Appendix J3

2016 Regulators inspection Reports

Nunavut

Department of Health

Environmental Health Report

Name of Premises	Date - D/M/Y	Time
MEADOWBANK MINE	18 AUG 16	1300 hrs
Address		
NORTH OF BAKER LAKE		
Owner/ Operator/ Manager	**Phone No.**	**Fax No.**
MARTIN THERIAULT		
Type of Premises	**Purpose of Inspection**	
MINE CAMP	COMPLIANCE	

ITEM NO.	DETAILS	CORRECTION BY
(1)	FIRST AID STATION.	
	(A) AUTOCLAVE - NEED TO FOLLOW MANUAL FOR USE AND CLEANING	
	(B) AUTOCLAVE TO BE SPORE TESTED MONTHLY. PLS CONTACT A LAB AND KEEP RECORDS.	
	(C) NO INTERMEDIATE LEVEL DISINFECTION, ONLY LOW LEVEL PRODUCTS. SUGGEST PURCHASING A PRODUCT WITH A TUBERCIDAL CLAIM.	
(2)	WALK ~~WAY~~ WAY STAIRS TO NOVA CAMP HAS PINCH POINTS ON STAIRWAY RAILING.	
(3)	USING LOW HEAT ON DRYERS. SUGGEST USING HIGH HEAT TO DEACTIVATE BODY LICE.	
(4)	IN KITCHEN.	
	(A) NEW HAND WASH BASIN NEEDED BESIDE FRONT SERVICE AREA. DISCUSSED WITH CHIEF.	
	(B) DISCUSSED IMPORTANCE OF HANDWASHING	
	(C) SIGNS REQUIRED ON HAND WASH BASINS "HAND ONLY."	

Operator	Position	Inspection Performed by
"Please Print" M MARTIN	ENVIRONMENTAL COORDINATOR	"Please Print" CARL NELSON
x Signature	18 AUG 16 Date - D/M/Y	x Signature 18 AUG 16 Date - D/M/Y

Original (white): Environmental Health Officer
Duplicate (yellow) : Operator

Nunavut

Department of Health

Environmental Health Report

Name of Premises	Date - D/M/Y	Time
MEADOW BANK MINE	18AUG16	1300hrs
Address		
NORTH OF BAKER LAKE		
Owner/ Operator/ Manager	**Phone No.**	**Fax No.**
MARTIN THERIAULT		
Type of Premises	**Purpose of Inspection**	
MINE CAMP	COMPLIANCE	

ITEM NO.	DETAILS	CORRECTION BY
(4)	CONT'D	
	(D) CMA DOOR DISHWASHER	
	-> PRESSURE GUAGE WAS BROKEN. PLEASE REPAIR.	
	-> ONLY REACHING 150°F ON FINAL RINSE, PLS REPAIR - SHOULD REACH 180°F.	
(5)	POTABLE WATER PLANT:	
	(A) DISCUSSED THE NEGATIVES OF USING LIQUID CHLORINE.	
	(B) DISCUSSED THE USE OF A MIXING TANK IF SODIUM HYPOCHLORITE IS USED.	
	(C) CONFIRMED CALIBRATION OF TURBIDITY METER. SAMPLE CELL WAS ~~EXPIRED~~ EXPIRED IN 2012. PLS GET A NEW SET OF STANDARDS	
(6)	DISCUSSED RESULTS OF WASTE WATER PLANT. MARTIN WILL SEND RESULTS. I WILL RESEARCH, AND GET BACK TO YOU.	

Operator	Position	Inspection Performed by
"Please Print" MARTIN	ENVIRONMENTAL COORDINATOR	"Please Print" CARL NOLAN
Signature	Date - D/M/Y: 18 AUG 16	Signature	Date - D/M/Y: 18AUG16

Original (white): Environmental Health Officer
Duplicate (yellow): Operator

2015 - 2016 Annual Monitoring Report

for Agnico Eagle Mines Ltd.'s Meadowbank Gold Project




Nunavut Impact Review Board
File No. 03MN107
October 2016

Report Title:	The Nunavut Impact Review Board's 2015 – 2016 Annual Monitoring Report for the Meadowbank Gold Project (NIRB File No. 03MN107)
Project:	Meadowbank Gold Project
Project Location:	Kivalliq Region, Nunavut
Project Owner:	Agnico Eagle Mines Ltd. P.O. Box 540 Baker Lake, NU X0C 0A0
Monitoring Officer:	Sophia Granchinho, M.Sc., EP
Monitoring Period:	October 2015 – September 2016
Date Issued:	October 26, 2016
Cover photos:	1) Vault Pit Attenuation Pond 2) Vault Pit 3) Portage Pit 4) All-Weather Access Road

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List of Appendices

LIST OF ACRONYMS

Agnico Eagle	Agnico Eagle Mines Ltd.
AWAR	All-weather private access road
CREMP	Core Receiving Environment Monitoring Program
DFO	Fisheries and Oceans Canada
ECCC	Environment and Climate Change Canada
EEM	Environmental Effects Monitoring
FEIS	Final Environmental Impact Statement
GN	Government of Nunavut
GN-DoE	Government of Nunavut, Department of Environment
HTO	Hunters and Trappers Organization
INAC	Indigenous and Northern Affairs Canada
KIA	Kivalliq Inuit Association
km	kilometre
MMER	Metal Mining Effluent Regulations
mL	million litre
NIRB	Nunavut Impact Review Board
NLCA	Nunavut Land Claims Agreement
NWB	Nunavut Water Board
PEAMP	Post-environmental assessment monitoring program
SEMC	Socio-Economic Monitoring Committee
TC	Transport Canada
TK	Traditional Knowledge
TSS	Total suspended solids
VEC	Valued Ecosystemic Component

1.0 INTRODUCTION

On December 30, 2006 pursuant to Section 12.5.12 of the Nunavut Land Claims Agreement (NLCA), the Nunavut Impact Review Board (NIRB or Board) issued Project Certificate No. 004 (the Project Certificate) for the Meadowbank Gold Project (the Project), allowing the Project to proceed in accordance with the Terms and Conditions issued therein. The NIRB is responsible for the monitoring of this Project as per Sections 12.7.1 and 12.7.2 of the NLCA, and the Project Certificate. In November 2009, the NIRB formally amended the Project Certificate to include an amendment to Condition 32 pursuant to NLCA 12.8.2 and an approval to change the name of the assignee from Cumberland Resources Ltd. to Agnico Eagle Mines Ltd. (NIRB 2009). In August 2016, the NIRB formally amended the Project Certificate [004] to include the Vault Pit Expansion Project proposal for the Project (NIRB 2016).

This report provides findings that resulted from the Board's monitoring program for this Project from October 2015 to September 2016.

1.1. PROJECT HISTORY AND CURRENT STATUS

In early 2007, Agnico Eagle Mines Ltd. – Meadowbank Division (Agnico Eagle or the Proponent) acquired Cumberland Resources Ltd.'s assets which included the Meadowbank Gold Mine. Construction of an all-weather private access road (AWAR) from the Hamlet of Baker Lake to the Meadowbank mine site was completed in 2008 and the road opened to mine-related transportation in March 2008. The Meadowbank Gold Mine entered the operations phase of the project in February 2010 and is currently entering its seventh year of operations.

The Type "A" Water Licence (2AM-MEA0815) required for the Project was issued by the Nunavut Water Board (NWB) in June of 2008. This licence was amended in May 2010 to allow for an expansion to the Baker Lake fuel tank farm facility which included 2 additional 10 million litre (mL) fuel tanks to a combined total of six 10 mL fuel tanks.

In 2008, the NIRB received a request by the Hamlet and Hunters and Trappers Organization (HTO) of Baker Lake and the Proponent to allow public usage of the AWAR. Following a technical review of the request and a public hearing, the NIRB formally approved the amendment to the project in November 2009 and issued an amended Meadowbank Gold Mine Project Certificate (NIRB 2009).

