AGNICO EAGLE

January 14th, 2019

Erin Reimer
Technical Advisor I
P.O. Box 534
Arviat, NU
X0C 0E0

Re: Agnico Eagle's response to Meadowbank Gold Project 2017 Annual Report comments

Dear Erin Reimer,

The following information are intended to address the regulator's comments regarding the Meadowbank 2017 Annual Report.

Should you have any questions or require further information, please do not hesitate to contact us at the below.

Regards,
Agnico Eagle Mines Limited – Meadowbank Division

Robin Allard
Robin.allard@agnicoeagle.com
819-759-3555 x 6838
Environment General Supervisor

Marie-Pier Marcil
Marie-pier.marcil@agnicoeagle.com
819-759-3555 x5836
Senior Compliance Technician

cc: Karén Kharatyan, Nunavut Water Board
Richard Dwyer, Nunavut Water Board
Luis Manzo, Kivalliq Inuit Association
Maria Serra, Kivalliq Inuit Association
Sally Wong, Fisheries and Oceans Canada
Chris Spencer, Government of Nunavut
Rachel Théoret-Gosselin, Crown-Indigenous Relations and Northern Affairs Canada
Felexce Ngwa, Crown-Indigenous Relations and Northern Affairs Canada
Georgina Williston, Environment and Climate Change Canada
Melissa Pinto, Environment and Climate Change Canada
Christopher Aguirre, Transport Canada
Peter Unger, Natural Resources Canada
Sandra Slogan, Health Canada

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

AGNICO EAGLE

Table of Contents

1 Government of Nunavut (GN) 5
1.1 Habitat Loss 5
1.2 All-Weather Access Road Ground Surveys 6
1.3 Caribou Monitoring and Project Interaction 7
1.4 Dustfall Monitoring 8
1.5 Acoustic Environment 9
1.6 Wildlife Interactions and Mortalities 12
1.7 Monitoring of Wolverine 13
1.8 Impact to Health Services 15
1.9 Economic Security and Wellbeing 17
2 Fisheries and Oceans Canada (DFO) 18
2.1 Effects Monitoring 18
2.2 Compliance Monitoring 18
3 Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) 19
3.1 General Comments 19
3.2 Quarries 20
3.3 Lake Level Monitoring 20
3.4 Predicted vs. Measured Water Quality 21
3.5 Waste Rock Volume 22
3.6 Tailings Storage Facility (TSF) 23
3.7 Tailings Freezeback and Capping Thickness 23
3.8 Spill Management 25
3.9 Monitoring 26
3.10 Core Receiving Environment Monitoring Program (CREMP) 26
3.11 Portage Rock Storage Facility (ST-16) 31
3.12 All Weather Road (AWAR) and Quarries 32
3.13 Seepage Through Central Dike 33
3.14 Groundwater 33
3.15 Progressive Reclamation – Mine Site 34
3.16 Inspections, Compliance Reports and Non-Compliance Issues 35

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

3.17 Post-Environmental Assessment Monitoring Program (PEAMP) – Evaluation of Impact Predictions 36
3.18 Accuracy of Impact Prediction 36
3.19 Other Considerations 37
3.20 Project Certificate Terms and Conditions, and Commitments 38
3.21 Term and Condition No. 65 39
3.22 Term and Condition No. 68 39
3.23 Appendix A: Edits and Omissions 40
4 Kivalliq Inuit Association (KIA) 41
4.1 General 41
4.2 Section 1: Introduction 42
4.3 Section 2: Summary of Activities – 2018 Activities 42
4.4 Section 2: Summary of Activities – 2018 Mine Plan 43
4.5 Amaruq Exploration Access Road 44
4.6 Section 3: Construction/Earthworks – Dike and Dams 45
4.7 Section 4: Water Management Activities - Lake Level Monitoring 48
4.8 Section 4: Water Management Activities - Water Balance Water Quality Model Reporting Summary 49
4.9 Section 4: Water Management Activities - Predicted vs Measured Water Quality [and Quantity] 51
4.10 Section 5: Waste Rock Management Activities - Geochemical Monitoring 53
4.11 Section 5: Waste Rock Management Activities - Tailings Storage Facility Capacity 57
4.12 Section 5: Waste Rock Management Activities - Tailings Freezeback and Capping Thickness 58
4.13 Section 6: Waste Management Activities - General Waste Disposal Activity 58
4.14 Section 7: Spill Management 60
4.15 Section 7: Spill Management - Landfarm 62
4.16 Section 8: Monitoring - CREMP 65
4.17 Section 8: Monitoring – Vault Attenuation pond discharge 72
4.18 Section 8: Monitoring – East Dike discharge 73

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

4.19 Section 8: Monitoring – EEM Interpretive Report Cycle 2 and EEM Study Design Cycle 3 73
4.20 Section 8: Monitoring – Mine Site Water Quality and Flow Monitoring (and Evaluation of NP2) 74
4.21 Section 8: Monitoring – NP1 Lake 75
4.22 Section 8: Monitoring – Baker Lake Marshalling Facilities 75
4.23 Section 8: Monitoring – Mill Seepage 76
4.24 Section 8: Monitoring – Blast Monitoring 77
4.25 Section 8: Monitoring – AEMP - Potential Sources of Impacts and the Conceptual Site Model (CSM) 77
4.26 Section 8: Monitoring – AEMP - Summary of Results of AEMP-Related Monitoring Programs 77
4.27 Section 8: Monitoring – Air Quality Monitoring 79
4.28 Section 8: Monitoring – Wildlife Monitoring 80
4.29 Section 11: Modifications/General/Other – Inspections, Compliance Reports and Non-compliance Issues 83
4.30 Section 11: Modifications/General/Other – Traditional Knowledge, Consultation with Elders and Public Consultation 83
4.31 Section 12: PEAMP – Aquatic Environment 84
4.32 Section 12: PEAMP – Terrestrial and Wildlife Environment 85

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

AGNICO EAGLE

1 Government of Nunavut (GN)

1.1 Habitat Loss

Concern: In section 3.7 of the Wildlife Monitoring Summary Report, the Proponent has identified that habitat loss "as result of mine site construction to date was 17.8% higher than the FEIS predicted".

The Proponent outlines its management recommendations in section 3.8 of the Wildlife Monitoring Summary Report stating that measures "may involve removal of contaminated soil, placement of stockpiled native soils, reseeding (e.g., native-grass cultivars and forbs such as nitrogen-fixing legumes) and transplanting of vegetation". The Proponent only provides vague descriptions of its possible adaptive management practices. The GN cannot evaluate the Proponent's methods without a clear description of what the Proponent intends to undertake in response to the habitat loss exceedances.

Table 3.4 lists under its "Adaptive Management Implemented" column that management for terrestrial habitat loss is "to be determined following a more inclusive habitat analysis in the 2018 annual report". Waiting until after the 2018 annual report causes an undesirable full year delay in the implementation of management actions.

Habitat loss poses a risk to grazing species such as caribou and muskox in Nunavut. Both of these species are important both economically and culturally to Nunavummiut.

Recommendation 1: The GN recommends that the Proponent conduct an inclusive habitat analysis at the earliest possible date and, in coordination with the GN, develop and implement specific adaptive management measures relating to the exceedances of habitat loss at the Project site.

> ***Agnico Eagle's Response:***
> *Agnico will be completing a comprehensive habitat analysis for the 2018 annual report, which will include all habitat alterations due to mine activities up to December 2018. The ground analysis could not be conducted for the 2017 annual report because the necessary geospatial data (e.g., actual and approved losses of the Phaser Lake extension) were not available. Section 3.6.1 of the annual report indicates, "The Phaser Lake extension was completed with approval from the NIRB and the Nunavut Water Board (NWB); however, the size of the extension area was not available for habitat calculations in this report." Further, Section 3.8 notes, "To better understand the extent of exceedances, all approved mine components (e.g., Phaser Lake extension) need to be included in the habitat analysis. An updated habitat assessment, with all approved extensions, will be included in the 2018 annual report."*

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

1.2 All-Weather Access Road Ground Surveys

Concern: Section 7.4 Methodology of the Proponent's Wildlife Monitoring Summary Report States:

> Beginning in early 2016, road surveys were expanded beyond the AWAR to include the recently completed Vault Haul Road.
>
> The terrain on both sides of the road (to a maximum horizontal distance of approximately 1 km perpendicular from the road edge) is surveyed as the vehicle progresses at a maximum speed of 30 km per hour. The survey team typically includes two observers, one being the driver. For each sighting, the vehicle is safely parked in a road pullout and UTM coordinates are recorded along with the estimated distance of the animal(s) from the road. Where animals are sighted close to roads and a risk of collision with vehicles is possible, the environmental monitor reports the number of animals, location, and direction of travel to the mine radio dispatcher who informs all vehicle operators. In addition, all vehicle operators report ungulates seen along the road to the dispatcher.
>
> Regular data provided to mine site personnel from the Caribou satellite-collaring program (Section 9) are also used to track Caribou movement and potential migration towards the road and mine site.

The road survey design is inadequate for the detection of caribou. Of the two observers, only one will be able to attentively watch for caribou. For safety reasons the vehicle driver must focus on driving and will have a limited ability to observe wildlife. If an additional pass of the road is undertaken then the first pass will influence the results of the second pass and it will not be possible to ascertain duplicate observations of the same animal.

Additionally it is not stated what equipment is being used, if any, to detect wildlife from a vehicle (for example, spotting scopes and/or binoculars).

The road survey alone provides an inadequate indication that a caribou herd deflection has occurred. Road surveys rely on caribou being within clear line of sight. However caribou may be deflected at further distances due to auditory, olfactory, or other unknown reasons.

It is essential to the validity of survey results that adequate observation be undertaken during the AWAR road survey. If the driver is being utilized as an observer, observational power will be weighted towards the passenger side of the road and there will exist the potential for missed observations along the driver's side of the road.

Recommendation 2: The GN recommends that the survey design be updated to include two dedicated observers to ensure that each side of the road is observed with an adequate and equal amount of attention.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Agnico Eagle's Response:

A minimum of two surveyors (i.e., a driver and a passenger) are included in the road surveys. Because the surveys are conducted at a low speed (i.e., 30 km/hr), the driver surveys the left side of the road, while the passenger surveys the right side of the road. Two passes of the road or having two observers are not part of the survey methodology; however, if animals are seen in return transit to the mine, they are recorded on the data sheets. During migration periods, frequency of the survey is increased.

Agnico follow the road surveys methodology for Meadowbank AWAR and Vault/Whale Tail Haul Road describe in Section 3.2.1 of the Terrestrial Ecosystem Management Plan dated June 2018.

Agnico Eagle is considering and doing basic research on alternatives and/or supplement to surveys. The use of enhanced GN collaring data within the Memorandum of Understanding could prove a useful tool in assisting with adaptive management. Furthermore, starting in 2018, Height of Land Surveys are conducted on the Whale Tail Haul Road. Overall, two observers stop at the Height-of-Land (HOL) survey locations for 20 minutes to survey the area, focusing on further field areas (i.e., likely up to 4 to 5 km). HOL survey methodology are discussed in Section 3.2.1 of the Terrestrial Ecosystem Management Plan (June 2018).

Recommendation 3: The GN recommends the implementation of another monitoring method in addition to the road surveys. This would allow the Proponent to detect if caribou are being disturbed by the AWAR before they are within sight of the road observer. The Proponent should work in collaboration with the Department of Environmental regional caribou biologist to devise and implement additional monitoring methods.

Agnico Eagle's Response:

Agnico Eagle is considering and doing basic research on alternatives and/or supplement to surveys. The use of enhanced GN collaring data within the Memorandum of Understanding is a useful tool to detect if caribou are being disturbed by the AWAR before they are within sight of the road observe. As well, constant discussions are held through the Terrestrial Advisory Group (TAG) and its members. The TAG acts as an advisory group to Agnico Eagle and a forum for ongoing cooperation and communication in the review and consideration of environmental effects monitoring, mitigation measures and fulfillment, by Agnico Eagle, of the TEMP and the project certificate terms and conditions, as applicable, relating to the interaction between the Project and the terrestrial environment.

1.3 Caribou Monitoring and Project Interaction

Concern: The Proponent has stated in the executive summary of their Wildlife Monitoring Summary Report that:

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

"Collared Caribou were present predominantly during the fall rut, with some minor presence in late summer, fall, and early winter. . . . No collared Caribou moved around or across the Meadowbank RSA during spring migration."

GN telemetry data shows multiple collared caribou moved across the regional study area (RSA) and all weather access road (AWAR) during the month of May (see Figure 1).

The statements in the executive summary are also inconsistent with those in Section 6.5.4 Caribou and Muskox Protection which states that "[g]roups of 20 or more animals [caribou] were observed at the mine site near the Amaruq Road area in mid-April and early May".

Caribou are a key species in Nunavut ecologically, economically, and culturally. The accurate reporting of caribou movements by project proponents is essential to the continued sustainable management of caribou in Nunavut.

Recommendation 4: The GN requests that the Proponent update its Wildlife Monitoring Summary Report to reflect the movement of collared caribou across and around the Project RSA during the spring migration period.

> ***Agnico Eagle's Response:***
> *Figure 1 provided by the GN for Recommendation 4 refers to caribou collaring data from May 2018, which will be summarized and discussed in the 2018 annual report.*

1.4 Dustfall Monitoring

Concern: Appendix G10 presents the monitoring procedures and results for dust-fall monitoring around the project site. Appendix G11 presents the methods, findings, and discussions of the Proponent's All Weather Access Road (AWAR) dust monitoring and suppression program. The Government of Nunavut (GN) has concerns relating to the placement of air quality monitoring stations within the Project development area (PDA). Figure 1 of App G10 displays the locations of the dustfall monitoring stations, with four stations DF-1 to 4 present.

The measured parameters of each station are presented in App G10 Table 1. Appendix A of App G10 indicates that the predominant wind direction for the Meadowbank site is from the northwest. This is further confirmed by App G11 s. 1.2 which identifies northwest as upwind of the Project location.

The prevalent wind direction means that sampling stations DF-1 and 2 lay upwind of the Project and as such are not ideally placed for analysis of the additional parameters of total suspended solids (TSP), PM10, PM2.5, and NO2.

There are no air quality or dustfall monitoring stations in the vicinity of the Vault pit expansion, or along the haul road running between the vault pit and the Meadowbank Project. Condition 72 of the Project Certificate states that the Proponent will "[i]ncorporate the Government of

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Nunavut Dust Suppression Guidelines issued under the Environmental Protection Act to Cumberland Air Quality Management Plan" Effective analysis of dust suppression techniques is prevented by a lack of dustfall monitoring stations.

Accurate measures of air quality are required for monitoring Project effects. Dust deposition has the potential to damage vegetation through both mechanical damage and through smothering. Dust deposition also has the capacity to impact caribou forage (Chen et al., 2017). Caribou are present seasonally within the Project area and footprint. An accurate measure of a loss of forage is therefore necessary to determine potential Project effects on caribou.

Recommendation 5: The GN recommends that the Proponent update its dustfall monitoring plan to include the measured parameters of TSP, PM10, PM2.5, and NO2 at sampling stations DF-3 and DF-4.

> ***Agnico Eagle's Response:***
> *Agnico Eagle does not consider the addition of sampling stations at DF-3 and DF-4 to be required. The efforts deployed to assess air quality monitoring are, in Agnico Eagle's view, sufficient to capture any exceedances or concerns to guideline and FEIS. It is Agnico's intent to continue to operate as per the Air Quality and Dustfall Monitoring Plan (Version 3, May 2018).*

Recommendation 6: The Proponent shall also add additional air quality station in the vicinity of the project and along the vault pit haul road to ensure adequate monitoring of Project related dust generation.

> ***Agnico Eagle's Response:***
> *Agnico Eagle does not consider the addition of air quality station to be necessary at the aforementioned area. The overall effort deployed around the mine sites are, in Agnico Eagle's view, sufficient to capture any exceedances or concerns to guideline and FEIS. It is Agnico's intent to continue to operate as per the Air Quality and Dustfall Monitoring Plan (Version 3, May 2018).*

1.5 Acoustic Environment

Concern: The Proponent's Annual Report contains some inconsistencies with regards to noise related monitoring in presentation of the results; as well as a lack of details in the discussion of this monitoring.

Appendix G9 concluded that "regular wildlife monitoring (see 2017 Wildlife Summary Report) indicates no exceedances of thresholds related to noise on the mine site (i.e. sensory disturbance) for wildlife." The Wildlife Summary Report does not include any mention of noise impacts, but states that sensory disturbance on ungulates is possible (see Table 10.1: Potential Project Effects, Thresholds, and Results of Monitoring in 2017). The conclusion of no exceedances of thresholds

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

therefore appears unsubstantiated. The Government of Nunavut (GN) has concerns regarding the declaration of a lack of Project effects without substantiating monitoring evidence.

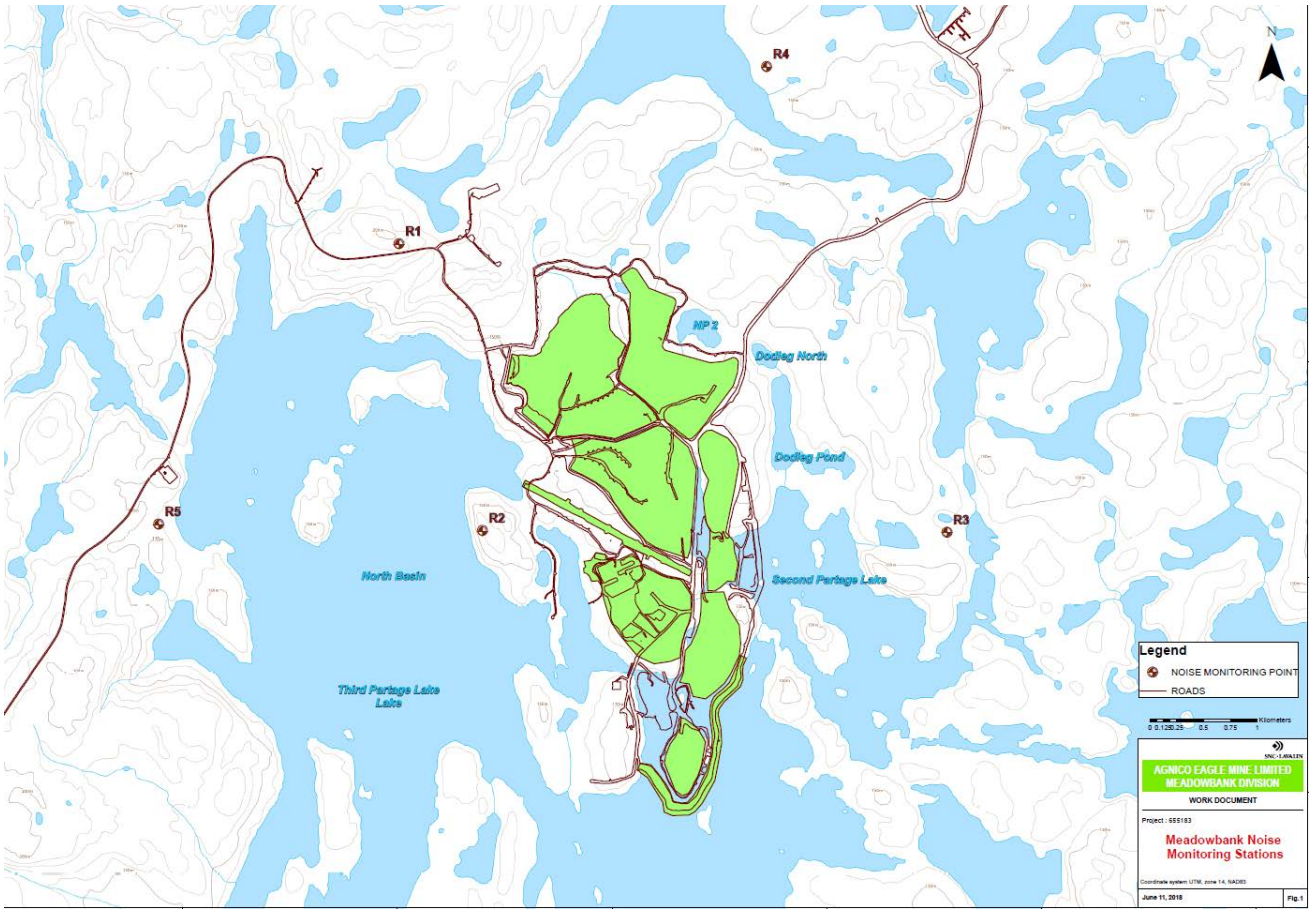
Noise effects on wildlife have to be monitored and assessed to ensure proper implementation of noise mitigation measures. Accurate identification of impacts and presentation of the results determines compliance with Project Certificate terms 62 and 85: "[d]evelop and implement a noise abatement plan to protect wildlife from significant mine activity noise, including blasting, drilling, equipment, vehicles and aircraft)" and ("[d]evelop a detailed blasting program to minimize the effects of blasting on fish and fish habitat, water quality, and wildlife and terrestrial VECs"). This will also support implementation of the Terrestrial Ecosystem Management Plan Version 5 (June 2018).

Recommendation 7: The GN recommends that the Proponent:

1) Provide a rationale for location selection of the receptors for noise monitoring; and

> ***Agnico Eagle's Response:***
> *Agnico Eagle will continue to monitor noise levels around the Meadowbank mine site at five locations previously determined in consultation with Golder Associates Ltd. Figure below show the noise monitoring location in relation to the mine site features. All sites are located at a distance from noise sources to be representative of sound levels in locations where wildlife may be expected to occur, and where noise-related PPE is not required. The measured levels provide a snapshot of the acoustic environment in this phase of project and are considered representative of the current operational activity.*
>
> *The noise model was reviewed in 2016 and Agnico have concluded:*
>
> *'By monitoring sound levels at five locations around the mine site for two 3-4 day periods annually, the current monitoring program provides a conservative assessment of the accuracy of predicted noise levels. A review of the impact assessment methodology was performed, and it was determined that assumptions of the noise model with respect to site activities remain valid'*

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com



Recommendation 8: The GN recommends that the Proponent:

2) Include within the Annual Report a discussion on noise effects on wildlife, including vibration and blasting noise.

Agnico Eagle's Response:

Agnico Eagle discussed the noise effect on wildlife in the 2017 Noise Monitoring Report and compare to FEIS in Section 12 of the 2017 Annual Report.

As per the TEMP (June 2018) Section 3.4.2.4, Agnico Eagle will implement a field-based study to understand and document the visual and physical parameters of the blast and quantify the response of caribou to the blast. The Study design was explored on-site during the 2018 spring migration to determine logistics of the blast schedule with operations and field technicians. As such, it is Agnico's intent to continue application of the Terrestrial Ecosystem Management Plan dated June 2018.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

1.6 Wildlife Interactions and Mortalities

Concern: Section 6.5.5, Predatory Mammal Deterrence and Protection, of the Proponent's Wildlife Monitoring Summary Report describes the Proponent's practices surrounding the deterrence of predatory wildlife on and around the Project site. The Proponent states that as part of their predator deterrence practices "[n]otices were sent out on a weekly basis to Meadowbank employees regarding the presence of wildlife". A weekly notice is not sufficient to ensure employees are aware that potentially dangerous wildlife is in the area. Wildlife may pose a problem almost immediately after arrival to the regional study area (RSA). The use of immediate site notifications and alerts when predator wildlife is spotted is far more effective for rapid response and deterrence.

Section 6.5.5 also describes an incident in which an injured wolf was observed along the Amaruq road. The Proponent states

> The following morning, the Wolf was found dead, presumably killed by a Wolverine (Appendix C). The Wolf appeared to have an injury to the head, and many Caribou tracks were observed in the immediate area; therefore, this mortality is assumed to be unrelated to mine and road operations.

The Proponent's evidence – namely, the presence of caribou tracks and a head injury with unknown causes – cannot be used to support the conclusion that the mortality was not Project related. The wolf in question may have moved to the location after the described injury. The Wildlife Monitoring Summary Report does not provide a cause for the head injury or include if the cause of said head injury was investigated. The wildlife incident report in Appendix C of the Wildlife Monitoring Summary Report states that "the injured wolf was first seen at km 8 and walked his way to km 6.5", indicating that the wolf was active and moving prior to being sighted and arriving at the location of its death.

Appendix C of the Wildlife Monitoring Summary Report also describes a January 12th incident in which a wolverine was run over and fatally injured by a Project pickup truck. This incident is further detailed in MEMO – 20170113 Environmental Incident at Meadowbank Mine. The sex of the animal was not reported upon the removal of the animal's remains.

Predatory mammals - in addition to being important furbearers for the Nunavut economy - represent a threat to the health and safety of project personnel. Every attempt should be made regarding adequate monitoring and deterrence methods to ensure the safety of both wildlife and Project personnel.

Rapid alerting of personnel to the presence of wildlife is integral to human and animal safety and all measures to alert site personnel quickly should be taken.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Accurate tallying of wildlife mortality with details of demographic parameters including sex is integral to analyzing Project effects. Where the cause of mortalities can only be assumed, a cause of death should be listed as “undetermined”.

Recommendation 9: The GN recommends that the Proponent update its predatory mammal deterrence protocols to include the immediate issuance of a site alert to personnel when carnivores are sighted in and around the project area. The GN also recommends that the Proponent amends Appendix C of the Wildlife Monitoring Summary Report, Wildlife Mortality Report to include the sex of deceased animals.

Agnico Eagle’s Response:

When predators are observed in the vicinity of the mine, Agnico notifies and alerts Environment Section staff and department heads immediately and during daily meetings. To avoid personnel from going to view predators out of curiosity and to minimize predator/human interactions, mine-site wide notifications to all staff are not provided. This policy was not explicitly stated in the 2017 report; therefore, appropriate changes will be made to the 2018 annual report to reflect Agnico's approach to predator notification. The Wildlife Protection and Response Plan (TEMP, Appendix C) was updated in June 2018. This plan included a section regarding the responses to different levels of encounters.

Further, when possible, details on apparent cause of death and demographics of dead/killed wildlife will be collected and reported in subsequent mortality and annual reports.

In relation to the recommendation on Appendix C, Agnico will update to include the sex of deceased animals, when a clear determination is possible to the best of the Environmental staff knowledge. If any doubt, or if unclear, sex will be entered as ‘undetermined’.

Recommendation 10: The GN further recommends that the Proponent revise its wildlife incident report. The cause for the December 1, 2017 incident should be ‘undetermined’.

Agnico Eagle’s Response:

The wildlife incident report from December 1, 2017 has been revised to reflect the 'undetermined' cause of death (Appendix 1).

1.7 Monitoring of Wolverine

Concern: The Project has the potential to affect wolverines through direct and indirect loss of habitat, mine related mortality (attraction and vehicle collisions) and sensory disturbance.

The threshold level of mine related mortality for predatory mammals is one per year. Appendix G13 describes mine site ground surveys used to verify if mitigation measures are successful in maintaining the allowable mortality rate of one or less individuals per year. The assessment of

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Project sensory disturbance and direct impacts on habitat are not provided as part of the monitoring program.

The Proponents 2017 wildlife reporting log states 104 wolverine sightings (about 9 wolverines per month, with highest numbers in January =17) were reported in the Project areas. Wolverines are solitary carnivores but observations of group of 4 to 5 animals were reported at the landfill/dumpsite. This is an indication that mitigation measures to deter wildlife, in particular wolverines, from the site are not working as intended. Given the high occurrence of wolverine, the Government of Nunavut (GN) feels that surveys to assess wolverine distribution and habitat, along with a reexamination of the Proponents wildlife deterrence measures regarding Project waste are prudent.

The GN is responsible for the management of terrestrial mammals in Nunavut. Predatory mammals are susceptible to loss of denning habitat, and sensory disturbance associated with project construction and operation. Predatory mammals are also prone to attraction to project sites through human waste and strange smells associated with project activities.

Wolverine are an important cultural and economic resource for Nunavummiut. The Canada population of wolverine is considered a species of special concern by Committee on the Status of Endangered Wildlife in Canada (2014). The distribution and abundance of wolverines are affected by the trends in caribou populations. Wolverine, as a resident species, may be considered an indicator of ecosystem status.

As required by the Project Certificate Term and Condition No. 54, the Proponent shall provide "statistical validation to support the conclusions drawn from monitoring impacts of the mine and infrastructure on wildlife".

Recommendation 11: The GN recommends: 1) Given the high occurrence of wolverines at the mine sites, the Proponent should conduct surveys on wolverine distribution and habitat use, in order to properly assess the impact to local population for the required mitigation and monitoring needs.

> ***Agnico Eagle's Response:***
> *Agnico Eagle's intent is to operate as per the TEMP Version 5, June 2018. This version was completed in collaboration with GN Biologist. As per this version, Agnico Eagle reported all wolverines sighting in the 2018 Wildlife Annual Report.*

Recommendation 12: The Proponent reassess their mitigation measures pertaining to prevention of wildlife attraction on and around the Project site.

> ***Agnico Eagle's Response:***
> *Agnico Eagle's intent to operate as per the TEMP Version 5, June 2018. This version was completed in collaboration with GN Biologist. In Appendix C of the TEMP, Section 2.2.2 of the Wildlife Protection and Response Plan describes the mitigation measures in place for*

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

prevention of the wildlife attraction. The mitigation measures are related to food wastes and garbage, chemicals (e.g., road salt) and their refuse (e.g., empty fuel containers, wildlife carcasses (e.g., road kills, hunter kills), movement and human activity (e.g., movement of people and equipment outdoors) and roads (which may create preferential travel corridors for wildlife, can lead to vehicle collisions and increased exposure to wildlife encounters at the Project site).

Agnico routinely reassesses its measures in relation to prevention and consistently maintains awareness by conducting toolbox meetings to all departments on site. By maintaining awareness on such topics as mentioned in Appendix C of the TEMP (wildlife attractant, garbage management, wildlife health, and wildlife and vehicle, wildlife and buildings, reporting wildlife observations and incidents, protocols for dealing with problem wildlife), Agnico is confident measures in place will ensure to limit potential impacts.

Recommendation 13: The Proponent should conduct a survey to identify wolverine habitat in the Project area that may be directly or indirectly (sensory disturbance) affected by mine activities.

Agnico Eagle's Response:
Agnico Eagle's intent is to operate as per the TEMP Version 5, June 2018. This version was done in collaboration with GN Biologist. As per this version, Agnico Eagle reported all wolverines sighting in the Wildlife Annual Report.

Recommendation 14: The Proponent should develop a response plan when a wolverine den site is detected within 1 km of Project activity to ensure no significant effects on this valued ecosystem component.

Agnico Eagle's Response:
The flowchart presented in Figure 12 of the TEMP (Version 5, June 2018) show the Thresholds for Monitoring and Mitigation of Predatory Mammal Dens in Proximity to the Project. This flowchart is considered as the response plan when a wolverine or predatory mammal dens is detected.

Recommendation 15: As required by the Project Certificate Term and Condition No. 54, the Proponent shall provide "statistical validation to support the conclusions drawn from monitoring impacts of the mine and infrastructure on wildlife" as it applies to wolverine.

Agnico Eagle's Response:
Agnico Eagle acknowledges GN's comment and will provide the requested information in the 2018 Annual Report.

1.8 Impact to Health Services

Concern: On page 275 of its Annual Report the Proponent states:

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

> Per capita health centre visits in communities with the most Meadowbank employees (Baker Lake, Rankin Inlet, and Arviat [sic] are beginning to show an upward trend, most notably in Baker Lake and Arviat. The number of employees referred to their community health centres for personal or work-related reasons ranges from 14 to 58 people per year, though it is difficult to draw a relationship between movement of this indicator and use of GN Health Services.

Currently, the available data alone does not indicate:

- Whether a Meadowbank worker, on average, is a higher user of health care services than other workers or unemployed people or if there is a counter effect where employees use on-site medical services in lieu of GN health services while on rotation.
- To what extent these referrals are for work related reasons.

The GN notes that employees may require health centre services as a result of working at the mine. Without data indicating the reason for the visit, it is impossible to ascertain impacts on community health centres.

The Annual Report provides that between 14 and 58 employees were referred to health centres in Baker Lake, Rankin Inlet, and Arviat. The referrals do not indicate if the person's employment at the mine caused the referral. Complete data are required to determine the true impacts these referrals have on the relevant health centres.

Recommendation 16: The GN recommends that AEM begin collecting additional data when employees visit the on-site clinics and receive referrals for community health centres. If employees consent, the collection of information could include whether the referral is for a mine-related health issue or otherwise. If employees consented to such collection, additional information could also include: communicable disease reporting and/or testing; mine-related clinic visits; health plan utilization reports; and the number of referrals and consultations with the Department of Health. The information would provide a more complete assessment of positive and negative impacts to health services.

Agnico Eagle's Response:

Agnico already collects and reports for on-site clinic visits, for both work-related and non-work related (personal) reasons. Agnico will respectfully refer to the annual Socio-Economic Monitoring Report for further details.

Agnico can report on referrals for both work-related and personal reason. Agnico would also encourage the GN to collect information on community health centre visits, including the reason for the visit, so that both sets of data can be compared and reported annually to better understand the Project's direction of impact, especially in the hamlet of Baker Lake.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Agnico cannot report on communicable disease reporting and testing, as well as the number of consultations with the Department of Health. Additionally, Agnico is not able to isolate health plan utilization based on community of hire.

1.9 Economic Security and Wellbeing

Concern: In Appendix J7 the Proponent outlines data respecting turnover rates at the mine site: the Proponent states:

> Since 2010, turnover rate for permanent Inuit employees has been consistently higher than that for permanent non-Inuit employees (approximately four to six times higher over the past four years). The turnover rate for permanent Inuit employees increased to 28% in 2016, up from 21% in 2015 but approximately the same as in 2014 (26%). Of note is the number of dismissals in 2016, which increased to 54 from 24 or lower in all years prior.
>
> The drop in the temporary & on-call Inuit employee turnover rate between 2010 and 2013 is likely due the [sic] shift of temporary employees away from set-contracts (contracts with a defined end-point which therefore manifest as turnover) towards on-call temporary employees. These employees now have an indefinite contract and are called upon when the need arises. This turnover rate increased to 59% in 2016 from a low of 43% in 2015.

