample as well as metal toxicity;
   c. All monitoring data with respect to geochemical analyses on site and related to roads, quarries, and the All Weather Access Road;
   d. Leaching observations and tests on pit slope and dike exposure;
   e. Any geochemical outcomes or observations that could imply or lead to environmental impact;

   f. Geochemical data associated with tailings solids, tailings supernatant, cyanide leach residue, and bleed from the cyanide destruction process including an interpretation of the data; and
   g. Results related to the road quarries and the All Weather Private Access Road.

6. Volumes of waste rock used in construction and placed in the Rock Storage Facilities;

7. An update on the remaining capacity of the Tailings Storage Facility;

8. Summary of quantities and analysis of seepage and runoff monitoring from the landfills;

9. A summary report of solid waste disposal activities including monthly and annual quantities in cubic metres of waste generated and location of disposal;

10. Report of Incinerator test results including the materials burned and the efficiency of the Incinerator as they relate to water and the deposit of waste into water;

SPILLS

11. A list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up action taken;

MODIFICATIONS

12. A summary of modifications and/or major maintenance work carried out on all water and waste related structures and facilities;

MONITORING

13. The results and interpretation of the Monitoring Program in accordance with Part I and Schedule I;

14. The results of monitoring under the AEMP;

15. Results of monitoring pursuant to the Fault Testing and Monitoring Plan (August 2007);

CLOSURE

16. A summary of any progressive closure and reclamation work undertaken including photographic records of site conditions before and after completion of operations, and an outline of any work anticipated for the next year, including any changes to implementation and scheduling;

agr

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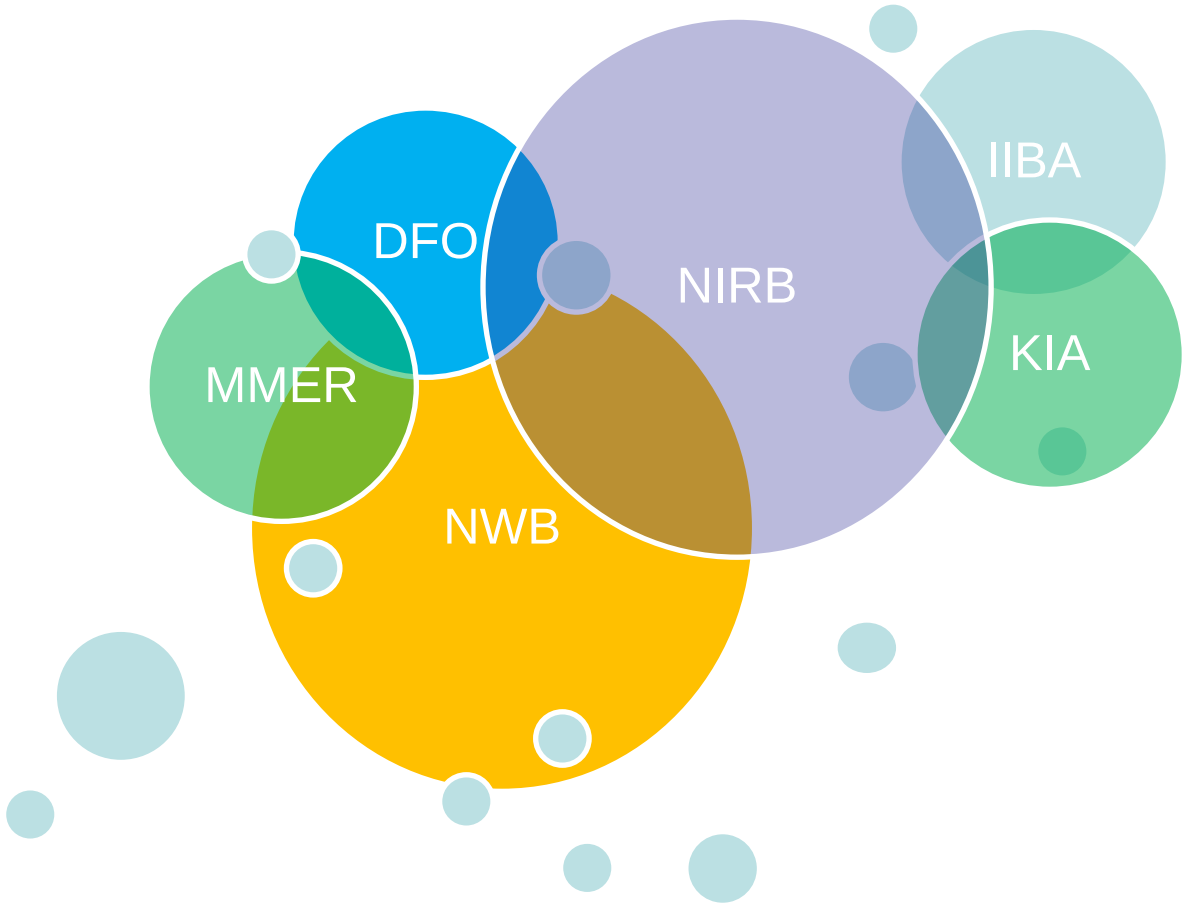
Meadowbank Gold Project - 2012 Annual Report