An expansion to the Meadowbank airstrip was screened by the NIRB in September 2010 (NIRB File No. 10XN039) and the NIRB issued a 12.4.4(a) recommendation to the then-Minister of Indian and Northern Affairs indicating that the proposed project could proceed subject to additional project specific terms and conditions. Additionally, the NIRB expanded its Part 7 NLCA monitoring program for the Meadowbank Project to include the airstrip expansion. On January 27, 2013 Agnico Eagle submitted an application to the NWB to amend the site water licence and allow for the expanded airstrip. The request indicated a revision to the original 2010 request (NIRB File No. 10XN039) which substantially reduced the impact to Third Portage Lake and included construction of the expansion during the winter season. On April 4,

2013 the NWB approved the proposed modification and the airport extension was completed April 6, 2013 (Agnico Eagle 2014a).

On July 14, 2011 the NIRB issued *Appendix D – Meadowbank Monitoring Program* to Agnico Eagle in accordance with the Project Certificate (NIRB 2011). The Meadowbank monitoring program includes responsibilities for Agnico Eagle, the NIRB, and several authorizing agencies and government departments.

During the 2014 year, Agnico Eagle continued mining activities in both the Portage and Bay-Goose pits and started in Vault Pit. Dewatering of the Vault Pit was completed in June and thereafter became the Vault Attenuation Pond. By the beginning of 2015, mining activities ceased in the Bay-Goose Pit. Additional activities included construction/modification occurring near the main mine site area and the Vault area and construction of Central Dike Phase 4 and Saddle Dam 3, 4 and 5.

In July 2014, Agnico Eagle applied for a renewal to its Type "A" Water Licence (No. 2AM-MEA0815) as the previous licence were to expire in May 2015. On August 5, 2015 the NWB granted Agnico Eagle's request to renew and amend its Water Licence and issued the amended Licence No.: 2AM-MEA1525 for a 10 year licence period.

In July 2014, Agnico Eagle applied to Fisheries and Oceans Canada (DFO) for a *Paragraph 35(2) (b) Fisheries Act Authorization (Normal Circumstances)* to expand its current Vault pit operations into Phaser Lake to access additional gold deposits, and defer the operations closure date later in 2017. Following a technical review of the request and a public hearing, the NIRB formally approved the Vault Pit Expansion and amendment to the project and issued an amended Meadowbank Gold Mine Project Certificate on August 19, 2016 (NIRB 2016).

The NIRB Monitoring Officer for the Meadowbank Gold Mine Project along with another NIRB staff member conducted a site visit of the project from August 6 to August 7, 2016. Following the site visit, the NIRB staff held an open house and community information sessions in Baker Lake on August 8, 2016 to update, discuss with, and receive feedback from community members on the NIRB's monitoring program for the Meadowbank Gold Mine project. This site visit report is summarized in Appendix I and the community meeting is summarized in Appendix II.

1.2. PROJECT COMPONENTS

The Meadowbank Gold Project as operated by Agnico Eagle consists of an open pit gold mine located approximately 70 kilometres (km) north of the Hamlet of Baker Lake on Inuit-owned surface lands. The project components include the Meadowbank mine site (main mine site); Vault mine site; marshalling facilities in Baker Lake; and a 110 km AWAR connecting the Hamlet of Baker Lake with the Meadowbank mine site. The main mine site is comprised of: camp facilities, mill, waste rock facility, landfill, landfarm remediation site, tailings storage facility and Portage attenuation pond, airstrip, fuel tank farm, airstrip, waste and hazardous materials storage area, incinerator and active mine areas including the Goose pit (mining ended early 2015) and the Portage pits. The Vault mine site consists of a maintenance shop, shelter/refuge facility, waste rock storage facility, water management facilities, and haul roads.

In addition to mining infrastructure and activities, ancillary Project infrastructure is located approximately 2 km east of the Hamlet of Baker Lake and consists of barge unloading facilities, a laydown storage and marshalling area, a 60 mL fuel tank farm, associated interconnecting roads and a 110 km AWAR from the Hamlet of Baker Lake to the Meadowbank mine site. Supplies are shipped from locations within Canada via sealift to Baker Lake where they are offloaded at Agnico Eagle's marshalling area and transported to the Meadowbank site via haul trucks along the 110 km AWAR.

The original Project proponent and owner, Cumberland Resources Inc., estimated in 2006 that the Meadowbank project comprised of a total proven and probable gold reserves of 2.7 million ounces (NIRB 2006). In its 2015 Mineral Reserve and Resource Data report, Agnico Eagle indicated that Meadowbank had proven and probable gold reserves of 0.9 million ounces (Agnico Eagle 2015). Agnico Eagle further noted in its annual report that due to operational changes and the decision to expand the Vault Pit resulted in the revised production guidance at Meadowbank with the expected forecast to close the mine in the third quarter of 2018, which is approximately a year longer than previously forecasted (Agnico Eagle 2016a).

2.0 MONITORING ACTIVITIES

2.1. REPORTING REQUIREMENTS

2.1.1. General Reporting Requirements

During the 2015 – 2016 monitoring period, the Proponent demonstrated a general compliance with reporting requirements imposed through commitments resulting from the NIRB's Review of the Project, including those contained in related reports, plans, and the NIRB's Project Certificate. The Proponent has provided the following updated items as required by the terms and conditions contained within the Project Certificate for the current monitoring period of October 2015 through September 2016:

- Agnico Eagle's 2015 Annual Report to the NWB, NIRB, DFO, Indigenous and Northern Affairs Canada (INAC), and Kivalliq Inuit Association (KIA) which included:
    - 2016 Mine Plan for production lease KVPL08D280 (2015)
    - Meadowbank Dike Review Board Reports
    - Mine Waste Rock and Tailings Management Plan (2016)
    - Water Management Report and Plan (2015)
    - Spill Contingency Plan, version 6 (2016)
    - Water Quality and Flow Monitoring Plan, version 5 (2016)
    - Incinerator Waste Management Plan, version 6 (2016)
    - Tailings Storage Facility: Operation, Maintenance and Surveillance Manual, version 6 (2016)
    - Dewatering Dikes: Operation, Maintenance and Surveillance Manual, version 4 (2016)
    - Emergency Response Plan, version 18 (2016)

2.1.2. Annual Report as per Project Certificate Appendix D

Appendix D of the Project Certificate is designed to provide direction to the Proponent, the NIRB's Monitoring Officer, government departments, and authorizing agencies with regard to the monitoring program established for the project pursuant to Section 12.7 of the NLCA. Appendix D also outlines the Proponent's responsibilities to establish a monitoring program, the requirement of the NIRB's Monitoring Officer to support the production and interpretation of various monitoring reports, and also outlines the NIRB's requirements of various authorizing agencies in reporting compliance monitoring activities. As outlined in Appendix D, the Proponent is required to submit an annual report that provides an updated status of Project operations, an overview of the site and its operation during the reporting period, as well as a discussion of the observations made as a result of, or illustrated through, the monitoring program (NIRB 2011).

On April 25, 2016 the NIRB received Agnico Eagle's *Meadowbank Gold Project 2015 Annual Report* (2015 Annual Report). On May 6, 2016 the NIRB distributed the report to interested parties with a request that they provide comments relating to effects and compliance monitoring as well as other areas of expertise or mandated responsibility. On or before June 6, 2016 the NIRB received comments from the following parties:

- Government of Nunavut (GN)
- Environment and Climate Change Canada (ECCC)
- Indigenous and Northern Affairs Canada (INAC)
- Fisheries and Oceans Canada (DFO)
- Natural Resources Canada (NRCan)
- Transport Canada (TC)

Comments received by parties identified specific areas that may require further attention and/or discussion; these are addressed throughout the remainder of this report and are considered in the recommendations set forth by the Board under separate cover, for subsequent action, attention, or remedial activity by the Proponent.

2.2. COMPLIANCE MONITORING

Compliance monitoring involves an assessment undertaken by regulators and other agencies to establish whether or not a project is being carried out within the legislation, regulations, instruments, commitments and agreements as such are applicable to certain project activities, and further, is a requirement of the NIRB's Appendix D to the Meadowbank Project Certificate.