On page 65 of the Annual Report, the Proponent sets out its predictions from the FEIS:

> In terms of positive impacts on social services, the FEIS also describes how increased economic security and well-being may reduce dependence on social services, understood to also include social assistance payments: "Increased employment and business opportunities will result in increased income, a measure of economic security, capacity building that will contribute to employability over the long term, and improved self-image of employees and their families. This could result in reducing dependence on government social services."

These predictions have not been realized. The high turnover rate suggests economic insecurity amongst Inuit employees. However, despite this there has been an overall decrease in dependency on social assistance since the mine opened.

The Proponent concludes that there is still significant need for social assistance in the Kivalliq region. Although there have been declines in the overall reliance on social assistance, as compared to historically high requirements in 2007, there is no clear correlation between these declines and Meadowbank-related employment:

> The proportion households [sic] receiving social assistance increased gradually between 2011 and 2015 (from 24% to 34%), but has remained below 2007 levels.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

> Despite declines from historical highs, social assistance data does not show a clear correlation between Meadowbank-related employment and social assistance requirements in Baker Lake or Arviat. Data suggests that both expenditures and percentage of households receiving social assistance have been declining in Rankin Inlet since the mine opened (s. 9.4.3).

Turnover rate alone does not appear to fulsomely address questions about economic security. In addition to turnover rates, an analysis prefaced on the length of services of Inuit employees would provide more complete data to address issues related to social assistance and economic security.

Recommendation 17: The GN recommends that the Proponent also include average lengths of service for Inuit employees in future annual reports as a more accurate reflection of economic security.

> ***Agnico Eagle's Response:***
> *Agnico will include average lengths of service for Inuit employees in future annual reports, by skill level.*

2 Fisheries and Oceans Canada (DFO)

2.1 Effects Monitoring

Concern 1: In the Meadowbank Gold Project 2017 Annual Report, Appendix G7: 2017 Blast Monitoring Report for the Protection of Nearby Fish Habitat, under section 3, on page 5 "Agnico suggests that additional studies may not be necessary to confirm low PPV at spawning and incubation sites, since results of this study suggest impacts are likely not occurring even if no attenuation of PPV is occurring between blast monitoring sites and spawning habitat." DFO cannot confirm the validity of this conclusion at this time, without further information and clarity on the frequency of proposed blasting moving forward. As such, DFO-FPP recommends that Agnico continue to record Peak particle velocity (PPV) and overpressure monitoring data during blasting activities.

Recommendation 1: DFO-FPP recommends that Agnico continue to record Peak particle velocity (PPV) and overpressure monitoring data during blasting activities.

> ***Agnico Eagle's Response:***
> *Agnico Eagle acknowledge DFO comment and will continue to record Peak particle velocity (PPV) and overpressure monitoring data during blasting activities*

2.2 Compliance Monitoring

Concern 2: Worker Fishing: DFO-FPP notes that on page 240 in Table 12.4. Predicted and measured impacts to fish and fish habitat, from the Meadowbank Gold Project 2017 Annual Report, under "Mortality of fish and fish eggs", Agnico has stated that monitoring conducted for

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Worker fishing in 2017 was "None" and Observed Impacts for 2017 were "Not assessed". DFO-FPP notes that Term and Condition 52 of the NIRB's project certificate No.:004 states: "Cumberland shall enforce a no-fishing policy for employees while working on the job site." In addition, Condition 2.6 under Agnico's Fisheries Act Authorization NU-03-0191.3 states "The Proponent shall develop and enforce a policy that prohibits fishing on Second Portage Lake and Third Portage Lake and surrounding lakes and streams by individuals on the mine site in a capacity as mine employee, contractor or visitor during all phases of mining activities, unless otherwise agreed to by DFO." DFO-FPP notes that it is important to monitor worker fishing in order to demonstrate compliance with both the NIRB term and condition and AEM's Fisheries Act Authorization.

Agnico Eagle's Response:
Agnico Eagle has a no-fishing policy for its Meadowbank Mine Site. The policy is enforced all through the year within environmental inspections. There were no observed impact in 2017 as there were no workers fishing. Agnico should have stated that there is 'no observed impact' instead of 'not assessed' to avoid confusion.

3 Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

3.1 General Comments

Concern: As was noted by CIRNAC in their reviews of previous Annual Reports (2015 and 2016), it is sometimes difficult to ascertain the status of activities proposed by AEM and to track the implementation of recommendations made by regulators within the Annual Report and/or supporting documents. This is due to the vast amount of information that is presented, the differing timeframes of the various supporting reports, and the fact that a particular topic is discussed in multiple sections of the Annual Report.

Recommendation 1: CIRNAC recommends AEM develops and includes a table to track proposed activities and recommendations presented within the Annual Report and supplementary documentation appended to the Annual Report. Such a table would help to ensure the follow up of potential issues, such as information regarding whether a recommendation was adopted, how it was implemented and/or the rationale as to why a recommendation was not considered.

Agnico Eagle's Response:
Agnico acknowledges CIRNAC comments and will determine the best way to introduce a table to track authorities' recommendations in the 2018 Annual Report.

Concern: It is noted that in some cases, that commitments made to update documents "at least once a year" (e.g., the Emergency Response Plan) have not been fully adhered to.

Recommendation 2: CIRNAC recommends that AEM ensures that all documents are updated on a timely basis.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Agnico Eagle's Response:
Agnico acknowledge CIRNAC comments and will ensure the documents are updated as per License/Project Certificate requirements.

3.2 Quarries

Concern: The degradation of petroleum hydrocarbon (PHC) contamination in Quarry 22 is discussed on page 17 of the 2017 Annual Report where AEM states that "Based on the degradation history of PHC's in the Meadowbank Landfarm and upon results from the 2014 and 2016 Q22 soil sampling, Agnico Eagle is confident that the natural degradation of Petroleum Hydrocarbon related products is an effective remediation method for Q22". The 2017 Annual Report does not present historical PHC degradation data and trends to support this assertion.

Recommendation 3: CIRNAC recommends that AEM presents the data and information on historical PHC degradation at the Meadowbank Landfarm that corroborates these conclusions.

Agnico Eagle's Response:
Agnico acknowledge CIRNAC comments and will present the historical PHC degradation results in the next annual report.

3.3 Lake Level Monitoring

Concern: Changes in lake levels in Turn Lake, resulting from diversions involved in the Phaser Lake dewatering, do not appear to have been measured/reported in 2017, as well as in previous year (2013-2016). Thus, comparisons to FEIS predictions were not provided in the 2017 Annual Report.

Recommendation 4: CIRNAC recommends that AEM provides an explanation as to why Turn Lake water levels are not being monitored, reported and compared to FEIS predictions.

Agnico Eagle's Response:
Agnico acknowledges an oversight was made in the level monitoring work plan; thus Turn Lake was involuntarily not included in the level measurements program.

Agnico will ensure, moving forward, that Turn Lake water level monitoring in the next open water season will be completed, reported and compared to predictions.

Concern: Table 4.2 reports separate lake level measurements for Ponds B, C and D in the Vault Attenuation Pond; however, there is mention of only one monitoring location for the Vault Attenuation Pond, station VN-IN which is established in Pond B (shown on Figure 3). Thus, it is not clear how measurements were obtained for Ponds C and D.

Recommendation 5: CIRNAC recommends that AEM clarifies the methodology by which lake level measurements were obtained for Ponds B, C, and D of the Vault Attenuation Pond.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Agnico Eagle's Response:
All the pond elevations provided are taken by Agnico surveyors using a surveying GPS. A map with labelled ponds will be added to the 2018 annual report.

3.4 Predicted vs. Measured Water Quality

Concern: As per the recommendation made by CIRNAC in their review of the 2016 Annual Report, in the 2017 Annual Report, AEM used one consistent methodology to calculate the percent (%) difference between predicted and measured data for both water quantity and quality. The methodology is clearly explained and the comment has been addressed.

While the results of predicted vs. measured comparisons (average and lower 25th percentile) for both scenarios (Probable and Probable Poor End) are provided in the 2017 Annual Report for each pit (North Portage Pit [ST-17], Third Portage Pit [ST-19], Goose Pit [ST-20], and Vault Pit [ST-23]) in paragraph form for each year for the period 2012-2017, the manner in which these data are presented makes it difficult to decipher any temporal trends. Further, no discussion of temporal trends is included in the text. Presenting these data in a tabular or graphical format would provide a more effective means of deciphering water quality trends over time.

Recommendation 6: CIRNAC recommends that predicted vs. measured water quality parameter comparisons be presented in a tabular or graphical format. A table could be prepared with the pits and successive monitoring years appearing in the rows and the average/lower 25th percentile results with >20% difference summarized in the columns for each scenario. A year to year comparison for each pit could then be made by moving down each column. Alternatively, time series plots could be prepared for each pit and parameter exhibiting >20% difference that would show how concentrations are evolving over time. A plot will also show if the magnitude of the divergence is increasing or decreasing over time.

Agnico Eagle's Response:
For the 2018 annual report, plots comparing the predicted water quantity and quality over time will be produced. The predicted values will be plotted as line graph and compared to the actual data presented as a bar graph.

Concern: In their review of the 2016 Annual Report, CIRNAC noted that the report "details results of the comparison between predicted seepage and groundwater sources and volumes and the measured volumes from Portage, Goose and Vault Pits. Results from Portage and Goose indicate that significantly less water was actually flooding the pits than predicted." Although the 2016 Annual Report mentioned that flooding sequence and volumes are updated to account for the measured inflows, CIRNAC recommended that AEM also discuss the probable causes of the discrepancies and how these results could affect the re-flooding plans.

On page 27 of the 2017 Annual Report, AEM has provided comments on probable causes for each pit as follows:

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

• less seepage into Portage Pit because seepage from the East Dike is pumped out of the pit and back into Second Portage Lake;

• more seepage in Vault pit due to more precipitation including larger freshet and rainfall;

• less seepage in Goose Pit; it is stated that runoff, groundwater and seepage now contribute to the natural reflooding of the pit since mining in Goose Pit ceased in 2015, but no reason is provided to explain why predicted water volumes were overestimated. Furthermore, there was no specific discussion of the potential effects of these changes on the flooding plan.

Recommendation 7: CIRNAC recommends that AEM discusses the probable causes of the discrepancies and how they could affect reflooding plans or provide a rationale for not doing so. CIRNAC also recommends that AEM provides discussions of potential impacts of placing tailings into pits and how this would affect existing reflooding plans.

Agnico Eagle's Response:

One probable cause for the discrepancies observed between the predicted seepage flows and the observed values could be the presence of a rock structure with a higher or lower permeability than anticipated in the hydrogeological model. There may also be the presence of wall fault lines that were not detected in the modelling phase.

The higher or lower seepage flowrate into the pit will have an impact on the volume of water required for pit flooding. Agnico will verify the volume required to reflood the pit based on actual site conditions (i.e. water level in the pit at closure).

Agnico Eagle is presently in the Water License amendment process for the in-pit deposition. If authorized, with in-pit deposition, there will be a positive impact on the overall volume of water required for pit reflooding. The tailings will occupy the majority of the volume in the pit, thus reducing the quantity of water needed to be transferred from Third Portage Lake to the pits

3.5 Waste Rock Volume

Concern: CIRNAC recommended the following during their review of the 2016 Annual Report; "To facilitate review and understanding of the progression of the work, INAC recommends AEM provides a comparison of the volume generated annually with the FEIS predictions and discusses how the results might warrant re-evaluation of the Waste Management Plan with regards to the design of the Waste Rock Storage Areas and the capping requirements for closure." In their response to CIRNAC, AEM noted that the Waste Rock and Tailing Management Plan will continue to be updated yearly with current production quantities and Life of Mine, and will be presented in the 2017 Annual Report, including a discussion on material balance and material quantity required for closure Non-Acid Generating (NAG) cover, and a comparison of the volume generated with FEIS predictions. This commitment was partially fulfilled in the 2017 Annual Report, but a comparison of the volume generated annually to FEIS predictions was not included.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Recommendation 8: CIRNAC recommends that AEM provides a comparison of the volume of waste rock generated annually to FEIS prediction.

Agnico Eagle's Response:
Agnico acknowledges CIRNAC comments and the requested information will be integrated into the 2018 annual report.

3.6 Tailings Storage Facility (TSF)

Concern: It is noted that there is no mention of actual or potential tailings storage in any of the open pits in Section 5.3.1 of the 2017 Annual Report, while Appendix D1 Mine Waste Rock and Tailings Management Plan sections 8.1.1.5 and 8.1.1.6 state that monitors were installed in the Goose Pit TSF and Portage Pit TSF, respectively. This discrepancy makes it difficult to determine the Proponent's intention regarding tailings management.

Recommendation 9: CIRNAC recommends that AEM clarifies the discrepancy in tailings management approach mentioned in the 2017 Annual Report and the Appendix D1Mine Waste Rock and Tailings Management Plan.

Agnico Eagle's Response:
In-pit disposal was considered in the Mine Waste Rock and Tailings Management Plan for planning purpose only, in anticipation of the Whale Tail Pit Project. Agnico did not detail this option in the 2017 Annual Report so not to create confusion, as the approbation for the Meadowbank in-pit disposal was still not received.

3.7 Tailings Freezeback and Capping Thickness

Concern: Section 5.3.2 of the 2017 Annual Report reports on the monitoring of the freezeback efficiency and the permafrost monitoring program. This section has the same format and discussion as the 2016 Annual Report. CIRNAC's comments on the 2016 Annual Report are repeated below as they have been not been addressed by AEM's response and remain valid comments on the 2017 Annual Report and Appendix D1 Mine Waste Rock and Tailings Management Plan.

"The results from thermistors readings are presented, but AEM does not present a discussion of these results and how they are integrated in the update of the Waste Rock and Tailings Management Plan. Section 2.1.4.3 of the "Waste Rock and Tailings Management Plan" (Appendix D), which discusses climate change and permafrost contains several error messages and repeated information that appears to be formatting issues. There is no further discussion on the results of the current monitoring and how they compare with the thermal modeling used for conceptual freezeback and capping plans presented in the FEIS. Under section 7.3 of Appendix D (Tailings Reclamation), a short discussion is presented on the design of the Tailing Storage Facility at closure. AEM states "Tailings material, beneath the minimum 2.0 m thick cover, appears to remain

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

frozen for all years (excluding the warmest years) from the 100-year database, accounting for climate change". However, no results are presented and no details are given on the type of climate change scenario utilized, the data considered, and the model methodology. It is unclear if this conclusion is based on monitoring results from the thermistors, and how this compares with values predicted in the FEIS.

Recommendation 10: INAC recommends AEM includes a meaningful discussion of the results from the permafrost monitoring in the Annual Report. FEIS predictions should be compared with monitoring results and be clearly presented. AEM should present the updated modeling supporting their conclusions that the conceptual plans for thermal encapsulation of the Tailing Storage Facility and the Waste Rock Storage Facility remain effective to prevent and control deleterious seepage over long term. Finally, if results show discrepancies from the predicted values, AEM should discuss the management actions that should be implemented to address the risk."

> ***Agnico Eagle's Response:***
> *In the 2018 annual report, the current performance will be evaluated and compared against the FEIS.*

Concern: Section 5.3.2 of the 2017 Annual Report provides a sub-section entitled Summary of Ongoing Field Trials. This section refers to work carried out in collaboration with the Research Institute of Mines and Environment (RIME) on three experimental cells and notes that the results have been used so far on the cover design of TSF North and South Cell, that data collection is still ongoing and that results will be used in future studies as needed. Similarly, it notes that RIME has carried out laboratory tests of soapstone to evaluate its resistance to freeze/thaw (F/T) and wet/dry (W/D) cycles and concludes that soapstone has good resistance to F/T and W/D cycles. However, no details or results are provided on either the experimental field cover cells trials or the laboratory F/T, W/D cycle tests.

Recommendation 11: CIRNAC recommends that AEM provides more information on the nature and extent of research efforts, results of the research and a discussion of how the proposed cover design has been influenced by these results.

> ***Agnico Eagle's Response:***
> *Agnico acknowledges CIRNAC comments and the requested information and discussion will be integrated into the 2018 annual report.*

Concern: Section 2.1.4.3 of the Waste Rock and Tailings Management Plan discusses the impacts of climate change on site conditions. This section used information from reference documents dated 1992 (Woo et. Al.), 2003 (BGC), 2004 (NRC), and 2007 (IPCC). CIRNAC is of the opinion that the information in these documents may be dated.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Recommendation 12: CIRNAC recommends that AEM reviews the status of current climate change literature to ensure that the design basis used in the FEIS is still appropriate or if adaptive management may be anticipated to be needed.

> ***Agnico Eagle's Response:***
> *As part of the adaptive management, Agnico reviewed the climate change model literature and mandated O'kane Consultants to provide a detailed engineering design of the TSF closure concept in 2016 using up to date climate change predictions from the IPCC (Intergovernmental Panel on Climate Change) RCPs (Representative Concentration Pathways) RPC4.5 and RCP6.*

Concern: Section 9 of the Waste Rock and Tailings Management Plan states that "no instruments are planned for the Vault Waste Rock Storage area". It is not clear how AEM will confirm that the VWRSF will be frozen without instrumentation.

Recommendation 13: CIRNAC recommends that instrumentation be added to confirm VWRSF freezeback predictions and measure performance.

> ***Agnico Eagle's Response:***
> *Instrumentation is planned to be installed at closure to confirm freezeback predictions and measure performance.*

3.8 Spill Management

Concern: The 2017 Annual Report shows that the number of Reportable Spills (28), while not as high as 2016 (34) still remains high. Non-Reportable Spills (442) continue to be at levels much higher than in prior years [2016 (374), 2015 (148), 2014 (63)].

With respect to Condition 26 of the Project Certificate No.: 004, in their review comments regarding the 2016 Annual Report, NIRB requested that AEM "provide a written submission explaining the conditions which contributed to increased spills being reported on site for 2016, and describe the measures and training implemented since to address spill prevention and the associated results."

While it is not clear from the review of the 2017 Annual Report whether a written submission was prepared for the NIRB, the 2017 Annual Report notes that AEM began a Spill Reduction Action Plan in 2016 and the discussion in Section 7 (page 87) was expanded to describe the development of Key Performance Indicators (KPI) and how they are used to follow trends related to spill increase or reduction, and to guide corrective actions where required.

AEM also explains that general awareness on spill management and reporting with management and operations were expanded, which resulted in proactive maintenance to be done on equipment; hence reducing the overall quantities of material spilled. Mandatory spill training and reminders of best practices in spill management are also discussed.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Crises management training was given to management staff in 2017 and information and training were given to Baker Lake Marshalling Facility personnel with respect to how to react to a major spill at the Baker Lake Bulk Fuel Storage and Marshalling Facility.

Given the trend in reportable and non-reportable spills, these initiatives are positive proactive measures.

Recommendation 14: In keeping with the focus of these efforts to reduce reportable spills, CIRNAC recommends that AEM increase its Spill Reporting to once a quarter to track the effectiveness of spill reduction efforts and assure that these preventative efforts are effective.

Agnico Eagle's Response

Agnico Eagle is already reporting spills on a monthly basis via the NWB Monthly report required under Water License 2AM-MEA1526 and quarterly via the KIA Production Lease Report. The CIRNAC Inspector is included in the distribution list of the NWB Monthly report.

3.9 Monitoring

Concern: The objective of Section 8 of the 2017 Annual Report is to present the results of the various monitoring programs included under the Aquatic Effects Management Plan (AEMP). As such, a lot of information is discussed in this section and a total of 74 tables summarizing data are cited in the text. However, only twelve (12) of these tables have actually been included in the report making it difficult to assess the results and confirm AEM's conclusions.

Recommendation 15: While the information is available elsewhere in supporting documents, if tables are referenced within the text of the report as being part of that section, CIRNAC would expect that they would appear in that section of the Annual Report.

Agnico Eagle's Response:

Agnico will continue to improve the visual presentation of Section 8 and add some of the tables from Appendices to facilitate the interpretation of the annual report. Also, reference to the appendix where the table can be found will be added in the 2018 annual report.

3.10 Core Receiving Environment Monitoring Program (CREMP)

Concern: It is understood that the information presented in Section 8 of the 2017 Annual Report is just a summary of the CREMP report, which is included as Appendix G1 to the 2017 Annual Report; nonetheless, this section would benefit by the inclusion of a figure such as Figure 1.3-1 from the CREMP report showing the general locations of the receiving environment stations that are monitored, as well as a brief description of the stations including location and definitions of Near-field, Mid-field, Far-field and Reference stations.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

As per the recommendation made by CIRNAC in their review of the 2016 Annual Report, a discussion has been provided in Section 8.9.5 Identification of Potential Risks and Discussion (page 176), to rationalize why the exceedance of several water chemistry triggers resulting from mine related changes relative to baseline conditions presents a low likelihood of adverse effects on aquatic life. Several lines of evidence from toxicity testing and Environmental Effects Monitoring (EEM) are collectively used to draw this conclusion, which is reasonable.

CIRNAC also recommended in 2016 that AEM discuss the management actions that should be implemented when triggers are exceeded and to report their plans to implement these management actions and how their effectiveness would be monitored. In response, AEM committed to providing additional detail on the action plans, if the water quality is triggered, and associated monitoring management plans. While recommended management actions are discussed in the 2017 Annual Report for trigger exceedances observed in sediment, management actions are not discussed with respect to trigger exceedances observed in water, due to the low likelihood of adverse effects on aquatic life.

Recommendation 16: CIRNAC recommends that AEM provides a discussion of management action with respect to trigger exceedances in water, even if the likelihood of adverse effects on aquatic life is low.

> ***Agnico Eagle's Response:***
> *There are two parts to the Recommendation 16. The first part is a request for evidence to support why exceedances of the threshold are considered "relatively low" and "unlikely to adversely affect aquatic life" with reference to findings from the biotic surveys (i.e., phytoplankton and benthic invertebrate community) conducted in 2017. The second part relates to the management response plan (MRP) in place for the AEMP.*
>
> *This section deals specifically with evidence from the 2017 CREMP used to determine that adverse effects to aquatic life are unlikely. For phytoplankton, the stressor evaluation focused on changes in water quality parameters. Readers are also directed to Section 3.2.2.2 of the 2017 CREMP report (Appendix G1), which provides details response regarding the assessment of water quality). For benthic invertebrates, stressor evaluation included contaminant exposure via surface water and sediment exposure pathways.*
>
> ***Phytoplankton** – biomass was statistically significantly higher at TPE, SP, and WAL in 2017 relative to reference/baseline conditions. The observed increase in the BACI assessment was not attributed to any observable Site-related activities. Higher biomass would be expected to occur if nutrient loading to the areas was identified in the BACI analysis of water chemistry, but nutrient concentrations remain well below threshold levels associated with increased primary productivity (see Table 3.2-1 in the annual CREMP report). Changes in biomass identified in the BACI assessment appear to be due largely to lower biomass at INUG (the reference area) in 2017 compared to the baseline period, whereas the opposite was true at the NF areas. The divergent patterns of phytoplankton*

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

biomass between INUG and the NF areas resulted in a large "perceived" increase in biomass for the NF areas. The absolute biomass values at the NF are in line with their historical values. Taking into consideration all the lines of evidence (BACI and absolute values plotted over time), there is no evidence to suggest mining operations are increasing primary productivity in the NF areas. Phytoplankton richness was similar to previous monitoring cycles. Overall, there is no evidence to suggest the health of the phytoplankton community at the near-field stations is adversely affected by mine-related activities. While natural variability is considered the most likely explanation for the observed differences in 2017, it was concluded that the trends should be closely watched in 2018 to see if initial conclusions are corroborated or if there is stronger evidence of mine-related causality.

***Benthic Invertebrates** – There were no effects-based threshold exceedances for water quality parameters at any of the near-field locations in 2017. Threshold exceedances for sediment chemistry parameters were noted for TPE (Cr) and WAL (As, Cr, Pb) in 2017. At TPE, chromium concentrations measured in 2017 continue to exceed the trigger value. Previous targeted studies (implemented in 2015; Azimuth 2016) at TPE using data generated from laboratory toxicity tests and sequential extraction testing of the sediments provided evidence that chromium in the sediment was non-bioavailable and non-toxic. These results were integrated with the benthic invertebrate community data in a sediment triad assessment to provide confidence that sediment metals were not affecting the benthic invertebrate community at TPE. Since the target study in 2015, chromium concentrations (as measured in the sediment cores), while initially stabilizing in 2016, trended higher in 2017, prompting further investigation (see below). Over this time, benthic invertebrate community results have been largely consistent with historical results at TPE. While the temporal trend analysis showed relatively lower total benthic invertebrate abundance at TPE relative to INUG over the past three years, the trend appears to be driven by increases at INUG (i.e., natural variability) rather than by decreases at TPE. In addition, no changes were observed in benthic invertebrate community diversity (taxa richness) at TPE, which would be expected to occur if there were mining-related changes. Thus, evidence to date points to natural variability, rather than mining, as the cause of the relative differences in abundance observed at TPE in 2017; these conclusions will be re-assessed in 2018. A repeat of the 2015 targeted bioavailability assessment and the 2017 sediment coring was completed in 2018 to assess whether current conditions at TPE present risks to the benthic invertebrate community; results of these targeted studies, coupled with the routine CREMP benthic community monitoring, will help determine the ecological significance of observed changes in sediment chromium concentrations and will be included in the 2018 CREMP report.*

Arsenic, and to lesser extent lead and chromium, exceeded their trigger values in sediment cores at WAL in 2017relative to the baseline period and compared to the most recent 2014 coring results. Sediment triggers for WAL were developed in 2017 now that WAL is the receiving environment under MMER (discharge from the Vault attenuation pond). The trigger for arsenic is 44.5 mg/kg, which is the 95th percentile of the baseline sediment arsenic concentrations measured in 20 samples between 2008 and 2012. The trigger value

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

is 7-fold higher than the CCME ISQG of 5.9 mg/kg, indicating arsenic is naturally elevated in WAL. Abundance and richness of the benthic invertebrate community remain high at WAL as evidenced by the results of the BACI analysis presented in Appendix G (2017 CREMP; Tables 3.2-16 and 3.217). Notwithstanding the overall health of the benthic invertebrate community, Agnico Eagle made a management decision to pursue targeted sediment coring and toxicity/bioavailability studies in 2018 to fully address risks to the benthic invertebrates at WAL; these results will be reported in the 2018 CREMP.

***Management Actions for Water Quality Trigger Exceedances** – In simple terms, the MRP describes the process of identifying potential risks to the aquatic environment and developing appropriate management responses. Figure 4-2 in Azimuth (2010) provides an overview of the MRP for the Meadowbank AEMP and outlines the steps involved in data evaluation, assessment, and mitigation. The scope of management actions depends on the nature of the problem, the spatial scale, evidence for causality, reversibility and uncertainty. Management actions may involve no action beyond routine CREMP monitoring, continued trend monitoring, or active follow-up with more detailed quantitative assessment. Changes to water quality to date: (a) are considered "low" in magnitude (i.e., are consistent with the magnitude predicted in the FEIS) and are not expected to result in any adverse effects to aquatic life and (b) appear to have stabilized; recommended management actions focus on continued close monitoring of these trends. Changes to sediment quality at TPE and WAL have resulted in the implementation of additional targeted studies to help (a) verify the observed trends (particularly for WAL) and (b) determine the potential for adverse effects to the benthic community; the results of these studies and their implications in the context of the MRP will be reported in the 2018 CREMP.*

Concern: In their review of the 2016 Annual Report the NIRB requested AEM to provide:

- "a discussion on the apparent mine-related changes observed at the near-field stations, the changes observed over time at these stations since operations commenced, what the cause may be for the changes observed at these stations, and whether Agnico Eagle intends to establish other near-field stations that could be used for baseline/reference conditions."
- "a discussion and additional evidence to support its contention that the parameters measured at Meadowbank which have been observed to be above the CCME guideline levels are not a serious concern for aquatic life."

In Section 8.1 of the 2017 Annual Report, Agnico again reports the observance of statistically significant mine-related changes relative to baseline/reference conditions at one or more near-field stations in Third Portage Lake (North and East basins), Second Portage Lake, and Wally Lake. These observations were for conventional, ionic and nutrient parameters (alkalinity, conductivity, hardness, major cations, total dissolved solids, and total Kjeldhal nitrogen). None of these parameters have effects-based thresholds such as Canadian Council of Ministers of the

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Environment (CCME) water quality criteria, and thus their exceeded triggers have been set at the 95th percentile of baseline data.

In 2017 there were no trigger exceedances for any water quality parameters with CCME water quality guidelines, including metals. The observed concentrations of the aforementioned parameters were described by Agnico as still being relatively low and unlikely to adversely affect aquatic life. In Section 8.9.5 (page 176), several lines of evidence from the results of toxicity testing and EEM sampling are provided to indicate that impacts to higher trophic levels are not being observed, which supports this conclusion.

Based on consideration of the conceptual site model presented in Figure 39 and the 2017 monitoring results, Agnico determined that the most likely source of changes to conventional parameters is effluent discharge (potentially, current, and historical); however, specific activities or incidents that may have caused these changes were not identified or discussed. In response to NIRB's comment on near-field baseline/reference stations (NIRB 2016-2017 Annual Monitoring Report, page 9), Agnico indicated that it is not considering finding other near-field stations that could be used for baseline/reference conditions and provided a rationalization as to why, which does not appear to have been accepted by NIRB.

Recommendation 17: While some aspects of NIRB's comment appear to have been addressed, the issues of impact causes and reference/baseline stations still need to be resolved.

> ***Agnico Eagle's Response:***
> ***The cause associated with changes in conventional parameters*** *– Figure 5 in the 2017 annual report outlines the conceptual site model (CSM) for near-field changes in conventional parameters, which highlights the linkage between changes in conductivity, major cations, hardness, etc.) and effluent discharge from the Vault attenuation pond (WAL) and Portage attenuation pond (SP and TPL). As discussed in the responses to recommendation 17 above and in Section 3.2.2.2 of the 2017 CREMP report (Appendix G1, the changes in water quality observed to date are considered (1) unlikely to result in adverse effects to aquatic life and (2) to be consistent with the FEIS prediction of low impact. As such, this situation warrants only ongoing monitoring under the MRP.*
>
> ***Additional reference/baseline*** *stations – As discussed in last year's response, the before-after-control-impact (BACI) design is predicated on having pre-development baseline data at all stations of interest in order to make inferences that statistically significant differences (i.e., at NF stations relative to baseline/reference conditions) are related to mining. Without baseline ("before") data, the design is limited to CI comparisons, which are considered flawed as they assume that stations are identical (i.e., any differences between two stations in a CI design are considered mine-related even though they may just be different due to natural, pre-existing differences). Despite these limitations, however, the CREMP was expanded in 2009 to add an additional reference area (Pipedream Lake; PDL) and far-field area (Tehek Lake far-field; TEFF); while these areas are not formally used in the statistical analyses for the Meadowbank CREMP, they are*

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

considered valuable in the interpretation of the overall results (i.e., PDL for regional trends and TEFF for spatial extent). However, NF stations by definition are those that would be (i.e., during baseline studies) or are (after development) situated in close proximity to mining-related infrastructure/sources. Thus, given that the development has already taken place, adding NF stations would not improve the design of the CREMP nor could they be used to characterize baseline/reference conditions. Consequently, there are no plans for adding NF stations.

3.11 Portage Rock Storage Facility (ST-16)

Concern: Tables 8.21 to 8.24 of the 2017 Annual Report summarize monitoring results for station ST-16, a sump area along the east base of the Portage Rock Storage Facility (RSF), and stations downstream in the receiving environment in NP-2 Lake (South, East, West, Winter), NP-1 Lake (West), Dogleg Lake (North), and Second Portage Lake (RSF Seep) for monitoring years 2014 to 2017, respectively. Parameters reported include Cyanide (CN Total, CN Weak Acid Dissociable [WAD], and CN Free). This monitoring is conducted in accordance with the 2017 Freshet Action Plan to contain and monitor seepage from the North Cell Tailings Storage Facility (TSF), which in 2013 migrated below the Portage RSF to the sump area at ST-16.

It is noted after Table 8.24 that, "the KIA requested that Agnico continue monitoring until there is a 5 year period of non-detect cyanide results. To date (previous 4 years) the monitoring has indicated no CN levels in NP-2, NP-1 and downstream lakes, Dogleg and Second Portage. Thus the current program will continue in 2018. In 2018, Agnico will assess the data after the sampling season as required."

It is not apparent from Tables 8.21 to 8.24 that CN levels have not been detected in lakes NP-2, NP-1, Dogleg and Second Portage in the previous 4 years (2014-2017). According to the table notes, values presented in bold correspond to half detection limits, and so presumably, values presented in bold represent non-detect values. Based on this interpretation, detectable levels of all CN forms were measured in NP-2 and NP-1, and CN WAD and CN Free in Dogleg and Portage in 2014 and CN Total and CN WAD in all lakes in 2017.

Recommendation 18: CIRNAC recommends that AEM clarify the statement "To date (previous 4 years) the monitoring has indicated no CN levels in NP-2, NP-1 and downstream lakes, dogleg and Second Portage" and confirm the cyanide results.

Agnico Eagle's Response:

Values in bold are values below the accredited laboratory detection limit. For statistical purposes, and according to standards, Agnico considers those values be half the detection limit. Agnico does not consider those values to mean that no CN is present.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

The sentence where Agnico indicated that no CN levels would refer to the fact that the yearly average does not exceed the CCME guideline, the MDMER or Water License limit for effluent discharge into the environment. In the 2018 Annual report, the text will be corrected to avoid confusion.

3.12 All Weather Road (AWAR) and Quarries

Concern: Section 8.3.5 of the 2017 Annual Report notes that a geotechnical structural inspection of the AWAR, including all culverts, bridges and quarries, was conducted by Golder in 2017. The findings and recommendations along with AEM's responses are discussed in Appendix B1. For ease of reference it is noted that Golder recommendations included:

a) expansion of the monitoring program to ensure that all culverts provide adequate capacity for the freshet and following large storm events;

b) monitoring progression of erosion of culverts PC-17A (8+830), PC-11 (39+552), R14 (67+840), R18-B, R-20 (85+490), R-23 (93+600), and R24 (98+100) at freshet for any signs of progression or washout, as signs of water flowing beneath the road were observed at these locations;

c) monitoring is recommended to see if flow occurs through the culvert (i.e., during the freshet) with particular attention paid to R-00A (km 2+550), the culvert at 5+700, PC-14 (km 4+260), and PC-16 (km 54+950).