MERGING NWB, NIRB, KIA, & DFO ANNUAL REPORT REQUIREMENTS



AEM ANNUAL REPORT - TABLE 1.1 - EXAMPLE

AGNICO EAGLE

Table 1.1: List of Reporting Requirements

Authorization Reference	Reporting Requirement	Report Section
NIRB Project Certificate No.004 Condition 4	Take prompt and appropriate action to remedy any noncompliance with environmental laws and regulations and/or regulatory instruments, and shall report any non compliance as required by law immediately and report the same to NIRB annually.	11.2
NIRB Project Certificate No.004 Condition 8	Continue to undertake semi-annual groundwater samples and re-evaluate the groundwater quality after each sample collection; report the results of each re-evaluation to NIRB's Monitoring Officer, INAC and EC	8.1.9
NIRB Project Certificate No.004 Condition 15	Within two (2) years of commencing operations re-evaluate the characterization of mine waste materials, including the Vault area, for acid generating potential, metal leaching and non-metal constituents to confirm FEIS predictions, and re-evaluate rock disposal practices by conducting systematic sampling of the waste rock and tailings in order to incorporate preventive and control measures into the Waste Management Plan to enhance tailing management during operations and closure; results of the re-evaluations shall be provided to the NWB and NIRB's Monitoring Officer	5.1
NIRB Project Certificate No.004 Condition 19	Report to NIRB's Monitoring Officer for the annual reporting of freezeback effectiveness.	5.3.3
NIRB Project Certificate No.004 Condition 23	Ensure that water quality monitoring performed at locations within receiving waters that allow for an assimilative capacity assessment of concern to regulators, be carried out by an independent contractor and submitted to an independent accredited lab for analysis, on a type and frequency basis as determined by the NWB; results of analysis shall be provided to the NWB and NIRB's Monitoring Officer	8.1.13
NIRB Project Certificate No.004 Condition 29	Report to NIRB if and when [Cumberland] develops plans for an expansion of the Meadowbank Gold Mine, and in particular if those plans affect the selection of Second Portage Lake as the preferred alternative for tailings management	11.6
NIRB Project Certificate No.004 Condition 32e	Prior to opening of the road, and annually thereafter, advertise and hold at least one community meeting in the Hamlet of Baker Lake to explain to the community that the road is a private road with non-mine use of the road limited to approved, safe and controlled use by all-terrain-vehicles for the purpose of carrying out traditional Inuit activities.	11.3.2
NIRB Project Certificate No.004 Condition 32f	Place notices at least quarterly on the radio and television to explain to the community that the road is a private road with non-mine use of road limited to authorized, safe and controlled use by all-terrain-vehicles for the purpose of carrying out traditional Inuit activities.	11.3.2
NIRB Project Certificate No.004 Condition 32g	Record all authorized non-mine use of the road, and require all mine personnel using the road to monitor and report unauthorized non-mine use of the road, and collect and report this data to NIRB one (1) year after the road is opened and annually thereafter.	11.3.1
NIRB Project Certificate No.004 Condition 32h	Report all accidents or other safety incidents on the road, to the GN, KivIA [KIA], and the Hamlet immediately, and to NIRB annually.	11.3.2