2.2.1. Compliance with the NIRB Screening Decision Reports

2.2.1.1. **Screening Decision Report 11EN010**

One of the recommendations of the NIRB's April 21, 2011 Screening Decision Report for Agnico Eagle's "Pipe Dream Winter Road and Mining Exploration" project (File No. 11EN010; now referred to as the "Amaruq" project) is that Agnico Eagle include a summary of activities undertaken within its annual report for the Meadowbank Gold Project (File No.

03MN107). Agnico Eagle included within its 2015 Annual Report a comprehensive report of the activities associated with the "Amaruq" project that occurred in 2015 (Agnico Eagle 2016b).

2.2.2. Compliance with the NIRB Project Certificate

2.2.2.1. **Agnico Eagle Responses to the Board's 2015 Recommendations**

On October 23, 2015 the Board issued a number of recommendations to Agnico Eagle as a result of its 2014 – 2015 monitoring efforts including the 2015 site visit (NIRB 2015). The following provides an overview of Agnico Eagle's responses to the Board's recommendations as provided to the NIRB on December 11, 2015.

a. Access and Air Traffic Management Plan

Recommendation 1: The Board requested that Agnico Eagle provide an updated *Access and Air Traffic Management Plan* that reflected the current status of the Meadowbank Mine project. This plan was requested to be provided within 30 days of receipt of the Board's recommendations.

In response to the Board's recommendation, Agnico Eagle noted that it prepared the *Transportation Management Plan: All-weather Private Access Road* in 2009 to reflect the changes made to Condition 33 following the Board's reconsideration of the road access, and that this revised version superseded the previous plan from 2005. No revisions have been requested by the NIRB since the 2009 revision and no further significant changes have been made to the road; therefore Agnico Eagle referred to the Transportation Management Plan as last updated in March 2014 and submitted with its 2013 Annual Report.

b. Gathering of Traditional Knowledge and Community Consultation – Condition 40

40. "*Cumberland shall gather Traditional Knowledge from the local HTOs and conduct a minimum of a one-day workshop with residents of Chesterfield Inlet to more fully gather Traditional Knowledge about the marine mammals, cabins, hunting, and other local activities in the Inlet. Cumberland shall report to KivIA and NIRB's Monitoring Officer annually on the Traditional Knowledge gathered including any operational changes that resulted from concerns shared at the workshop."*

Recommendation 2: Based on the evidence provided by the Baker Lake HTO on traditional knowledge evidence of the Meadowbank Gold Mine marine shipping impacts on marine mammals in Chesterfield Inlet, the Board recommended Agnico Eagle undertake additional workshops in Chesterfield Inlet and Baker Lake to gather Traditional Knowledge from both the community level and the Chesterfield Inlet and Baker Lake HTOs. A response was requested to be provided to the NIRB within 30 days of receipt of the Board's recommendations and any applicable follow-up should be provided within Agnico Eagle's 2015 Annual Report and future reports.

In its response, Agnico Eagle noted that it has made an effort to host a minimum of one community meeting a year in Chesterfield Inlet and has been successful in doing so; during these meetings Inuit Qaujimajatuqangit is gathered and reported annually. In addition, Agnico Eagle held a meeting with the Chesterfield hamlet representatives in February and

September 2015 and gathered traditional knowledge (TK). The information gathered was provided in the 2015 Annual Report. Agnico Eagle noted that it planned to meet with the community members in 2016 to provide updated information regarding shipment of hazardous material as well as consulting with the community to determine specific impacts to marine mammals due to shipping. During this meeting, Agnico Eagle will specifically solicit any TK from the community members attending.

c. Participation in Surveys – Conditions 51 & 54

51 "Cumberland shall engage the HTOs in the development, implementation and reporting of creel surveys within waterbodies affected by the Project to the GN, DFO and local HTO."

54 "Cumberland shall provide an updated Terrestrial Ecosystem Management Plan to the GN, EC and INAC, within three (3) months of the issuance of the Project Certificate including: e. Details of a comprehensive hunter harvest survey to determine the effect on ungulate populations resulting from increased human access caused by the all-weather private access road, including establishing preconstruction baseline harvesting data, to be developed in consultation with local HTOs, the GN-DOE and the Nunavut Wildlife Management Board…"

Recommendation 3: The Board requested that Agnico Eagle provide a discussion on how it came to the conclusion that the overall distribution of harvest of caribou had stabilize based on the number of caribou harvested along the AWAR in 2014 especially since the data collected by Agnico Eagle from the participants generally underestimate true harvest levels. It was requested that the response be provided to the NIRB within 30 days receipt of the Board's recommendations.

Recommendation 4: The Board requested that Agnico Eagle provide a discussion on different methods of surveys that could be conducted to compensate for the fact that there may be participant fatigue with the Hunter Harvest Study in order to determine the effects on ungulate populations resulting from human access caused by the AWAR. The response was to be provided to the NIRB within 30 days receipt of the Board's recommendations.

Recommendation 5: The Board requested clarification from Agnico Eagle regarding its statement that the overall fishing efforts per participants increased due to increased fishing by participants in 2014 while in 2013 the lower numbers were due to participants less willing to travel long distances to catch fish. It was requested that the clarification be provided to the NIRB within 30 days receipt of the Board's recommendations.

Recommendation 6: The Board requested that Agnico Eagle provide information regarding Agnico Eagle's efforts on any additional studies conducted to better understand the Projects related effects on caribou and the creel population within the local study area. The information should include results where feasible. It was requested that the information be provided to the NIRB within 30 days receipt of the Board's recommendations.

In its response to recommendation 3, Agnico Eagle noted that the overall distribution of harvest cannot be compared to the number of caribou harvested. Irrespective of the number of hunters involved or the number of caribou harvested, a reasonable assumption of this study is that the areas where participants report harvesting caribou is representative of overall hunting distribution. The statement 'overall distribution of harvest is stabilized' is based on data that suggest that since 2007, overall percentage of harvest within 5 km of the road is relatively stable at around 40%. This percentage has not changed dramatically over the eight years of the study despite annual variability in the number of participants and total number of reported caribou harvests.

In response to the recommendation #4, Agnico Eagle indicated that the Hunter Harvest Study would be suspended for one year until 2017. In the interim, Agnico Eagle noted that discussions would be held with the Baker Lake HTO and other community representatives to explore innovative ways to improve HTO and hunter participation, and to develop the study into a more community-based initiative. Further, Agnico Eagle noted that in 2016 it would be exploring other ways to gather harvest data in consultation with the HTO, Kivalliq Inuit Association (KIA), and the Government of Nunavut (GN), and potentially other agencies. Further discussion on the Hunter Harvest Study from the review of the 2015 Annual Report is provided in Section 2.3.1.4 of this report.

In response to recommendations 5 and 6, Agnico Eagle noted that the increased overall fishing efforts for the 2014 year compared to the 2013 year (despite there being only nine (9) participants compared to 23 in 2013) was due to one very active participant who reported 648 fish of a total of 1,026 fish reported for the year. Further, the Creel Report indicated that 'The majority of participants continue to fish around the perimeters of Baker and Whitehills lakes'.

Agnico Eagle also noted that discussions would be held with Baker Lake HTO, Government of Nunavut (GN) and other community representatives in 2016 to explore innovative ways to improve HTO and hunter/fisherman participation, and to develop the study into a more community and regionally based initiative. Further, as part of the Memorandum of Understanding with the GN, an additional 10 collars were deployed in in the Baker Lake area in mid-April 2015.

d. Provision of Updated Information – Condition 56

56. Cumberland shall plan, construct, and operate the mine in such a way that caribou migration paths through the Project, including in the narrows west of Helicopter Island, are protected. Maps of caribou migration corridors shall be developed in consultation with Elders and local HTOs, including Chesterfield Inlet and placed in site offices and upgraded as new information on corridors becomes available. Information on caribou migration corridors shall be reported to the GN, KivIA and NIRB's Monitoring Officer annually.