AEM responses essentially indicate that they believe the existing monitoring program addresses these recommendations. This should be confirmed in the next annual report.

Recommendation 19: CIRNAC recommends that it would be constructive if AEM were to develop and include a table to track proposed activities and recommendations presented within the Annual Report and supplementary documentation appended to the Annual Report. Such a table would help to ensure the follow up of potential issues, such as information regarding whether a recommendation was adopted, how it was implemented and/or the rationale as to why a recommendation was not considered.

Agnico Eagle's Response:

Agnico acknowledges CIRNAC comments and will determine the best way to introduce a table to track authorities' recommendations in the 2018 Annual Report as detailed in Recommendation 1. In Agnico's view, this table may include commitments done in responses to NIRB/NWB recommendations/comments, during the review of any management plan or in any other official communication or regulatory process. For now, Agnico does not see the necessity to include in the table all the proposed activities provided in the supplementary documentation appended to the Annual Report.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

3.13 Seepage Through Central Dike

Concern: Section 8.3.7.2 of the 2017 Annual Report provides a discussion of Central Dike seepage issues that peaked in July 2017 with seepage flows at 575 m3/h compared to the 450 m3/h predicted. The section discussed monitoring, alert levels, mitigative actions, involvement of the Meadowbank Dike Review Board (MDRB) and AEM concluded that based on the adaptive measures taken the situation is now under control.

However, based on review of the MDRB meeting records of 4 September 2017 it is noted that while conditions appeared stable at that time, the MDRB still had some concerns regarding the Central Dike seepage and notes the need for additional investigations of void interpreted features and suggests that AEM consult with Ground Penetrating Radar (GPR) specialists to assess applicability of GPR surveys.

Recommendation 20: CIRNAC agrees with the MDRB recommendation that additional investigations be carried out, and that AEM assess applicability of GPR in this regard.

Agnico Eagle's Response:

Following the 2017 MDRB report, additional measures were taken such as a field investigation in the area of concern. GPR was evaluated but was concluded to not be a suitable technology due to the field condition. Agnico reported the result of the investigation and the recommendation of the dike designer to MDRB who was satisfied with the answer.

The seepage at Central Dike has further decreased with a similar trend to the model and is now at 230 m^3/h.

3.14 Groundwater

Concern: Figure 38 of the 2017 Annual Report summarizes sulphate concentrations vs. calcium plus magnesium concentrations measured in various groundwater or potential groundwater sources, and identifies three types of water: Reclaim Water, NAG Stockpile, and Natural Water. However, when the various water signatures are discussed in the text on page 161 of the Report, the signature associated with waste rock is identified as being from the Potentially Acid Generating (PAG) Stockpile and not NAG. The same discrepancy is noted in the 2017 Groundwater Monitoring Program Report.

Recommendation 21: CIRNAC recommends that AEM should clarify whether the signature is for PAG or NAG waste rock seepage.

Agnico Eagle's Response:

It was suggested within Figure 38 of the 2017 Annual Report that three (3) possible signatures were identified in 2017 groundwater related samples. They were showed and separated according to chemical ratios and possible source identified, for example NAG

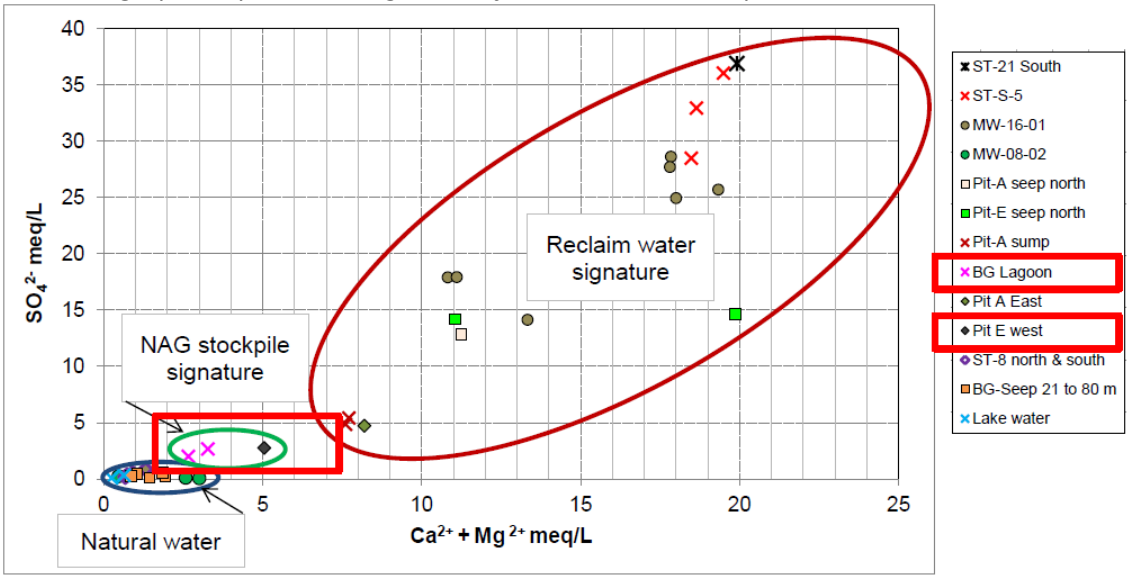
10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

stockpiles are located in the vicinity of the locations (BG Lagoon and Pit E West) identified under NAG stockpile signature. A hypothesis was formulated that this water enters in contact with the rocks and dust and can eventually leach with a signature from either (NAG or PAG). This rationale was meant to explain why sulfate vs calcium + magnesium was plotting a little higher on the graph when compared with background groundwater samples. This hypothesis has not been confirmed as other factors could influence those variations. The proximity of the signature comparison the natural water meant that focus could be shifted to other elements.

Thus it was mentioned in the text on page 161 that three potential groups could be further interpreted on site:

- *Samples containing reclaim signature*
- *Samples containing a potential signature from waste rock PAG stockpiles (further investigation would be required), and*
- *The natural surface water and groundwater signature.*

The below graphic represented Figure 38 of the 2017 Annual Report.



3.15 Progressive Reclamation – Mine Site

Concern: Section 9.1.1 of the 2017 Annual Report generally discusses the status of current reclamation plans and progressive reclamation carried out to date at a high level. The information is consistent with general plans and principles outlined in other portions of the document and the FEIS.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

No mention is made of potential implications of updates to Life of Mill plan if ore is milled from additional pits elsewhere, and what if any implications this may have on planned progressive reclamation.

In terms of progressive reclamation progress, the only numeric value provided is that of 86% of the Portage PRSF had been covered to end of January 2017. We would have expected that AEM would have provided more details than this with respect to the status of progressive reclamation at the mine site (e.g., areas of TMF and WRSF facilities covered in 2017 and total areas to date, along with the volumes associate with these areas).

It is noted by AEM that the Interim Closure and Reclamation Plan (ICRP) will be updated in 2018.

Recommendation 22: CIRNAC expects that 2018 updates to ICRP will include more details on progressive reclamation such as: areas of TMF and WRSF facilities covered in 2017 and total areas to date, along with the volumes associate with these areas, amongst others.

Agnico Eagle's Response:
The 2018 ICRP update was submitted to NWB on August 22, 2018. Following the authorities' review period of this plan, no comments were received regarding the current CIRNAC's recommendation. In this 2018 updated version, information regarding the progressive closure of TSF and WRSF can be found Section 6.2 of the report, however it does not included all the details requested by CIRNAC. Agnico may consider adding some of this information in the next ICRP revision. The annual report will continue to include detailed progressive closure completed during the year.

3.16 Inspections, Compliance Reports and Non-Compliance Issues

Concern: Section 11.3 of the 2017 Annual Report discusses inspections that have occurred during the year. In some cases, it is clearly stated by AEM that no issues were identified. In other cases, AEM simply refers the reader to the Appendix of the report.

Recommendation 23: CIRNAC recommends that AEM provides a summary statement on findings of all inspections and if and where necessary, provide a list of issues that have been identified and the status of these issues.

Agnico Eagle's Response:
It is Agnico's intent to refer directly to the full investigation reports to capture the whole essence of the interpretation of the reports. It is also Agnico's belief that a summary is already provided of the inspections completed in the year. However, Agnico will continue to improve information reported in this section in future annual reports.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

3.17 Post-Environmental Assessment Monitoring Program (PEAMP) – Evaluation of Impact Predictions

Concern: In their review of the 2016-2017 Annual Monitoring Report, the NIRB required AEM to "provide a full discussion and summary on the post-environmental assessment monitoring program for the Project. This must include a discussion that references the baseline and previous years' monitoring data and further indicates whether any trends have been observed at the mine site for each Valued Ecosystem Component where an impact has been observed. The discussion should include whether any identified trends of effects over time are indicating the potential for impacts from or associated with the Meadowbank Project."

In Section 12 of the 2017 Annual Report, AEM states that a discussion of year-to-year trends is provided for any monitoring components where an exceedance of impact predictions was observed. For example, an assessment of historical trends was conducted for large predatory mammal mortality since such mortality in 2017 occurred beyond FEIS thresholds. Since AEM concluded that observed impacts to water quantity, water quality, fish and fish habitat measured in 2017 are within the FEIS predictions or are not expected to result in adverse environmental impacts, trend analyses were not presented for any components of the aquatic environment. While the concentrations of conventional water quality parameters that exceeded trigger values were deemed to be low and with a low likelihood of adverse effects on aquatic life, these parameters may eventually become problematic if their concentrations are increasing over time which is why a trend analysis is needed. Data comparisons and interpretations presented for the PEAMP continue to be limited to those between current conditions (2017) and FEIS predictions.

Recommendation 24: CIRNAC recommends that AEM includes a temporal analysis identifying trends over time in the data interpretation.

> ***Agnico Eagle's Response:***
> *It is Agnico's belief that a comprehensive update is not warranted as part as the PEAMP. According to the proponent's responsibilities identified under Appendix D of the Project Certificate, examinations are provided as required in individual monitoring reports. As such, trending analyses would also not be required under the aforementioned responsibilities. Agnico is confident that these discussions reference any potential impacts observed. In addition, the annual report is based on an extensive review of the FEIS throughout its content.*
>
> *Nonetheless, Agnico, is committed on improving identification of noted effects within the PEAMP summary report in this section and intends to highlight any trends observed for VEC's exceeding predictions with the 2018 Annual report and moving forward.*

3.18 Accuracy of Impact Prediction

Concern 25: Information to date suggests that the impact predictions are generally as expected, although there are some areas where impact predictions vary with respect to specific aspects of

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

the project. For example, most parameters measured in the pits deviate in concentration by more than 20% from FEIS predictions and the number of parameters that may potentially require treatment at closure prior to dike breaching has increased over time (cadmium and nickel were added to the list in 2017).

Similar to previous years (2014-2016), mine-related changes in conventional parameters relative to baseline/reference conditions were observed in 2017 at near-field stations in the receiving environment, Third Portage Lake (North and East basins), Second Portage Lake and Wally Lake.

The concept of freezing the Waste Rock and Tailings Facilities is a fundamental design approach to mitigate Acid Rock Drainage and ensure chemical and physical stability of the structures. Monitoring data to date support this concept. It is noted however, that the climate change model predictions used in the FEIS are dated and it may be appropriate to update the climate change discussions with more recent research information.

Agnico Eagle's Response:

Variations in the predictions are related to water quality. Explanations were given regarding lower than expected volumes of water, therefore increasing concentrations of contaminants. As part of the adaptive management, Agnico reviewed the climate change model literature and mandated O'kane Consultants to provide a detailed engineering design of the TSF closure concept in 2016 using up to date climate change predictions from the IPCC (Intergovernmental Panel on Climate Change) RCPs (Representative Concentration Pathways) RPC4.5 and RCP6.

3.19 Other Considerations

Concern 26: The annual report is for the most part silent with respect to the potential impacts of Life of Mill extension if additional mineral resources are processed at the Meadowbank operation. Such activities would be a major variance to the Meadowbank FEIS plans and associated predictions. Given the desire to compare predicted impacts to actual impacts, the failure to at a minimum point out that the life of the operation may change, and if so, that the predictions for some aspects of the operation (tailings storage, closure concepts, extended life of mill and associated infrastructure operations both on site and at off site locations) will also change accordingly is a major shortcoming in understanding the potential long term behaviour and impacts of the operation.

Agnico Eagle's Response:

Agnico is already required under the Project Certificate under Appendix D to include in its annual report, "b. A summary of the results from the PEAMP including an analysis of the project's impact to the environment with reference to the predictions and environmental and socioeconomic indicators used throughout the FEIS and Final Hearing, to be clearly cross-referenced to facilitate the reviewers' ability to locate such referenced information. This analysis should include: i. Reference to baseline and monitoring data used to support impact predictions and effects conclusions, with a discussion of data collection and

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

analysis methodologies employed; ii. An evaluation of the effectiveness of any mitigation measures undertaken and, where relevant, a discussion of any exceeded thresholds, adaptive mitigation strategies employed and their effectiveness."

As per our monitoring requirements, we have been carrying out this analysis and have not noted any major variances against predictions. Agnico will continue to carry out this analysis in relation to its current and future activities at Meadowbank, including the continued use of the mill that was permitted when the Whale Tail Project was approved by NIRB. Agnico would provide additional information on predicted impacts of future modifications as required within the NIRB process including annual reporting. As an example, in the recent In-Pit Deposition application, Agnico noted that the current monitoring will continue with reference to the predictions. The application also highlights that this development will utilize existing impacted areas, reduce the predicted freshwater transfer by 60% and continue operations at the Meadowbank Mine, supporting the continued benefits of the mine to the Inuit, the region, Nunavut and Canada."

3.20 Project Certificate Terms and Conditions, and Commitments

Concern: The 2017 Annual Report's format does not provide the resolution status of all Project Certificate terms and conditions and commitments. CIRNAC has conducted a cursory review of the Project Certificate and has determined that as a minimum, the following terms and conditions, and commitments are applicable to socio-economic monitoring.

Term and Condition No.	Commitment No.
39, 40, 58, 59, 63, 64, 65, 68, and 84	12, 13, 18, 21, 22, 23, 26, 37, 42, 94, 95, 100, 101, 102, 103, 104, 105, 106, 107, 108, 110, and 111

Recommendation 27: CIRNAC recommends that AEM include a table of concordance for Project Certificate terms and conditions, and commitments in future Annual Report submissions. This would facilitate the review of their resolution status.

Agnico Eagle's Response:

Agnico has determined the Term and Condition to be minimally include in the annual report as per the Project Certificate Appendix D Item 2h. In addition, Table 1.1 - List of Reporting Requirements of the 2017 annual report provided all Project Certificate conditions included in the annual report and the section where the information can be found. Furthermore, the NIRB Annual Monitoring Report in Appendix III provided a concordance table for all conditions. The Table in Appendix III does not provide an update of all commitments. It is Agnico's view that the annual report should continue to report only on conditions.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

3.21 Term and Condition No. 65

Concern: Cumberland shall include in its socio-economic monitoring program for the Meadowbank Project the collection and reporting of data of community of origin of hired Nunavummiut.

Although valuable labour information is provided in Section 11.10.1 of the 2017 Annual Report (e.g., total workforce, percentage of Inuit and non-Inuit by employment category, and percentage of Inuit women and non-Inuit women by employment category), data is not provided for community of origin of hired Nunavummiut.

Recommendation 28: CIRNAC recommends that AEM report on the community of origin of hired Nunavummiut pursuant to the requirements of Term and Condition No. 65.

> ***Agnico Eagle's Response:***
> *Agnico already reports on this information annually through the Socio-Economic Monitoring Program Report in section 1.3 (Project Agnico Eagle employment by Kivalliq community).*

3.22 Term and Condition No. 68

Concern: Cumberland shall, in consultation with Elders, local Hunters and Trappers Organizations (HTOs) and the Meadowbank Gold Mine Socio-economic Monitoring Committee (SEMC), demonstrate that they are working toward incorporating Inuit societal values into mine operation policies.

Although AEM has confirmed its commitment to consulting with Elders, local HTOs, and the Kivalliq SEMC on mine operations as referenced in Section 11.6 of the 2017 Annual Report and Appendix J6, it is difficult to ascertain that policies and management plans are being reviewed and modified to incorporate Inuit societal values.

Recommendation 29: CIRNAC recommends that AEM demonstrate that it is regularly consulting with Elders, local HTOs, and the Kivalliq SEMC with the aim of incorporating Inuit society values into mine operation policies. A record of decisions and perhaps a policy on how Inuit societal values are to be adhered throughout mine operations should be included in future annual report submissions.

> ***Agnico Eagle's Response:***
> *Agnico can demonstrate through more detailed record of consultation on mine operation policies in future reports, showing a record of review and decisions, if applicable.*

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

3.23 Appendix A: Edits and Omissions

Concern: CIRNAC noted that as new information is added to the end of each section with each iteration of the Annual Report, sometimes there becomes a disconnect in the flow of information presented and in other instances the new information repeats or contradicts what was stated previously (e.g., top of page 27).

Recommendation 30: CIRNAC recommends general editing to improve upon information flow during subsequent annual report revisions.

> ***Agnico Eagle's Response:***
> *Agnico acknowledges CIRNAC comment and will work on improving the flow of information within future annual reports.*

Concern: Some of the site maps (e.g., Figures 1 to 4) are of poor quality, outdated and missing features (e.g., locations of Landfarms 1 and 2, Saddle Dam 5) and could be replaced with maps and figures presented in appended reports, which show areas in more detail. In addition, it is noted that the 2017 Annual Report does not contain photographs of site features which would be helpful in discussions of some of aspects of the site conditions.

Recommendation 31: CIRNAC recommends that AEM update the referenced maps in future reports.

> ***Agnico Eagle's Response:***
> *Agnico acknowledges CIRNAC comment and will provide updated maps in the 2018 annual report.*

Concern 32: The report seems to be written with the assumption that the reader is already familiar with the site and the various aspects of the operation, and thus provides little background information for context. Although much of this information was found in the supporting documents, it would be helpful if some relevant background information was added to the Annual Report (e.g., a brief overview of the site and mining operations).

> ***Agnico Eagle's Response:***
> *Agnico acknowledges CIRNAC comment and will review how the next annual report can be improved. Agnico wants to remind that the annual report summarizes most of the information requested. Full details and background are to be found in each of the appendices individually.*

Concern : There are many instances where Sections (e.g., Section 8.3.7 and sub-sections), tables or figures are numbered incorrectly either in the caption (e.g., Figures 39 and 40) or as referenced within the text. Also, many tables (e.g., Tables 1.1, 1.2, 8.1-8.20, 8.25-8.62, 8.64-8.66, and 8.74) and figures (e.g., figure referred to on page 154) are referenced in the text but are not included anywhere within the report. Many tables (e.g., Tables 8.69-8.71 summarizing results from the

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

CREMP) and figures (e.g., Figures 5-12 summarizing thermistor results; Figure 34 showing sub-landfill location) are also difficult to read due to their sizing (i.e., the text/images are too small to read or of poor quality).

Recommendation 33: CIRNAC recommends that AEM improves upon the quality of tables and figures and ensures that all referenced tables and figures are included in the annual report.

> ***Agnico Eagle's Response:***
> *Agnico acknowledges CIRNAC comment and will ensure that all tables/figures are correctly referenced in the text.*
>
> *Agnico will continue to add some of the tables and Figures in Appendices to ease the comprehension of the annual report. Also, reference to the appendix where the table can be found will be added in the next 2018 annual report.*

Concern: Terminology or nomenclature used is not consistent between the various documents, so when information is copied directly into the Annual Report from supporting documents it is often not clear what is being described and discussed. For example use of terms north and third portage pit vs. pits A, B, C, D and E to describe areas and monitoring locations within the Portage Pit; Stations TPN, TPE, SP, WAL are referenced in the CREMP but not described in the Annual Report or shown on any figures.

Recommendation 34: CIRNAC recommends that AEM uses consistent terminology, when referring to mine pits or other structures, within the annual report and related documents.

> ***Agnico Eagle's Response:***
> *Agnico acknowledges CIRNAC comment and will improved the consistency of terminology in the next annual report. The abbreviation list at the beginning for the annual report was created to avoid this kind of confusion.*

4 Kivalliq Inuit Association (KIA)

4.1 General

Concern: Several reports are cited in the text which are not part of the accompanying appendices (e.g., Physical Environment Impact Assessment Report 2005; Cumberland 2006; Golder 2007; SNC 2013) and there is no Reference section at the end of the report providing details on these reports.

Recommendation 1: Please provide a Reference section at the end of the report and linkages to source documents.

> ***Agnico Eagle's Response:***
> *Agnico will add a reference section in the next annual report. Reports included in the reference section will be provided on request.*

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

4.2 Section 1: Introduction

Concern: The 2017 Annual Report addresses reporting requirements under the following authorizations:

- NWB Type A Water License 2AM-MEA 1525;
- NIRB Project Certificate No. 4;
- DFO HADD Authorization NU-03-190 AWAR;
- DFO HADD Authorization NU-03-191 Mine Site;
- DFO Authorization NU-14-1046 Phaser Lake;
- INAC Land Leases 66A/8-71-2 (AWAR) and 66A/8-72-2 (AWAR Quarries); and
- KIA Right of Way KVRW06F04.

AEM notes that reporting requirements for the Metal Mining Effluent Regulations (MMER) were submitted directly to Environment and Climate Change Canada (ECCC). We request that copies of these reports also be provided directly to the Kivalliq Inuit Association (KIA).

Recommendation 2: AEM should provide copies to the KIA of all MMER reports submitted to ECCC.

Agnico Eagle's Response:

Agnico reported data to Environment and Climate Change Canada (ECCC) via the RISS electronic database reporting system. All of this reported data were part of the annual report and will continue to be included.

As required by ECCC, a Biological Monitoring Study (EEM Study Design 3) was conducted in 2017 to assess the Wally Lake (Vault Discharge). The study design was submitted to ECCC on February 17, 2017 (Appendix G3 of the 2017 Annual Report). In June 2018, the Environmental Effect Monitoring Study 3 Interpretative Report was submitted to ECCC. A copy of this report is provided in Appendix 2 and will also be part of the 2018 annual report.

Agnico Eagle will continue to provide KIA and other regulators copies of reports and data submitted to ECCC via the Annual report.

4.3 Section 2: Summary of Activities – 2018 Activities

Concern: AEM indicates that 2017 was another good year for the Meadowbank Mine, with operations exceeding production targets for the sixth consecutive year. Meadowbank produced a total of 352,256 ounces of payable gold, as well as 276,853 ounces of silver. The mine is forecast to produce 220,000 ounces of gold and 60,000 ounces of silver in 2018. Production at Meadowbank has been extended to 2019 due to extension of the mine plan at Vault and Phaser Pits in 2018 and Portage Pit in 2018 and 2019, as well as supplementation from stockpiles in both years. This extension is expected to result in no interruption in mining activity in the area as Meadowbank operations end and Amaruq operations begin in the third quarter of 2019.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Under 2017 highlights for Meadowbank, AEM reports that "during 2016, the mill processed 3,915,000 tonnes of ore" (p. 2). We assume this should read "during 2017"?

Recommendation 3: Please correct the text to indicate ore processed for 2017.

Agnico Eagle's Response:
This is an error. The data were not updated for the 2017 annual report and are the one for 2016. You should have read 'During 2017, the mill processed 3,853,034 tonnes of ore.'

4.4 Section 2: Summary of Activities – 2018 Mine Plan

Concern: The 2018 Mine Plan (fully described in Appendix A1) outlines activities planned for 2018. Meadowbank will be in its ninth year of operations in 2018. In addition to routine activities, several construction and modification projects are planned in the main mine site and Vault areas:

- Construction of the Central Dike Phase 7;
- Construction of the North Cell Internal Structure (pending regulatory approval);
- Construction of Saddle Dam 3 Phase 4; and
- Evaluation of options for future tailings deposition.
-

Environmental monitoring (of wildlife, aquatic effects, groundwater, noise and air) will continue throughout 2018.

AEM plans to extract a total of 12.5 Mt of rock from Portage and Vault pits in 2018 (10.1 Mt of waste rock, 2.4 Mt of ore from open pits and 1.0 Mt of ore from stockpiles).

AEM plans to minimize greenhouse gas emissions by maximizing use of the waste storage facility and minimizing haulage cycle times.

Recommendation 4: Please explain the rationale for evaluating options for future tailings deposition. Are current sites close to capacity?

Agnico Eagle's Response:
The current Tailings Storage Facility (TSF) was designed to receive tailings associated to the Meadowbank Project. With the development of the Whale Tail Project, ore will continue to be processed at the Meadowbank Mill and tailings will need to be disposed in the facility at Meadowbank. Although sufficient capacity was assessed to include Whale Tail pit operations, Agnico continue to evaluate options for future tailings deposition to ensure sufficient capacity to receive the tailings. Agnico Eagle is currently in the NWB Water License 2AM-MEA1526 Amendment Process to get the approval for in-pit disposal. NIRB Project Certificate 004 Amendment no 3 was received to reflect this change.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

4.5 Amaruq Exploration Access Road

Concern: A comprehensive annual report of activities associated with the Amaruq Exploration Access Road is included in Appendix A2. A complete report was submitted separately to the Nunavut Water Board (NWB), Indigenous and Northern Affairs Canada (INAC) and the KIA by May 4, 2018. In Appendix A2, AEM states that 650 holes were drilled at the Amaruq project and 25 were drilled in the Meadowbank area and "all drilling areas were managed in such a manner as to reduce our environmental footprint to a minimum" (App A2 p. 3) but no further details given.

Recommendation 5: Please indicate what steps were taken to minimize the environmental impacts of drilling for the Amaruq project in 2017.

> ***Agnico Eagle's Response:***
> *At a drill site, the drill and the equipment are placed in a restrained area and will normally use less than 0.01 hectare. As a comparison, one (1) hectare per drilling site is paid to the Kivalliq Inuit Association for each piece of land used around a drill site outside the commercial lease and located on Inuit Owned Land. Cuttings generated by drilling are disposed of at a distance of at least 31 meters from a water body where a direct flow to the water is not possible. When drilling on ice, the cuttings generated also disposed of at a distance of at least 31 meters from a water body using pumps and sludge lines or using settling tanks and transport. Once drilling is completed, the casing is then removed or cut off at ground level.*

Concern: Insufficient information on the content of consultations with Government of Nunavut biologists is provided in Appendix A2. AEM states that consultations led to "revisions of the Terrestrial Ecosystem Monitoring Plan (TEMP) in support of final hearings" (App A2 p. 7) but does not indicate what the revisions were specifically.

Recommendation 6: Please indicate what changes to the TEMP occurred as a result of consultation with Government of Nunavut biologists.

> ***Agnico Eagle's Response:***
> *Please find attached in Appendix 3 meeting minutes from June 19-20, 2018 Terrestrial Advisory Group meeting (in fulfillment of NIRB Condition 27) which demonstrates Agnico's collaboration with GN biologists. In particular, action item 4, 7, 11 and "Day 1- TEMP Changes Review" (on pages 1 and 2 of the meeting minutes) reflect the changes Agnico has made in the TEMP as a result of consultation with GN biologists. Agnico has submitted V6 of the TEMP in December 2018 to NIRB and the TAG (action item 15).*

Concern: AEM is required to provide "a brief summary of Wildlife Monitoring and Mitigation Plan (WMMP) results including the wildlife log and record of observations as well as any mitigation actions that were undertaken" (App A2 p. 8). AEM provides the raw data of wildlife observations and mitigation actions in appendices but does not summarize this information in the text.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Recommendation 7: Please provide a written summary of the log and record of observations and mitigation actions in the text (e.g., number of each type of wildlife encountered, actions taken, and outcome of actions).

Agnico Eagle's Response:
Agnico Eagle acknowledges KIA's comment and will provide the requested information in the 2018 Wildlife Monitoring Report to be submitted as part of the 2018 Annual Report.

4.6 Section 3: Construction/Earthworks – Dike and Dams

Concern: AEM outlines its surveillance program to monitor deformations, seepage and geothermal responses, as required by the water license:

- Daily inspection – carried out daily by a designated qualified engineer or technician;
- Thermistor and piezometer monitoring – carried out generally weekly or bi-weekly by a designated qualified engineer or technician;
- Detailed inspection - carried out generally monthly or bi-monthly by a designated qualified
- engineer or technician; and
- Engineering annual inspection – carried out annually by qualified engineer (consultant), during open water, if possible, to verify that the facilities are functioning as intended.

No major concerns were raised for most of the monitored structures based on available geotechnical instrumentation data and visual inspection in 2017 (i.e., at dewatering dikes, and at Tailing Storage Facilities).

In 2016, a rockfill buttress support was constructed at the downstream toe of the South Cell in response to tension cracks and signs of settlements observed on the Stormwater Dike's crest. New tension cracks and signs of settlements were observed here again in July 2017.

See descriptions below for the state of individual structures.

East Dike
AEM has been discharging seepage water from the East Dike collection system back to Second Portage Lake since January 2014. The discharge is monitored subject to MMER requirements and AEM reports that to date parameters have been within acceptable levels. A seepage collection system was installed downstream of the dike in 2011/2012 to manage three zones of seepage year-round. The measured flow of this seepage decreased slightly in 2017.

Bay Goose Dike
Mining activity ceased in the Goose Pit in 2015. There has been some seepage associated with the dike but AEM does not indicate its volume or extent. AEM reports that "there is currently no downstream seepage collection and monitoring system as the amount of seepage through the dike is not significant" but that "the area will continue to be monitored to determine

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

increases/decreases of the seepage in these areas", and "the condition of the dike will continually be monitored" (p.11).

As we highlighted in our review of the 2016 Annual Report, information on seepage monitoring at the Bay Goose Dike is unclear. AEM indicates in the first statement above that there is no monitoring of the seepage, which contradicts the second and third statements suggesting that monitoring is ongoing.

Recommendation 8: Please clarify whether monitoring of the seepage along the dike is occurring, and if so, with what frequency.

> ***Agnico Eagle's Response:***
> *The seepage channel at the toe of Bay-Goose Dike can be observed in the summer. This water naturally reports to the Bay Goose Pit and is not managed by pumping. Agnico conducts punctual flow monitoring at predetermined locations to get an estimate of the seepage evolution. The flow in the channel is measured punctually using a bucket and a stopwatch (averaging between 5 and 15 m^3/day). The reading frequency is approximately once per week during summer time.*

Concern:

Central Dike

Seepage at the downstream toe of the Central Dike, which was first reported in the fall of 2014, has continued in 2017. Seepage has been managed through containment and pumping back to the South Cell Tailings Storage Facility since 2015. The water quality of the seepage is monitored monthly for metals, cyanide and major anions. Analysis of water quality parameters suggests the source of the seepage is the South Cell. Golder updated the seepage model in 2017 to include seepage flow through the bedrock. A total of 332,177 m3 of seepage water was transferred to the Goose Pit in 2017 (an initial transfer of 50, 000 m3 to the Goose Pit occurred in 2015).

Appendix C2 – 2017Water Management Report & Plan provides further details on Central Dike seepage. An orange precipitate was observed in the seepage pond in July 2017, as well as large depressions in the tailings beaches and a temperature increase on one thermistor. AEM developed an action plan to reduce the hydraulic gradient between the South Cell and its downstream seepage pond, which involved the transfer of water to Goose Pit and the construction of the South Cell Internal Structure to prevent the tailings beach from reaching the reclaim pump, similar to the structure built in the North Cell in 2014.

The Central Dike seepage is also described in Section 8.3.7 of the Annual Report (reviewed herein in Section 8.3.7).

Stormwater Dike

Cracks were observed in the foundation of the dike in the summer of 2016. Monitoring of the dike's movement has been implemented, and a buttress type structure was constructed at the downstream toe of the dike in 2016 (following recommendations by Golder, the designer of the

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

dike). New tension cracks and signs of settlements were observed on the crest of the dike again in July 2017. AEM believes that thawing of soft soil below the dike may be responsible for these changes to the structure. The frozen foundation may have thawed when the South Cell pond reached the toe of the dike in July 2016. Monitoring instruments installed along the dike in 2016 and 2017 show no indication of movement. It is not clear if AEM plans any further action to promote freezing of the thawed foundation at the downstream toe.

Recommendation 9: Please explain what additional mitigation measures, if any, are planned to prevent further cracking and settlement of the dike's foundation due to thawing of the underlying soil.

> ***Agnico Eagle's Response:***
> *Cracks development continued in 2017. The mechanism of thaw settlement in the frozen sediments is well understood. The settlement is expected to continue as water in the South Cell raise. Agnico continues monitoring of the movements as per OMS. Ongoing tailing deposition along the toe of the dike will limit heat flux and permit freeze-back to the foundation. No additional measures are deemed necessary at the moment as the situation is considered stable and under control.*

Concern:
Appendix B1: Annual Geotechnical Inspection – Part 1
Golder makes numerous recommendations in its Annual Geotechnical Inspection relating to performance of structures throughout the mine site. AEM includes recommendations related to the Central Dike in its Annual Report, but does not present other recommendations such as:

- Checking whether piezometers recording data < 0 at East Dike and Bay-Goose Dike are broken
- (since piezometers are not reliable once they freeze);
- Continuing to isolate ultramafic waste rock stockpile from downstream toe of South Camp Dike to enable visual observation of toe;
- Monitoring of several culverts to ensure sufficient capacity for freshet flows;
- Clearing obstructions, repairing and monitoring erosion during freshet at culvert #167, as well as
- at five culverts along Vault Road;
- Ongoing removal of water ponding at Baker Lake fuel tank farm and Meadowbank Main Camp fuel tank, and monitoring and management of water accumulation within bermed area at Baker
- Lake fuel tank farm;
- Covering exposed geomembrane at Baker Lake fuel tank farm with geotextile and fill material to ensure protection of liner.