AEM ANNUAL REPORT - TABLE 1.1 - EXAMPLE

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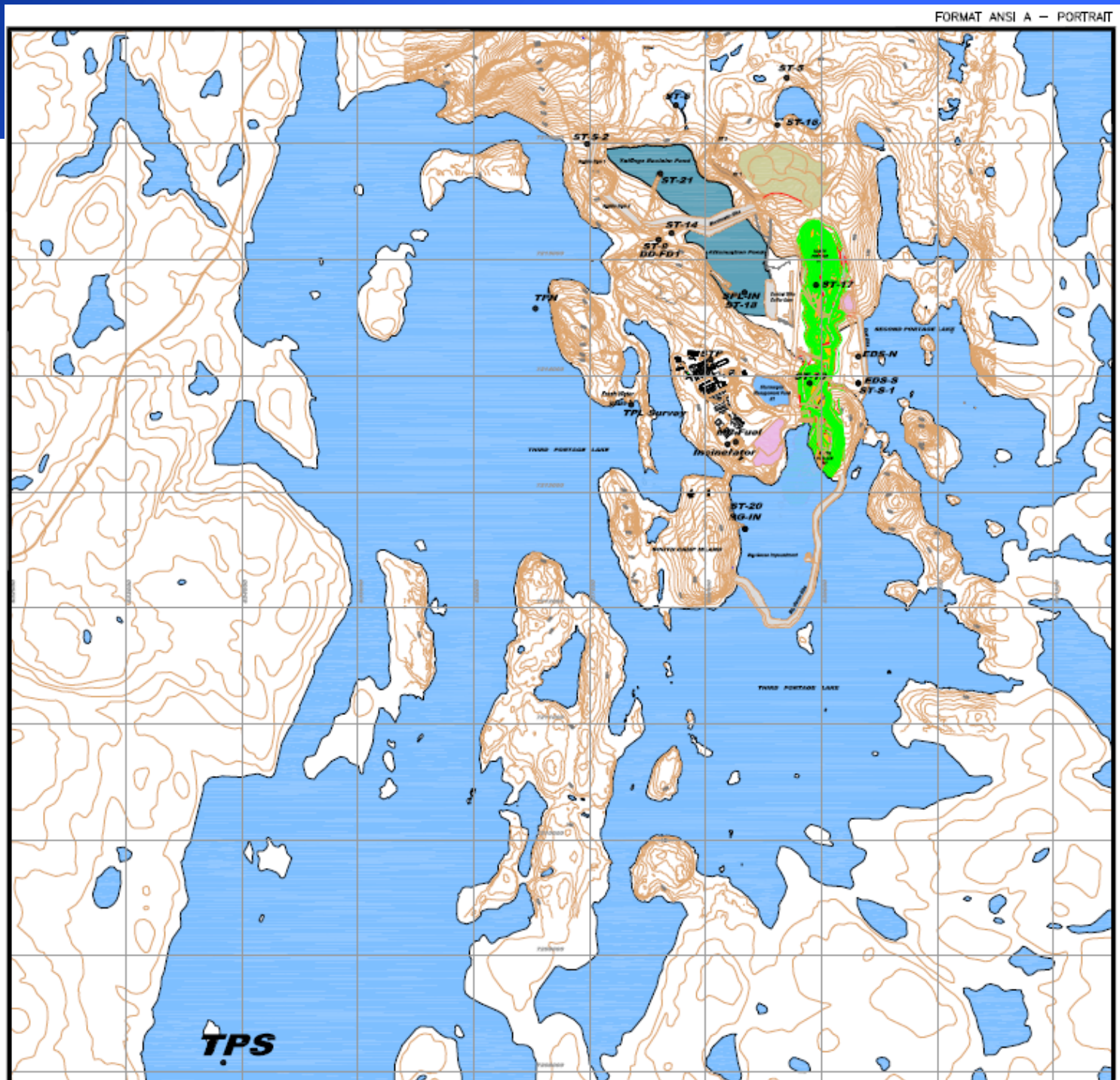
NIRB Project Certificate No.004 Condition 75	Provide a complete list of possible accidents and malfunctions for the Project; it must consider the all-weather road, shipping spills, cyanide and other hazardous material spills, and pitwall/dikes /dam failure, and include an assessment of the accident risk and mitigation developed in consultation with Elders and potentially affected communities	7
NIRB Project Certificate No.004 Condition 80	File annually with NIRB's Monitoring Officer an updated report on progressive reclamation and the amount of security posted, as required by KivIA, INAC, and/or the NWB.	9.2.1
NIRB Project Certificate No.004 Condition 82	Monitor the ingress/egress of ship cargo at Baker Lake and report any accidents or spills immediately to the regulatory agencies as required by law and to NIRB's Monitoring Officer annually.	7
NIRB Project Certificate No.004 Condition 85	Develop a detailed blasting program to minimize the effects of blasting on fish and fish habitat, water quality, and wildlife and terrestrial VECs	8.1.11
NWB 2AM-MEA0815 Schedule B-1	Construction Details for dikes and dams.	3.1
NWB 2AM-MEA0815 Schedule B-2	Results of lake level monitoring conducted under the protocol developed as per Part D Item 11.	4.1
NWB 2AM-MEA0815 Schedule B-3	Summary of reporting results for the Water Balance Water Quality model and any calibrations as required in Part E Items 6 and 7.	4.2
NWB 2AM-MEA0815 Schedule B-4	The bathymetric survey(s) conducted prior to each year of shipping at the Baker Lake Marshalling Facility.	4.3
NWB 2AM-MEA0815 Schedule B-5	Geochemical monitoring results.	3.1
NWB 2AM-MEA0815 Schedule B-6	Volumes of waste rock used in construction and placed in the Rock Storage Facilities.	5.2
NWB 2AM-MEA0815 Schedule B-7	An update on the remaining capacity of the Tailings Storage Facility.	5.3.1
NWB 2AM-MEA0815 Schedule B-8	Summary of quantities and analysis of seepage and runoff monitoring from the landfills.	6.1
NWB 2AM-MEA0815 Schedule B-9	A summary report of solid waste disposal activities including monthly and annual quantities in cubic metres of waste generated and location of disposal.	6.2
NWB 2AM-MEA0815 Schedule B-10	Report of Incinerator test results including the materials burned and the efficiency of the Incinerator as they relate to water and the deposit of waste into water.	6.3
NWB 2AM-MEA0815 Schedule B-11	A list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up action taken.	7
NWB 2AM-MEA0815 Schedule B-12	A summary of modifications and/or major maintenance work carried out on all water and waste related structures and facilities.	11.1
NWB 2AM-MEA0815 Schedule B-13	The results and interpretation of the Monitoring Program in accordance with Part I and Schedule I.	8

SITE FIGURE

Figure- 2



AANDC WATER LICENSE AMENDMENT- MAIN POINTS / ISSUES

Issue #1: No stand alone Water Balance and Water Quality Monitoring Reports

Issue #2: Separation of the Mine Waste and Water Management Plan into Two Plans

Issue #3: Part E, Item 7 of the License References a Dated Monitoring Plan

ISSUE #2

Issue #2: Separation of the Mine Waste and Water Management Plan into Two Plans -

AANDC Recommendation

The amended water licence should remove any reference made to a Mine Waste and Water Management Plan. Rather, reference should be made to the Mine Waste Management and Water Management Plans that have been implemented by Agnico Eagle.

In 2009, Agnico Eagle replaced the 2007 Mine Waste and Water Management Plan with a Mine Waste Management Plan and Water Management Plan. These plans address Part F, Item 16 of the licence … This change in management planning should be incorporated into an amended water licence.