Recommendation 7: The Board requested that updated caribou migration maps from the 2014 Annual Report be posted at the Meadowbank Mine site. It was further recommended that Agnico Eagle provide details clarifying whether and how information collected from consultation with Elders and local HTOs had been incorporated into

updating the maps. The response was to be provided to the NIRB within 30 days receipt of the Board's recommendations.

Agnico Eagle indicated in its response that it would post updated caribou migration maps at the site. Further, it noted that it conducts an annual site visit with the HTO at which time site-wide monitoring including the updated caribou migration maps are also reviewed. Any information that is collected in these meetings is passed on to the consultants who work with the GN wildlife biologist to construct and finalize the migration maps. Agnico Eagle further noted that the GN Wildlife Biologist independently consults with the Hunters and Elders to construct and finalize the migration maps.

e. Socio-economic monitoring program – Condition 64

64. Cumberland shall work with the GN and INAC to develop the terms of reference for a socio-economic monitoring program for the Meadowbank Project, including the carrying out of monitoring and research activities in a manner which will provide project specific data which will be useful in cumulative effects monitoring (upon request of Government or NPC) and consulting and cooperating with agencies undertaking such programs. Cumberland shall submit draft terms of reference for the socio-economic monitoring program to the Meadowbank SEMC for review and comment within six (6) months of the issuance of a Project Certificate, with a copy to NIRB's Monitoring Officer.

Recommendation 8: The Board recommended that Agnico Eagle provide a progress report on the development of the socio-economic monitoring program and if possible provide a summary of the results of the program to date. It was requested that the progress report be provided to the NIRB within 30 days receipt of the Board's recommendations.

In its response, Agnico Eagle indicated that it has made progress on developing a socio-economic monitoring program as per the requirements of Condition 64 and has retained a consultant to work with the GN and INAC on the development of the report. Further, Agnico Eagle plans to finalize and submit the report to the Socio-Economic Monitoring Committee (SEMC), KIA and the NIRB by mid-December. The NIRB is satisfied with this response.

f. On-site incinerators – Condition 72

72. On-site incinerators shall comply with Canadian Council of Ministers of Environment and Canada-Wide Standards for dioxins and furan emissions, and Canada-wide Standards for mercury emissions, and Cumberland shall conduct annual stack testing to demonstrate that the on-site incinerators are operating in compliance with these standards. The results of stack testing shall be contained in an annual monitoring report submitted to GN, EC and NIRB's Monitoring Officer.

Recommendation 9: The Board requested that Agnico Eagle provide an explanation for the incinerator having not achieved the recommended temperatures in the secondary chamber in the winter of 2014 as required by Environment Canada. It was further recommended that Agnico Eagle describe any corrective measures employed at the

incinerator in addition to the corrective actions set in place in 2014. The response was to be provided to the NIRB within 30 days receipt of the Board's recommendations.

Recommendation 10: The Board requested that Agnico Eagle provide a summary of the 2015 stack testing that was completed. It was also requested that Agnico Eagle provide a description of the comprehensive site wide information program and confirmation that it is working to ensure that batteries are recycled appropriately. The response was to be provided to the NIRB within 30 days receipt of the Board's recommendations.

Recommendation 11: The Board recommended that EC[1] provide comments on results of Agnico Eagle's 2014 Incinerator Daily Report Logbook, the results from the 2014 stack testing and to provide confirmation that it agrees (or disagrees) to the continuation of biennial incinerator stack testing. Comments on these items were requested given the reported instances of exceedances that were observed in the 2014 stack testing and the continued lower than optimal secondary chamber burn temperatures observed in 2014.

In response to recommendation #9, Agnico Eagle indicated that maintenance work was conducted at the incinerator in 2014 and 2015 with the work continuing in October 2015. Agnico Eagle further noted the maintenance work appeared to be effective in keeping the temperatures in the secondary chamber above 1000ºC and considered that the maintenance work conducted at the incinerator in 2015 was effective at addressing the issue. The NIRB is satisfied with this response. Further discussion on Agnico Eagle's on-site incinerator from the review of the 2015 Annual Report is available in Section 2.3.1.3 of this report.

In response to recommendation #10, Agnico Eagle provided the stack sampling testing report and noted that the results indicated that the exceedances measured in 2014 were the result of improper waste management, specifically improper disposal of alkaline batteries. Agnico Eagle also provided a summary of its comprehensive site wide information program which included holding a total of 18 meetings with all departments on-site. The result from the meetings reflected an increase in batteries being recycled in 2015 compared to 2014 and Agnico Eagle is of the opinion that the actions taken were effective at addressing high mercury levels in stack testing. Further discussion on Agnico Eagle's stack testing results from the review of the 2015 Annual Report is available in Section 2.3.1.3 of this report.

ECCC's response to recommendation #11 is discussed in Section 2.2.2.2 of this report.

g. Suppression of surface dust – Condition 74

74. "Cumberland shall employ environmentally protective techniques to suppress any surface dust."

Recommendation 12: Pursuant to Term and Condition 74, the Board required Agnico Eagle to apply dust suppression on the all surface roads including the AWAR.

[1] Note that the Board invited Environment Canada to comment via correspondence issued under separate cover, and that AEM was not responsible for a response to this recommendation.

Recommendation 13: The Board requested that Agnico Eagle provide a plan of action for dust suppression along the AWAR during dry periods as required by Condition 74 and how it would meet the requirements of Condition 74 for the remaining years of the Project life. The plan of action was to be provided to the NIRB within 30 days receipt of the Board's recommendations.

In response, Agnico Eagle stated that dust suppressant measures were employed on the AWAR since 2011. Dust suppressants have been placed annually from the former Exploration Camp to the Meadowbank Gatehouse; and dust suppressant have been placed on the portion of the AWAR that starts before the Baker Lake Gatehouse since 2013. Further, Agnico Eagle noted that the '*Access and Air Traffic Management Plan'* was updated to include an AWAR Management Plan, which was submitted to the NIRB as part of the 2010 Annual Report. This was later updated and renamed in 2013 to the Transportation Management Plan. No comments were received from the NIRB on the updated plans after submission and thus Agnico Eagle assumed the plans to be satisfactory. Agnico Eagle noted that dust suppression using specific chemicals was not considered in the updated plan.

Agnico Eagle maintained that it is meeting Condition 74 and based its conclusion on several factors, including the necessity of undertaking the addition of chemical dust suppressants as a mitigation measure, and on whether there has been an impact to the surrounding areas because of dust caused by road traffic. Agnico Eagle acknowledged that dust is generated along the all-weather road; however, Agnico Eagle has proven through monitoring that these levels are within the levels of dustfall that were predicted in the original Final Environmental Impact Statement (FEIS) and are within the Alberta guidelines for dustfall on recreational areas ($4g/m^2$/month). If these levels exceeded predictions then additional mitigation measures such as chemical dust suppression would be contemplated. Agnico Eagle further noted that given that its dust monitoring results are within the predicted levels it is therefore unlikely that impacts to Valued Ecosystemic Components (VECs) (vegetation community productivity and wildlife) due to dust are occurring beyond the smallest assumed zone of influence which is 100 metres based on the monitoring results. Finally, based on wildlife monitoring conducted no thresholds for bird populations were surpassed along the road, thus the road-related effects on bird populations were not considered to be significant.

Agnico Eagle plans to:

- Continue to apply dust suppression in areas of highest traffic along the AWAR and near the hamlet of Baker Lake and from the former Exploration camp to the Meadowbank gate.
- Continue dust monitoring along the AWAR in August, the driest season with the highest volume of traffic.
- Enter discussion with Baker Lake community based groups to determine areas along the AWAR near White Hills Lake where the highest traffic occurs. Agnico Eagle is prepared to apply approved dust suppression material in these areas based on the community consultation. This would be conducted as a pilot in response to community concerns.

- Continue the current dust suppression program at the Meadowbank (including the Vault Road) mine site.