It is not clear what action AEM is taking to address the above concerns raised by Golder.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Recommendation 10: Please discuss all recommendations made by Golder in Appendix B1 in the main text of the Annual Report, including details on how AEM plans to address them

Agnico Eagle's Response:
All of Golder recommendations were discussed in the Implementation Plan provided in Appendix B1 of the 2017 Annual Report. In Agnico's view, to keep the whole interpretation and understanding of the recommendations and responses, the reader must refer to the Appendix. Agnico will not discuss all recommendations in the next Annual Report.

4.7 Section 4: Water Management Activities - Lake Level Monitoring

Concern: AEM monitors lake levels during the open water period for Third Portage Lake, Second Portage Lake and Wally Lake. Third Portage Lake has not received discharge from Portage Attenuation Pond since 2014. Second Portage Lake receives water from the East Dike seepage year-round, while water from the Vault Attenuation Pond was discharged into Wally Lake from July 17, 2016 to October 11, 2017. The General Water Movement models for 2017- 2029 presented in Appendix C2 –Water Management Report and Plan do not include Second Portage Lake.

Recommendation 11: Please include Second Portage Lake in the General Water Movement models for the life of the mine.

Agnico Eagle's Response:
Discharge to Second Portage Lake will be included in the General Water Movement models for the life of mine. This will be integrated into the 2018 annual report

Concern: AEM reports that water levels remained within the range of naturally occurring levels for all three lakes in 2017.

AEM states that it "does not see the advantage of comparing the water level to the natural seasonal variation as water levels are only taken in ice free period" (p. 21). We agree that the comparison should only be with natural variation during the ice-free period, not year-round, but emphasize the importance of continuing these comparisons to ensure discharge is not having significant effects on water levels.

Recommendation 12: Please continue to monitor lake levels during the ice-free period in lakes receiving discharge.

Agnico Eagle's Response:
Agnico will continue to monitor lake levels during the ice-free period in lakes receiving discharge.

Concern: Table 4.2 presents 2017 raw water level monitoring results. It would be helpful if each lake/pond column also included a calculation of the ice-free average, not just the raw data.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Recommendation 13: Please include the 2017 average water level and the long-term average value for each lake in Table 4.2.

Agnico Eagle's Response:
Agnico acknowledges KIA's comment and will add the requested information in the 2018 Annual Report.

4.8 Section 4: Water Management Activities - Water Balance Water Quality Model Reporting Summary

Concern: AEM reports that the water management plan has been updated to reflect:

- Validation and update of the site hydrology;
- Changes to the mining schedule, mill operation rate, mine pits layout, rock storage facility extent, and tailings management facilities filling;
- The development of a water balance model for the entire site and complete duration of the project;
- Comparison of the predicted and recently remodelled pit water quality forecast.

The water balance was also updated in 2017 to accommodate changes to the life of mine and associated changes in:

- Fresh water consumption;
- Total daily mill water requirement;
- Updated tailings deposition plan affecting the North Cell and South Cell deposition calendar;
- Pit water inflow revision based on observed flowmeter data as well as a revision of the pits and Tailings Storage Facility (TSF) run off inflows related to their underlying watersheds;
- Flooding sequence and volumes update to take into account the updated run off inflows, as well as to optimize flooding activities to reduce the impact on wall stability, as well as 2017 transfers from the South Cell downstream seepage to Goose Pit;
- The dewatering of Phaser Lake in 2016;
- Updating the seepage section; and
- Changes in tailings dry density as observed through the most recent bathymetric analysis.

The updated water quality model indicates that treatment may be required for aluminum, arsenic, cadmium, chromium, copper, fluoride, iron, nickel, and selenium so that the pit water quality meets CCME criteria at mine closure. Silver is no longer anticipated to be a problem at closure due to lower loadings in the 2016 mill effluent. This represents a change from the statements made in the 2014 Annual Report (which predicted that only copper and selenium might require treatment), the 2015 Annual Report (which predicted that copper, silver, selenium and total nitrogen might require treatment), and the 2016 Annual Report (which predicted that aluminum, arsenic, chromium, copper, fluoride, iron, silver, and selenium might require treatment). No

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

explanation for the changes to predictions is made in the Annual Report, although it is discussed in Appendix C2 Water Management Report and Plan. We highlighted this issue in our review of the 2016 Annual Review as well.

Recommendation 14: Please explain why there has been an increasing trend in the number of parameters predicted to require treatment at closure.

Agnico Eagle's Response:

The increasing trend from year to year in the number of parameters forecasted to exceed the CCME guidelines in the pits a mine closure can be attributed to the following:

1. In past Annual Reports, the forecasting of the metal concentrations was based on the dissolved fraction since it was assumed that the suspended particles should settle out in the pit and not be re-mobilized in the water column once the dike is breached. As of last year's Annual Report, total concentrations of the metals were considered in order to assess its impact if the suspended particles did not settle out in the pit. This approach results in a more conservative assessment and results in identifying additional parameters of concerns.

2. Furthermore, as of last year's Annual Report, the model considers the concentration loads from the pit seepages, which result in an increase in the loads of certain parameters into the pit water. For total aluminium, total arsenic, total chromium, total iron and fluoride, the higher forecasted concentrations can be attributed to these additional seepage loads to Portage Pit and Goose Pit. The analytical results from the groundwater sampled around the Portage and Goose Pits also confirm this observation. Parameters such as aluminum, arsenic and chromium are measured in very low but detectable concentrations in the groundwater. Fluoride is also present in the groundwater sampled around the Portage and Goose Pit.

3. Also, every year, the water quality forecast model is adjusted based on the mill effluent sampled during that year. The quality of the mill effluent varies from year to year. In 2015, higher concentrations of dissolved copper, dissolved silver and dissolved selenium in the mill effluent were measured in the mill effluent and used in the model when compared to the 2014 model, resulting in the identification of silver and selenium as additional parameters of concern. Silver was not identified as a parameter of concern in the 2016 model based on the mill effluent sampled that year. In the current 2017 model, forecasted nickel concentration was detected to be slightly higher than the CCME guidelines in Goose Pit due in part to the higher concentration measured in the mill effluent that year.

4. The water quality forecast model provides a conservative estimate, especially with regard to the pit seepage loadings that were assumed to be constant throughout the years until the pits are completely flooded. This is a conservative assumption. There should be

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

a decrease in seepage flow since the hydraulic gradient between the pit water and groundwater level will decrease over time.

Recommendation 15: Please provide more detailed discussion on the reasons for specific parameter exceedances in the Annual Report, by summarizing the information from Section 4.0 of the SNC-Lavalin Meadowbank Water Quality Forecasting Update provided in Appendix C2.

Agnico Eagle's Response:
Please refer to KIA's Recommendation 14 above.

4.9 Section 4: Water Management Activities - Predicted vs Measured Water Quality [and Quantity]

Concern: An annual comparison between predicted water quality and quantity and measured water quality and quantity within Portage, Goose and Vault Pits is required under the water license. A comparison of predicted and measured water quality and quantity within the pits was conducted for 2017, by comparing the measured water quality and quantity for that year with the predicted values for 2012-2017. Under the water license, AEM is required to explain percent differences of >20% between predicted and measured values.

Water Quantity
The volume of water measured in the Portage Pit in 2017 was more than 20% below the volume predicted for 2013 to 2017. AEM explains that this is partly because seepage water from East Dike was pumped to the Portage Pit sump prior to 2014, but that since 2014 this seepage water has been pumped into Second Portage Lake, leading to a significant decrease in water quantity in Portage Pit between 2014 and 2017.

The volume of water measured in Goose Pit was more than 20% below the volume predicted for 2012 to 2017, indicating that the contribution of seepage and groundwater sources to the pit is less than originally predicted.

The volume of water measured in Vault Pit was more than 20% greater than the volume predicted in 2014 (start of mining) and 2015 (by 120% and 142% respectively). No significant difference was observed in 2016 but in 2017 the volume measured was 363% greater than predicted. AEM suggests this is due to a larger freshet and more rainfall flowing to Vault and Phaser Pits. If this is the case, why do Portage Pit and Goose Pit not also show greater than predicted increases? No weather data is presented to support this conclusion. We highlighted this issue in our review of the 2016 Annual Review as well.

Recommendation 16: Please explain possible reasons for the greater than expected water volumes measured in Vault Pit in 2014, 2015 and 2017 and consider these against the reasons for reduced volumes in Portage and Goose Pits. Please discuss the implications of these exceedances on water management at Vault Pit.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Agnico Eagle's Response:

The larger volume of water discharged to Wally Lake around Vault Pit could be caused by a larger freshet and rainfall flowing to Vault and Phaser Pits. Another possible reason is a higher accumulation of snow in the Vault and Phaser pits compared to Portage and Goose Pits. Finally, another explanation is a higher infiltration rate of groundwater into Vault and Phaser pits.

The main implication of the higher volume of water to managed at Vault Pit area is the requirement to pump water for a longer period than anticipated. This translates to a higher consumption of diesel fuel to power the diesel pump.

Concern:

Water Quality

Water quality in the three pit sumps (Portage, Goose and Vault) showed similar patterns in 2017 to those in previous years (2012-2016). Most parameters of concern had greater than 20% differences between their measured and predicted concentrations (i.e., in both positive and negative directions) in all pit sumps.

AEM suggests several possible reasons for differences greater than +/- 20% between predicted and measured values:

- Management of seepage, groundwater and local runoff results in reduced volume of water available to attenuate contaminant loads reaching pits;
- Higher contaminant loads in pit water could be related to higher observed loads in seepages flowing into pits;
- Some parameter detection limits are higher than predicted values (e.g., for dissolved metal analysis);
- Un-ionized ammonia concentration in water is highly influenced by pH (higher pH = higher fraction of un-ionized ammonia; measured pH is higher than expected in Portage and Goose;
- Pit water has higher background values of many parameters (e.g., ammonia, nitrate due to explosive activity during pit activity; runoff and seepage in contact with potentially acid generating [PAG] rock).

None of the pits are discharged directly to the environment.

Recommendation 17: Please explain why measured pH in Portage and Goose Pits is higher than expected.

Agnico Eagle's Response:

The pH measured in Portage and Goose pits is higher than the value predicted since the groundwater infiltrating into the pits have a higher alkalinity concentration and pH when compared against the background water quality of the surrounding Third Portage Lake.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Recommendation 18: AEM should ensure that the accredited laboratory used to analyze pit water quality meets the required detection limits for pertinent comparisons for all future monitoring. We note that these detection limits are available from most commercial laboratories, including those used by AEM (e.g., H2Lab). We also highlighted this issue in our review of the 2016 Annual Report.

Agnico Eagle's Response:

Agnico will continue to update its water quality model using the best information available. The information contained in section 4.6 of the 2017 Annual Report is based on the comparison of actual water quality obtained from samples taken on site, with prediction provided in the FEIS water quality model. Agnico intends to continue the comparison as required by the Water License. Additionally, Agnico completes yearly an updated water quality forecast for the Meadowbank site, as required by the Water License. Updated annually, this model is developed to predict water quality at closure. The model uses the most recent data from on-site sampling to update the forecast model. Sample results used for modelling are from analysis conducted by an accredited laboratory.

The laboratory services selected by Agnico are conducted by accredited facilities and reach the analysis lower detection limits (LDL) where the results can be compared to the CCME guidelines. Agnico Eagle will continue to ensure that the accredited laboratory can reach the required detection limits.

4.10 Section 5: Waste Rock Management Activities - Geochemical Monitoring

Concern: Within two years of the start of operations, AEM is required to re-evaluate the characterization of mine waste materials for acid generating potential, metal leaching and non-metal constituents to confirm predictions presented in the environmental impact statement, and to re-evaluate rock disposal practices (via sampling) to ensure preventive and control measures are incorporated into the Waste Management Plan. Results of the re-evaluations are to be provided to the NWB and the Nunavut Impact Review Board's (NIRB) Monitoring Officer.

AEM indicates that it characterized PAG and NPAG materials of waste rock by analysing 25% of blast holes for percentages of sulphur and carbon. In 2017, 21,021 samples from blast holes at Vault and 7975 samples from blast holes at Portage were analysed. At both sites, the majority of rock material was classified as NPAG (Vault: 9% PAG, 15% uncertain and 76% NPAG; Portage: 18% PAG, 6% uncertain and 76% NPAG).

AEM states that any PAG or uncertain waste rock material is placed in the middle of the facility and is surrounded by NPAG material to encapsulate the PAG material. The effectiveness of this abatement measure is then evaluated by monitoring runoff or seepage water. AEM reports that no indication of PAG leaching has been observed from runoff water to date. As we have stated in previous reviews, AEM does not provide the results of the seepage monitoring, nor explain the

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

monitoring frequency. It is not clear what the threshold level of acceptable PAG in runoff or seepage is.

Recommendation 19: Please report results of the seepage monitoring to confirm no PAG leaching has occurred at the waste rock storage facility.

Agnico Eagle's Response:

As detailed in the 2017 Annual report, Agnico Eagle conducts inspections around both Rock Storage Facilities (RSF) to determine if there is seepage at the base of the RSF. In 2017, as in previous year, seepage has been observed at both RSF. Samples are taken in accordance with the NWB Water License 2AM-MEA1526 and reported in the annual report – ST-16 for the ponding water at the base of Portage RSF and ST-24 Vault RSF. Results are present in the 2017 Annual Report under Section 8.3.3.11 and 8.3.3.13 respectively.

The waste rock storage facility at Portage includes a sector including only NPAG material, and a sector for PAG material, capped with NPAG material during operations. Inspection and monitoring around the Portage waste rock storage facility report very minimal water accumulation around the facility, mostly related to melt and runoff water in the spring. Thermistors installed in the Portage RSF also indicate that freeze back is occurring within the rock pile; freeze back of the pile and the 4.0 m layer of NPAG rock will provide geochemical stability and to act as a thermal barrier to control acid rock drainage potential. The station ST-16 collects some water accumulating along the Portage RSF. It is important to be noted that the seepage reported at ST-16 in 2013 is not related with acid rock drainage from the waste rock contained in the Portage RSF, but rather from infiltration of reclaim water from the TSF through the RSF. Several mitigation measures were implemented in since 2013 to control effectively this seepage.

In 2014, as per inspections conducted within the framework of the Freshet Action Plan, run off was noted at the northeast side of the Portage NPAG waste rock extension pile in a natural depression (WEP). Agnico contained this run off and pumped it back to the North Cell TSF as a precaution and to prevent egress to the East Diversion non-contact water ditch. Sampling has commenced in 2016 at sumps WEP1 and WEP2 as per NWB Water License 2AM-MEA1526. There are no applicable license limits. Results are presented in Table 8.25 for WEP1 and Table 8.26 for WEP 2, and discussed in section 8.3.3.12 of the 2017 Annual Report.

The waste rock mined at Vault is largely NPAG, and as discussed in the Annual Report, there is a higher ratio of NPAG versus what was initially predicted. As a mitigative measure any PAG or uncertain waste rock material is placed in the middle of the Vault Waste Rock

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Storage Facility while NPAG material is placed on the perimeter to encapsulate the PAG material. Runoff or seepage water monitoring analysis confirms to date the effectiveness of this abatement measure. To date water monitoring analysis from run off indicates no concerns related to ARD. The water seepage from the Vault RSF area is expected to be of suitable quality to allow discharge to the environment without treatment and capping of this facility is therefore not proposed. Agnico initiated water quality monitoring at Vault in 2014 and results to date confirm the prediction. An adaptive management plan will include continued monitoring of water quality during operations to confirm modelling predictions, and to allow adjustments to the closure plan as required.

As discussed in section 8.3.3.13 of the 2017 Annual Report, in 2017, ponded water was observed at the base of the VRSF (sampling station ST-24) and was sampled in June. As per NWB Water License, samples were collected to assess water quality and the results are presented in Table 8.28. No water was pumped from this location as it is mainly a ponding area without flow, and the water is evaporating. From the analysis results for ST-24, available in Table 8.28 of the 2016 Annual Report, there is no indication of acid rock drainage from the Vault RSF.

Recommendation 20: AEM should provide details on the approach that is used to monitor the waste rock disposal method. In addition, AEM should indicate what the threshold level of acceptable PAG runoff or seepage will be and describe available mitigation measures which can be applied if this level is surpassed.

Agnico Eagle's Response:

Segregation of ore, waste rock as potentially acid generating (PAG) or non-potentially acid generating (NPAG) material based on operational testing during mining activity to differentiate waste rock type is part of the Meadowbank Waste Rock Management Plan. Sampling and testing of waste materials for acid rock drainage (ARD) is conducted during mine operation in order to segregate PAG waste from NPAG waste rock material, so that waste material can be assigned to specific locations or use. This practice has been ongoing since the beginning of the mining operations at Meadowbank, and will continue during the remaining operation period.

Operational sampling and analysis is completed on site during mining activities in order to identified and delineate the material type in the pits during mining. Agnico Eagle sampled approximately 25% of all blast holes and analyzed the percentages of sulphur and carbon. The results from these analyses are used to differentiate the PAG and NPAG materials. Once characterized, the waste rock material is segregated and placed in appropriate location.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

The geochemical properties of all Meadowbank mining wastes have been confirmed with duplicates samples sent to certified laboratory, through both static and kinetic testing on numerous representative samples, by various test methods and through multiple project development stages.

Information regarding the waste rock characterization is also managed and recorded by the mine dispatch Wenco system, tracking in real time load of material, including waste rock, and their respective destination. The system and the dispatcher in charge, guides the operators and ensures the ore and waste rock material is transported to the appropriate destination. The system displays in real time information about equipment location and destination, as well as pit development information. All production data, including all waste rock haulage to the PAG and NPAG waste rock storage facilities (RSF), as well as construction use are recorded into a database.

Sampling of waste rocks facility seepages will continue to be monitored as per NWB Water License 2AM-MEA1526, and reported in the Annual Report. There are no applicable license limits. Contact water will be managed and pumped to appropriate area and will not be in contact with the receiving environment.

Concern: AEM has recommended in previous annual reports that surface water chemistry sampling at fish-bearing watercourses be discontinued, unless turbidity issues are visually observed. AEM indicates that detailed monitoring will be implemented if an erosional issue arises, with, at a minimum, a single water chemistry sample being collected upstream and downstream of the source. In 2017, four formal erosion inspections were completed by qualified environment technicians in May through July, and weekly visual inspections were conducted during AWAR inspections. Daily inspections were also made in collaboration with the Meadowbank Energy and Infrastructures Department. As no erosional issues were observed, surface water quality sampling was not carried out at non-HADD (harmful alteration, disruption or destruction of fish habitat) crossings or quarry contact water pools.

We are concerned that water quality issues unrelated to turbidity (e.g., PAG leaching) may be missed if regular surface water chemistry sampling does not occur at fish-bearing watercourses.

Recommendation 21: AEM describes a schedule for monitoring for turbidity issues in 2017 which combines formal and informal inspections. Will this approach be continued in future years? We recommend that, in addition to monitoring for turbidity yearly, detailed surface water chemistry sampling be conducted every three to five years at fish-bearing watercourses.

Agnico Eagle's Response:

The monitoring approach described in the 2017 Annual Report for the monitoring of the water quality along the AWAR at the non-HADD continued in 2018 and will continue in

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

the following years, unless turbidity issues were visually observed. As the road is made of NPAG material, and has no sign of erosion or turbidity, Agnico considers the planned monitoring approach sufficient.

As describe in the 2012 Annual Report, 'HADD crossings R02, R06, R09 and R15 water quality monitoring results continue to suggest an improvement from post AWAR construction (complete March 2008) as mine related road activity did not cause any observable effects on the receiving environment from the field observations and water chemistry data collected in 2012. Consistent with 2011, the AWAR surface water quality results did not present concerns to the receiving environment as none of the parameters exceeded CCME (2007) in 2012. Based on the monitoring results, the road construction material appears to be stable; therefore Agnico did not conduct any surface water chemistry sampling in 2013 unless visual turbidity observed. If in the future, an erosion issue occurs, detailed monitoring will be conducted in response to the event.'

4.11 Section 5: Waste Rock Management Activities - Tailings Storage Facility Capacity

Concern: The deposition plan model concludes that the total estimated capacity of the TSF North Cell and South Cell is 32.0 Mt. The total capacity of the North Cell is estimated at 18.2 Mt and the total capacity of the South Cell is estimated at 15.0 Mt. The sum of these totals (33.2 Mt) exceeds the combined estimated capacity (32.0 Mt). The estimated remaining capacity in the South Cell, as of the end of December 2017, is reported as "4.6 Mm3 (3.6 Mm3)" (p. 43). Should this read "4.6 Mt (3.6 Mm3)"?

Recommendation 22: Please clarify the discrepancy between the total estimated capacity and the sum of the individual capacities for the North and South Cells.

Agnico Eagle's Response:
The volume and tonnage of the estimated North Cell and South Cell are correct. However, the combined total was not updated. As of December 2017, the combined estimated capacity is 25.9Mm^3, corresponding to 33.2Mt, using an average density of 1.28.

Recommendation 23: Please report total estimated capacity and remaining estimated capacity of the TSF Cells in the same units.

Agnico Eagle's Response:
Agnico acknowledge KIA's comment and will report the estimated and remaining capacity in the same units. In the 2017 Annual Report, you should have read that the estimated remaining capacity in the South Cell is 4.3Mt (3.6Mm^3) instead of 4.6Mm^3 (3.6Mm^3).

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

4.12 Section 5: Waste Rock Management Activities - Tailings Freezeback and Capping Thickness

Concern: AEM reports on instrumentation used to monitor the various mine structures. Information on the number and type of instruments is reported and monitoring results are presented in figures (and appendices). However, summaries of results in the text are lacking, particularly for Stormwater Dike, Central Dike and Second Portage Lake Arm, East Dike of Portage Pit and Bay-Goose Dike.

Recommendation 24: Please summarize results of instrumentation monitoring (i.e., thermistors and piezometer data) in the text of the Annual Report.

Agnico Eagle's Response:

It is Agnico's view that the annual report summarizes the results of the thermistors installed on Meadowbank Site. For a completed review and analysis, Agnico will refer to the 2017 Annual Geotechnical Inspection found in Appendix B1.

4.13 Section 6: Waste Management Activities - General Waste Disposal Activity

Concern: All tables in this section are missing a tally of the total volume or mass of waste generated in 2017.

Recommendation 25: Please add information on the total volume or mass of waste to each of the tables in this section.

Agnico Eagle's Response:

Two tables were missing a tally in Section 6 of the 2017 Annual Report. This will be corrected in the 2018 Annual Report.

Concern: The information presented in Table 6.2 is not clear.

Table 6.2. Volume of waste disposed in each sub-landfill (from survey)

	COORDINATES (UTM)				
LANDFILL	NORTHING	EASTING	ELEV	VOLUME (m^3)	DATE COVERED
#1	7215715.58	638601.454	160	3650	**12-Dec**
#2	7215795.798	638711.423	186	840	**27-Feb**
#3	7215743.117	638827.768	195	-	**-**
#4	7215784.8	638891.4	200	9507	**Jan-19-2014**
#5A	7206586.1	643115.9	210	3870	**Nov-30-2014**
#5B	7206586.1	643115.9	210	?	**Mar-13-2015**
#6A	7215788.8	638793.3	212	278	**Mar-21-2015**
#6B	7215795.06	638854.73	212	3260	**Sep-05-2015**
#6C	7215790.8	638878.1	212	9290	**May-20-2016**
#7	7215790.8	638878.1	213.5	5394	**Dec-20-2016**
#8a	7215790.8	638878.1	217	11700	**Nov-30-2017**
#8b	7215814.2	638888.4	217	1645	**Jan-27-2018**

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

From the table it appears that waste was deposited to each landfill except #3 in 2017. Why was #3 not used? Why is there a '?' for the volume deposited to landfill #5B?

It appears from the table that waste continues to be deposited to landfills even after they are covered—is that correct?

In the text AEM indicates that it landfilled 13,345 m3 in 2017, but this does not align with the volumes listed in Table 6.2, which total 49,434 m3.

Recommendation 26: Please clarify information presented in Table 6.2 and ensure that it agrees with accompanying text.

Agnico Eagle's Response:
Agnico Eagle will correct and update Table 6.2 in the 2018 Annual Report.

Concern: Table 6.3 summarizes the amount and type of hazardous waste shipped offsite in 2017. No mass is provided for the 60 L of water grease listed in the last row.

Waste	Drum	Tote	Pail	Quadrex	Mass (Kg)
Diesel, fuel	34 (205L)	10	-	-	13524
Empty plastic drum	79 (205 L)	-	-	-	1185
Empty plastic pail	-	-	4780	-	4780
Antifreeze (concentration >30%)	-	55	-	-	47072
Kitchen grease	69 (205 L)	-	-	-	8441
Oil	108 (205 L)	-	-	-	19359
Oil filters	231 (205 L)	-	-	-	26364
Oily contaminated solid	4 (205 L)	-	-	434	63573
Oily water	-	33	-	-	39624
Water grease	148 (205 L)	-	-	-	18832
Water grease	11 (60L)	-	-	-	-

Recommendation 27: Please include a mass for water grease in Table 6.3.

Agnico Eagle's Response:
Agnico acknowledges KIA's comment and will make sure to include a mass for all hazardous waste in the 2018 Annual Report.

Concern: AEM mentions that a new procedure was implemented in 2017 to address problems identified in 2016 with manifest tracking, and that the new system appears to have solved the issues. However, no description of the new procedure is provided.

Recommendation 28: Please describe the new system implemented in 2017 to address manifest tracking problems.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Agnico Eagle's Response:
In Appendix 4 below, you will find the procedure NU-P&L-PRO-Managing the Hazardous Movement Document Manifest. As stated in the 2017 Annual report, this procedure describes the steps to avoid manifest tracking issues.

4.14 Section 7: Spill Management

Concern: Meadowbank experienced a steady increase in the number of reportable spills between 2013 and 2016, at which time a Spill Reduction Action Plan was implemented. There was a slight decrease in the number of reportable spills from 2016 to 2017 (18% fewer, from 34 in 2016 to 28 in 2017). However, the number of non-reportable spills has shown a steep increase since 2014, including a ~150% increase from 2015 to 2016, and an 18% increase from 2016 to 2017. AEM does not discuss possible reasons for why the number of non-reportable spills continue to rise despite implementation of the Action Plan.

We recommend that the number of reportable and non-reportable spills occurring onsite from 2011 to 2017 be presented in table or graph format.

In Tables 7.1 and 7.2, AEM reports that "contaminated soil picked up and disposed of appropriately" for numerous spills but it is not clear what clean-up procedure was followed.

Recommendation 29: Please discuss why the number of non-reportable spills continues to increase and what is being done to reverse this trend.

Agnico Eagle's Response:
As stated in the 2017 Annual report, 442 spills (reportable and non-reportable) occurred on the Meadowbank Mine Site and the Amaruq Exploration Access Road (AEAR).

Agnico acknowledges that the overall number of spills have increased but also would like to mention that the totals reported in the 2AM-MEA1526 Meadowbank 2017 Annual report included spills along the AEAR, that were also reported under the 8BC- AEA1525 AEAR 2017 Annual report. Thus, double accounting was included within the tabulations of Meadowbank reporting.

To be consistent with previous years, only spills on the Meadowbank Mine site, AWAR and Bake Laker infrastructures should be used for comparison. Refer to Table 1 below for a spills summary from 2011-2017.

Table 1. Total reportable and non-reportable spills for the Meadowbank, AWAR and Baker Lake Infrastructures from 2011 to 2017.

Year	*Number Reportable Spills*	*Number Non-Reportable Spills*	*Total*
2011	*12*	*68*	*80*
2012	*16*	*82*	*98*

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

2013	*7*	*85*	*92*
2014	*9*	*63*	*72*
2015	*18*	*148*	*166*
2016	*34*	*374*	*408*
2017	*28*	*383*	*411*

Data from 2017 shows a decrease of 18% in reportable spills and a slight increase of 2% in overall non-reportable spills for the Meadowbank site.

Moving forward, Agnico will ensure data is presented in future annual reports in a manner to prevent confusion and help the review process.

Agnico notes that emphasis on spill reporting and proper data collection was put forward in 2016, and as showed effective in identifying areas of focus and improvements. By continuing education and awareness within our sites, we are confident that the overall environmental impacts are limited.

Furthermore, Agnico continues to reference the Spill Reduction Action Plan started in 2016. Key Performance Indicators (KPI) were developed to monitor reported spills. Spill Frequency is calculated and reported to the daily management meeting. The Spill Frequency is the ratio of the total number of spill to date in the year over the number of days in the current year. The total number of spill to date includes the spills internally reported as well as the spills reported to the regulators. This KPI is used to follow trends related to spill increase or reduction, and to guide corrective actions when required. As well, "bad actors" identified through the data collected on spill reports are now mentioned within the daily management meetings.

All internal reported spills and to regulators are managed according to our spill contingency plan. Spills are contained and cleaned, contaminated material is disposed to the appropriate area, such as the onsite landfarm and the clean-up actions are monitored by the Environment team.

Recommendation 30: Please present the number of reportable and non-reportable spills from 2011 to 2017 in table or graph format.

Agnico Eagle's Response:
Agnico acknowledges the KIA's recommendation and will include the information in the 2018 Annual Report, as mentioned in KIA Recommendation 29 above.

Recommendation 31: Please provide more details on the clean-up procedure for spills in Tables 7.1 and 7.2 that resulted in contaminated soil.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Agnico Eagle's Response:

As per the Landfarm design and Management plan, all contaminated spill pads, and booms used during spill response are placed within Quatrex bags for shipment to an approved disposal facility. All the petroleum hydrocarbon contaminated soil collected during clean-up is placed into the landfarm for treatment. Spills over 100 L of non-petroleum hydrocarbon material (e.g. solvents, glycol) will be placed in drums and stored in the on-site hazardous material area for shipment south to approved facilities during barge season. Spills of non-petroleum hydrocarbon material fewer than 100 L will be placed in the Tailings Storage Facility. For spills fewer than 100 L of petroleum hydrocarbon contaminated snow will be placed in a designated area of the landfarm and treated as contact water after snowmelt. For spills over 100 L of petroleum hydrocarbon contaminated snow will be excavated and stored in labeled drums.

All internal reported spills and reported to regulators are managed according to the spill contingency plan. Spills are contained and cleaned, contaminated material is disposed to the appropriate area, such as the onsite landfarm and the clean-up actions are monitored by the Environment team.

4.15 Section 7: Spill Management - Landfarm

Concern: AEM decided to find a new location for the landfarm (Landfarm 2) to continue treatment of contaminated soil, since the existing landfarm (Landfarm 1) is located on the northwest side of the South Tailings Cell, and will eventually be flooded by reclaim water; Landfarm 2 was constructed in 2016. An extension of Landfarm 1 was also built at a higher elevation in 2016 to continue treatment of soil at this location. AEM does not indicate where the newly constructed Landfarm 2 is located. AEM reports the amount of soil added to Landfarm 2 from September 2016 to January 2017. Was any additional soil added to Landfarm 2 in the remainder of 2017?

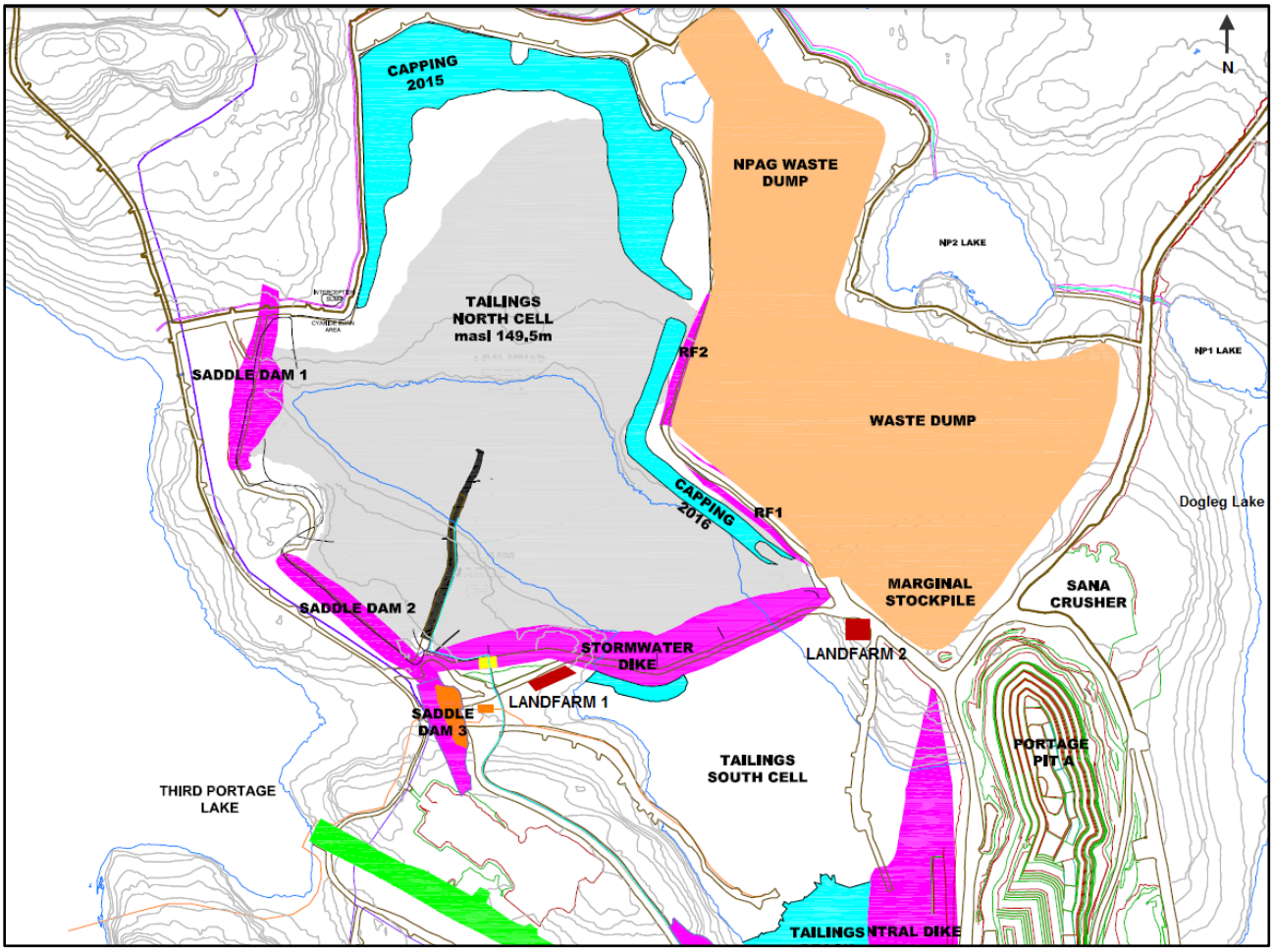
Recommendation 32: Please indicate the location of Landfarm 2.