AEM agrees and this will be part of the Type A water license renewal

ISSUE #1 AND #3

Issue #1: No stand alone Water Balance and Water Quality Monitoring Reports

Issue #3: Part E, Item 7 of the License References a Dated Monitoring Plan

WATER BALANCE & WATER QUALITY MODELLING REPORT

AGNICO EAGLE

Applicable licence conditions

Part E, Item 6: The Licensee shall submit a Water Balance and **Water Quality Monitoring Reports** to the Board for review, biannually (twice a year) for two years following the commencement of operations and annually thereafter. The Report shall include a comparison of predicted and measured parameters.

Presented in the AEM annual report

Part E, Item 7: The Water Balance and **Water Quality Model** shall be re-calibrated *as necessary* in accordance with the action plan outlined in section 3.2.5.2 of the Water Quality and Flow Monitoring Plan (August 2007), and at a minimum of once every two years following the commencement of Operations. The results and implications of the re-calibrated model shall be reported to the Board.

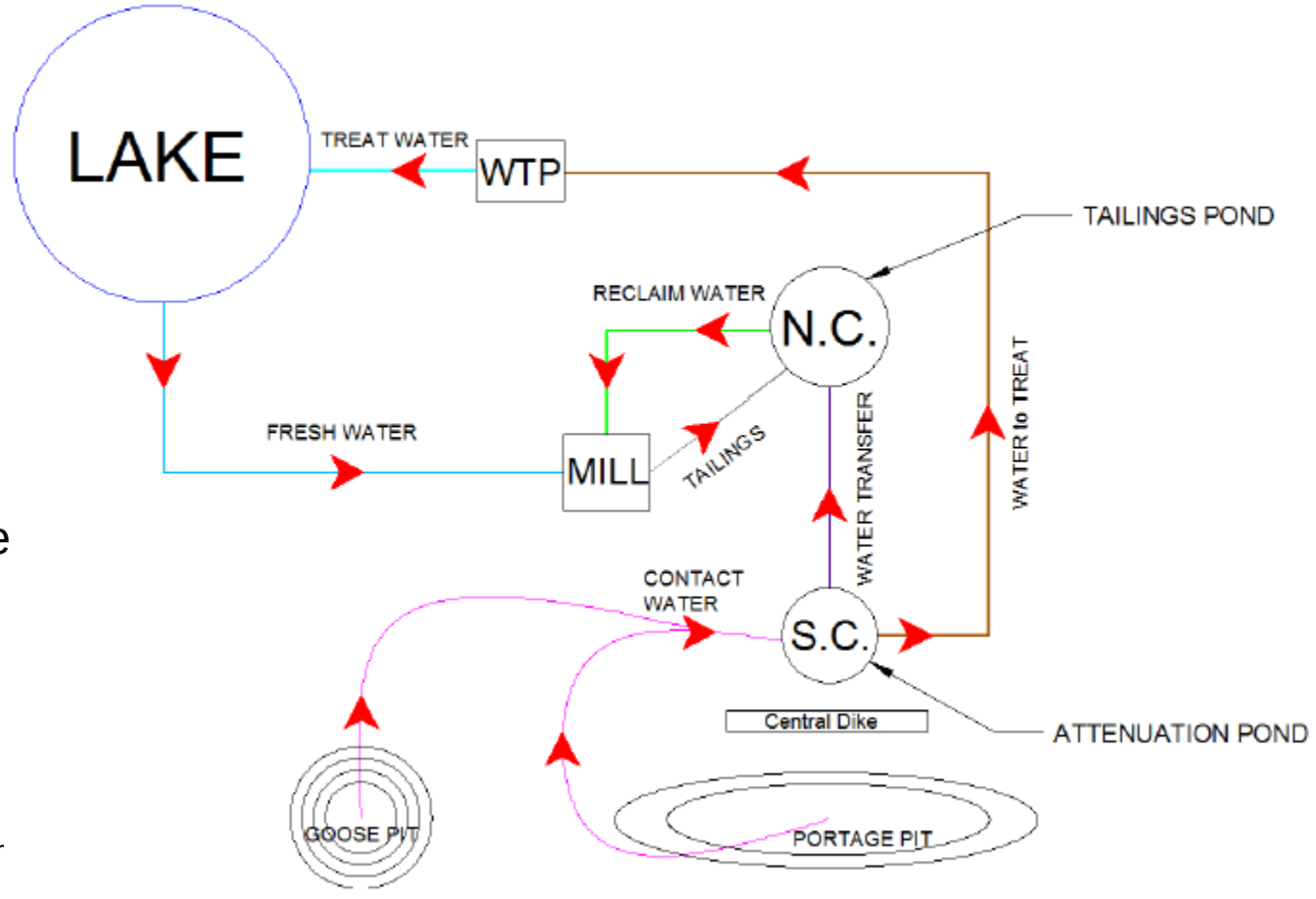
Recently reported in SNC (2012) water management plan. We will complete this annually as requested

Schedule B - General Conditions, Item 3, of the water licence requires Annual Reports to include "summaries of reporting results for the Water Balance and Water Quality model and any calibrations as required in Part E Items 6 and 7."

WATER BALANCE

As Meadowbank has progressed, our water management has transitioned from construction/ dewatering to optimizing our operations and water management .

We now have a dedicated team of water management engineers that routinely update the site wide water balance.



In - house expertise

WATER QUALITY MODELING REVIEW

Why is there a requirement for a water quality model update in the Type A water License?

To develop discharge criteria for the Type A water License.