Further discussion on the NIRB's conclusions concerning the suppression of surface dust as related to the 2015 – 2016 monitoring period and to Condition 74 is discussed in Section 2.2.2.4. A discussion on Agnico Eagle's 2015 dust monitoring results from the review of the 2015 Annual Report is provided in Section 2.3.1.3 of this report.

h. Accidents and Malfunctions – Condition 75

Recommendation 14: The Board requests that Agnico Eagle provide within its 2015 annual report further discussions as to how various management plans relating to accidents and risk have been developed in consultation with Elders and potentially affected communities.

In its response to the Board's recommendation, Agnico Eagle committed to provide the requested information within the 2015 Annual Report. Further discussion on the assessment of the accident risk and mitigation developed in consultation with Elders from the review of the 2015 Annual Report is provided in Section 2.2.2.4 of this report.

i. Appendix D and the Annual Report

Recommendation 15: The Board recommended that Agnico Eagle provide a full discussion and summary on the PEAMP for the Project as required by Appendix D. This must include a discussion that references the baseline and previous years' monitoring data and further indicate whether any trends have been observed at the mine site for each VEC. The discussion should include whether the trends of effects over time are potentially indicating impacts from or associated with the Meadowbank Project. It was requested that the response be provided to the NIRB within 30 days receipt of the Board's recommendations.

In its response to the Board's recommendation, Agnico Eagle noted that it believes the required components of the PEAMP summary report are included within the Annual Report but notes that baseline data used to develop impact predictions could be more clearly indicated. Agnico Eagle noted that it would clarify how predicted impacts relate to baseline values where appropriate. However, Agnico Eagle observed that the program objectives/proponent responsibilities do not specify that a trend analysis of previous years' monitoring data will was required within the PEAMP summary report. Agnico Eagle further stressed that the intent of the PEAMP is a higher-level overview of site-wide impacts, so specific data comparisons and analysis are better suited to individual monitoring reports. Since Agnico Eagle aims to minimize redundancy within the Annual Report, inter-annual trends are generally discussed in the PEAMP only where impacts are identified, within each VEC's section on "Recommendations for Mitigation or Adaptive Management". Agnico Eagle will however attempt to clarify discussions of historical trends where impacts/thresholds are exceeded in subsequent PEAMP reports, within the current framework. Agnico Eagle further noted that it would continue to work to develop

continuity between the PEAMP sections for each VEC to ensure all sections provide similar clarity, as recommended by NIRB.

Further discussion on Agnico Eagle's response and conclusions concerning its PEAMP from the 2015 Annual Report is available in Section 2.3.3.1.

j. Noise Quality Monitoring

Recommendation 16: The Board requested that Agnico Eagle provide a summary of the communications Agnico Eagle has had with the GN in 2015 regarding mine related noise disturbance on caribou and wildlife and whether any changes have been recommended to the Noise Monitoring and Abatement Plan. It was requested that this information be provided to the NIRB within 30 days' receipt of the Board's recommendations.

Recommendation 17: The Board requested that Agnico Eagle provide a trend analysis of the noise monitoring data collected to date as required by the PEAMP and further outline and provide a discussion on any trends observed.

In response to the recommendation #16, Agnico Eagle noted that in 2014, by way of responding to NIRB's recommendation, Agnico Eagle reached out to the GN, however Agnico Eagle did not receive any direct feedback from the GN. Agnico Eagle has not held any formal discussions with the GN regarding mine noise on caribou and wildlife since operation began in 2010. Agnico Eagle further noted that it has not observed any impacts to caribou due to noise from the mine and remains willing to discuss the potential for noise-related wildlife effects with NIRB and GN staff.

In response to recommendation #17, Agnico Eagle noted that the sound levels at station R5 may have been elevated in 2014 due to increased helicopter usage for exploration activities at the Amaruq exploration site. The R5 station is located near the former Meadowbank exploration camp, which is still used as a base for exploration helicopter activity. Further, Agnico Eagle noted that as indicated in its response to the Board's recommendation regarding the PEAMP, the PEAMP program objectives/proponent responsibilities do not specify that a trend analysis of previous years' monitoring data will be performed within the PEAMP summary report. Analyses of historical trends and any evidence of mine-related impacts are provided as required in individual monitoring reports (Annual Report Appendices), are summarized in the relevant sections of the Annual Report main document (i.e., the sections preceding the PEAMP), and impacts are further summarized in the PEAMP in relation to FEIS predictions (Section 12 of the Annual Report). Therefore, a full comparison of historical data was provided in the 2014 Noise Monitoring Report.

k. Aquatic Environment

Recommendation 18: The Board recommended that Agnico Eagle provide a full trend analyses and discussion on the aquatic environment based on the data collected to date under the CREMP and indicate whether any impacts are being observed from the Project and whether the analyses meets or exceeds the predictions made within the

FEIS. It was requested that this information be provided within 30 days' receipt of the Board's recommendations.

Recommendation 19: The Board requested that Agnico Eagle 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, and what the cause may be for the changes observed at these stations. It was requested that this information be provided within 30 days' receipt of the Board's recommendations.

In response to recommendation #18, Agnico Eagle noted that the CREMP is one component of Agnico Eagle's Aquatic Effects Monitoring Program (Agnico Eagle), which also included five (5) other aquatic monitoring programs in 2014. A full integration of results from these programs and discussion on the aquatic environment, including Project-related impacts and potential causes, was provided within Section 8.7 of the Annual Report.

Results of aquatic monitoring programs are discussed in relation to FEIS predictions made in the Physical Environment Impact Assessment Report (2005) in Section 12.1 of the PEAMP of the 2014 Annual Report. Agnico Eagle recognized that there is no direct comparison in the PEAMP to CREMP-specific thresholds or target values established under the FEIS. As a result, the new plan for the CREMP program submitted to the NWB/NIRB in 2015 in support of Agnico Eagle's Type "A" Water License renewal specifies that future CREMP reports will include a specific comparison of results to FEIS predictions. These will be further referenced in the PEAMP.

Further, Agnico Eagle noted that as indicated in its response to the Board's recommendation regarding the PEAMP, the PEAMP program objectives/proponent responsibilities do not specify that a trend analysis of previous years' monitoring data will be performed within the PEAMP summary report. Therefore, a full trend analysis and comparison of historical data collected to date under the CREMP was provided in the 2014 Core Receiving Environment Monitoring Program report.

l. <u>Water Management and Monitoring of the Culverts at the Vault Road</u>

Recommendation 20: The Board requests that Agnico Eagle provide a discussion on the potential monitoring issues associated with the three culverts being collapsed at the Vault Road, the potential that fish passage may be compromised from the collapsed culverts and whether Agnico Eagle is considering repairing or replacing the culverts. This information should be provided to the NIRB within 30 days' receipt of the Board's recommendations.

In response to the recommendation, Agnico Eagle indicated that the area was monitored in 2013, 2014, and 2015 and no issues were identified in regards to water flow or sedimentation. Further, no action is required as the condition of the culverts looks stable and they seem to perform well during freshet. Daily inspections are conducted by Agnico Eagle during freshet to confirm that the culverts (and in particular the middle culvert which is embedded) are not impeding the flow thus not compromising fish passage. Water flow

and sedimentation around the culverts will continue to be monitored annually during the Annual Geotechnical Inspection and daily during freshet by Agnico Eagle.

2.2.2.2. **Authorizing Agency Responses to the Board's 2015 Recommendations**

a. On-site Incinerators – Condition 72

As outlined in recommendation #11, in 2015, the Board requested that Environment and Climate Change Canada (ECCC) provide comments on the results of Agnico Eagle's 2014 Incinerator Daily Report Logbook, the results from the 2014 stack testing and to provide confirmation that it agrees (or disagrees) to the continuation of biennial incinerator stack testing. Comments on these items were requested given the reported instances of exceedances that were observed in the 2014 stack testing and the continued lower than optimal secondary chamber burn temperatures observed in 2014.