Agnico Eagle's Response:

Detail regarding the location and design of the Landfarm 2 was included in the Landfarm Design and Management Plan (Version 4; March, 2017) and submitted as part of the 2016 Annual Report.

The location of the Landfarm 1 is directly north of the South Cell Tailings Facility. In 2016, a second landfarm facility (Landfarm 2) was constructed in the same general location within the South Cell Tailings impoundment, since the Landfarm 1 facility is planned to be flooded by reclaim water. Landfarm 2 is located on the north east side of the South Tailing Cell, north of the Central Dike. See Figure below.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com



General location of Landfarm 1 and Landfarm 2.

Recommendation 33: Please indicate whether soil was deposited to Landfarm 2 in February-December 2017.

Agnico Eagle's Response:

*Agnico acknowledges KIA's noted confusion towards landfarm soil movement. Agnico has realized that an error was made on the dates of movement within the Annual report and the 2017 Landfarm report. The reports should have stated that between September 2016 and January **2018** (and not January 2017, as stated) 1485 m^3 of soil were added to Landfarm 2 from excavation of spills around the Meadowbank site. In addition, 605 m^3 were relocated to Landfarm 2 from Landfarm 1, leaving 655 m^3 in Landfarm 1.*

Approximately 175 m^3 of coarse material was removed from Landfarm 2 through screening during 2017.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Concern: AEM reports that 605 m3 of soil from Landfarm 1 was transferred to Landfarm 2 in 2016, leaving 655 m3 in Landfarm 1. It is not clear when Landfarm 1 will cease operation, and how the remaining soil there will be managed to avoid exposure to flooding and the generation of unnecessary contact water

Recommendation 34: Please explain when Landfarm 1 will cease operation, and how the remaining soil at the landfarm will be managed to avoid exposure to flooding.

Agnico Eagle's Response:

No soil addition to Landfarm 1 was made in 2017 and a portion of material (605 m^3) was moved to Landfam 2 to enable the cessation of operation on Landfarm 1 in the fall of 2017.

Being encapsulated within the TSF and as per the Landfarm Design and Management Plan, section 5.2.4, the remainder of the soil left at Landfarm 1 (655 m^3) was directly placed in the TSF. While this method does not result in the treatment of soil, it is a viable contingency option as it allows for the safe disposal of the contaminated material. The final cover with NPAG will be a minimum of 2 m deep (current closure plan is 4 m of NPAG cover). Total encapsulation and freeze-back would occur, eliminating any movement of contaminants. Over time, this material will undergo natural degradation, and will be monitored with a suitable program for PHCs, which will be incorporated into the Meadowbank Closure Plan.

Since fall 2017, Landfarm 2 is now the only active landfarm onsite.

Concern: AEM states that "NRC conducted chemical and microbiological analyses of soil samples from the landfarm in October, 2017" (p. 131). Was sampling conducted at both landfarms? AEM reports that there was a "moderate level of PHC F2 and F3 contamination (i.e., exceedances of CCME guidelines)" (p. 131), but no values are provided. We are concerned that exceedance of CCME guidelines is interpreted as moderate contamination.

Similarly, AEM states that "soil nitrogen and TOC contents were moderate" (p. 131), but no values are provided to evaluate this conclusion.

Information is missing from the text: Soil nitrogen and TOC contents were moderate, and the bacterial numbers, both total heterotrophs and diesel degraders, were typical for a soil of this type. Mineralization results" (p.131).

AEM states that more information on landfarm activities is presented in Appendix F3 "2017 Landfarm Report", however, basic information on operations, location, monitoring results and mitigation of flooding should also be summarized in the Annual Report.

Recommendation 35: Please clarify whether soil samples were analysed from both landfarms.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Agnico Eagle's Response:
Since NRC sampling was conducted in October 2017, as stated in recommendation 34 response, Landfarm 1 has ceased operations. Therefore, samples analysed where only from the Landfarm 2.

Recommendation 36: Please report the levels of PHC F2 and F3, soil nitrogen and TOC contents recorded in soil samples.

Agnico Eagle's Response:
The analysis results can be found in the Appendix A Table 2 of the 2017 Landfarm Report. Agnico acknowledge KIA's comment and will continue to improve the future annual report but will continue to refer the reader to the report in Appendix of the annual report for the overall comprehension.

4.16 Section 8: Monitoring - CREMP

Concern: The CREMP monitors for mine-related changes in limnology, water and sediment chemistry, and primary and secondary aquatic producers using temporal/spatial trend assessment and a system of triggers (warning signals) and thresholds (requiring action). 2017 mine activities that could affect the receiving environment include effluent discharge and dust production (from rock crushing, blasting, and ore and waste hauling).
Water Chemistry
As in previous years, there were several statistically significant mine-related changes relative to baseline/reference conditions at Meadowbank study lakes in 2017, relating to alkalinity, conductivity, hardness, major cations (calcium, potassium, magnesium and sodium), total dissolved solids (TDS) and total Kjeldahl nitrogen (TKN). Since no effects-based thresholds exist for these parameters (such as CCME water quality guidelines), AEM set triggers at the 95th percentile of baseline data. AEM concludes that "while these results represent mine-related changes, the observed concentrations are still relatively low and unlikely to adversely affect aquatic life" (p. 135). AEM should explain why levels are considered low and support its conclusion that they are unlikely to negatively affect aquatic life by linking findings to results of biotic surveys (i.e., phytoplankton and benthic invertebrate community) presented later in this section. We also recommend that AEM include Table 3.2-3 from Appendix G1, which summarizes water quality parameters with 2017 trigger exceedances, in the Annual Report.

Recommendation 37: Please explain why trigger exceedances are considered "relatively low" and provide support for the statement that they are "unlikely to adversely affect aquatic life" by linking to the findings from the biotic surveys conducted in 2017.

Agnico Eagle's Response:
Please refer to CIRNAC's recommendation 16 above.

Recommendation 38: Please include Table 3.2-3 from Appendix G1 in the Annual Report.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Agnico Eagle's Response:

The annual report is a summary of the findings detailed in the CREMP report in Appendix G1. For a better understanding and detailed analysis of all the findings, it is Agnico's view that the reader should refer directly to the CREMP report in the Appendix.

Concern: AEM states that there were no trigger exceedances for any water quality parameters having CCME guidelines. In Appendix G1 Table 3.2-1, a number of parameters are listed that have trigger values above CCME threshold guidelines, to reflect site-specific conditions. These parameters should be identified in the text, and reference should be made to baseline monitoring results to indicate that elevated levels are naturally occurring and not due merely to mine activity.

Recommendation 39: Please discuss which water quality parameters were assigned trigger values above their CCME guideline thresholds due to site-specific conditions. Please explain (with reference to baseline monitoring data) why these parameters have been assigned site-specific trigger values.

Agnico Eagle's Response:

The lower pH range (field) and total phosphorus have trigger values for the Meadowbank project lakes (and Baker Lake in the case of total phosphorus) that are less conservative than their CCME guidelines. Field and laboratory pH triggers were developed separately for the various project lakes. The table below from the 2015 CREMP Plan Update summarizes the baseline data used to derive the triggers values for field and lab pH and the methods used in their derivation. The pH triggers were 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"). The CCME guideline for pH is a range between 6.5 and 9. Field pH was used preferentially over lab pH. While the upper and lower pH triggers were within the CCME guideline range for most cases, the lower pH trigger for Meadowbank was set at 6.3 (the lower 95th percentile). Thus, the CCME guideline is reported as the threshold but is not used as a criterion for action at Meadowbank as it is naturally outside the range of the CCME pH guidelines.

Meadowbank								
Variable	*Threshold*	*DL*	*N*	*>DL*	*Med*	*P95*	*Trigger*	*M*
pH Field (Upper)	*9*	*0.1*	*174*	*174*	*7.24*	*8.25*	*8.25*	*B*
pH Field (Lower)	*6.5*	*0.1*	*174*	*174*	*7.24*	*6.30[a]*	*6.3*	*B*
pH Lab (Upper)	*9*	*0.1*	*204*	*204*	*6.89*	*7.27*	*7.94*	*A*
pH Lab (Lower)	*6.5*	*0.1*	*204*	*204*	*6.89*	*6.50[a]*	*6.50*	*B*
Wally								
Variable	*Threshold*	*DL*	*N*	*>DL*	*Med*	*P95*	*Trigger*	*M*
pH Field (Upper)	*9*	*0.1*	*32*	*32*	*7.67*	*8.26*	*8.34*	*A*
pH Field (Lower)	*6.5*	*0.1*	*32*	*32*	*7.67*	*6.54[a]*	*6.54*	*B*
pH Lab (Upper)	*9*	*0.1*	*34*	*34*	*7.35*	*7.44*	*8.17*	*A*

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

pH Lab (Lower)	*6.5*	*0.1*	*34*	*34*	*7.35*	*7.00[a]*	*6.92*	*A*
Baker								
Variable	*Threshold*	*DL*	*N*	*>DL*	*Med*	*P95*	*Trigger*	*M*
pH Field (Upper)	*9*	*0.1*	*26*	*26*	*7.41*	*8.32*	*8.32*	*B*
pH Field (Lower)	*6.5*	*0.1*	*26*	*26*	*7.41*	*6.50[a]*	*6.50*	*B*
pH Lab (Upper)	*9*	*0.1*	*31*	*31*	*7.21*	*7.66*	*8.11*	*A*
pH Lab (Lower)	*6.5*	*0.1*	*31*	*31*	*7.21*	*6.99[a]*	*6.86*	*A*

Derivation of the CCME water quality guideline for phosphorous follows a different framework than other substances because phosphorous is non-toxic to aquatic organisms at concentrations and forms typically present in aquatic environments (CCME, 2004 [Link]. The CCME guidance framework for managing phosphorus is meant to protect aquatic environments from the negative effects of eutrophication and oxygen depletion that may occur as a secondary effect of phosphorous-related increases in primary productivity. Multiple guideline values, as ranges, are recommended because of aquatic communities are generally adapted to ambient conditions. In this way, the guideline range is selected by setting ecosystem goals and defining reference/baseline conditions. The framework notes that up to a 50% increase in total phosphorus over baseline is generally considered acceptable.

The Meadowbank project lakes were initially considered as ultra-oligotrophic in the CREMP Design (Azimuth 2013). Method B (95th percentile of baseline) was used to set the trigger value for phosphorus. Additional baseline data included in the most recent trigger revisions (Azimuth 2015) resulted in higher 95th percentile concentrations for the Meadowbank project lakes, Wally Lake, and Baker Lake. In addition to the baseline data used initially, the updated data set included more recent data from the reference areas or from pre-development monitoring events (Wally Lake) through December 2013; sample numbers were 204 for Meadowbank, 34 for Wally, and 31 for Baker (total = 269). Concentrations ranged from < MDL (0.002 mg/L) to the 95th percentiles of 0.0060 mg/L, 0.0067 mg/L, and 0.0096 mg/L for Meadowbank, Wally Lake, and Baker Lake, respectively. These upper 95th percentile baseline concentration estimates are in the range of 0.004 to 0.01 mg/L defined as oligotrophic in the CCME framework for setting site-specific phosphorus guidelines.

Meadowbank								
Variable	*Threshold*	*DL*	*N*	*>DL*	*Med*	*P95*	*Trigger*	*Method*
T. phosphorous	*0.004*	*0.002*	*192*	*84*	*0.0019*	*0.006*	*0.006*	*B*
Wally								
Variable	*Threshold*	*DL*	*N*	*>DL*	*Med*	*P95*	*Trigger*	*Method*
T. phosphorous	*0.004*	*0.002*	*34*	*21*	*0.0028*	*0.0067*	*0.0067*	*B*
Baker								

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Variable	*Threshold*	*DL*	*N*	*>DL*	*Med*	*P95*	*Trigger*	*Method*
T. phosphorous	*0.004*	*0.002*	*31*	*23*	*0.0036*	*0.0096*	*0.0096*	*B*

Concern: Sediment Chemistry
Chromium levels continued to increase in sediment at Third Portage Lake in 2017, exceeding the trigger value and showing a statistically significant departure from the baseline value. AEM conducted a bioavailability study in 2015 which concluded that chromium changes were related to dike construction material and did not threaten the benthic community. However, AEM recommends that a new bioavailability study be conducted in 2018 to determine if ongoing changes are a concern ecologically. AEM also recommends that sediment coring be repeated in 2018 to determine if chromium levels have stabilized or continue to increase. We agree with these recommendations.

Recommendation 40: We support AEM's plan to repeat sediment coring and to conduct a new bioavailability study at Third Portage Lake in 2018.

Agnico Eagle's Response:
Agnico acknowledges KIA'S comment. The result of the 2018 sediment coring will be provided in the 2018 Annual Report.

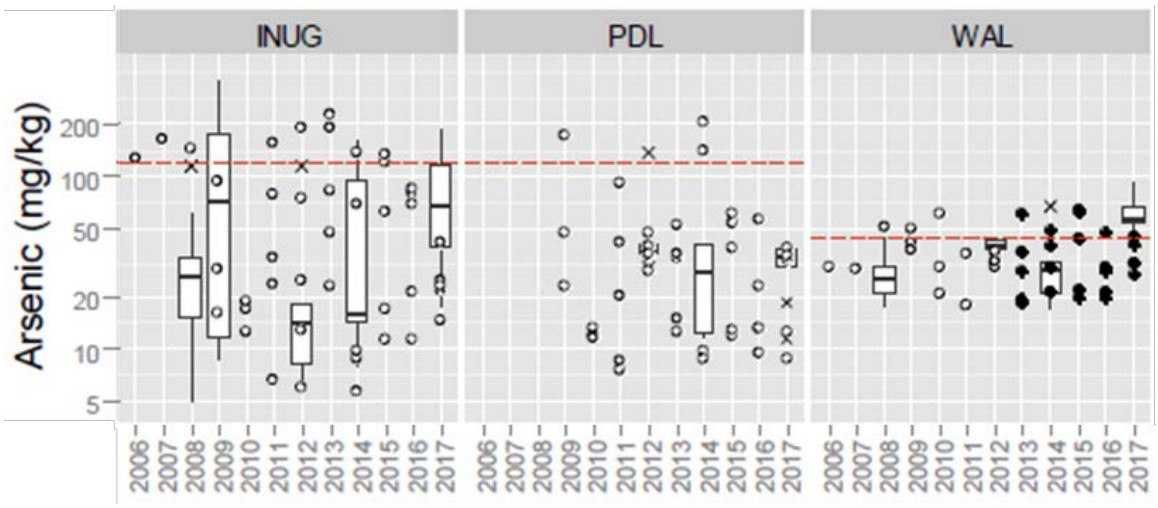
Concern: Wally Lake had trigger exceedances in lead, chromium and arsenic in 2017 sediment samples. While lead and chromium were "marginally above their respective trigger values" (p. 136), arsenic was approximately 2.5 times higher than baseline and had increased since the previous coring sample was collected in 2014. AEM suggests that this trend may be due to natural spatial heterogeneity but is not affecting benthic richness or abundance according to the 2017 BACI analysis. AEM recommends that coring continue in 2018 to determine whether the increasing trend is real or related to spatial heterogeneity, and that a targeted bioavailability study also be conducted to determine potential effects on biotic communities. We agree with these recommendations for further study of the issue. However, we are not clear on how additional coring will resolve whether the arsenic trend is mine-related or due to spatial heterogeneity. How would elevated arsenic levels reflect spatial heterogeneity if they represent an increase from baseline levels collected at the same location? Furthermore, it is not clear whether AEM has established medium and high level triggers that require additional action if levels of these parameters continue to increase. This should be completed in response to triggering a low action level response.

Recommendation 41: Please explain how additional coring will be used to distinguish between mine related and background variation in arsenic values at Wally Lake. Please also clarify the potential influence of spatial heterogeneity on variation in arsenic levels.

Agnico Eagle's Response:
This region is highly mineralized and metals concentrations in sediment from the Meadowbank project lakes can be quite variable over a small spatial area within the

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

prescribed sampling areas. Coring is undertaken at the same general locations within the sediment basin (8 m +/- 1.5 m) to minimize the potential confounding effects of spatial variability in sediment metals concentrations, but even on the scale of 10-20 m, sediment metals concentrations are not homogenous. This phenomenon is exemplified by the patterns observed for arsenic at reference areas INUG and PDL (see figure below, excerpted from 2017 CREMP Figure 3.2-55). Coring (box and whiskers) conducted in 2009 at INUG first highlighted this challenge. Since then, coring results at INUG have continued to be quite variable, but largely been consistent with the range observed across the annual grab samples (open circles for baseline/reference data; black circles for "after" data). Highly variable arsenic results have also been observed at PDL, but less so for the coring results. While the 2017 coring results at Wally show an apparent increase in arsenic relative to 2014, the overall pattern is more suggestive of natural variability (e.g., to what was observed at INUG and PDL) than of mine-related changes (e.g., chromium at TPE); similar differences were observed between two baseline coring events (2008 and 2012) and the most recent coring results are largely consistent with historical data.



An additional year of sediment coring at WAL was proposed to confirm that concentrations of some metals (i.e., As) were trending higher in the after period. Multiple years of data from the "after" period help clarify whether "apparent" increases in metals concentrations are attributable to activities at the mine (e.g., chromium at TPE) or simply an artifact of the natural variability in the sediment metal concentrations (e.g., arsenic at INUG and PDL). The 2018 chemistry results will be plotted in time series with data from previous cycles to help distinguish spatial vs temporal trends in metals concentrations in the basin. Further, Agnico Eagle also decided to conduct the targeted toxicity/bioavailability study at the same time. Results for both will be integrated into the 2018 CREMP.

Recommendation 42: Please explain what medium and high level triggers are in place for these parameters and the associated management actions required should these triggers be exceeded.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Agnico Eagle's Response:

Trigger values for Meadowbank and Baker Lake sampling areas were initially developed in 2013 (Azimuth 2013). In response to the need to develop Wally-specific triggers, trigger values for all areas were updated in the 2017 CREMP report (see Table 2.4-1). For Meadowbank and Baker Lake, the original 2008/2009 baseline dataset was augmented with core chemistry data from reference areas collected in 2012, 2014, and 2017. The new trigger values derived specifically for Wally Lake used baseline core chemistry data from 2008 and 2012 (i.e., before the area designation changed from "before" to "after" in July 2013). Most of the trigger values for the project lakes exceed the CCME interim sediment quality guidelines. In the case of WAL, the updated trigger values (i.e., 95th percentile of baseline concentrations) exceed all the CCME ISQG values. For the Meadowbank project lakes, lead and zinc have ISQGs that are less than the trigger value, although in both cases differences between the trigger values and the ISQG are relatively small compared to the natural variability in sediment metal concentrations (Pb: 25.3 mg/kg trigger vs 35 mg/kg threshold; Zn: 114 mg/kg trigger vs 123 mg/kg threshold).

As reported in the CREMP Design (Azimuth 2013), for sediment metals with naturally-elevated concentrations above the CCME ISQG, the trigger value is the only criterion used for initial decision making. The approach to increasing chromium in sediment at TPE is a case study of how trigger exceedances helped inform decision making within the framework outlined in the management response plan (MRP). Briefly, sediment chromium concentrations were observed to be increasing over time. A targeted sediment coring program was implemented in 2014 to address uncertainty about the apparent trend of increasing chromium being an artifact of spatial heterogeneity. The 2014 program demonstrated that chromium is increasing over time in the sediments at TPE; in response; a targeted toxicity/bioavailability study was undertaken in 2015 to assess sediment toxicity using laboratory toxicity tests and sequential extraction testing. These two lines of evidence, combined with annual benthic invertebrate community taxonomy data, demonstrated that although concentrations of chromium have increased compared to pre-mining conditions, those changes were not expected to adversely impact the benthic invertebrate community. Temporal analysis of the sediment chemistry data continued in 2016 and 2017. Based on continual increases in sediment chromium at TPE in 2016 and 2017, a repeat of the target bioavailability study was recommended for 2018. This example demonstrates that the single trigger value is effectively used to help inform responsive and appropriate management actions.

Concern: Chromium concentrations were measured in Third Portage Lake East Basin as 178-264 mg/kg dry weight. The trigger value for chromium is 135 mg/kg dry weight. How does AEM determine that these measured values were "marginally above" the trigger value?

Recommendation 43: Please explain how exceedances are determined to be marginally above trigger values.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Agnico Eagle's Response:

Classification of trigger results is typically binomial (i.e., exceeding or not). The addition of "marginally" in the past generally applies to borderline cases, but is arbitrary (i.e., no specific rule sets). While we looked through the 2017 Annual Report and the 2017 CREMP for instances where "marginally" was used, we could not find the specific case mentioned above. If it was used, we did not intend it to lessen the importance we place on characterizing the ecological significance of any changes identified in the receiving environment. In the specific case of sediment chromium at TPE, recommendations for targeted studies to verify this issue were made in the 2017 report and they were carried out in 2018.

Importantly, the identification of changes relative to baseline relies on objective comparisons to baseline conditions and to trigger values; in cases where triggers are exceeded, recommendations are provided as to what appropriate follow-up targeted studies should be conducted. Notwithstanding, we appreciate the comment and will endeavor to limit the arbitrary use of "marginally" and other adverbs in the future.

Concern: Appendix G1 Table 3.2-9 indicates that CCME guidelines were not used as threshold values for several sediment parameters because of site-specific conditions. These parameters should be identified in the text.

Recommendation 44: Please discuss which sediment chemistry parameters were assigned trigger values above their CCME guideline thresholds due to site-specific conditions.

Agnico Eagle's Response:

Most of the trigger values for sediment chemistry in the project lakes exceed the CCME interim sediment quality guidelines because of naturally-occurring high concentrations of metals in the sediments. The reference area INUG, for example, had the highest sediment arsenic concentration among all the cores samples collected in 2017 (see plot in Comment 41). Other lakes in the region are even more mineralized; the north basin of Whale Tail Pit had arsenic concentrations over 500 mg/kg and up to 1,700 mg/kg in surface grabs collected for baseline surveys in 2015. Benthic invertebrate communities appear adapted to the naturally-occurring high concentrations of metals in these systems. For WAL, the updated trigger values (i.e., 95th percentile of baseline concentrations) for arsenic, cadmium, chromium, copper, lead, and zinc were all higher than their respective CCME ISQG values. For the Meadowbank project lakes, lead and zinc have trigger values below the CCME ISQG values, although in both cases differences between the trigger values and the ISQG are relatively small compared to the natural variability in sediment metal concentrations (Pb: 25.3 mg/kg trigger vs 35 mg/kg threshold; Zn: 114 mg/kg trigger vs 123 mg/kg threshold). Mercury is the only parameter where trigger values are consistently lower than the CCME ISQG values (thresholds).

Concern: Appendix G1 Table 3.2-11 shows numerous (most) hydrocarbon and PAH results from sediment grabs as being below the detection limit. This is problematic, especially for parameters

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

whose CCME guideline levels are below the detection limit, such as acenaphthene, acenaphthylene, and dibenz(a,h)anthracene. AEM should ensure that laboratory testing is capable of analysing samples with low concentrations so that threshold exceedances can be detected.

Recommendation 45: Please discuss what steps will be taken to improve laboratory testing to address detection limit issues.

> ***Agnico Eagle's Response:***
> *Elevated detection limits for hydrocarbon and PAH analyses are associated with samples that have naturally-high moisture content. Agnico has been in contact with ALS to discuss options to reduce the frequency with which elevated DLs are occurring. Analytical options to reduce the DLs are limited (ALS account rep, pers comm, November 30, 2018). Modifications of the field method will be explored to reduce moisture content in the samples before the samples arrive at the laboratory for analysis.*

Concern: Baker Lake
AEM reports that no exceedances of water quality triggers occurred at Baker Lake in 2016. Should this read 2017?

Recommendation 46: Please correct date of Baker Lake water quality survey.

> ***Agnico Eagle's Response:***
> *There is effectively an error in the Annual Report. You should have read:' There were no cases where water quality parameters exceeded the triggers in 2017.'*

4.17 Section 8: Monitoring – Vault Attenuation pond discharge

Concern: A total of 715,606 m3 was discharged from Vault Attenuation Pond to Wally Lake from June to October 2017. The total suspended solids (TSS) removal water treatment plant was not used in 2017 because contact water was compliant with TSS criteria. AEM collected sub-lethal toxicity samples in August and September, and samples to characterize effluent in June, July, August and September. Raw data is presented in Tables 8.2 and 8.4. It would also be helpful to summarize and interpret these results in the text of the Annual Report.

Recommendation 47: Please summarize and interpret discharge monitoring results for the Vault Attenuation Pond discharge.

> ***Agnico Eagle's Response:***
> *Agnico acknowledges KIA'S comment and will see how this section of the Annual Report can be improved.*

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

4.18 Section 8: Monitoring – East Dike discharge

Concern: A total of 99,798 m3 was discharged in 2017 from the South and North seepage points via diffuser into Second Portage Lake.

Two episodes of elevated TSS occurred during the year, resulting in water being redirected to Portage Pit sumps and discharged to Portage Pit once compliant. The first episode occurred on May 19, when TSS was measured at 34 mg/L in a grab sample (30 mg/L is the maximum allowable under the Water License). An estimated 33.66 kg of TSS was released. The second exceedance occurred on September 18, when TSS was measured at 32 mg/L and an estimated 55.49 kg of TSS was discharged into Second Portage Lake before being redirected. In each case there was a delay between sampling and response, due in part to waiting for lab results (two days in May and four days in September). However, AEM reports that there was a further 2.5 hour delay between receiving the results and halting discharge in May "due to operational constraint, i.e., adjustment of piping and valve to permit the discharge of the water back to Portage Pit" (p. 142).

Recommendation 48: We recommend that AEM investigate potential modifications to the discharge system which would avoid or minimize the delay in switching discharge from Second Portage Lake to the Portage Pit sumps in the event of future exceedance events.

> ***Agnico Eagle's Response:***
> *The May exceedance, where the 2.5 hours delay occurred, was under frozen condition, which slowed down the switch between SPL to Portage Pit. It is Agnico's opinion that the system is already effective but will continue to investigate potential modifications to minimize the delay in switching discharge from SPL to Portage Pit, if needed, in the future. Furthermore, Agnico has put in place an internal proactive water quality monitoring that permit to stop the discharge to the receiving environment before a non-compliance occurs.*

4.19 Section 8: Monitoring – EEM Interpretive Report Cycle 2 and EEM Study Design Cycle 3

Concern: Discharge from the Vault Attenuation Pond to Wally Lake is currently considered the mine activity with the greatest risk of adversely affecting the receiving environment. As a result, the EEM study has shifted focus in Cycle 3 from Third Portage Lake (since discharge stopped here in 2014) to Wally Lake as the exposure area. The Cycle 3 EEM study design is similar to Cycles 1 and 2. The same two lakes, Inuggugayualik Lake (INUG) and Pipedream Lake (PDL) are being used as reference lakes for the study. The study will investigate Lake Trout and benthic invertebrates responses to discharge.

Appendix G3 provides more detail on the EEM Cycle 3 study design and provides background on environmental conditions at the mine site. In Section 2.6.3 Water Quality and Section 2.6.4 Sediment Quality of Appendix G3 the most recent CREMP data provided are from 2015 and 2014 respectively. These sections should be updated to include results of the 2017 CREMP monitoring.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Recommendation 49: Please update Sections 2.6.3 and 2.6.4 of Appendix G3 with the 2017 CREMP monitoring results.

Agnico Eagle's Response:
The EEM Cycle 3 Study Design was provided to ECCC and Technical Advisory Panel (TAP), consisting of representatives from ECCC, NWB and CIRNAC, for their review on February 2017 and was elaborated on the most up to date complete data available at the moment. The Study Design will not be updated to include this recommendation as it has been approved by ECCC and the fieldwork (summer 2017) has been completed according to this Study Design. Agnico will continue to use the most up to date data for following Study Design.

Concern: Section 4.3.1 of Appendix G3 discusses the Lake Trout population in Wally Lake. Some fish in Wally Lake were transferred from Vault Lake in 2014 and from Phaser Lake in 2016 before each of those lakes were drained. While transferred fish were tagged, these tags may since have been shed and thus the origin of Lake Trout captured for the study will be unknown. AEM acknowledges that this issue could confound investigation into the effects of Vault discharge on Wally Lake fish, if individuals from different sources have differential responses to the discharge. AEM does not, however, discuss how it will address this confounding factor in study design.

Recommendation 50: Please discuss how fish transfers may affect monitoring results and how this will be addressed.

Agnico Eagle's Response:
The transfer of fish to Wally Lake has the potential to affect each of the EEM fish survey endpoints of Wally Lake fish. Therefore, the fish transfers will confound attempts to determine the cause if fish surveys in Cycle 3 and future EEM cycles demonstrate differences between Wally Lake and the reference lake(s).

As discussed in Agnico's response to TAP comments regarding the EEM Cycle 3 Study Design (Appendix G4 of the 2017 Annual Report):

To the best of Agnico's knowledge, there are no studies from other sites at similar latitudes that could provide an indication of how long it may take the population of Wally Lake to return to a steady ecological state. There are no population estimated or species-specific age class estimates from Wally Lake prior to the fish transfers.

4.20 Section 8: Monitoring – Mine Site Water Quality and Flow Monitoring (and Evaluation of NP2)

Concern: AEM is required to present the results and interpretation of the monitoring program under Water License 2AM-MEA1525 Schedule B-15. Raw data is provided in tables, but the information is not summarized or interpreted in the text. Instead, AEM reports for many mine site data that there are "no applicable license limits" (e.g., for Vault Attenuation Pond, p. 141; Tailings

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Storage Facility, p. 142; North Portage Pit Sump, p. 143; South Portage Pit Sump, p. 143; Goose Island Pit Sump/Lake, p. 143; Vault Pit Sump, p. 144; PRSF-Waste Extension Pool, p. 147; Vault Rock Storage Facility, p. 147; Saddle dam, p. 147, Central Dike Seepage, p. 147, Saddle dam 3, p. 148).

We understand that limits may not be applied because water is not directly released to the environment from these sites. However, tracking levels of contaminants year over year is important in the event that seepage occurs (e.g., as occurred from Portage Waste Rock Storage Facility in 2013, which had elevated levels of cyanide, nickel and copper, and was found to have originated from reclaim water from North Cell TSF).

Recommendation 51: Please summarize monitoring results and interpret trends for the Mine Site Water Quality and Flow Monitoring in the Annual Report

> ***Agnico Eagle's Response:***
> *Agnico acknowledges KIA'S comment and will include improved trending of Section 8 Mine Site Water Quality and Flow Monitoring (and Evaluation of NP2) in future annual reports.*

4.21 Section 8: Monitoring – NP1 Lake

Concern: NP1 Lake is inspected daily during freshet. On June 6, 2017, elevated TSS was detected and reported as a spill. AEM implemented a daily TSS monitoring program "until results are satisfying…and compliant with regulation for a period judged acceptable for confirmation that runoff water will not impact the receiving body further" (p. 149). No further details are provided. It is not clear how long elevated TSS conditions persisted, what exceedance level was recorded, nor what period of compliance is deemed "acceptable for confirmation that runoff water will not impact the receiving body further".

Recommendation 52: Please provide additional details about the elevated TSS event at NP1 Lake, including what the exceedance level was, how long TSS was elevated, how it was addressed, and what period of compliance is deemed acceptable.

> ***Agnico Eagle's Response:***
> *Please refer to Appendix 5 below for the follow up report provided to regulators following the spill. These documents were also part of Appendix F1 of the 2017 Annual Report.*

4.22 Section 8: Monitoring – Baker Lake Marshalling Facilities

Concern: AEM reports that water collected in secondary containment areas (Tanks 1-4; ST-40.1) and additional diesel bulk fuel storage facilities (Tanks 5-6; ST-40.2) were sampled in May and June 2017 and water from the secondary containment areas were discharged to the tundra since there were no exceedances. It is not clear if water from the additional diesel bulk fuel storage facilities was also discharged. AEM states that "In fact, Agnico used silt bags and transfer water from Tank 5-6 to containment of Tank 1-4" (p. 149).

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Recommendation 53: Please clarify what was done with water collected in Tanks 5-6.

Agnico Eagle's Response:
Agnico apologizes that a clerical error was made in the redaction on this section and the phrase "In fact, Agnico used silt bags and transfer water from Tank 5-6 to containment of Tank 1-4" should not have been included in the 2017 annual report. This statement was mistakenly carried over from the 2016 Annual report.

Water collected in the secondary containment areas of the main (Tanks 1 – 4; ST-40.1) and additional (Tanks 5 - 6; ST-40.2) diesel bulk fuel storage facilities at the Baker Lake Marshalling Facility were sampled on May and June 2017.

Notification to the INAC Inspector, made in accordance with Part F, Item 12 of NWB License 2AM-MEA1525, was sent on June 5, 2017 for ST-40.2 and June 19 for ST-40.1. Approximately 13,600 m^3 of water was discharged from secondary containment Tank 1 to 4 (ST-40.2) to the tundra in June and 4,200 m^3 was discharged from ST-40.1 in July.

4.23 Section 8: Monitoring – Mill Seepage

Concern: AEM implemented a monitoring program for mill seepage in 2014, as part of the Freshet Action Plan. AEM presents the results of water quality monitoring of seepage in the interception trench, monitoring wells and Third Portage Lake in Tables 8.65 and 8.66, as well as regulatory guidelines in Table 8. 64.

It would be helpful if exceedances were highlighted in the tables. There are several exceedances relating to free cyanide and iron in trench and wells, and copper in Third Portage Lake. The September 19 copper exceedance in Third Portage Lake (0.013 mg/L vs the CCME guideline of 0.002 mg/L for the protection of aquatic life) should also be discussed in the text.