To assist AEM in ensuring that the water quality will meet discharge criteria. This will assist us in- determining pit water quality, planning water treatment, evaluate discharge timing, etc.

AEM has met Type A License limits prior to discharging.

As we approach pit reflooding we will be reviewing our water quality model annually and ensure we meet CCME limits to protect aquatic biota prior to breaching the dikes.

WATER QUALITY MODELLING REVIEW

AGNICO EAGLE

4.2.2 Forecasted Concentrations in Reclaim Pond: North and South Cells

Table 4-2 summarizes the observations noted in Figures 4-1 to 4-14, specifically for the forecasted concentrations in the Reclaim Pond (North and South cells).

Table 4-2: Summary of Forecasted Concentrations in Reclaim Pond

PARAMETER	FORECASTED CONCENTRATION (mg/L)				WATER LICENSE PART F (CCME) (mg/L)
	RECLAIM POND (NORTH CELL)		RECLAIM POND (SOUTH CELL)		
	July 2012 (initial)	July - August 2014 (end)	July - August 2014	2014 to 2019	
Total Cyanide (CN)	39.26	Decrease to 14	13	Fluctuate from 8 to 11	0.5 (free CN 0.005)
Copper (Cu)	19.58	Increase to 30	25	Fluctuate from 18 to 25	0.1 (0.002)
Iron (Fe)	7.4	Increase to 14	12	Fluctuate from 8.4 to 12	n/a (0.3)
Ammonia (NH_3)	1.0	Increase to 14 (mg N/L)	11 (mg N/L)	Fluctuate from 8 to 11	16 (0.86) (mg N/L)
Nitrate (NO_3)	8.6	Decrease to 6.6 (mg N/L)	5.7 (mg N/L)	Fluctuate from 3.8 to 5.7	20 (2.9) (mg N/L)
Chloride (Cl)	626	Decrease to 490	420	Fluctuate from 420 to 280	1000 (120)
Sulfate (SO_4)	1457	Increase to 1600	1360	Fluctuate from 920 to 1600	Solubility limit of $CaSO_4$ at 10°C ~1800 mg/L

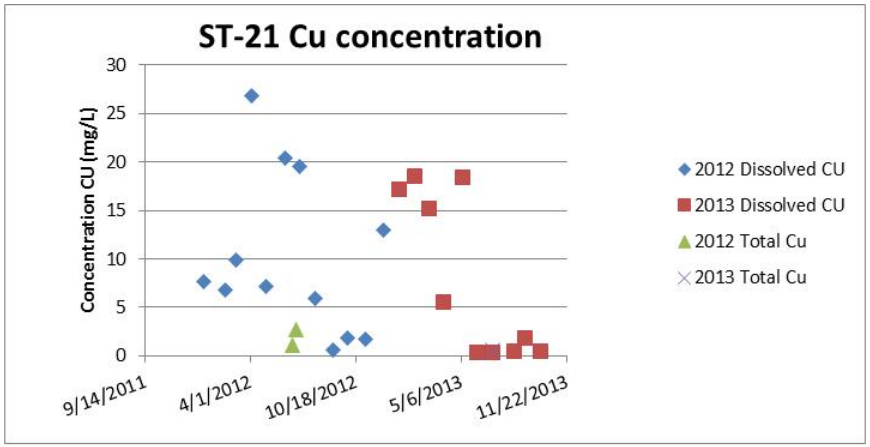
WATER QUALITY MODELLING REVIEW

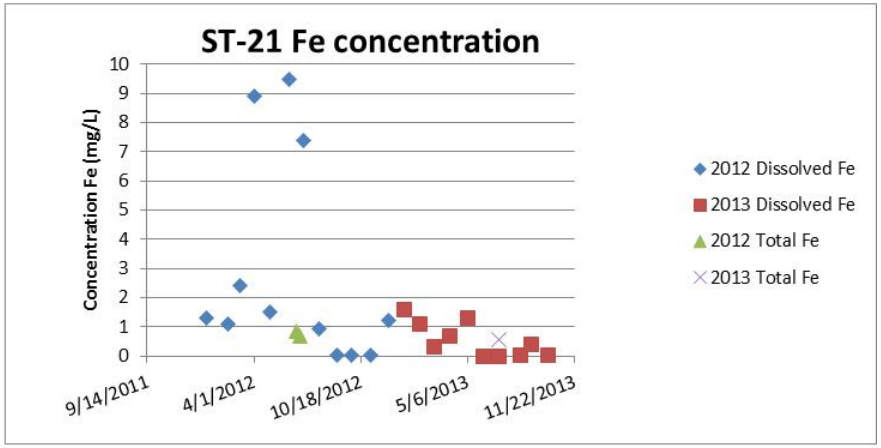
AGNICO EAGLE

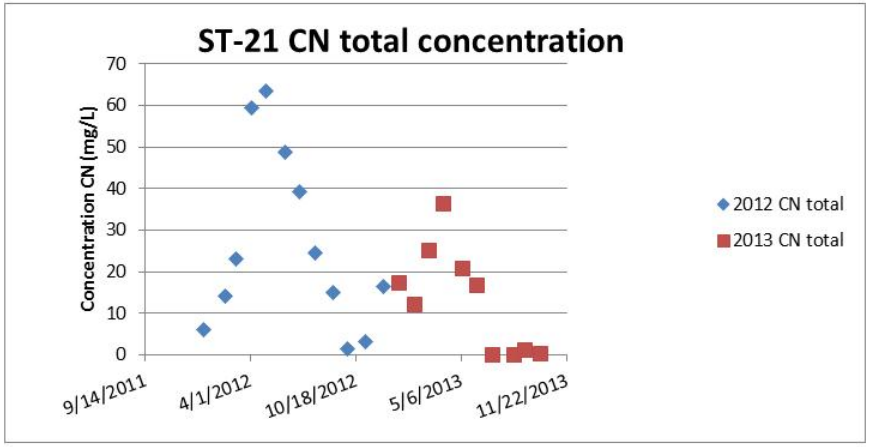
Table 4-3: Summary of Forecasted Concentrations in Portage and Goose Pits