In its response to the Board's recommendation, ECCC noted that it had no comments at this time in response to the NIRB's request and noted that ECCC's comments submitted on February 27, 2015 to the NIRB on the topics still applied. Further, ECCC noted that the proponent is required to comply with its obligations under relevant legislation; including the *Canadian Environmental Protection Act, 1999*; the pollution prevention provisions of the *Fisheries Act*; the *Migratory Birds Convention Act, 1994*; and the *Species at Risk Act*.

2.2.2.3. **Conditions Requiring Attention**

The NIRB notes that Agnico Eagle is not in full compliance with the following Terms and Conditions of the Meadowbank Project Certificate, and that recommendations from the Board have been provided to the Proponent under separate cover.

a. Suppression of surface dust – Condition 74

As noted previously and within the NIRB's 2016 Site Visit Report (see Appendix I) and Agnico Eagle's 2015 Annual Report, dust suppression techniques have not been applied to manage dust along the AWAR between Baker Lake and Meadowbank. Dust suppressants have been limited to haul roads at the mine site, between the Meadowbank gatehouse and Exploration Camp site, and the airstrip. Dust suppression measures employed by Agnico Eagle at these areas were noted to include the use of calcium chloride between the Meadowbank gatehouse and Exploration Camp site and water applied to the mine site roads (including Vault road) and the airstrip.

It is noted that the Agnico Eagle initiated a dust sampling program along the road in 2012 to monitor dust deposition on vegetation along the road. Further, Agnico Eagle implemented additional studies in 2016 to determine the most effective protective techniques to suppress surface dust from vehicles. Results from the ongoing studies viewed during the site visit and results would be provided in Agnico Eagle's future annual report.

In its response to the Board's 2015 recommendations Agnico Eagle maintained that it is meeting Condition 74 and based its conclusion on several factors, including the necessity of undertaking the addition of chemical dust suppressants as a mitigation measure, and on

whether there has been an impact to the surrounding areas because of dust caused by road traffic.

In review of the *Transportation Management Plan* as submitted by Agnico Eagle in 2014, it is noted that there is no discussion provided on mitigation measures related to dust from the road (Agnico Eagle 2014b). As previously noted by the Board, Condition 33 of the Project Certificate required that the *Access and Air Traffic Management Plan*' be updated to include an '*All-weather Private Access Road Management Plan*'. As noted by Agnico Eagle this was done and provide to the NIRB in 2010 which in turn was updated and renamed to the *Transportation Management Plan*. Further, Agnico Eagle has noted in the past that it believes that Condition 74 does not apply to the AWAR as it is not specified in the specified in the "All Weather Road" section of the Project Certificate. The NIRB would like to point out that the updated *Access and Air Traffic Management Plan* identified three types of roads that would provide on-site access: 1) on-site haul roads; 2) service roads; and 3) all-weather access road. Further, the plan specified that "[d]ust control on the roads will be achieved through regular watering during the dry periods…". The NIRB still stresses that Condition 74 applies to all mine roads which as noted by Agnico Eagle in the previous *Access and Air Traffic Management Plan* includes the all-weather access road.

With the exception of continuing the dustfall monitoring along the AWAR, Agnico Eagle has not indicated any further commitment to apply dust suppressant to the AWAR in the future. The Proponent has not fully met the requirements of Condition 74, as dust suppression techniques were not being applied along the AWAR from Baker Lake to the mine site.

2.2.2.4. **Compliance Achievements**

a. Traditional Knowledge and Consultation – Conditions 39 & 40

39. "Within three (3) months of contracting with a shipping company to transport cargo to the Project through Chesterfield Inlet and prior to the commencement of shipping, Cumberland shall advertise and hold a community information meeting in Chesterfield Inlet to fully discuss the shipping program for the Project. Thereafter, Cumberland shall annually advertise and hold a community information meeting in Chesterfield Inlet to report on the Project and to hear from Chesterfield Inlet residents and respond to concerns. A consultation report shall be submitted to NIRB's Monitoring Officer within one month of the meeting."

40. "*Cumberland shall gather Traditional Knowledge from the local HTOs and conduct a minimum of a one-day workshop with residents of Chesterfield Inlet to more fully gather Traditional Knowledge about the marine mammals, cabins, hunting, and other local activities in the Inlet. Cumberland shall report to KivIA and NIRB's Monitoring Officer annually on the Traditional Knowledge gathered including any operational changes that resulted from concerns shared at the workshop."*

Agnico Eagle noted in its 2015 Annual Report that it held meetings with Chesterfield Inlet representatives in February and September 2015 and gathered traditional knowledge. During the February meeting, concerns were raised regarding the impacts to marine

mammals from shipping as it was noted that shipping is driving marine mammals away from traditional feeding and harvesting areas. In addition, concerns were raised that barges travelling between Chesterfield Inlet and Baker Lake are affecting caribou. Agnico Eagle indicated that the company, the Hamlet of Chesterfield Inlet, and the HTO are discussing ways to work together to address these issues. During the September meeting, TK information was provided on the currents and the Hamlet wondered about the possibility of Agnico Eagle providing marine spill kits. Agnico Eagle noted that it planned to meet with the community members again in 2016 to provide updated information regarding shipment of hazardous material as well as consulting with the community to determine specific impacts to marine mammals due to shipping and to solicit additional TK. Agnico Eagle is also considering the provision of spill response training to appropriate community members as well as providing spill response material.

a. Provision of Updated Information – Condition 56

56. Cumberland shall plan, construct, and operate the mine in such a way that caribou migration paths through the Project, including in the narrows west of Helicopter Island, are protected. Maps of caribou migration corridors shall be developed in consultation with Elders and local HTOs, including Chesterfield Inlet and placed in site offices and upgraded as new information on corridors becomes available. Information on caribou migration corridors shall be reported to the GN, KivIA and NIRB's Monitoring Officer annually.

During the 2016 site visit, the Monitoring Officer observed a map dated 2015 outlining caribou migration corridors posted on a bulletin board at the main camp (near the door to the gym). There were two additional maps with no date from the GN on the bulletin board showing caribou migration routes.

b. Accidents and Malfunctions – Condition 75

75. "Cumberland shall provide a complete list of possible accidents and malfunctions for the Project. It must consider the all-weather road, shipping spills, cyanide and other hazardous material spills, and pitwall/dikes/dam failure, and include an assessment of the accident risk and mitigation developed in consultation with Elders and potentially affected communities."

Within its 2015 Annual Report, Agnico Eagle included a list of possible accidents and malfunctions for the Meadowbank Gold Mine Project. In addition, Agnico Eagle noted that the original management plans that included the assessment of the accident risk and mitigation were developed during the public review phase for the Meadowbank project and included Elder's participation at the associated hearings. Furthermore, Agnico Eagle noted that it has consulted quarterly with Elder representation as part of the Baker Lake Liaison Committee with topics including accidents and malfunctions. Agnico Eagle also noted that it holds a yearly meeting with the community of Baker Lake to discuss the road safety and to prevent accidents on the AWAR as part of the requirements of Condition 32e.

The NIRB believes that Agnico Eagle has met this condition with the information provided and following review of the Final Hearing Report (NIRB 2006). The NIRB encourages Agnico Eagle to continue to consult with Elders and the potentially affected communities

regarding the possible accidents and malfunctions, and incorporate any concerns and comments within the management plans.

2.2.3. Compliance Monitoring by Regulatory Authorities

On May 6, 2016 the NIRB requested that regulatory authorities with jurisdiction and/or area of expertise for the Meadowbank Gold Mine project provide comments and information with respect to compliance monitoring for the 2015 reporting period as required in Part D of Appendix D of the Meadowbank Project Certificate (NIRB 2011). Specifically, comments were requested regarding the following:

a. Provide any compliance monitoring and/or site inspection reports to the NIRB including the following information:
    i. How the authorizing agency has incorporated the terms and conditions from the Project Certificate into their permits, certificates, licences or other government approvals, where applicable;
    ii. A summary of any inspections conducted during the 2015 reporting period, and the results of these inspections; and
    iii. A summary of Agnico Eagle's compliance status with regard to authorizations that have been issued for the Project.

The following is a *summary* of the comments received from parties regarding compliance monitoring.