Recommendation 54: Please highlight guideline exceedances of parameters in Table 8.65 and 8.66.

Agnico Eagle's Response:
Agnico Eagle will highlight guideline exceedances in Table 8.65 and 8.66 in future annual reports.

Recommendation 55: Please discuss the implications of the copper exceedance measured in Third Portage Lake on September 19, 2017.

Agnico Eagle's Response:
The result of copper in Third Portage Lake on September 19, 2017 was 0.0013 mg/L (Table 8.66) and not 0,013 mg/L. The result of September 19, 2017 in below the CCME guideline of 0.002 mg/L and thus there is no exceedance.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

4.24 Section 8: Monitoring – Blast Monitoring

Concern: Appendix G7 provides information on blast monitoring, including the fact that no exceedances of DFO guidelines occurred in 2017. It would be helpful to include this detail directly in the Annual Report as well.

Recommendation 56: Please mention in the Annual Report that no blasting exceeded DFO guidelines in 2017.

Agnico Eagle's Response:
Agnico acknowledges the KIA's comment and will mentioned in the annual report if there is or not exceedance to the DFO guideline

4.25 Section 8: Monitoring – AEMP - Potential Sources of Impacts and the Conceptual Site Model (CSM)

Concern: AEM states that "although the Cycle 3 EEM Biological Monitoring took place in 2017, results have not yet been reported" (p. 165). When will these be reported?

Recommendation 57: Please indicate when the Cycle 3 EEM Biological Monitoring results will be available. Please send a copy directly to the KIA.

Agnico Eagle's Response:
In June 2018, the Environmental Effects Monitoring Study 3 Interpretative Report was submitted to ECCC. A copy of this report is provided in Appendix 2 and will also be part of the 2018 annual report.

4.26 Section 8: Monitoring – AEMP - Summary of Results of AEMP-Related Monitoring Programs

Concern: The AEMP-related monitoring programs carried out in 2017 included:

- CREMP;
- MMER (EEM) Monitoring;
- Minesite Water Quality and Flow Monitoring (and evaluation of NP-2);
- Visual AWAR Water Quality Monitoring;
- Air Quality Monitoring;
- Blast Monitoring; and
- Groundwater Monitoring.

CREMP
AEM indicates that there were early warning trigger exceedances for alkalinity, conductivity, hardness, major cations, TDS and TKN for one or more near-field areas in 2017 but concludes that

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

"while these results represent mine-related changes, the observed concentrations are still relatively low and unlikely to adversely affect aquatic life" (p. 168). As we recommended in Section 2.8.1, AEM should provide support for this statement by linking it to results of biotic surveys carried out as part of CREMP.

AEM reports that arsenic levels in Wally Lake are 2.5 times higher than baseline, "however, there is some uncertainty regarding whether this trend to [sic] real or due to natural spatial heterogeneity" (p. 168). As we recommended in Section 2.8.1, AEM should clarify how an increase from baseline levels could reflect spatial heterogeneity, if samples were collected at the same location.

It is not clear how the spatial scale of effects is determined in Tables 8.69-8.71. AEM states that the effect of the TKN exceedance in water quality is small (localized), yet presumably it applies to all of Wally Lake?

The legend for Table 8.69 indicates that the moderate spatial scale covers sub-basin to basin and the large spatial scale covers basin to whole lake. Should the scale thus be large for TKN in Wally Lake?

Similarly in Table 8.70, a moderate spatial scale is assigned for chromium exceedance in sediment chemistry for Third Portage Lake. Was this restricted to a sub-basin or basin, or to the entire lake?

Recommendation 58: Please provide supporting evidence from biotic surveys that water quality trigger exceedances are unlikely to have adverse effects on aquatic life.

Agnico Eagle's Response:
Please refer to Agnico's response to CIRNAC's Recommendation 16 above.

Recommendation 59: Please clarify the potential role of natural spatial heterogeneity in the ongoing elevated (and rising) arsenic levels in Wally Lake.

Agnico Eagle's Response:
Please refer to Agnico's response to KIA's Recommendation 41.

Recommendation 60: Please clarify how spatial scale is assigned to the TKN exceedance in Wally Lake and the chromium exceedance in Third Portage Lake.

Agnico Eagle's Response:
The spatial scale of the receiving environment is the entire waterbody in the case of SP and WAL or large basins within waterbodies for TPE and TPN. There may be variability within a waterbody associated with spatial structure (e.g., edges may be more prone to influence of spring run-off), depth or other factors. Mean annual TKN in WAL was 0.17 mg/L compared to the trigger value of 0.16 mg/L. The spatial scale of the TKN exceedances were considered small (i.e., localized). In August, both surface water samples from WAL

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

were collected near the diffuser because of sampling requirements for the EEM program and the goal of sharing data between the EEM and CREMP. The two samples were located less than 150 m apart, representative of localized ambient water quality conditions near the benthic invertebrate and sediment sampling basin. By comparison, the May, July, and September sampling events involved water sampling throughout the entire lake in areas with at least 5 m of total water depth as per the CREMP water sampling SOP. In May and September, only one of the two samples collected in each event exceeded the trigger. In July, both water samples had TKN concentrations less than the trigger values. Combined, these results demonstrated that the TKN concentrations are not elevated above the trigger values throughout the lake on a month-by-month basis; hence, the small spatial scale rating for TKN in WAL.

The sediment coring program is designed to track changes in sediment chemistry over time using a before-after (BA) statistical framework. Chromium exceedances at TPE were given a "moderate" spatial scale rating of chromium exceedances, meaning concentrations were inferred as being elevated in the sub-basin to basin when considering the core chemistry data. The CREMP has successfully detected changes in sediment chromium concentrations in the basin over time; however, no effects to benthic invertebrate community abundance or richness have been detected to date.

4.27 Section 8: Monitoring – Air Quality Monitoring

Concern: AWAR Monitoring

AEM expanded its dustfall sampling along the AWAR in 2017 by studying the effects of dust suppression. Five key locations were selected to receive dust suppressant. Sites with suppression had significant reductions in the mean fixed dustfall rates up to 150 m from the road compared to sites where no suppression was applied. At 300 m beyond the road, dustfall rates were similar between reference and treatment sites. AEM will continue using dust suppressant in the same areas along the AWAR in 2018. AEM does not report what type of dust suppressant was used, nor explain why five locations have been identified as potential areas of concern along the AWAR.

Recommendation 61: Please indicate what type of dust suppressant was used along the AWAR.

Agnico Eagle's Response:

As detailed in Appendix G11 – 2017 All-Weather Access Road Dust Monitoring Report, the dust suppression product TETRA Flake was applied twice to each of the locations detailed in Table below. For all locations, the first application of dust suppressant occurred the week of June 11, and the second application occurred the week of July 23.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Location Type	Dust Suppression Location	Rationale
Hamlet	Agnico Eagle spud barge area	High traffic area near hamlet
Hamlet	Agnico Eagle tank farm to Arctic Fuel site	High traffic area near hamlet
AWAR	km 10 - 12	High traffic area near hamlet & area of concern to HTO – proximity to lake
AWAR	km 24 - 26	Area of concern to HTO – proximity to lake
AWAR	km 48 - 50	Area of concern to HTO – water crossing
AWAR	km 68 - 70	Location identified by Agnico Eagle – water crossing
AWAR	km 80 - 84	Location identified by Agnico Eagle – proximity to water & crossing
Onsite	Emulsion plant turn off to Meadowbank site (km 103 – 110)	High traffic area onsite

Recommendation 62: Please explain why the five locations receiving dust suppressant were identified as potential areas of concern for dustfall.

Agnico Eagle's Response:

In 2016, Agnico conducted an initial meeting with the Baker Lake Community Liaison Committee (including an HTO member) on March 18 to discuss the planned dust suppression pilot study. A field visit with HTO members was planned to identify specific areas of concern related to dust along the AWAR. The field visit by members of the HTO and the Meadowbank Environment Department was conducted May 11th 2016, and examined AWAR km 1 – km 50. Three areas of concern were identified, generally due to proximity of Whitehills Lake and water crossings. Please refer to Table in KIA's comment 61 above for the rational associated with the segment of the AWAR receiving dust suppression.

4.28 Section 8: Monitoring – Wildlife Monitoring

Concern: A habitat analysis was conducted as part of the annual wildlife monitoring program for the first time since 2014 (it is to be carried out at least every three years). The analysis calculated the amount of area and Ecological Land Classification (ELC) units lost to mine development, based on GIS data. The habitat loss for the mine site was predicted to be 867 ha but the actual loss was 1027 ha in 2017, 160 ha or 18% more than predicted. The loss of high suitability habitat was greater than predicted (i.e., beyond thresholds) for ungulates (growing and winter season), small mammals, and other breeding birds at the mine site. The AWAR meanwhile, required considerably less area and habitat loss than predicted (173 ha vs the predicted 281 ha, or 38.5% less than predicted).

AEM calculated an overall net loss for the combined mine site and AWAR areas as 4% (46 ha) above what was originally predicted and approved.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Appendix G13 – 2017 Wildlife Monitoring Summary Report
This appendix provides supplemental information to the wildlife monitoring presented in the body of the Annual Report.

Appendix G13 Section 3 Habitat Mapping
Table 3.1 of Appendix G13 presents the predicted habitat loss thresholds originally estimated for the mine site and AWAR.

Table 3.1: Habitat Mapping Monitoring Parameters, Estimated Footprint Losses, and Thresholds

Monitoring Parameter	Mine Site Estimated Loss	AWAR Estimated Loss	Threshold
Terrestrial Habitat	867 ha	281 ha	>5% Predicted
Ungulate – High Suitability Habitat	240 ha (growing season) 191 ha (winter season)	63 ha (growing season) 188 ha (winter season)	>10% Predicted
Small Mammals – High Suitability Habitat	178 ha	156 ha	>10% Predicted
Waterbirds – High Suitability Habitat	518 ha	22 ha	>10% Predicted
Breeding Birds – High Suitability Habitat	322 ha	170 ha	>10% Predicted

No thresholds were reached or exceeded in 2010, 2012, or 2014 habitat analyses. However, the 2014 results indicated that the mine site threshold was being approached, as 775.7 ha actual loss was recorded. AEM responded by committing to remove material stored in the NPAG extension area and use it for capping the North Cell TSF during closure and reclamation. AEM reasoned that this would free up high suitability habitat in the NPAG extension area, making it available again for ungulates following restoration. AEM does not report on how much habitat this would restore, nor when it would be fully restored as high suitability habitat. It is also not clear if this action (i.e., removal of material and restoration of habitat) is underway or has been completed. No mention of this action is made in Section 9.1 Progressive Reclamation of the Annual Report.

Recommendation 63: Please provide more details on the restoration of the NPAG extension area, including how much habitat would be restored, how it would be restored, and what the status of restoration is.

> ***Agnico Eagle's Response:***
> *Agnico will be completing a comprehensive habitat analysis in the 2018 annual report, which will be inclusive of all habitat alterations due to mine activities up to December 2018. The status of the NPGA extension restoration up to December 2018 will be provided and discussed.*

Concern: Mine Site
Since the 2014 analysis, the Vault Pit has become fully operational and has expanded into Phaser Lake. AEM explains that the difference between predicted and actual habitat losses is mainly due to the final extent of the Vault waste dump, the Phaser Lake extension of the Vault Pit area and the as-built layout of the NPAG expansion of the Portage Waste Rock Facility.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

The calculated individual ELC unit loss was above estimated losses for all ELC units except water, and greatest for sedge (27.3% more than predicted) and birch and riparian shrub (41.8% more than predicted) ELC units, both of which are high suitability habitat for ungulates during winter. There were greater than 10% differences between predicted and actual habitat losses for heath tundra, lichen, lichen-rock and rock and boulder ELC units. Thresholds were exceeded for all VECs except waterbirds.

Table 3.4 indicates that adaptive management measures to respond to habitat loss are "to be determined following a more inclusive habitat analysis in the 2018 annual report" (G13 p. 14). What is the habitat analysis planned for 2018 and why is it necessary? The annual report states that habitat analysis is generally scheduled every three years and was carried out in 2017.

Recommendation 64: Please provide more details on the habitat analysis planned for 2018, including rationale. The 2018 habitat analysis should also be discussed in the Annual Report.

> ***Agnico Eagle's Response:***
> *Agnico will be completing a comprehensive habitat analysis in the 2018 annual report, which will be inclusive of all habitat alterations due to mine activities up to December 2018. The analysis will also take into account all areas that have been approved since the FEIS so that exceedances to thresholds can be identified and appropriate adaptive mitigation measures can be implemented in 2019. Another analysis is necessary in 2018 because not all geospatial data (e.g., actual and approved habitat losses) were available for the 2017 report.*

Concern: Appendix G13 Section 7 All-Weather Access Road and Vault Road Ground Surveys
Table 7.4 lists wildlife mortality thresholds associated with AWAR surveys, relating to caribou, predatory mammals, small mammals, raptors, waterbirds, songbirds and other birds. Only the caribou related mortality threshold is stated in Section 7.2 Objectives.

Recommendation 65: Please include all wildlife mortality thresholds in survey objectives.

> ***Agnico Eagle's Response:***
> *All wildlife mortality thresholds will be included in the 2018 annual report.*

Concern: Figure 7.3 shows the number of caribou observed along the AWAR from 2007 to 2017. The lowest number of observations occurred in 2017 (920), compared to highs of 30,000 in 2008, 15,000 in 2010 and ~10,000 in 2007, 2014 and 2015. All other years have recorded observations of at least 2000 caribou along the road. What is the potential reason for the much lower numbers seen in 2017?

Recommendation 66: Please discuss possible reasons for the low numbers of caribou observed along the AWAR in 2017 compared to other monitoring years. Please investigate whether the decline also occurred in reference areas, or is a mine-related effect.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Agnico Eagle's Response:

Preliminary road survey data from January to July 2018 (total of 7 months) indicate that 23,901 caribou were reported, which is well above all other years with the exception of 2008. Caribou populations are known to be cyclical and herds do not always migrate in consistent locations. A discussion on the possible reasons for year to year fluctuations in caribou numbers along the AWAR will be discussed in the 2018 report.

4.29 Section 11: Modifications/General/Other – Inspections, Compliance Reports and Non-compliance Issues

Concern: AEM is required under Water License 2AM-MEA 1525 to summarize actions taken to address concerns or deficiencies raised in inspection reports and compliance reports. AEM mentions that several inspections occurred in 2017 by ECCC, KIA, INAC, NIRB and the Government of Nunavut. These reports are provided in the appendices but should also be summarized in the Annual Report regarding what issues were raised and how AEM addressed them.

Recommendation 67: Please summarize concerns or deficiencies raised by agency inspections in 2017 and indicate how they were addressed.

Agnico Eagle's Response:

In Agnico's view, it may be easier for the reader to refer directly to the inspection reports to capture the whole interpretation of the report. It is Agnico's opinion that a summary is provided regarding the inspection completed in the year. However, Agnico will continue to improve information reported in this section of the next annual report.

4.30 Section 11: Modifications/General/Other – Traditional Knowledge, Consultation with Elders and Public Consultation

Concern: AEM mentions that traditional knowledge is collected from community meetings and reported annually. How is this traditional knowledge reported and is it acted on or used in any way?

Recommendation 68: Please explain how traditional knowledge gathered at community meetings is reported and used.

Agnico Eagle's Response:

For the annual shipping meetings in Chesterfield Inlet, traditional knowledge is collected and reported through meeting minutes. Depending on the type of traditional knowledge collected, it can create actions or affect processes.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

4.31 Section 12: PEAMP – Aquatic Environment

Concern: Table 12.2 summarizes the predicted and measured impacts to water quantity in Meadowbank lakes. The freshwater consumption in Third Portage Lake was predicted to be 0.53 Mm3/yr (year 5-8), 2.35 Mm3/yr for 2017 and 9.12 Mm3/yr in 2018 through to expiry of water license and the measured impact was 528,171 m3. It would be helpful to show predicted impact and measured impact in the same unit (i.e., either all asmillion cubic metres or all as cubic metres). For Wally Lake, the predicted usage was 456,450 m3 total average annual discharge but the measured amount in 2017 was 715,606 m3. Why is there such a large discrepancy in these amounts?

Recommendation 69: Please report predicted and measured impacts in water quantity with consistent units in Table 12.2

Agnico Eagle's Response:
Agnico acknowledges KIA's comments and will use the same units.

Recommendation 70: Please explain why discharge volume to Wally Lake was 57% higher than predicted in 2017.

Agnico Eagle's Response:
The larger volume of water discharged to Wally Lake could be caused by a larger freshet and rainfall flowing to Vault and Phase pits

Concern: Table 12.3 summarizes predicted and measured impacts to water quality in Meadowbank lakes. The predicted impact of mine-related activities was for the receiving environment in all lakes to have parameter concentrations less than Canada Water Quality Guidelines (CWQG; except for arsenic and cadmium in Wally Lake and cadmium in Second Portage Lake and Third Portage Lake). Table 12.3 reports that the measured impact was that CREMP results were all less than CWQG in the receiving environment. However, Section 8.9 of the Annual Report shows that 2017 CREMP found multiple exceedances of the 95th percentile baseline trigger for parameters with no CCME thresholds, such as alkalinity, hardness, TDS, TKN etc. How were parameters without CCME guidelines dealt with in predictions?

Similarly, in Table 12.4, predicted and observed impacts to fish and fish habitat are reported as less than CWQG for aquatic life. How are parameters without guidelines addressed in predictions?

Recommendation 71: Please indicate how parameters without CCME guidelines are incorporated into predicted and observed impacts on water quality (in Table 12.3) and fish and fish habitat (in Table 12.4).

Agnico Eagle's Response:
The CREMP determined that, as in the past, there were some statistically significant mine-related changes relative to baseline/reference conditions identified in 2017 at one or more

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

near-field (NF) areas that exceeded their respective triggers: alkalinity (SP); conductivity (TPN, TPE, SP, WAL); hardness (TPN, TPE, SP, WAL); major cations (i.e., calcium, potassium, magnesium, and sodium [TPN, TPE, SP, WAL]); TDS (TPN, TPE, SP, WAL), and TKN (WAL). In the absence of effects-based thresholds (e.g., CCME water quality criteria) for these parameters, their triggers were set at the 95th percentile of baseline data. While these results represent mine-related changes, the observed concentrations are still relatively low and unlikely to adversely affect aquatic life.

Table 8.69 of the 2017 Annual Report mentioned that the parameters where elevated relative to reference-baseline conditions but concentration suggest low potential for adverse effects. Please also refer to CIRNAC's recommendation 16 above.

4.32 Section 12: PEAMP – Terrestrial and Wildlife Environment

Concern: AEM states that "overall two terrestrial ecosystem monitoring program thresholds were exceeded or potentially exceeded in 2016 (waterfowl mortalities; and potentially, sensory disturbance of caribou related to the AWAR" (p. 244). We believe this text should read 2017 and should reflect exceedances from 2017 (e.g., habitat loss for mine site, ungulate habitat loss and degradation of high suitability habitat, projectrelated mortality of large predatory mammals, habitat loss and degradation of high suitability habitat for small mammals, habitat loss and degradation of high suitability habitat for waterbirds, habitat loss and degradation of high suitability habitat for other breeding birds), as presented in Table 12.5.

Recommendation 72: Please correct the text to reflect thresholds exceeded in 2017 and ensure number of exceedances reported is consistent with those present in Table 12.5.

Agnico Eagle's Response:

There was an error in the 2017 Annual Report. You should have read: 'Overall, the following Terrestrial Ecosystem Monitoring Program thresholds were exceeded or potentially exceeded in 2017:

- *Habitat Loss for Vegetation (Wildlife Habitat), Ungulates, Small Mammals, other Breeding Birds*
- *Potentially Sensory Disturbance for Ungulates*
- *Project related Mortality for Predatory Mammals'*
-

Agnico Eagle will refer you to Section 12.2.1 of the 2017 Annual Report for a discussion regarding these exceedances.

Concern: Table 12.5 presents the differences between predicted and measured habitat loss at the mine. The net percent loss is reported for the mine site and AWAR combined. The individual percent losses should also be reported in the 'Measured Impact' column so that they can easily be compared with the individual values listed in the 'Threshold/Prediction' column (i.e., 18% above for mine site and 38% below for AWAR).

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Table 12.5. Terrestrial impacts and associated effects predicted in the FEIS, proposed monitoring, actual monitoring (2017) and any observed impacts (2017). Adapted from Table 10.1 in the 2017 Wildlife Monitoring Summary Report (Appendix G13). Measured impacts exceeding or potentially exceeding impact predictions/thresholds are indicated in grey.

Potential Impact	Potential Cause(s)	Proposed Monitoring Methods	Monitoring Conducted (2017)	Threshold/ Prediction	Measured Impact (2017)
Vegetation (Wildlife Habitat)					
Habitat Loss	Mine site footprint, pits, roads, water management and collection systems	Ground Surveys, Mapping, GIS Analysis	Ground Surveys, Mapping, GIS Analysis	Mine Site – 867 ha + 5% AWAR – 281 ha + 5%	Mine Site - 1,021 ha AWAR – 173 ha Net – 4% above total predicted habitat loss

Similarly, AEM should show the percent exceedance of threshold/prediction for habitat loss and degradation of high suitability habitat for ungulates, small mammals, waterbirds and other breeding birds (not just area).

			Surveys		
Habitat Loss and Degradation	Mine site footprint, pits, roads, water management and collection systems	Ground Surveys, Mapping, GIS Analysis	Ground Surveys, Mapping, GIS Analysis	Growing – 240 ha of High Suitability Habitat + 10% Winter – 191 ha of High Suitability Habitat + 10%	Growing – 318 ha Winter – 248 ha
				< 20%	

Recommendation 73: Please include individual percent loss of habitat values for the mine site and AWAR in Table 12.5 under the 'Measured Impact' column.

Agnico Eagle's Response:
Agnico acknowledges the comment and will add the percent loss of habitat values for the mine site and AWAR in the next annual report.

Recommendation 74: Please include the percent exceedance of the threshold/prediction for high suitability habitat under the 'Measured Impact' column for ungulates, small mammals, waterbirds and other breeding birds.

Agnico Eagle's Response:
Agnico acknowledges the comment and will add the percent loss of habitat values in the next annual report.

Concern: Three large predators (one wolverine and two wolves) were killed at the mine in 2017, which exceeded the one mortality per year threshold for large predatory mammals. AEM examined historical trends to evaluate the situation and found that there were no deaths in 2016 and 2015, 1 in 2014, 1 in 2013, 2 in 2012 and 4 in 2011. From this AEM concluded that "based on this data, there is no clear trend towards increasing mortalities of large predatory mammals on

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

the Meadowbank site" (p. 248). However, another way to interpret the data is that there was a steady decline in mortalities on site from 2011 to 2016, followed by an increase again in 2017, which warrants further investigation into what occurred in 2017.

Recommendation 75: Please discuss possible reasons for an increase in large predatory mammal mortality on site in 2017 and describe what steps are being taken to avoid further threshold exceedances.

Agnico Eagle's Response:
Agnico will analyse the 2018 data to see if the increase in 2017 was not just sporadic. Agnico is continuously conducting toolbox meetings and inspections with regards to wildlife attractant and waste management to avoid threshold exceedance.

Concern: AEM states that "to determine appropriate management actions for exceedances of impact predictions related to habitat disturbance areas, further habitat analyses are planned for 2018" (p. 249).Why are further analyses necessary and what is the goal of these analyses? We recommend that any future studies focus on determining the best options to mitigate the larger than predicted habitat loss on the mine site and steps that can be taken to avoid further exceedances.

Recommendation 76: Please explain the nature of habitat analyses planned for 2018 and provide a rationale for them. We recommend that these analyses focus on determining the best options to mitigate the larger than predicted habitat loss that has occurred on the mine site to date, as well as steps that can be taken to avoid further habitat loss.

Agnico Eagle's Response:
Agnico will be completing a comprehensive habitat analysis for the 2018 annual report, which will include all habitat alterations due to mine activities up to December 2018. The ground analysis could not be conducted for the 2017 annual report because the necessary geospatial data (e.g., actual and approved losses of the Phaser Lake extension) were not available. Section 3.6.1 of the annual report indicates, "The Phaser Lake extension was completed with approval from the NIRB and the Nunavut Water Board (NWB); however, the size of the extension area was not available for habitat calculations in this report." Further, Section 3.8 notes, "To better understand the extent of exceedances, all approved mine components (e.g., Phaser Lake extension) need to be included in the habitat analysis. An updated habitat assessment, with all approved extensions, will be included in the 2018 annual report." Further, details will be provided on adaptive management measures and/or restoration activities undertaken by Agnico up to the end of 2018, in the 2018 annual report.

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

AGNICO EAGLE

APPENDIX 1

December 1, 2017 Wildlife Incident Report revised

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

Wildlife Incident Report

Date*:** 2017-12-02 ***From: *Martin Theriault*

Description:

On the 1st of December 2017 at about 20:00, the environment department was informed of an injured wolf on the Amaruq road between km 6 and 7. Environment asked the AEM pit supervisor that reported the situation to monitor the situation and stop all traffic in the area until further notice. The environment coordinator called the Baker Lake Conservation Officer to make them aware of the situation and then went to the area to investigate with an environment technician. Once arriving on the scene, the wolf was laying on the ground on the side of the road (Picture 1). The pit supervisor explained that the injured wolf was first seen at km 8 and walked his way to km 6.5. According to him, there was no apparent injury to the legs or other parts of the body except the forehead of the animal (See below the supervisor statement). Environment personnel went to km 8 to see any evidence of incident but couldn't find anything except wolf and caribou tracks (Picture 2). The environment personnel decided to leave the wolf for the night and re-evaluate the situation in the morning. They asked the road supervisor to deny access to the road for all vehicles except the grader.

Early next morning, the environment personnel was notified by the road supervisor that the wolf was dead. They went on the scene and saw the dead wolf about five meters away from where it was seen the night before (Picture 3). The carcass was picked up and brought back to site. Upon daylight, environmental technicians went back to investigate the area. No sight of incident was found on the road. A lot of caribou tracks and grazing were found in the area of km 8 (Picture 4) as well as wolf tracks (Picture 5) but no blood or hair was seen. Inspection was also done at km 6.5. Many tracks of wolverine were observed as well as blood and hair in these tracks (Picture 6, 7 and 8). The cause of the death was undetermined.

Picture 1: Wolf laying down on the side of the road

Picture 2: Wolf and caribou tracks at km 8

Picture 3: Dead wolf about 5 meters away from the night before

Picture 4: Caribou tracks and grazing around km 8

Picture 5: Wolf tracks around km 8

Picture 6: Evidence of the wolf being dragged by a wolverine

Picture 7: Blood mark in wolverine tracks

Picture 8: Blood mark in wolverine tracks

Pit supervisor statement

At 8pm the grader operator spotted a wolf walking on amaraq road at km 08. He stopped moving the grader and turned off all his lights to let the wolf walk by. But the wolf went under the machine, so the operator called me to go out to see him because he wasn't sure if the wolf was still there. We notified environment department. By the time I drove out to the area the wolf had already walked out to km07. I parked in front of the wolf and waited for environment to make it to the area. While I was waiting I noticed the wolf was bleeding from the top of his head and he also tried to stand up twice in 2hours but just layed back down. Environment personnel arrived on scene and relived me. I went back out to amaraq road at 4am to see if the wolf was still there, but when I arrived there the wolf was dragged off the road to a turn out spot and his head if gone. So he is dead.

If you need any more information, let me know

Jason Laforce
Auxiliary Equip. Operator/Relief Pit Services Supervisor

jason.laforce@agnicoeagle.com

T: 819.759.3555 x6891

Agnico Eagle Mines Limited
Meadowbank Division
Baker Lake, Nunavut, Canada
X0C 0A0

agnicoeagle.com

Action and Recommendations:

Action to be taken with the carcass will be taken as per the Conservation officer's request.

I trust that the above details and report will be satisfactory. Please contact the undersigned should you have any questions.

Martin Theriault
Environmental Technician

martin.theriault@agnicoeagle.com

T: 819.759.3555 x6906

Agnico Eagle Mines Limited
Meadowbank Division
Baker Lake, Nunavut, Canada
X0C 0A0

agnicoeagle.com

AGNICO EAGLE

Appendix 2

Meadowbank EEM Cycle 3 Interpretative Report

10 200, Route de Preissac, Rouyn-Noranda, Québec, Canada J0Y 1C0
Tél : 819.759.3700 Sans frais : 1.888.822.6714 agnicoeagle.com

ENVIRONMENTAL EFFECTS MONITORING: CYCLE 3, MEADOWBANK MINE INTERPRETIVE REPORT

June 20, 2018

Submitted To:

Agnico Eagle Mines Ltd: Meadowbank Division
Regional Office - 93, Rue Arseneault, suite 202,
Val-d'Or, Québec, J9P 0E9

Attention: Nancy Duquet-Harvey

C. PORTT and ASSOCIATES
56 Waterloo Avenue
Guelph, Ontario
N1H 3H5
519-824-8227
cportt@sentex.net

KILGOUR & ASSOCIATES LTD.
16-2285C St. Laurent Boulevard
Ottawa, Ontario,
K1G 4Z6
613-260-5555

EXECUTIVE SUMMARY

Introduction

Agnico Eagle Mines Ltd: Meadowbank Division began discharging treated effluent during 2009, and was subsequently required under the Metal Mining Effluent Regulations (MMER) to monitor effects of that effluent on fish and fish habitat. This is the mine's Third EEM Interpretive Report, and it is submitted to Environment Canada on behalf of Agnico Eagle Mines Limited, Val-d'Or, Québec. Although this is the Cycle 3 EEM study at the Meadowbank site, it is the first study for which Wally Lake has been the exposure site; during the previous EEM cycles the main discharge was to Third Portage North. This report documents the results of the adult fish population survey and the benthic invertebrate community survey completed for the mine's Cycle 3 EEM biological monitoring studies, as well as the sub-lethal toxicity testing carried out on the Meadowbank Division effluent since the drafting of the Cycle 2 Interpretive Report.

Fish Population Survey

Lake Trout was the sentinel fish species used in the 2017 Cycle 3 EEM survey; other species are not present in sufficient numbers. Lake Trout from the exposed area in Wally Lake (WAL) were compared to those from two reference lakes, Innuguguayalik Lake (INUG) and Pipedream Lake (PDL). The lethal study examined weight adjusted for length, liver weight adjusted for weight and length, weight at age and length at age, as well as size distribution and age distribution,. There were no significant differences ($P \leq 0.05$) in the slopes for any of the relationships examined using ANCOVA. There were no significant differences in the length or age distributions between lakes either. In other words, no effects were observed on Lake Trout in Wally Lake.

Benthic Invertebrate Community Survey

This 2017 survey of benthic invertebrates compared the exposure area in Wally Lake (WAL), with INUG and PDL as reference areas. This is the third invertebrate community survey for the Meadowbank Mine under the MMER, but the first undertaken in WAL (under MMER) because discharge to the previous exposure area (Third Portage North Lake) has ceased. Benthos have been sampled from WAL and INUG since 2006, while PDL has been sampled since 2009 as part of the mines Core Receiving Environment Monitoring Program (CREMP). The Cycle 3 EEM benthic invertebrate survey employed the same sampling methods as the CREMP program so that a before-after-control-impact (BACI) design could be used. Benthic invertebrates were collected on August 24 (PDL), 25 (INUG) and 26 (WAL), 2017. Effects assessment involved use of baseline period data dating back to 2006, and testing of before-after-control-impact (BACI) and trend over time variations.

The benthic community of WAL, in 2017, largely consisted of chironomids and sphaeriid fingernail clams, similar to what the community consisted of in all other surveys, including those from the baseline period 2006 to 2012. The community of WAL was, further, very similar to what has been described from INUG and from PDL. Some of the observed variations in core indices of composition (abundance, family richness, equitability, scores on NMDS axes 1 and 2) were related to variations in substrate total organic carbon and grain size, and sample depth. Testing for spatio-temporal variations, therefore, was carried out on residuals of the core indices, after taking into account the variations related to underlying physical variables.

When only the 2017 data were compared (H05) there was a significant difference between Reference (INUG, PDL) and Exposure (WAL) for the residuals of abundance and richness, but the effect sizes only exceeded 2 standard deviations for abundance. Abundances in WAL were high relative to INUG and PDL, however, even before the discharge of effluent into WAL. When all of the years of data were included (H01), which is arguably the most robust analysis, there was no significant difference between WAL and the average of INUG and PDL for any of the indices of composition. Residuals were significantly different between WAL and the average of INUG and PDL for equitability and both NMDS axes for H02, which included only the three most recent pre-exposure years (2010-2012), but the associated effect sizes were small (< 2SD). The time trend for the period 2013-2017 differed between WAL and the average of INUG and PDL for abundance (with ES>2 SD), and for NMDS1 (ES < 2 SD). For H04, which examined the step change in 2017 between Reference and Exposure, there were significant differences in the residuals of abundance, equitability and NMDS Axis 1, but again the difference were less than 2 SD.

Generally, and despite some of the statistically significant variations observed, the composition of benthic community of WAL was very similar to what is observed in the reference lakes, and in WAL during baseline periods, and further contained fauna indicative of high water quality. The benthic community of WAL did not indicate a degraded condition relative to the baseline period in WAL, and contained an assemblage of organisms that are typical for these Arctic systems.

There were a number of temporal variations that were significant and that were consistent with operational influences (Table 39). Most of the significant variations were small with effect sizes < 2 SDs. The most obvious significant variations that exceeded background variability were those associated with total abundances (higher in 2016 and 2017 relative to reference data), and scores on NMDS Axis 2 (lower in 2017, reflecting higher relative abundances of ostracods).

The benthic community of WAL, however, was very similar to what is observed in the reference lakes, and in WAL during baseline periods. The lake contained 10 genera of chironomid in 2017, similar to what has been observed in the other lakes. Further, the dominant chironomids in WAL are similar to what are dominant in the other lakes (i.e. *Cladotanytarsus*, *Constempellina* and *Sergentia*). Less-abundant chironomids in WAL indicated oligotrophic conditions (e.g., *Monodiamesa*). There were no oligochaete worms in the benthos of WAL in 2017, a group that typically increases in numbers when conditions degrade. The benthos of WAL also contained the caddisfly *Grensia*, which has been historically observed (in low relative abundances), and a species that is generally restricted to the cold, clear waters of the far north (Harris and Lawrence, 1978).