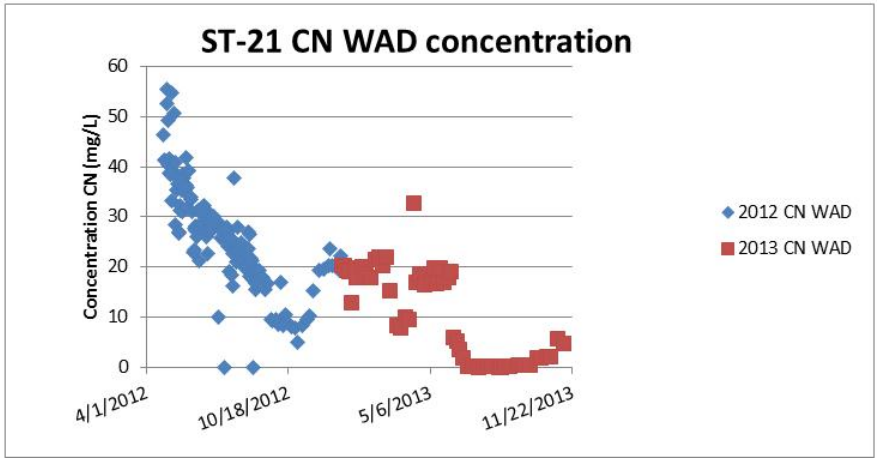
PARAMETER	FORECASTED CONCENTRATION (mg/L)				WATER LICENSE PART F (CCME) (mg/L)
	PORTAGE PIT		GOOSE PIT		
	Mar. 2015 [1] (initial)	Jan. 2025 [2] (end)	Jan. 2017 [1] (initial)	Jan. 2025 [2] (end)	
Total Cyanide (CN)	5	0.63	3.5	1.06	0.5 (free CN 0.005)
Copper (Cu)	10.2	1.4	7.8	2.3	0.1 (0.002)
Iron (Fe)	4.9	0.6	3.3	1.1	n/a (0.3)
Ammonia (NH_3)	4.7	0.6	3.2	1.0	16 (0.86) (mg N/L)
Nitrate (NO_3)	2.3	0.3	1.6	0.5	20 (2.9) (mg N/L)
Chloride (Cl)	117	22	115	37	1000 (120)
Sulfate (SO_4)	560	72	380	120	Solubility limit of $CaSO_4$ at 10°C ~1800 mg/L

EG. RECLAIM WATER QUALITY RESULTS









CONSIDERATIONS FOR FUTURE ANNUAL REPORTS

AEM is of the opinion that we meet the annual report requirements of Schedule B of the Type A water license

Are AANDC and KIA in agreement with the format of the annual report?

Is there a need to Restructure Schedule B?

(This could be done as part of the NWB type A license renewal)

We propose to host a workshop to review our water balance and water quality modeling in the first quarter of 2014.

QUESTIONS, DISCUSSION AND CLOSING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GOLD
COUNCIL
MEMBER

Appendix E

Laboratory Detection Limit

Multilab Direct

Parameters with detection limits for total metals (ICP Scan)			
Parameters	**Detection limit**	**Detection limit**	**Detection limit**
Metals	*** Water (mg/L)**	**Drinking Water (mg/L)**	**Solids (mg/Kg)**
Al	0.006	0.003	0.6
As	0.0005	0.0005	0.05
Sb	0.0001	0.0002	0.1
Ag	0.0002	0.0005	2
Ba	0.0005	0.0002	0.01
Be	0.0005	0.0005	0.1
Bi	0.0005	0.005	0.1
B	0.01	0.006	0.1
Cd	0.00002	0.00005	0.005
Ca	0.03	0.01	1
Cr	0.0006	0.0001	0.05
Co	0.0005	0.0005	0.05
Cu	0.0005	0.0005	5
Sn	0.001	0.0005	0.05
Fe	0.01	0.01	0.5
Mg	0.02	0.01	0.5
Mn	0.0005	0.0003	0.05
Mo	0.0005	0.0002	0.05
Ni	0.0005	0.0005	0.05
Pb	0.0003	0.0005	0.05
K	0.05	0.05	0.5
Se	0.001	0.0006	0.05
Si	0.01	0.01	0.1
Na	0.05	0.02	1
Te	0.0005	0.0005	0.1
Ti	0.01	0.01	0.01
U	0.001	0.0005	1
V	0.0005	0.0002	0.1
Zn	0.001	0.0005	0.05

* Water would include any of the surface, underground or wastewater

Parameters with detection limits for total metals			
Parameters	**Detection limit**	**Detection limit**	**Detection limit**
Metals	*** Water (mg/L)**	**Drinking Water (mg/L)**	**Solids (mg/Kg)**
Hg	0.00001	0.00001	0.01
Sr	0.005	N/D	10
Tl	0.005	N/D	2
W	0.005	N/D	N/D
Li	0.005	0.005	1