2.2.3.1. **Government of Nunavut (GN)**

The Government of Nunavut (GN) noted that the Proponent participated in the 2015 Kivalliq Socio-Economic Monitoring Committee (KivSEMC) annual meeting and shared project-specific socio-economic information with the regional stakeholders as per Project Certificate condition 63. Further, Agnico Eagle retained Stratos Inc. to work collectively with member organizations of the Meadowbank Socio-Economic Monitoring Committee (Agnico Eagle, GN, and INAC) to develop the Meadowbank Socio-Economic Monitoring Program in accordance with Term and Condition 64. The GN noted that it was satisfied with the monitoring program, which provided a comprehensive assessment of the Project's socio-economic benefits and impacts on Kivalliq communities and Nunavut. The monitoring program also included data and information on employee community of origin as outlined in condition 65. The GN noted that it would continue to work with the regional KivSEMC and the Meadowbank SEMC to ensure ongoing delivery of project-specific socio-economic information to impacted stakeholders.

2.2.3.2. **Environment and Climate Change Canada (ECCC)**

Environment and Climate Change Canada (ECCC) reported in its comments on compliance monitoring that an onsite inspection of the project was conducted in June of 2015. No non-compliance issues were identified by ECCC during the course of the inspection. ECCC further noted that Agnico Eagle submitted five (5) off-site inspections in accordance with the *Metal Mining Effluent Regulations* (MMER).

2.2.3.3. **Fisheries and Oceans Canada (DFO)**

Fisheries and Oceans Canada (DFO) noted that no new Authorizations have been issued since providing comments on Agnico Eagle's 2013 Annual Report and has no site inspections reports to submit for the 2015 year.

With respect to Agnico Eagle's compliance status with regard to DFO's Authorizations, DFO noted that it was unable to locate a photographic record as required for Authorization NU-03-0190 condition 5.3. With respect to Authorization NU-08-0013, DFO was unable to locate any mention of monitoring the Western Channel or construction of the proposed habitat shoal.

2.2.3.4. **Indigenous and Northern Affairs Canada (INAC)**

Indigenous and Northern Affairs Canada (INAC) noted that it is responsible for inspecting and enforcing terms and conditions (T&C) contained within water licences issued in Nunavut but noted that the decision to implement the T&C's of a project certificate, from the perspective of inland water management, rests with the NWB. INAC noted that Crown Land Lease No. 66A/8-71-2 was obtained for the development of portions of the all-weather access road and Crown Land Lease No. 66A8-72-2 was obtained to construct quarries on the associated parcels of land located on Crown Land. INAC provided a summary of the terms and conditions from Project Certificate No. 004, which were incorporated into the NWB water licence and the Crown land leases.

INAC also commented on socio-economic monitoring association with term and condition #63, and acknowledged that INAC has worked with Agnico Eagle and the GN on the Kivalliq SEMC. INAC further noted that it met with Agnico Eagle, the GN, and the KIA on several occasions to share data and information to work towards a comprehensive socio-economic monitoring report for the Meadowbank project. INAC indicated that the 2015 Socio-Economic Monitoring Report was finalized in 2015, noting that the report contained a comprehensive set of indicators that serve to verify the impact predictions outlined in the Meadowbank FEIS. With this report, INAC is of the opinion that the requirements of condition #64 have been met.

INAC further noted that as per Term and Condition #65, Agnico Eagle has reported on community of origin of hired employees since project commencement, and as per Term and Condition #68, Agnico Eagle has incorporated Inuit societal values into mining operations. Both of these conditions have been incorporated into the Meadowbank 2015 Socio-Economic Monitoring Program.

INAC's Water Resource Officer (WRO) performed three inspections in 2015. Overall, no issues with non-compliance were identified during the 2015 reporting period; however, a few minor items were noted to Agnico Eagle during each inspection. The inspection reports are available from the Nunavut Water Board Public Registry.

Finally, INAC noted Agnico Eagle carried out works to ensure they were complying with the measures identified within the 2013 Inspector's Direction regarding seepage from the tailing storage facility sump (ST-16) into NP-2 Lake. Based on the actions performed by Agnico Eagle, the Inspector's Direction was revoked in March 2015.

2.2.3.5. **Natural Resources Canada (NRCan)**

Natural Resources Canada (NRCan) noted in its submission that it conducted an explosives inspection in July 2014 regarding the Explosives Factory Licence F74222 and that the inspection did not yield any non-compliance environmental matters regarding the explosives factory site.

2.2.3.6. **Transport Canada (TC)**

In its submission, Transport Canada (TC) noted that it reviewed Agnico Eagle's Oil Pollution Prevention Plan (OPEP) and it is in compliance with the regulations.

TC also noted that Agnico Eagle provided TC with a follow-up report addressing all the non-compliance issues noted on the Transportation of Dangerous Goods Inspection Report dated September 14, 2015. Agnico Eagle indicated it will complete some of the follow-up activities prior to the next Transportation of Dangerous Goods Inspection later in 2016.

Finally, TC noted that it received a legal interpretation regarding application of PART 2 and 3 of the Marine Transportation Security Regulations, for interfaces of international vessels to mine sites. TC noted that a Marine Security Operations Bulletin will be forthcoming to stakeholders informing them of the requirement to become certified if a vessel, acquired to deliver services or products to their site, came directly from an international location, notwithstanding the type of vessel used to offload the supplies. TC noted that for the vessels for the Meadowbank Gold Project that are coming from Quebec would not need to be certified at this time.

2.2.4. Compliance with Instruments

2.2.4.1. **Compliance with Licenses and Authorizations as Described in the 2015 Annual Report**

Agnico Eagle noted that on November 19, 2014 tailings deposition commenced in the South Cell (Portage Attenuation Pond) which ended the use of the Portage Attenuation Pond. Effluent discharge to Third Portage Lake has not occurred since November 2014, and sample locations ST-9 (Portage Attenuation Pond effluent discharge point) or ST-MMER-1 are no longer active. Further, Agnico Eagle noted that the sampling for the Environmental Effects Monitoring (EEM) program successfully took place at the end of August and was completed during the first week of September as required under the MMER and Schedule 5 EEM Studies.

Agnico Eagle also noted that the Vault discharge to Wally Lake became subject to the Metal Mines Effluent Regulations (MMER) in June 2013 during the dewatering of Vault Lake. In 2015, the TSS removal water treatment plant was not required as the contact water from the Vault attenuation pond was compliant with section 4 (1) of the of the MMER regulation as well as the Type "A" Water license criteria for TSS. Discharge monitoring samples were collected weekly and acute toxicity was sampled monthly. Under the EEM program sub-lethal toxicity samples were required at the Vault Lake Attenuation Pond Discharge into Wally Lake, which were collected in July and August of 2015 by Agnico Eagle. The CREMP results for Wally

Lake revealed that Wally Lake has not been impacted by mining activity and all results complied with the Water License Part F, Item 4 for effluent quality limits as well as MMER criteria

Agnico Eagle further noted that the East Dike Seepage Discharge became subject to the MMER in January 2014. In 2015, there were two (2) seepage collection points (North and South) on the west side of the East dike, which collect Second Portage Lake seepage. In 2015, all results were compliant with Water License Part F, Item 6 for TSS and MMER criteria.

2.3. EFFECTS MONITORING

Effects monitoring can be described as an assessment of the measurable change to a particular environmental or socio-economic component, as compared to the potential effects that were predicted to result from a proposed development. In the case of Meadowbank, impact predictions and mitigation measures were outlined and developed throughout the environmental review of the Project, and were recorded and presented through the Proponent's Final FEIS and other related documents.

On May 6, 2016 the NIRB also requested that regulatory authorities with jurisdiction and/or area of expertise for the Meadowbank Gold Mine project review Agnico Eagle's 2015 Annual Report and provide comments and information with respect to effects monitoring as required in Part D of Appendix D of the Meadowbank Project Certificate (NIRB 2011). Specifically, comments were requested regarding the following:

a) Whether the conclusions reached by Agnico Eagle in the 2015 Annual Report are valid;
b) Any areas of significance requiring further studies; and
c) Changes to the monitoring program, which may be required.