Sediments in WAL have around 5 to 13% TOC, whereas INUG and PDL have around 2 to 6% TOC. That difference alone would be sufficient to result in the benthos of WAL being different from what is observed in the reference lakes. Reference-condition models were used here to 'adjust' indices to a more common set of conditions in terms of substrate.

Each of the three sampling areas has relatively low hardness with concentrations of metals and nutrients that are well below CCME water quality guidelines, and near detection limits. There has been some elevation of cations (Ca, Mg, K) in WAL, reflecting the higher hardness in WAL which is associated with effluent treatment, but the changes are trivial relative to the concentrations that would be required in order to elicit a toxicity response (Mount *et al*., 1997).

Mercury in Fish Flesh

Agnico Eagle Mines Ltd. has monitored mercury concentrations in the Meadowbank Division effluent since August 2009. Concentrations have remained below or near the detection limit of 0.01 µg/L. There was, therefore, no requirement to conduct a fish tissue survey during Cycle 3.

Sub-Lethal Toxicity

Cycle 3 effluent samples produced little or no effect on survival of exposed fathead minnows. Measurable growth impairment in fathead minnows was observed in two of the samples provided, with IC25 estimates of 58.3% and 64%. Tests measured no effect on survival of *Ceriodaphnia dubia* while two tests resulted in IC25 estimates of 86.1% and 59.3%. Final effluent samples did not impair growth in any of the *Pseudokirchneriella subcapitata* or *Lenna minor* tests during Cycle 3.

Future EEM Schedule

This Cycle 3 EEM study was the first EEM study for which Wally Lake was the exposure area. The next EEM cycle should, therefore, be completed within 36 months of this submission. In 2017, the largest effluent stream is via a diffuser into Wally Lake and based on its composition, this is the effluent that has the greatest potential to cause harm to the environment and, therefore, was the focus of this Cycle 3 EEM field study. Agnico will continue to monitor the volume and quality of the mine effluents. These data will be used to determine the effluent stream that will be the focus of the Cycle 4 EEM field study.

C. PORTT AND ASSOCIATES

Cam Portt, M.Sc.

KILGOUR & ASSOCIATES LTD.

Bruce Kilgour, PhD

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 MEADOWBANK MINE 1
1.2 REGULATORY BACKGROUND 1
1.3 CONCORDANCE WITH REQUIREMENTS 4

2.0 STUDY DESIGN UPDATE 5
2.1 MINING AND WASTEWATER MANAGEMENT OVERVIEW 5
2.2 EFFLUENT MIXING IN THE RECEIVING ENVIRONMENT 13
2.3 OVERVIEW OF STUDY DESIGN AND CHANGES 17
2.3.1 Adult Fish Survey 17
2.3.2 Benthic Invertebrate Community Survey 18

3.0 ADULT FISH SURVEY 22
3.1 INTRODUCTION 22
3.2 MATERIALS AND METHODS 22
3.2.1 Field Work 22
3.2.1.1 Gill Net Fish Collections and Measurements 22
3.2.1.2 Supporting Environmental Variables 23
3.2.2 Age Determination 23
3.2.3 Lake Trout Data Analysis 24
3.2.4 Power Analysis 25
3.3 RESULTS 26
3.3.1 Physico-Chemical Character of Capture Areas 26
3.3.2 Sampling Effort and Catches 27
3.3.2.1 Gill Net Catches 27
3.3.3 Lake Trout Characteristics 28
3.3.3.1 Overview 28
3.3.3.2 Ageing QA/QC 31
3.3.3.3 Lesions, Deformities and Parasites 31
3.3.3.4 Stomach Contents 31
3.3.3.5 Recaptures of Previously Tagged Fish 31
3.3.3.6 Between lake comparisons 31
3.3.4 Power Analysis 40
3.4 SUMMARY AND DISCUSSION 40
3.4.1 Recommendations for Future Fish Surveys, If Required 41

4.0 BENTHIC INVERTEBRATE COMMUNITY SURVEY 42
4.1 INTRODUCTION 42
4.2 MATERIALS AND METHODS 42
4.2.1 Benthic Sample Collection 42
4.2.2 Supporting Environmental Variables 43
4.2.2.1 Water 43
4.2.2.2 Sediment 45
4.2.3 Data Analysis 45

4.2.3.1 Data 45
4.2.3.2 Descriptors of Benthic Community Composition 46
4.2.3.3 Testing for Effluent Related Effects 47
4.2.3.4 Assessment of Covariable Effects 48
4.2.3.5 Presentation of Basic Statistics 49
4.2.3.6 Statistical Power 50
4.2.3.7 Precision 50
4.3 RESULTS 51
4.3.1 Supporting Environmental Variables 51
4.3.1.1 General Limnology 51
4.3.1.2 Laboratory Water Chemistry 54
4.3.1.3 Sediment Character 57
4.3.2 Invertebrate Community Composition 59
4.3.2.1 General Description 59
4.3.2.2 Controlling Variation in Benthic Indices 69
4.3.2.3 Hypothesis Tests 70
4.3.2.4 Precision 78
4.4 DISCUSSION 79
4.4.1 Recommendations for Next Cycle 80

5.0 FISH TISSUE SURVEY 82

6.0 SUBLETHAL TOXICITY TESTING 82
6.1 INTRODUCTION 82
6.2 MATERIALS AND METHODS 82
6.3 RESULTS 82
6.4 DISCUSSION 83

7.0 SUMMARY AND CONCLUSIONS 83

8.0 LITERATURE CITED 85

LIST OF TABLES

Table 1. Concordance table identifying the sections of this report that address specific MMER reporting requirements. 4
Table 2. Meadowbank Division effluent volume (m^3) to Wally Lake from Vault Attenuation Pond via outfall MMER 2 for 2015. 7
Table 3. Meadowbank Division effluent volume (m^3) to Wally Lake from Vault Attenuation Pond via outfall MMER 2 for 2016. 8
Table 4. Meadowbank Division effluent volume (m^3) to Wally Lake from Vault Attenuation Pond via outfall MMER 2 for 2017. 9
Table 5. Final effluent analytical results discharged to Wally Lake from Vault Attenuation Pond via outfall MMER 2 (2 pages). 10
Table 6. Sublethal endpoints and associated chemical and physical parameters for final effluent (MMER 2) in 2016 and 2017. 12
Table 7. Castaway© specifications. Source: http://www.sontek.com/productsdetail.php?CastAway-CTD-11 accessed January 25, 2017. 14
Table 8. Statistical analyses conducted to compare fish populations between the Exposure and Reference Areas 25
Table 9. Minimum and maximum temperature, dissolved oxygen concentration and specific conductance for gill net sets where these parameters were measured at 1 m depth intervals when nets were set. 26
Table 10. Depth and the minimum and maximum temperature and specific conductance determined in surface to bottom profiles when gill nets were lifted. 27
Table 11. Number and mean soak time of daytime and overnight gill net lifts, by lake. 27
Table 12. Numbers of fish that were released alive or were dead in gill net catches, by lake and species. 28
Table 13. Mean catch-per-unit-effort (CPUE; number of Lake Trout captured per hour of soak time) for daytime and overnight gill net sets, by lake. 28
Table 14. Number of Lake Trout examined from each waterbody, by sex and maturity. 28
Table 15. Number of mature individuals that were developing gonads to spawn in the current year and that were not sufficiently developed to spawn in the current year (undeveloped). 29
Table 16. Lake Trout summary statistics. 30
Table 17. Magnitude of differences between age estimations by two different investigators (age-QA/QC age) 31
Table 18. Summary of between-lake comparisons using ANCOVA. P-values ≤0.05 are in bold. 33
Table 19. Kolmogorov-Smirnov two-sided probabilities of differences in the fork length distributions between each pair of lakes. 37
Table 20. Kolmogorov-Smirnov two-sided probabilities of differences in the age distributions between each pair of lakes. 37
Table 21. Power analysis results. P is the probability that the effect size, from Environment Canada (2012), could be detected with the sample sizes and variance observed in the present study, and assuming a 10% Type-II error rate. N is the number of samples per site required to detect a difference equal to the critical effect size assuming the variance observed in this study and a 10% Type II error rate. 40

Table 22. Summary of between-lake comparisons calculated with reduced ANCOVA (i.e. comparison of intercepts), with no outliers removed. Critical effect sizes are from Environment Canada (2012). 41
Table 23. Benthos collection sample location waypoints. 43
Table 24. Water Quality Parameters and associated Detection Limits. 44
Table 25. Sediment Measures Detection Limits. 45
Table 26. Summary of number of benthos stations per sample area, by year. 46
Table 27. Linear contrasts that were used to analyze the 2017 benthic community data from WAL, INUG and PDL (Meadowbank Mine). 48
Table 28. ANOVA table to analyze linear contrasts in Table 27. 48
Table 29. Detailed water quality for the benthos monitoring areas. 55
Table 30. Variations in sample depth, TOC, sand, silt and clay, 2017. 57
Table 31. Relative abundances (%) of benthos taxa (families or higher level) by year for INUG, PDL and WAL. Averages of total abundance, family richness and equitability are also provided. 62
Table 32. Mean, median, minimum, maximum, standard deviation (SD) and standard error (SE) for core indices of benthic community composition for INUG, PDL and WAL in 2017. 63
Table 33. Mean, median, minimum, maximum, standard deviation (SD) and standard error (SE) for Bray-Curtis distances for INUG, PDL and WAL in 2017. 63
Table 34. ANOVA table for multiple regression models developed for each of the core indices of benthic community composition, in addition to NMDS axes 69
Table 35. Multiple regression model parameter estimates and percent of variation explained for each of the core indices of benthic community composition, in addition to NMDS axes 70
Table 36. Results of analysis of variance (ANOVA) for the four specified hypotheses, for core indices of benthic community composition. 72
Table 37. Results of analysis of variance (ANOVA) for the four specified hypotheses, for core indices of benthic community composition. 2017 data only. 73
Table 38. Sample sizes required to produce estimates of core and supporting indices of benthic invertebrate community composition that are within ±20% of the true values at a ‘station’ level 79
Table 39. Summary of results of analysis of variance (ANOVA) for the five hypotheses tested for core indices of benthic community composition. 81
Table 40. Sublethal toxicity data for 2015, 2016 and 2017. 83

LIST OF FIGURES

Figure 1. Location of Meadowbank Mine. 2
Figure 2. Map of the study area. 3
Figure 3. Effluent concentrations in Wally Lake on July 21, 2017. 15
Figure 4. Effluent concentrations in Wally Lake on August 26, 2017. 16
Figure 5. Wally Lake exposure area (WAL). 19
Figure 6. Pipedream Lake reference area (PDL). 20
Figure 7. Innuguguayalik Lake reference area (INUG). 21
Figure 8. Plot of fish weight versus fork length (log scales). 32
Figure 9. Plot of liver weight versus weight (log scales). 34
Figure 10. Plot of liver weight versus fork length (log scales). 35
Figure 11. Plot of fork length versus otolith age (log scales) 36
Figure 12. Plot of weight versus otolith age (log scales). 36
Figure 13. Length-frequency distributions. 38
Figure 14. Age-frequency distributions. 39
Figure 15. Depth profiles for water temperature, dissolved oxygen (DO) and conductivity, in each of the three benthos sampling areas, INUG, PDL and WAL. Values at each 1 m interval are the average from five sampling stations. 52
Figure 16. Water depth among years for INUG, PDL and WAL. 53
Figure 17. Total organic carbon (TOC) in sediment among years for INUG, PDL and WAL. 58
Figure 18. Geometric mean (GM) grain size of sediment among years for INUG, PDL and WAL 59
Figure 19. Number of organisms per m^2 among years for INUG, PDL and WAL. 64
Figure 20. Taxa richness (number of families) among years for INUG, PDL and WAL. 65
Figure 21. Equitability among years for INUG, PDL and WAL. 66
Figure 22. Scatterplot of Pearson correlation coefficients between taxa abundances and MDS axis scores. 67
Figure 23. Scatterplots of NMDS axis scores for benthos community samples from INUG, PDL and WAL by year. 68
Figure 24. Residuals of total abundance, among years for INUG, PDL and WAL 74
Figure 25. Residuals of family richness, among years for INUG, PDL and WAL 75
Figure 26. Residuals of equitability, among years for INUG, PDL and WAL 76
Figure 27. Residuals of NMDS Axis 1 Scores, among years for INUG, PDL and WAL 77
Figure 28. Residuals of NMDS Axis 2 Scores, among years for INUG, PDL and WAL 78

LIST OF APPENDICES

Appendix 1 Correspondence with Environment Canada
Appendix 2 Gill Net Set and Catch Data
Appendix 3 Individual Fish Data
Appendix 4 Water Chemistry Quality Assurance
Appendix 5 Benthic Community Data
Appendix 6 Benthic Community Data Quality Assurance

1.0 INTRODUCTION

1.1 Meadowbank Mine

The Meadowbank Mine (65°N, 96°W) is one of Canada's most northerly operating mines, located approximately 75 km north of the Hamlet of Baker Lake, Kivalliq District, Nunavut (Figure 1). Mine construction began in 2008 under Nunavut Water Board Type A License 2AM-MEA0815 (now 2AM-MEA1525) and Fisheries and Oceans Canada Authorization for Works or Undertaking Affecting Fish Habitat NU-03-0191.3 and NU-03-0191.4. Mine construction activities for the Goose Pit and Portage Pit included the isolation of portions of two lakes using dikes, with the dewatering of these impoundments into adjacent lakes starting in 2009. On December 31, 2009, Environment Canada notified AEM that the Meadowbank Mine is subject to the Metal Mining Effluent Regulations (MMER). Mining activities have been formally underway since March 2010, and are projected to occur until Q3, 2018. Mining at Meadowbank has occurred in four open pits (Goose Pit, Portage Pit, Vault Pit and Phaser Pit), though only two are currently operational, with Goose Pit completely depleted. Much of the pit development is located in close proximity to the mill, office and lodging infrastructure, with the exception of the Vault and Phaser Pits which are approximately 10 km northeast of the main mine site (Figure 2).

1.2 Regulatory Background

The MMER, under the Fisheries Act, imposes liquid effluent limits for pH, cyanide, metals and suspended solids, and prohibits the discharge of a liquid effluent that is acutely lethal to fish. The MMER also requires mines to conduct Environmental Effects Monitoring (EEM) studies of fish, fish habitat and the use of fisheries resources in aquatic receiving environments. Under the MMER, Agnico Eagle Mines Limited (Agnico) is required to conduct aquatic monitoring studies on the potential effects of the Meadowbank Division Mine's final liquid effluent on Wally Lake.

Schedule 5, Parts 1 and 2, of the MMER requires each operating mine to conduct an EEM program consisting of the following components:

- **Effluent characterization and water quality monitoring** studies including sublethal toxicity testing; and,
- **Biological monitoring studies** consisting of a study design, field studies, data assessment and reporting.

Agnico conducted its Cycle 1 Biological Monitoring Study in August 2011, collecting fish and benthos from the exposure area in Third Portage Lake North (TPN) (Figure 2) and from two reference areas, one each in Innuguguayalik Lake (INUG) and Pipedream Lake (PDL)(Figure 2). The results of that first study were reported to Environment Canada in June 2012 (Azimuth, 2012). The Cycle 2 Biological Monitoring Study was conducted in August 2014, using the same exposure and reference areas. The results of the second study were reported to Environment Canada in June 2015 (C. Portt and Associates, and Kilgour & Associates Ltd., 2015). A study design for a proposed Cycle 3 EEM Study, with the exposure area in Wally Lake, was submitted to Environment Canada on February 17, 2017 (C. Portt and Associates, and Kilgour

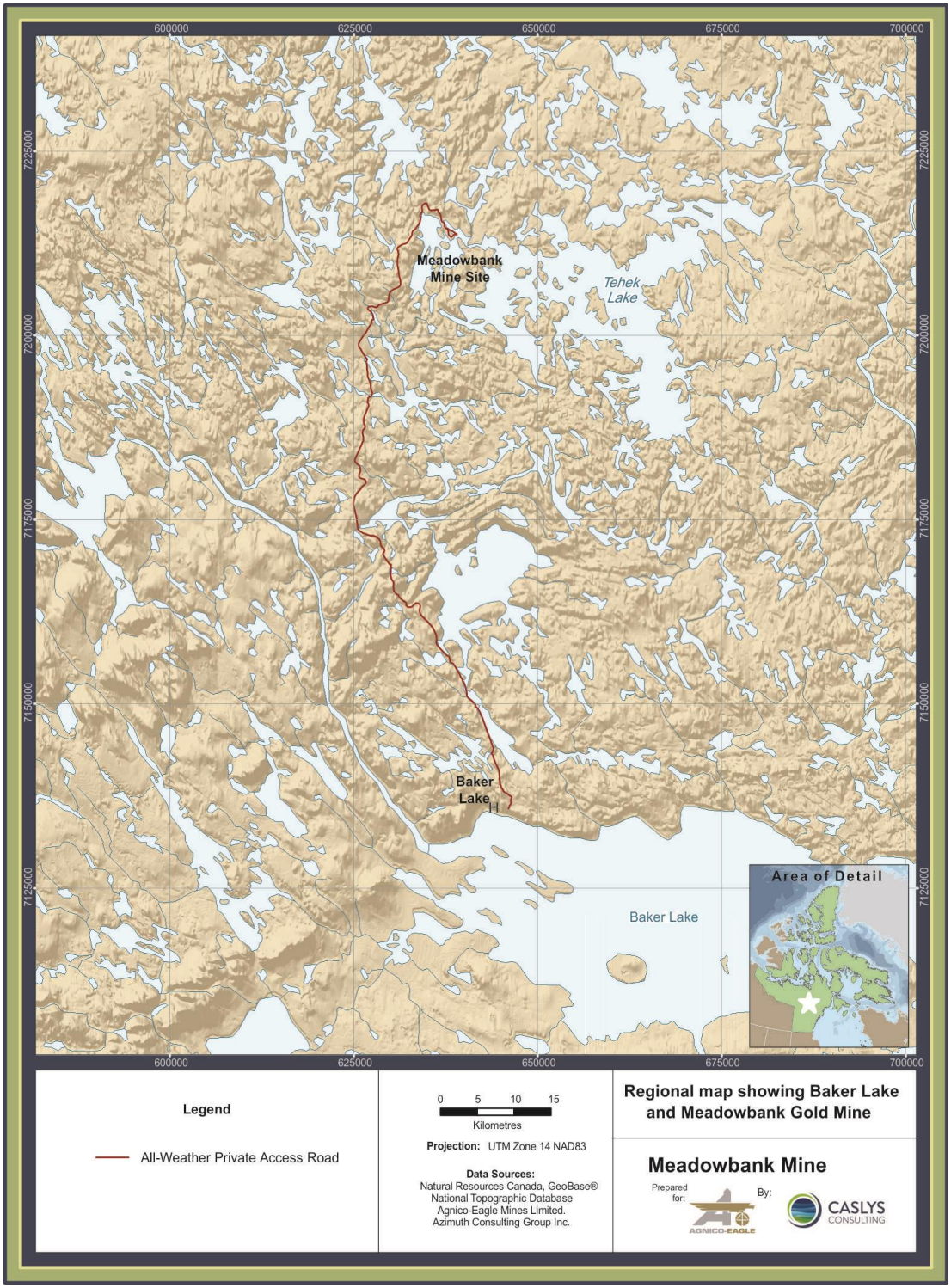


Figure 1. Location of Meadowbank Mine.

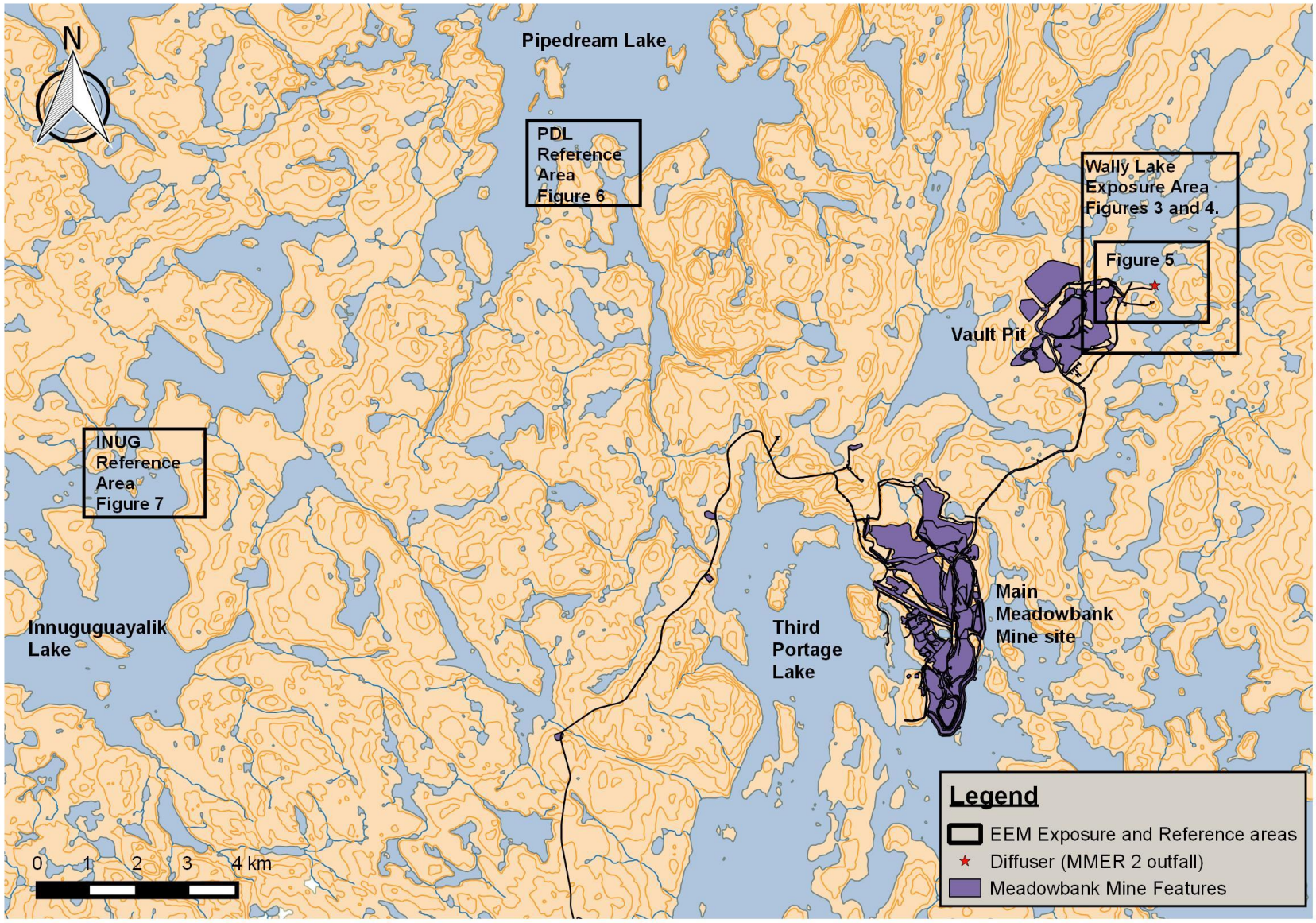


Figure 2. Map of the study area.

& Associates Ltd., 2017). The Technical Advisory Panel (TAP) reviewed the study design and provided comments to Agnico Meadowbank Division. These comments were addressed by Agnico, and the Meadowbank Cycle 3 EEM study design was apparently accepted by Environment Canada on July 26, 2017 (Appendix 1). This report describes the results of the Third Biological Study undertaken August 23-27, 2017, pursuant to Agnico's requirement under the MMER.

1.3 Concordance with Requirements

The Concordance Table (Table 1) provides a list of the MMER Interpretative Report requirements, and identifies where in this document the required information can be found.

Table 1. Concordance table identifying the sections of this report that address specific MMER reporting requirements.

MMER Requirement	Where Found in the Document
16. The data collected during the biological monitoring studies shall be used to: Calculate the arithmetic mean, the median, the standard deviation, the standard error and the minimum and maximum values in the sampling areas.	Raw data and summaries can be found in Section 3 and Appendix 2 and 3 for fish, and Section 4 and Appendix 5 for invertebrates. The raw data have also been submitted to the Environment Canada digital database.
17(a) Description of any deviation from the study design that occurred while the biological monitoring studies were being conducted and any impact that the deviation had on the studies.	Section 2.3
17(b) The latitude and longitude of sampling areas in degrees, minutes and seconds and a description of the sampling areas sufficient to identify the location of the sampling areas.	Digital data submission, Sections 3 and 4 and Appendix 2.
17(c) The dates and times when the samples were collected.	Sections 3 and 4
17(d) The sample sizes.	Sections 3 and 4
17(e) The results of the data assessment made under Section 16 and any supporting raw data	Section 3 for fish Section 4 for invertebrates
17(f) Based on (e), summary of effects on fish, fish tissues, invertebrates	Section 3 for fish A fish tissue study was not required (Section 5) Section 4 for invertebrates
17(g) Comparison of effects observed in (f) to results of sublethal toxicity testing.	Sections 6 and 7
17(h) conclusions of the biological monitoring studies taking into account: results of previous studies submitted under the study design; the presence of anthropogenic, natural or other factors that are not related to the effluent under study and that may reasonably be expected to contribute to any observed effect; the results of the statistical analysis conducted under paragraph 16(c) a description of the quality assurance/quality control measures that were implemented and the data related to the implementation of those measures.	Sections 3, 4, and 6 Appendices 3, 4 and 6
17(i) A description of how the results will impact the study design for subsequent biological monitoring studies	Section 3.4.1 for fish Section 4.4.1 for invertebrates
17(j) the date when the next biological monitoring study will be conducted.	Executive Summary Section 7

2.0 STUDY DESIGN UPDATE

2.1 Mining and Wastewater Management Overview

A detailed description of the Meadowbank Mine wastewater treatment system is provided in the EEM Cycle 3 Study Design (C. Portt and Associates, Kilgour & Associates Ltd., 2017). No changes in the wastewater treatment system occurred between the submission of the Study Design and the Cycle 3 field work in August 2017.

It is important to distinguish between the two major water-related "processes" that were in operation at the Meadowbank Mine prior to and during the EEM field work:

- *Reclaim Water* – All mining-related water (e.g., from the mill and/ or stormwater management pond, is segregated, and stored or actively pumped into the reclaim pond as make-up water. Presently, the reclaim pond is located within the South Cell of the TSF. **This water is not currently being discharged.**
- *Contact Water* – contains residual localized mine site drainage that may have been in contact with PAG material (i.e. from the Portage Waste Rock facility drainage which is directed to south cell) and water that is collected and actively pumped from the mine pits, either from groundwater sources, from dike water seepage to the South Cell or from the natural re-flooding of Goose Pit.

Relevant to this EEM, mine effluent did not contain water that had come into contact with milled tailings. The Meadowbank Mine has two (2) active effluents. Contact water from the Vault Attenuation Pond is discharged to Wally Lake via outfall MMER 2, and non-contact water originating from the seepage at the East Dike is discharged into Second Portage Lake via outfall MMER 3. Neither of these discharges has required water treatment to date. The largest effluent stream is via a diffuser into Wally Lake and, based on its composition, has the greatest potential to cause harm to the environment and, therefore, is the focus of this Cycle 3 EEM field study. In 2015 and 2016, Wally Lake received effluent from the Vault Attenuation Pond, as well as from the dewatering of Phaser Lake (which was routed through the Vault Attenuation Pond), with total volumes both years exceeding one million cubic metres. In 2017 the total discharge was significantly reduced from what occurred in 2015 and 2016, because the Phaser Lake dewatering was complete, with a total discharge of 715,605 m^3. The second and smaller discharge occurs at the East Dyke, where water that seeps through the dyke from Second Portage Lake is collected and pumped via a diffuser back into Second Portage Lake. This second discharge was approximately 83,928 m^3 in 2017.

To date, the Meadowbank mine has not and, in the future, does not expect to discharge any reclaim water to the receiving environment; rather, it will be combined with freshwater from Third Portage Lake and used to re-flood the pits as part of mine reclamation. Effluent is only discharged to the environment periodically (Table 2, Table 3, and Table 4), and during 2017 it was discharged periodically from June 19 to October 9, including during the Cycle 3 EEM field studies conducted from August 23 to 27, 2017 (Table 4).

Effluent from the Meadowbank Mine was generally not acutely toxic during 2017 (Table 5). Toxicity test results for sublethal endpoints for 2017 are presented in Table 6.

There have been no exceedances of the MMER effluent discharge limits for deleterious substances at the Meadowbank Mine up to October 2017.

Table 2. Meadowbank Division effluent volume (m^3) to Wally Lake from Vault Attenuation Pond via outfall MMER 2 for 2015.

Date	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
1	0	0	0	0	0	0	0	17,453	17,303	0	0	0
2	0	0	0	0	0	0	0	18,054	17,301	0	0	0
3	0	0	0	0	0	0	0	22,136	6,323	0	0	0
4	0	0	0	0	0	0	0	22,136	5,249	0	0	0
5	0	0	0	0	0	0	0	11,754	6,815	0	0	0
6	0	0	0	0	0	0	0	17,579	11,097	0	0	0
7	0	0	0	0	0	0	15,110	19,349	14,566	0	0	0
8	0	0	0	0	0	0	17,269	17,752	14,093	0	0	0
9	0	0	0	0	0	0	17,269	10,632	13,804	0	0	0
10	0	0	0	0	0	0	17,269	18,415	12,406	0	0	0
11	0	0	0	0	0	0	17,269	17,777	0	0	0	0
12	0	0	0	0	0	0	14,459	16,752	0	0	0	0
13	0	0	0	0	0	0	17,246	16,764	0	0	0	0
14	0	0	0	0	0	0	17,246	18,931	0	0	0	0
15	0	0	0	0	0	0	14,339	14,649	0	0	0	0
16	0	0	0	0	0	0	16,286	24,822	0	0	0	0
17	0	0	0	0	0	0	16,855	18,415	0	0	0	0
18	0	0	0	0	0	0	16,449	21,363	0	0	0	0
19	0	0	0	0	0	0	19,123	16,347	0	0	0	0
20	0	0	0	0	0	0	15,785	19,298	0	0	0	0
21	0	0	0	0	0	0	16,464	19,120	0	0	0	0
22	0	0	0	0	0	0	16,636	18,552	0	0	0	0
23	0	0	0	0	0	0	17,089	18,668	0	0	0	0
24	0	0	0	0	0	0	17,093	19,346	0	0	0	0
25	0	0	0	0	0	0	16,992	18,086	0	0	0	0
26	0	0	0	0	0	0	16,258	18,558	0	0	0	0
27	0	0	0	0	0	0	17,125	23,868	0	0	0	0
28	0	0	0	0	0	0	17,125	0	0	0	0	0
29	0		0	0	0	0	15,570	15,550	0	0	0	0
30	0		0	0	0	0	16,163	18,166	0	0	0	0
31	0		0		0		0	17,694		0		0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**398,490**	**547,986**	**118,957**	**0**	**0**	**0**

Table 3. Meadowbank Division effluent volume (m^3) to Wally Lake from Vault Attenuation Pond via outfall MMER 2 for 2016.

Date	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
1	0	0	0	0	0	0	0	12,306	4,393	20,394	0	0
2	0	0	0	0	0	0	0	12,306	14,951	15,228	0	0
3	0	0	0	0	0	0	0	12,306	17,681	8,482	0	0
4	0	0	0	0	0	0	0	12,306	17,510	9,427	0	0
5	0	0	0	0	0	0	0	12,306	17,270	12,211	0	0
6	0	0	0	0	0	0	0	12,306	10,591	14,381	0	0
7	0	0	0	0	0	0	0	12,306	17,094	10,666	0	0
8	0	0	0	0	0	0	0	12,306	18,204	14,646	0	0
9	0	0	0	0	0	0	0	12,306	18,216	13,667	0	0
10	0	0	0	0	0	0	0	12,306	18,210	13,697	0	0
11	0	0	0	0	0	0	0	12,306	16,304	4,586	0	0
12	0	0	0	0	0	0	0	12,306	17,959	0	0	0
13	0	0	0	0	0	0	0	12,306	9,736	0	0	0
14	0	0	0	0	0	0	0	12,306	15,107	0	0	0
15	0	0	0	0	0	0	0	12,306	8,805	0	0	0
16	0	0	0	0	0	0	0	10,777	21,797	0	0	0
17	0	0	0	0	0	0	14,400	15,241	8,903	0	0	0
18	0	0	0	0	0	0	16,077	8,643	22,733	0	0	0
19	0	0	0	0	0	0	14,117	0	11,287	0	0	0
20	0	0	0	0	0	0	13,068	0	16,232	0	0	0
21	0	0	0	0	0	0	14,252	0	17,044	0	0	0
22	0	0	0	0	0	0	13,385	4,270	16,694	0	0	0
23	0	0	0	0	0	0	17,131	0	16,574	0	0	0
24	0	0	0	0	0	0	17,131	0	15,501	0	0	0
25	0	0	0	0	0	0	17,131	0	7,275	0	0	0
26	0	0	0	0	0	0	17,131	0	5,144	0	0	0
27	0	0	0	0	0	0	17,424	0	0	0	0	0
28	0	0	0	0	0	0	17,760	0	0	0	0	0
29	0	0	0	0	0	0	15,768	0	12,687	0	0	0
30	0		0	0	0	0	17,088	0	15,061	0	0	0
31	0		0		0		16,728	0		0		0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**238,588**	**223,521**	**408,963**	**137,385**	**0**	**0**

Table 4. Meadowbank Division effluent volume (m^3) to Wally Lake from Vault Attenuation Pond via outfall MMER 2 for 2017.