Detection limits for inorganic and organic parameters			
Parameters	**Detection Limit**	**Detection Limit**	**Detection Limit**
	*** Water (mg/L)**	**Drinking water (mg/l)**	**Solid (mg/kg)**
% humidity - Water content	NA	NA	0.01%
Acidity	2	2	NA
Agressivity	NA	NA	NA
Alkalinity	2	2	2
Ammonia nitrogen	0.01	0.01	0.1
BHAA	1	1	NA
Bicarbonate (HCO3)	2	2	10
Polychlorinated biphenyls (PCB)	NA	NA	NA
Bromides	0.01	0.01	0.01
Dissolvedd Bromides	0.01	0.01	NA
BTEX	NA	NA	NA
Carbonate (CO3)	2	2	2
Free residual chlorine	0.1	0.1	NA
Total residual chlorine	0.1	0.1	NA
Chloride	0.5	NA	1
Total coliforms	NA	NA	NA
Fecal Colifroms	NA	NA	NA
Volatile organic compounds	NA	NA	NA
Phenolic compounds	NA	NA	NA
Conductivity	1	1	NA
Color	1	1	NA
Free Cyanide	0.005	0.005	0.005
Total Cyanide	0.005	0.005	0.005
BOD5	1	1	NA
COD	2	2	NA
Hardness	1	1	1
E-Coli	NA	NA	NA
Enterococcus	NA	NA	NA
Fluorides	0.02	0.02	1
Granulometry (Sieving tests)	NA	NA	0.01%
Oil and Grease (total)	1	1	80
Hydrocarbons (C10-C50)	0.1	0.1	80
Monocyclic Aromatic Hydrocarbons	NA	NA	NA
Polycyclic Aromatic Hydrocarbons	NA	NA	NA
Petroleum Products Identification (PPI)	NA	NA	NA
Phenol Index (colorimetry)	0.002	0.002	NA
Lixiviation : pH 4.93	NA	NA	NA
Lixiviation CPEU-9	NA	NA	NA
Lixiviation pH : 2.88	NA	NA	NA
Lixiviation SPLP	NA	NA	NA
Lixiviation TCLP	NA	NA	NA
Suspended solids	1	1	NA
Sample weight (grams)	0.01	0.01	NA
NH3	0.05	0.05	NA
NH4	0.05	0.05	NA
Nitrates (NO3)	0.01	0.01	0.01
Nitrites (NO2)	0.01	0.01	0.01
Odor	NA	NA	NA
Orthophosphate (O-P04)	0.01	0.01	0.01
Dissolved Oxygen	NA	NA	NA
Loss on ignition	NA	NA	0.10%
pH	NA	NA	NA
Dissolved Phosphorus	0.01	0.01	NA
Total Phosphorus	0.01	0.01	10
Neutralisation Potential	NA	NA	NA
Acid Generating Potential	NA	NA	NA
Neutralisation Power	NA	NA	NA
Radium (RA 226)	0,002 Becquerels/L	0,002 Becquerels/L	NA
Dryness	NA	NA	0.10%
Dissolved Solids	1	1	NA
Total Solids	1	1	NA
Sulfure	0.01%	0.01%	0.003 % (M-S-1.0)
Sulfur (S)	NA	NA	0.01%
Dissolved sulfur (S)	0.01%	0.01%	NA
Sulfate (SO4)	0.6	0.6	0.01%
Sufites (SO3)	0.1	0.1	NA
Sulfosalts	2	2	NA
Sulfides	0.03	0.03	NA
Total thiosalts	2	2	NA
Thiosulfates (S203)	0.02	0.02	NA
Trihalomethanes (THM)	NA	NA	NA
Turbidity	0,02 NTU	0,02 NTU	NA

*Water would include any surface, underground or wastewater

Quoted Parameters with Detection Limits

Parameter	Method Reference	Report D.L.	Units
Water-Physical Tests			
Hardness (as CaCO3)	APHA 2340B	0.50	mg/L
Water-Anions and Nutrients			
Ammonia, Total (as N)	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC	0.0050	mg/L
Bromide (Br)	APHA 4110 B.	0.050	mg/L
Chloride (Cl)	APHA 4110 B.	0.10	mg/L
Chloride (Cl)	APHA 4110 B.	0.50	mg/L
Fluoride (F)	APHA 4110 B.	0.020	mg/L
Nitrate (as N)	EPA 300.0	0.0050	mg/L
Nitrite (as N)	EPA 300.0	0.0010	mg/L
Orthophosphate-Dissolved (as P)	APHA 4500-P Phosphorous	0.0010	mg/L
Phosphorus (P)-Total	APHA 4500-P Phosphorous	0.0020	mg/L
Phosphorus (P)-Total Dissolved	APHA 4500-P Phosphorous	0.0020	mg/L
Silicate (as SiO2)	APHA 4500-SiO2 E.	0.50	mg/L
Sulfate (SO4)	APHA 4110 B.	0.50	mg/L
Water-Cyanides			
Cyanide, Free	ASTM 7237	0.0050	mg/L
Cyanide, Weak Acid Diss	APHA 4500-CN CYANIDE	0.0050	mg/L
Water-Organic / Inorganic Carbon			
Dissolved Organic Carbon	APHA 5310 TOTAL ORGANIC CARBON (TOC)	0.50	mg/L
Total Organic Carbon	APHA 5310 TOTAL ORGANIC CARBON (TOC)	0.50	mg/L
Water-Total Metals			
Aluminum (Al)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.003	mg/L
Antimony (Sb)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.0001	mg/L
Arsenic (As)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.0001	mg/L
Barium (Ba)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.00005	mg/L
Beryllium (Be)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.0001	mg/L
Bismuth (Bi)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.0005	mg/L
Boron (B)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.01	mg/L
Cadmium (Cd)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.00001	mg/L
Calcium (Ca)-Total	EPA 3005A/6010B	0.05	mg/L
Chromium (Cr)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.0001	mg/L
Cobalt (Co)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.0001	mg/L
Copper (Cu)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.0005	mg/L
Iron (Fe)-Total	EPA 3005A/6010B	0.01	mg/L
Lead (Pb)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.00005	mg/L
Lithium (Li)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.0005	mg/L
Magnesium (Mg)-Total	EPA 3005A/6010B	0.1	mg/L

Quoted Parameters with Detection Limits

Parameter	Method Reference	Report D.L.	Units
Manganese (Mn)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.00005	mg/L
Mercury (Hg)-Total	EPA 245.7	0.000010	mg/L
Molybdenum (Mo)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.00005	mg/L
Nickel (Ni)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.0005	mg/L
Phosphorus (P)-Total	EPA 3005A/6010B	0.05	mg/L
Potassium (K)-Total	EPA 3005A/6010B	0.1	mg/L
Selenium (Se)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.0001	mg/L
Silicon (Si)-Total	EPA 3005A/6010B	0.05	mg/L
Silver (Ag)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.00001	mg/L
Sodium (Na)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.05	mg/L
Strontium (Sr)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.0002	mg/L
Sulfur (S)-Total	EPA SW-846 3005A/6010B	0.50	mg/L
Thallium (Tl)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.00001	mg/L
Tin (Sn)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.0001	mg/L
Titanium (Ti)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.01	mg/L
Uranium (U)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.00001	mg/L
Vanadium (V)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.001	mg/L
Zinc (Zn)-Total	APHA 3030 B&E / EPA SW-846 6020A	0.003	mg/L
Water-Dissolved Metals			
Aluminum (Al)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.001	mg/L
Antimony (Sb)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.0001	mg/L
Arsenic (As)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.0001	mg/L
Barium (Ba)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.00005	mg/L
Beryllium (Be)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.0001	mg/L
Bismuth (Bi)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.0005	mg/L
Boron (B)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.01	mg/L
Cadmium (Cd)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.00001	mg/L
Calcium (Ca)-Dissolved	EPA 3005A/6010B	0.05	mg/L
Chromium (Cr)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.0001	mg/L
Cobalt (Co)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.0001	mg/L
Copper (Cu)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.0002	mg/L
Dissolved Mercury Filtration Location	EPA SW-846 3005A & EPA 245.7		
Dissolved Metals Filtration Location	APHA 3030 B&E / EPA SW-846 6020A		
Dissolved Metals Filtration Location	EPA 3005A/6010B		
Dissolved Metals Filtration Location	EPA SW-846 3005A/6010B		
Iron (Fe)-Dissolved	EPA 3005A/6010B	0.01	mg/L
Lead (Pb)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.00005	mg/L
Lithium (Li)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.0005	mg/L
Magnesium (Mg)-Dissolved	EPA 3005A/6010B	0.1	mg/L

Quoted Parameters with Detection Limits

Parameter	Method Reference	Report D.L.	Units
Manganese (Mn)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.00005	mg/L
Mercury (Hg)-Dissolved	EPA SW-846 3005A & EPA 245.7	0.000010	mg/L
Molybdenum (Mo)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.00005	mg/L
Nickel (Ni)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.0005	mg/L
Phosphorus (P)-Dissolved	EPA 3005A/6010B	0.05	mg/L
Potassium (K)-Dissolved	EPA 3005A/6010B	0.1	mg/L
Selenium (Se)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.0001	mg/L
Silicon (Si)-Dissolved	EPA 3005A/6010B	0.05	mg/L
Silver (Ag)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.00001	mg/L
Sodium (Na)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.05	mg/L
Strontium (Sr)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.0002	mg/L
Sulfur (S)-Dissolved	EPA SW-846 3005A/6010B	0.50	mg/L
Thallium (Tl)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.00001	mg/L
Tin (Sn)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.0001	mg/L
Titanium (Ti)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.01	mg/L
Uranium (U)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.00001	mg/L
Vanadium (V)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.001	mg/L
Zinc (Zn)-Dissolved	APHA 3030 B&E / EPA SW-846 6020A	0.001	mg/L
Water-Plant Pigments			
Chlorophyll a	EPA 445.0	0.010	ug

Methodology

Product	Matrix	Product Description	Analytical Method Reference
ANIONS-BR-IC-VA	Water	Bromide by Ion Chromatography	APHA 4110 B.

This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".

ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.

This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".

ANIONS-CL-LOW-IC-VA	Water	Low level Chloride by Ion Chromatography	APHA 4110 B.

This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".

ANIONS-F-IC-VA	Water	Fluoride by Ion Chromatography	APHA 4110 B.

This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".

ANIONS-NO2-IC-VA	Water	Nitrite in Water by Ion Chromatography	EPA 300.0

This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrite is detected by UV absorbance.