Date	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17
1	0	0	0	0	0	0	16622	3465	0	0	0	0
2	0	0	0	0	0	0	17143	15840	0	0	0	0
3	0	0	0	0	0	0	16980	0	0	0	0	0
4	0	0	0	0	0	0	16320	0	0	0	0	0
5	0	0	0	0	0	0	16528	0	0	1655	0	0
6	0	0	0	0	0	0	0	0	0	16125	0	0
7	0	0	0	0	0	0	0	2602	0	14417	0	0
8	0	0	0	0	0	0	15787	0	0	13055	0	0
9	0	0	0	0	0	0	11076	0	0	11695	0	0
10	0	0	0	0	0	0	22559	0	0	0	0	0
11	0	0	0	0	0	0	779	0	139	0	0	0
12	0	0	0	0	0	0	21029	0	12,535	0	0	0
13	0	0	0	0	0	0	16733	0	10,794	0	0	0
14	0	0	0	0	0	0	11633	0	13,170	0	0	0
15	0	0	0	0	0	0	15771	0	6,279	0	0	0
16	0	0	0	0	0	0	16855	4095	0	0	0	0
17	0	0	0	0	0	0	10035	12000	0	0	0	0
18	0	0	0	0	0	0	0	11424	0	0	0	0
19	0	0	0	0	0	12165	0	11424	0	0	0	0
20	0	0	0	0	0	18504	0	3639	0	0	0	0
21	0	0	0	0	0	18960	16301	9312	0	0	0	0
22	0	0	0	0	0	18665	15169	9480	0	0	0	0
23	0	0	0	0	0	16767	9652	9480	0	0	0	0
24	0	0	0	0	0	17758	10093	9000	0	0	0	0
25	0	0	0	0	0	14290	0	8640	0	0	0	0
26	0	0	0	0	0	17528	0	7920	0	0	0	0
27	0	0	0	0	0	17012	0	6792	0	0	0	0
28	0	0	0	0	0	11760	0	7368	0	0	0	0
29	0		0	0	0	16258	0	6720	0	0	0	0
30	0		0	0	0	17897	0	1912	0	0	0	0
31	0		0		0		0	0		0		0
Total	**0**	**0**	**0**	**0**	**0**	**197,564**	**277,065**	**141,113**	**42,917**	**56,947**	**0**	**0**

Table 5. Final effluent analytical results discharged to Wally Lake from Vault Attenuation Pond via outfall MMER 2 (2 pages).

	Arsenic	Copper	Cyanide	Lead	Nickel	Zinc	Total Suspended Solids	Radium 226	pH	Daphnia magna	Rainbow trout
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**Bq/L**	**units**	**LC50 %**	**LC50 %**
Max month avg Conc	0.50	0.30	1	0.20	0.50	0.50	15	0.37	6-9.5		
Max grab Conc	1.00	0.60	2	0.40	1.00	1.00	30	1.11	6-9.5		
Date											
8-Jul-15	<0.0005	0.003	<0.005	<0.0003	0.0044	<0.001	6	0.005	7.1	NMR	NMR
15-Jul-13	<0.0005	0.0013	<0.005	<0.0003	0.0033	<0.001	2	0.005	6.58	NMR	NMR
15-Jul-21	<0.0005	0.0023	<0.005	<0.0003	0.0033	0.001	6	0.002	6.98	>100	>100
15-Jul-29	<0.0005	0.0016	<0.005	<0.0003	0.0032	<0.001	1	0.006	7.66	NMR	NMR
4-Aug-15	<0.0005	<0.0005	<0.005	<0.0003	0.0038	<0.001	2	0.003	7.08	NMR	NMR
10-Aug-15	0.004	0.0033	<0.005	<0.0003	0.003	0.004	1	0.002	7.96	>100	>100
17-Aug-15	<0.0005	0.0015	<0.005	0.014	0.0034	0.001	3	0.021	6.92	NMR	NMR
24-Aug-15	0.0088	0.0028	<0.005	0.0031	0.0032	<0.001	1	0.008	7.73	NMR	NMR
1-Sep-15	<0.0005	0.0028	<0.005	0.0095	0.0029	<0.001	10	0.002	7.37	NMR	NMR
8-Sep-15	<0.0005	0.0025	<0.005	<0.0003	0.0019	<0.001	1	0.006	7.67	>100	>100
18-Jul-16	<0.0005	0.0025	<0.005	<0.0003	0.0046	<0.001	2	0.010	7.63	NMR	NMR
20-Jul-16	-	-	-	-	-	-	-	-	-	>100	>100
25-Jul-16	<0.0005	0.0020	<0.005	<0.0003	0.0035	<0.001	6	-	7.50	NMR	NMR
1-Aug-16	<0.0005	0.0022	<0.005	<0.0003	0.0034	<0.001	3	-	7.52	NMR	NMR
8-Aug-16	0.0010	0.0057	<0.005	<0.0003	0.0055	<0.001	6	-	7.35	NMR	NMR
15-Aug-16	<0.0005	0.0029	<0.005	<0.0003	0.0048	0.002	<1	-	7.46	NMR	NMR
22-Aug-16	0.0041	0.0030	0.011	<0.0003	0.0039	0.001	5	-	7.36	>100	>100
1-Sep-16	-	-	-	-	-	-	4	-	7.55	NMR	NMR

	Arsenic	Copper	Cyanide	Lead	Nickel	Zinc	Total Suspended Solids	Radium 226	pH	Daphnia magna	Rainbow trout
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**Bq/L**	**units**	**LC50 %**	**LC50 %**
5-Sep-16	<0.0005	0.0018	0.039	<0.0003	<0.0005	<0.001	4	-	7.49	NMR	NMR
12-Sep-16	<0.0005	0.0022	0.001	0.0058	0.0226	<0.001	3	-	6.99	NMR	NMR
20-Sep-16	<0.0005	0.0023	0.001	<0.0003	0.0037	0.004	14	0.005	6.71	NMR	NMR
26-Sep-16	<0.0005	0.0020	0.001	<0.0003	0.0039	0.002	11	0.010	6.68	>100	>100
3-Oct-16	<0.0005	0.0026	0.008	0.0008	0.0045	0.002	10	-	7.71	NMR	NMR
10-Oct-16	<0.0005	0.0029	0.005	<0.0003	0.0041	0.003	2	0.004	7.34	>100	>100
19-Jun-17	<0.0005	0.0025	0.0010	0.0009	0.0041	0.002	10.00	0.003	7.45	100	>100
26-Jun-17	<0.0005	0.0033	0.0030	0.0016	0.0043	0.0050	<1.00	-	-	NMR	NMR
3-Jul-17	<0.0005	0.0026	<0.001	0.0083	0.0045	0.0030	<1.00	0.0030	7.57	>100	>100
10-Jul-17	0.0043	0.0024	0.205	0.1225	0.0038	<0.001	4	-	8.05	NMR	NMR
17-Jul-17	<0.0005	0.0031	0.002	<0.0003	0.0048	<0.001	4	-	8.32	NMR	NMR
24-Jul-17	<0.0005	0.0028	0.001	<0.0003	0.0051	0.002	<1.00	0.003	7.73	NMR	NMR
1-Aug-17	<0.0005	0.0027	0.001	0.0004	0.0047	0.002	1.00	0.009	7.44	>100	>100
7-Aug-17	<0.0005	0.0023	<0.001	<0.0003	0.0041	0.006	10.00	0.008	7.95	NMR	NMR
21-Aug-17	<0.0005	0.0052	0.001	<0.0003	0.0056	<0.001	22.00	-	7.71	NMR	NMR
29-Aug-17	<0.0005	0.0030	0.014	<0.0003	0.0045	0.001	11.00	0.019	7.73	NMR	NMR
11-Sep-17	<0.0005	0.0032	0.019	<0.0003	0.0037	0.003	9.00	-	8.17	>100	>100
5-Oct-17	<0.0005	0.00	0.01	<0.0003	0.01	0.015	6.00	0.011	7.34	>100	>100
9-Oct-17	0.0022	0.0033	0.005	<0.0003	0.0076	0.001	10.00	-	7.80	NMR	NMR

NMR = No measurement required.

Table 6. Sublethal endpoints and associated chemical and physical parameters for final effluent (MMER 2) in 2016 and 2017.

Date	18/07/2016	22/08/2016	26/09/2016	19/06/2017	24/07/2017	07/08/2017	29/08/2017	11/09/2017
Parameter								
Alkalinity (mg $CaCO_3$/L)	23	28	15	30	53	53	54	63
Aluminium (mg/L)	0.046	0.161	0.01	0.23	0.101	0.202	0.389	0.283
Ammonia (mg N/L)	<0.01	0.01	<0.01	<0.01	0.01	<0.01	0.03	0.04
Ammonia nitrogen (NH3-NH4) (mg N/L)	0.66	1.14	0.01	0.54	0.98	0.63	1.82	3.1
Cadmium (mg/L)	0.00007	<0.00002	<0.00002	0.00003	<0.00002	0.00002	<0.00002	<0.00002
Hardness (mg $CaCO_3$/L)	67	113	20	38	77	85	151	148
Iron (mg/L)	0.07	0.45	0.01	0.39	0.21	0.32	0.47	0.47
Mercury (mg/L) (max allowance of 0.10µg/L)	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00004
Molybdenum (mg/L)	0.0054	0.0142	0.0005	0.0037	0.0081	0.0102	0.0198	0.0227
Nitrate (mg N/L)	3.36	6.6	0.24	0.68	2.90	2.97	6.34	7.48
Selenium (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002
Conductivity (µs/cm)	170	261	179	148.5	212.1	274	381	459
Temperature (^{0}C)	14.1	15.7	12.52	10.11	12.12	9	8.8	8.7
Fathead Minnow IC25	58.3	64	-	-	-	>100	-	>100
Fathead Minnow LC50	82	>100	-	-	>100	>100	-	>100
Ceriodaphnia dubia IC25	>100	>100	-	-	-	59.3	-	>100
Ceriodaphnia dubia LC50	>100	>100	-	-	>100	>100	-	>100
Freshwater Alga (*Pseudokirchneriella subcapitata* IC25	>90.91	>90.91	-	-	>90.9	>90.91	-	>90.91
Lemna minor IC25 dry weight %v/v	>97	>97	-	-	-	>97	-	>97
Lemna minor IC25 frond number %v/v	>97	>97	-	-	-	>97	-	>97

2.2 Effluent Mixing in the Receiving Environment

The effluent discharge location has changed since EEM Cycle 2, when effluent was discharged from the Portage Attenuation Pond to Third Portage Lake. Beginning on June 20, 2014, the effluent from Vault Attenuation Pond has been discharged to Wally Lake via a diffuser at the location shown in Figure 2. Effluent mixing in Wally Lake was modeled by W.F. Baird & Associates Coastal Engineers Ltd. (Baird) in 2017, and was provided in the Cycle 3 study design document (C. Portt and Associates, and Kilgour & Associates Ltd., 2017). Baird used the CORMIX model to predict plume mixing and dilution under combinations of four lake current conditions (near stagnant, low wind, average wind, and high wind) and three effluent buoyancy conditions (neutral, positive and negative) for a total of 12 different scenarios. Due to the vertical orientation of the diffuser, the direction of the current does not affect the mixing distance. Key results were as follows:

- Effluent dilution of 100:1 was generally not achieved within 250 m of the effluent discharge outfall for most scenarios, including the typical condition (this triggers the fish study).

- The typical scenario of median wind and positively buoyant effluent resulted in a distance of 800 m to attain 1% dilution, and a dilution of 18:1, or 5.6% dilution, at 250 m.

- The largest mixing zone to attain 1% dilution is predicted for a negatively buoyant discharge at stagnant to low wind conditions (approximately 2000 m).

- The smallest mixing zone to attain 1% dilution is predicted for a negatively buoyant discharge at high wind conditions (approximately 165 m).

- The plume will attach to the shoreline for all cases.

A field investigation of the Wally Lake effluent plume was conducted in 2016 by Agnico Eagle and C. Portt and Associates (C. Portt and Associates, and Kilgour & Associates Ltd., 2017) using specific conductance as an effluent tracer. The effluent was generally completely or nearly completely mixed vertically and there was no thermal stratification. Effluent discharge for 2016 commenced on July 16. On July 24, the effluent concentration was approximately 5% in the vicinity of the diffuser and on August 10 it was approximately 10% in the vicinity of the diffuser. On August 13, 2016, the effluent concentration exceeded 10% in the immediate vicinity of the diffuser and exceeded 1% at the farthest sampling station, 1.9 km from the diffuser.

The plume was investigated in the field again on July 21, 2017, by Agnico Eagle staff, as well as during the Cycle 3 EEM field work on August 26, 2017, by C. Portt and Associates and Kilgour & Associates staff. Specific conductance was used as an effluent tracer. At multiple locations, depth, temperature, conductivity and specific conductance profiles, from lake surface to lake bottom, were collected using a SonTek Castaway©-CTD (Xylem Inc.; refer to Table 7 for specifications). Specific conductance of the effluent was determined from effluent collected at the effluent pump. The minimum specific conductance recorded for each profile was used in the calculation of effluent concentrations. The specific conductance at the profile located farthest from the diffuser was assumed to represent the background specific conductance of Wally Lake. Effluent concentration was calculated using the formula

$$K_X=(K_L*(100-X)+(K_e*X))/100$$

where K_X=specific conductance of solution containing X% effluent,
K_L= base line specific conductance of Wally Lake, and
K_e= specific conductance of the effluent.

To solve for X, this equation is rearranged as

$$X= (K_X- K_L)/(K_e- K_L)*100$$

The results of the plume delineations are presented in Figure 3 and Figure 4. For the July 21 plume, the two sampling locations farthest north (ref. Figure 3) showed similarly low specific conductance (34.23 and 34.19 µS/cm), suggesting that the limit of the plume had been reached. The July 21 data indicate that the effluent concentration reached 1% approximately 1.6 km north of the diffuser, which is a slightly less extensive plume than the largest predicted extent calculated using CORMIX under a low wind, negatively buoyant, scenario (C. Portt and Associates, and Kilgour & Associates Ltd., 2017).

During the August 26, 2017, plume investigation, specific conductance continued to decrease slightly with increasing distance from the diffuser even at the locations of the farthest profiles (Figure 4), indicating that the limit of the plume may not have been reached. However, the similarity of these specific conductance readings farthest from the diffuser (ref. Figure 4) suggests that the specific conductance at the farthest location is a reasonable, and conservative, approximation of background. The August 26 data indicate that at its closest point from the diffuser the effluent concentration reached 1% approximately 711 m north of the diffuser, which is about the same as the extent of the "typical condition" plume calculated using CORMIX under a medium wind, positively buoyant, scenario (C. Portt and Associates, and Kilgour & Associates Ltd., 2017). As Figure 3 and Figure 4 illustrate, on both July 21 and August 26, the Cycle 3 EEM exposure sampling locations were all well within the >1% effluent plume.

Table 7. Castaway© specifications. Source: http://www.sontek.com/productsdetail.php?CastAway-CTD-11 accessed January 25, 2017.

Parameter	Range	Resolution	Accuracy
Temperature	-5 to +45°C	0.01°C	±0.05°C
Conductivity	0 to 100,000 µS/cm	1 µS/cm	0.25% ±5 µS/cm
Depth	0 to 100 m	0.01 m	±0.25% FS

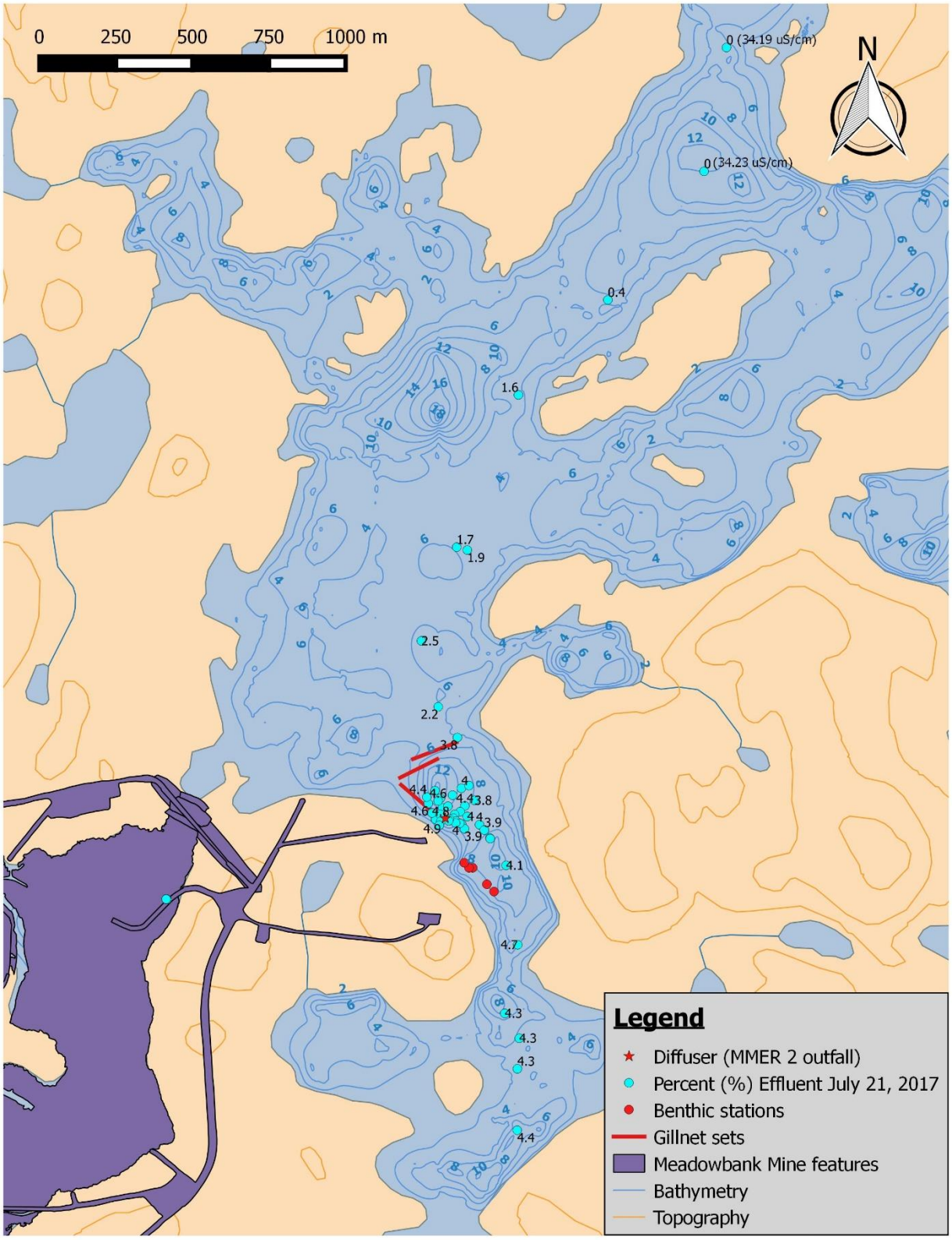


Figure 3. Effluent concentrations in Wally Lake on July 21, 2017.

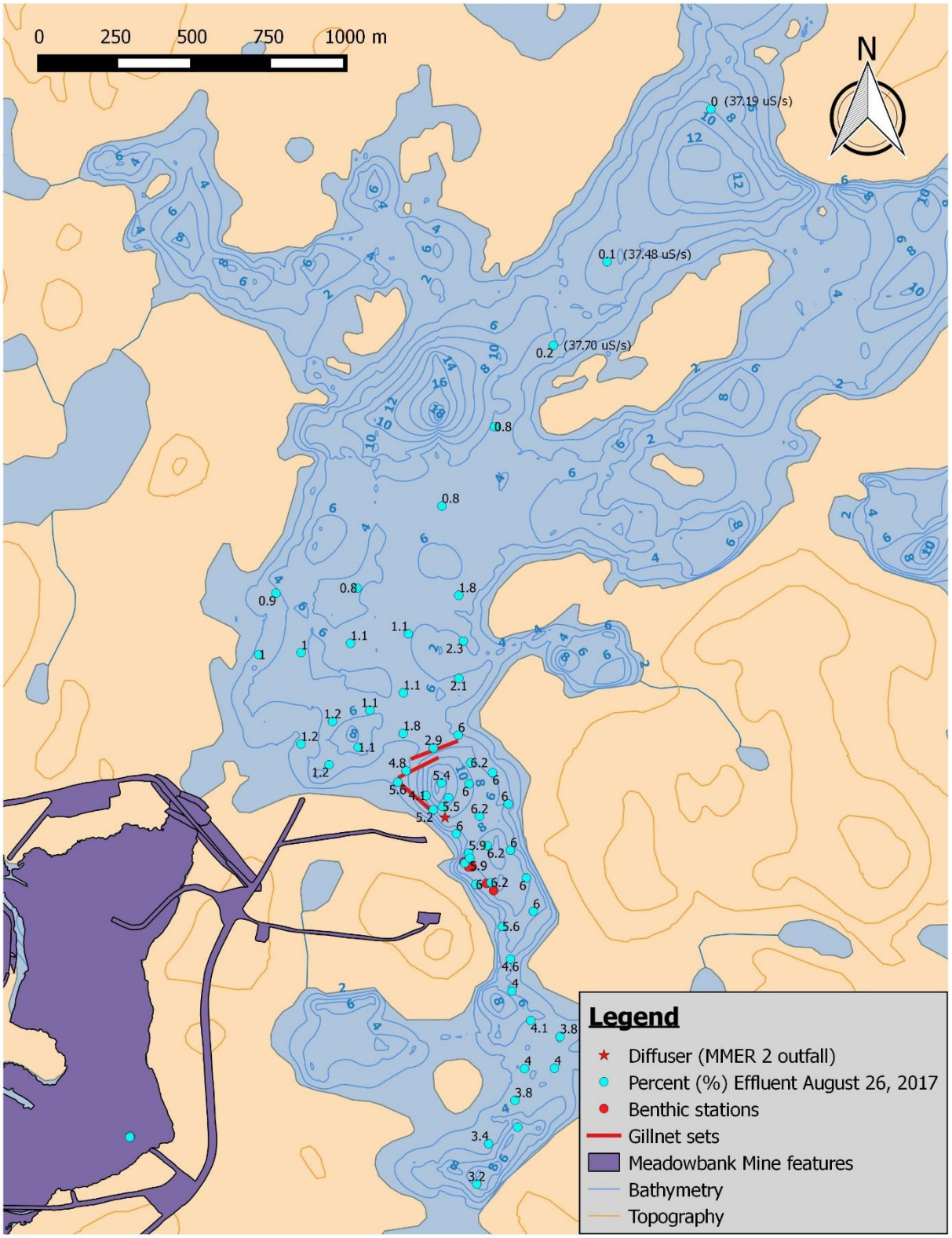


Figure 4. Effluent concentrations in Wally Lake on August 26, 2017.

2.3 Overview of Study Design and Changes

2.3.1 Adult Fish Survey

The Cycle 3 study design report (C. Portt and Associates, and Kilgour & Associates Ltd., 2017) proposed a lethal study of Lake Trout (*Salvelinus namaycush*) to be captured by gill netting in one exposure area (WAL; (Figure 5) and two reference areas (PDL and INUG; Figure 6 and Figure 7, respectively) with a target sample size of 20 fish per area, with length and weight determined for any additional Lake Trout that were released. The following information was to be determined for each Lake Trout that is part of the lethal sample:

- fork length in millimetres
- total weight in grams
- presence of external deformities, lesions, tumours, or parasites.
- liver weight in grams
- sex, gonad condition and gonad weight in grams

Age would be determined from otoliths and the first pectoral fin rays collected from fish that are lethally sampled. The intent was that ages determined from otoliths would be used in the analyses and that the ages determined from fin rays would be provided to Environment Canada for possible use in developing a fin-ray-age to otolith-age correction factor.

ANCOVA would be used to investigate whether or not significant differences occur in the following relationships:

- total weight versus length
- liver weight versus total weight
- liver weight versus length
- length versus age.

Reproductive endpoints would not be examined because many of the fish would be immature and the proportion of mature fish that spawn in any given year is low; therefore meaningful comparisons involving gonad weight would not be possible.

It was also recognized that the sample size of 20 individuals would not achieve the desired power for comparisons involving fish weight versus age, and therefore the study design did not propose those comparisons. Those comparisons are provided in this report, although their power, as predicted, is low.

The two-sample Kolmogorov-Smirnov (K-S) test, which is recommended for comparing length-frequency distributions between areas (Environment Canada, 2012), would be used to compare length and age distributions between pairs of areas.

2.3.2 Benthic Invertebrate Community Survey

There were no changes to the design of the executed field program. The Cycle 3 EEM benthic invertebrate community study utilized two reference areas (PDL and INUG) and one exposure area in Wally Lake, and a before-after-control-impact (BACI) design. Sample collection and processing followed the methodology used by the Core Receiving Environment Monitoring Program (CREMP), which allowed the extensive data collected for that program, including data collected for Wally Lake prior to it becoming an exposure area, in the statistical analyses.

In this Cycle 3 EEM study there was one exposure area (Figure 5) and two reference areas (Figure 6 and Figure 7), with five sampling stations nested within each of these areas. Two sub-samples of the benthic community were collected from each sampling station and composited. However, at the request of Environment Canada, the two grabs composited from each station were processed separately and those data were used to assess if composites of 2 subsamples per benthic station properly characterize each station in Wally Lake. Locations and water depths in the two reference areas, and depth in the exposure area, were targeted to be approximately that of the Cycle 1 and Cycle 2 EEM studies, while ensuring that sampling stations were a minimum of 20 m apart to maintain some amount of independence of stations.

There were minor modifications to the analysis of benthic invertebrate community data relative to the submitted study design. The first change relates to the contrast coefficients used to test the four specified null hypotheses. The coefficients for the fourth hypothesis (no change in differences in benthic indices between exposure (WAL) and reference (INUG and PDL) from early in the exposure period (2013 to 2016) to the last year in the exposure period (i.e., 2017)) were incorrect in the study design and have been corrected here, and are provided in Table 27.

The second change made relates to the use of partial Mantel tests to test for association between Bray Curtis distances and hypothesis matrices. We had proposed to partial-out the effects of grain size, TOC and water depth, prior to carrying out the Mantel test. In a Reference Condition Approach, the ‘reference’ model would be developed with the reference data only, and then applied to the exposure data. In hindsight, there is no simple way in a Mantel test to partial-out the associations between benthos and natural underlying variables using just reference data, and then apply that model to exposure data. Therefore, instead, the Bray Curtis distances were used to compute NMDS axis scores (described in the methods section), and the NMDS axis scores were modeled in a fashion similar to what was done for the other core benthic invertebrate community metrics, i.e., models were developed with reference data, and those models were applied to the exposure data. This latter approach, i.e., use of an RCA statistical approach, was proposed in the study design for use on the core benthos indices (abundance, richness, evenness) in the original study design and is extended here to NMDS axis scores (i.e., an analysis of the Bray Curtis distances).

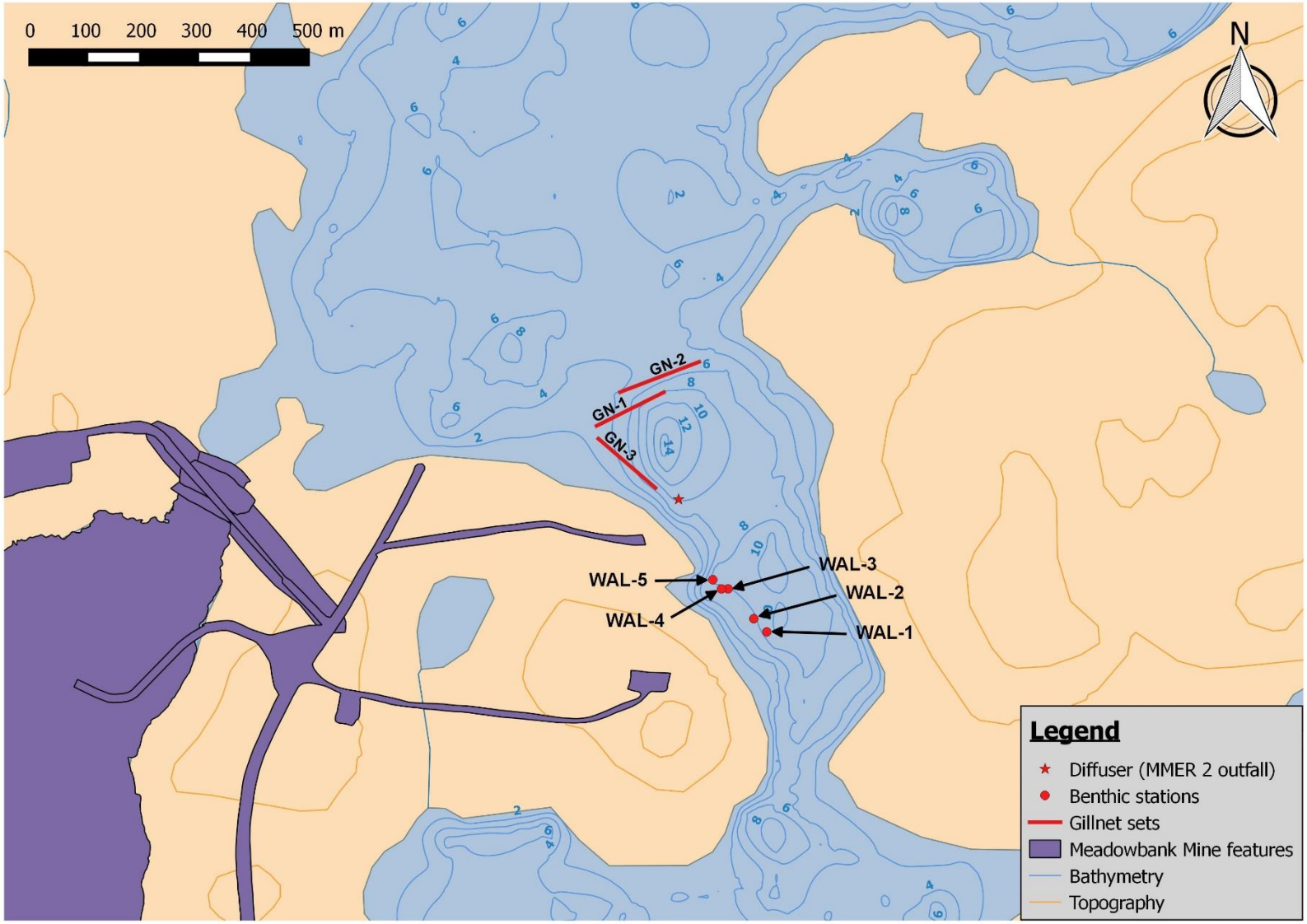


Figure 5. Wally Lake exposure area (WAL).

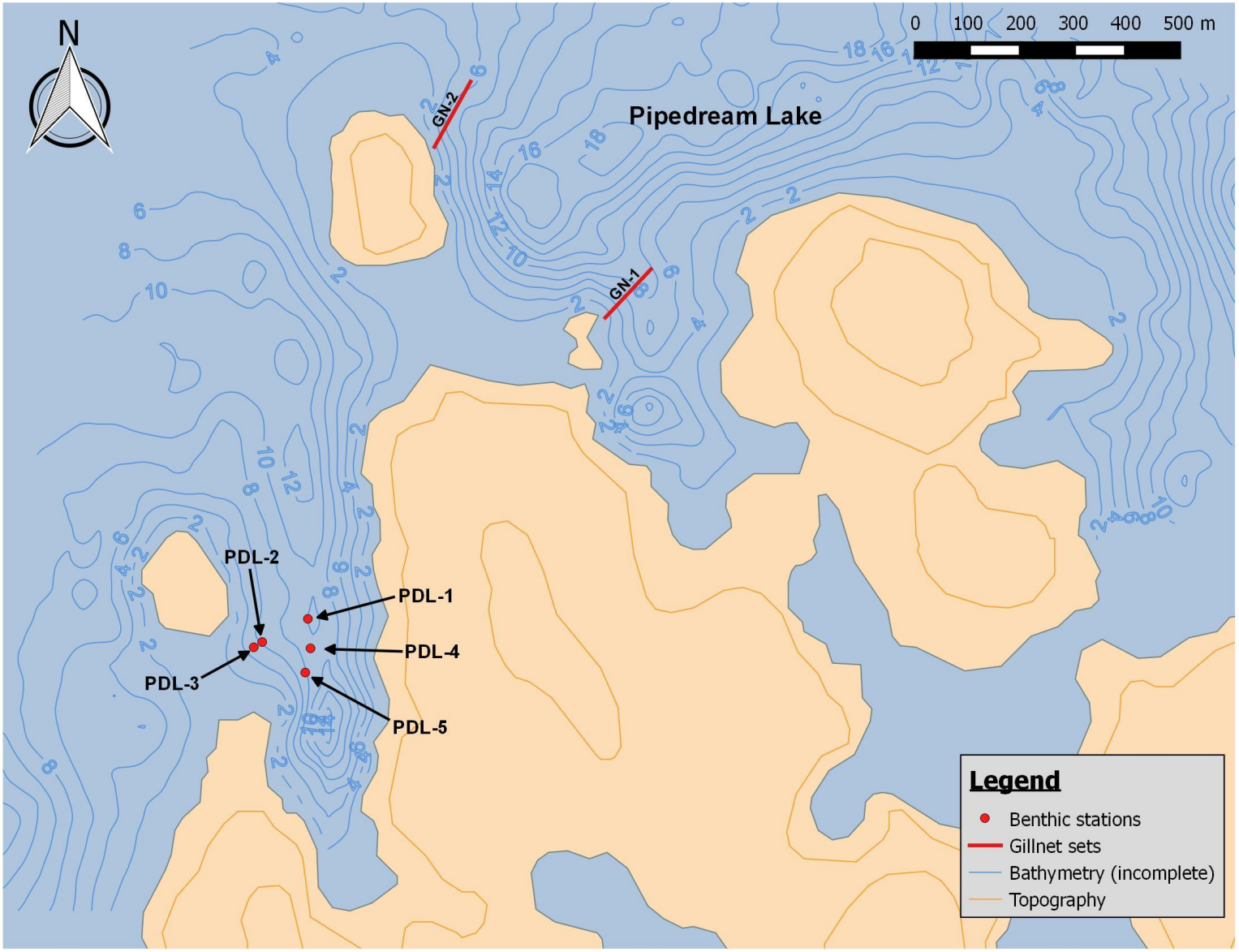


Figure 6. Pipedream Lake reference area (PDL).