The following section provides the NIRB's review of the 2015 Annual Report and a *summary* of the comments received from parties.

2.3.1. NIRB's Review of Agnico Eagle's 2015 Annual Report

Appendix D of the Project Certificate provides an outline of the requirements for the Proponent's annual report for the Meadowbank Project. Particularly, the annual report should include a summary of the results from the PEAMP, including an analysis of the Project's impact upon the environment with reference to the predictions and environmental and socio-economic indicators referenced throughout the FEIS and the Final Hearing. As part of its PEAMP, Agnico Eagle provided a summary on how the current environmental and socio-economic effects of the Meadowbank mine site compare to the impacts as predicted in the FEIS for the following:

- Aquatic Environment
- Terrestrial and Wildlife Environment
- Noise
- Air Quality
- Permafrost

- Socio-economic

The NIRB reviewed these items as presented in Agnico Eagle's 2015 Annual Report summarized as follows:

2.3.1.1. **Aquatic Environment**

Agnico Eagle reported in the PEAMP section of the 2015 Annual Report that observed impacts to surface water quantity, surface water quality, and fish and fish habitat measured in 2015 appeared to have been within FEIS predictions, or if not were not expected to result in adverse environmental impacts.

Agnico Eagle noted within the 2015 Annual Report that the CREMP determined that there were some apparent mine-related changes in conventional parameters relative to baseline/reference conditions at one (1) or more near-field and mid-field areas. Agnico Eagle further noted that while these results represented mine-related changes, the observed concentrations were still relatively low and unlikely to adversely affect aquatic life. Agnico Eagle noted that these trends would need to be reviewed again in 2016. The NIRB observed that for the 2014 Annual Report, Agnico Eagle reported similar apparent mine-related changes and noted that follow-up studies were recommended and would be conducted in 2015. The 2015 Annual Report and the PEAMP section did not discuss these follow-up studies and what the potential source of the apparent mine-related changes were. However, the PEAMP, which summarizes the results of each underlying monitoring program, including the CREMP, did not detect any significant mine-related changes in the water quality that had the potential to cause risks to the aquatic environment. This statement appears to be in conflict with the discussion under Section 8.9 of the Annual Report.

Again, the PEAMP section of the 2015 Annual Report did not provide any discussions on the CREMP or Agnico Eagle programs and any discussion on the changes observed/detected at the aquatic stations. Agnico Eagle did not 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 is considering finding other near-field stations that could be used for baseline/reference conditions. A year-to-year comparison would provide a robust analysis and would have been useful to help identify trends in the data collected for the aquatic environment, specifically for the water quality and sediment quality data.

2.3.1.2. **Noise Quality Monitoring**

In its 2015 Annual Report, Agnico Eagle indicated that it increased noise monitoring to include two monitoring rounds due to high winds in the area interfering with the quantity of available valid data. Agnico Eagle reported that two equivalent sound levels exceeded day-time sound level of 55 A-weighted decibels (at station R5) and were likely a result of increased helicopter activities associated with exploration projects during the monitoring time period.

The PEAMP noted that in 2015, measured sound levels exceeded predicted sound levels only at station R5 on one (1) occasion. This was likely because FEIS predictions for noise did not

include helicopter activities at the exploration camp and the AWAR located adjacent to station R5 as noise sources in the modeling parameters. Therefore, Agnico Eagle concluded in its 2015 Annual Report that predicted noise levels for this location were not realistic based on actual site activities. The NIRB would like to point out that the noise model presented within the FEIS is expected to be a reasonable accurate basis for impact predictions. Agnico Eagle should consider updating the model predictions to identify any issues with the previous model and to further provide information whether the impacts previously assessed in the FEIS have significantly changed. This should provide further clarity to parties whether or not impacts from noise are being observed at the mine site.

2.3.1.3. **Air Quality Monitoring**

Dustfall Monitoring along the AWAR

Similar to the 2014 dustfall monitoring, the 2015 study conducted by Agnico Eagle aimed to characterize dust deposition rates with respect to distance from the Meadowbank AWAR in order to determine the potential for impacts to habitat in excess of those predicted in the FEIS. The study also included dustfall measurements along the proposed Amaruq road to obtain measurements of background dustfall and to act as a reference for the AWAR. The results to date from the dust fall monitoring indicate that more than a 50% reduction in average total dustfall is occurring from 25 metre (m) to 100 m on the downwind (most impacted) side of the road, indicating that the majority of dustfall settle within 100 m zone as predicted in the FEIS. Further, it was noted that the average rates of dustfall decline below Alberta Environment's guideline for recreational areas within 100 m of the AWAR. Agnico Eagle noted that based on these results, it is unlikely that FEIS predictions are being exceeded and that impacts to VECs (vegetation community productivity and wildlife) due to dust are occurring beyond the smallest assumed zone of influence (100 m). Wildlife monitoring to date has indicated no significant road-related effects, dust monitoring has indicated no trend towards increasing rates of dustfall, and risk assessment has indicated no incremental risk for wildlife from chemical contaminants near the AWAR.

On-site air and dust monitoring

Agnico Eagle reported that there appeared to be no apparent trends towards increasing air quality concerns at the Meadowbank site but noted that 4 out of 228 suspended particulate samples collected exceeded impact predictions in 2015. No discussion was provided in comparison to historical data making it difficult to determine if a trend is or is not being observed in the air quality monitored around the Meadowbank site.

Incinerator

In its 2015 Annual Report, Agnico Eagle indicated the that the Daily Report Logbook entries for the incinerator operation were available for every month in 2015 with the exception of December, in which a few days of the secondary chamber temperatures are missing in the logbook. Agnico Eagle further noted that approximately 60% of the material incinerated was food waste; the other 40% was dry waste comprised of food containers, cardboard boxes, paper, and absorbent rags.

In the review of the available 2015 Incinerator Daily Report Logbook (Agnico Eagle 2016c), the NIRB notes that the incinerator temperature in the secondary chamber was below the recommended 1000ºC temperature on a few occasions in January 2015 and was below the recommended temperature on August 22nd and November 24th. The NIRB notes that the maintenance work conducted at the incinerator in 2014 and 2015 appeared to be effective in improving efficiency of the unit with the temperatures staying above the recommended 1000ºC temperature as required by Environment and Climate Change Canada. Agnico Eagle noted in its report that it would continue to monitor temperatures in the secondary chamber.

As noted by the Board in its review of the 2014 Annual Report, stack testing of the incinerator completed in July 2014 by Agnico Eagle indicated non-conformance during the testing with mercury levels exceeded the Canadian Council of Ministers of the Environment (CCME) guideline for discharge of dioxins and furans (see Section 2.2.2.1 for the Board's previous recommendation). Laboratory testing confirmed the stack testing results. In response, Agnico Eagle conducted confirmatory stack testing in the summer of 2015 and implemented a comprehensive site wide information program to reinforce the requirements of the battery recycling program. The results from the 2015 test indicated that the mercury levels were well below Environment and Climate Change Canada's guideline which was similar to results obtained in 2012 (Agnico Eagle 2016d). Agnico Eagle noted in the report that it is of the opinion that the actions taken were effective at addressing high mercury levels in stack testing, and it will continue its efforts to ensure batteries used on site are recycled adequately, Further, confirmatory stack testing was to take place again in 2016.

In addition to stack testing, Agnico Eagle conducted ash sampling from the incinerator on a quarterly basis in 2015, which was an increase from the previous once per year sampling frequency. The results from quarterly testing indicated no exceedance of the GN Environmental Guidelines for Industrial Discharge. However, the NIRB notes that chromium was not tested for in April 2015. The testing of chromium is important as it could indicate sources of non-combustible materials that are not allowed to be incinerated.

2.3.1.4. **Wildlife Monitoring**

Hunter Harvest Study (Condition 54)

Agnico Eagle noted that the Hunter Harvest Study participants rates declined in 2015 (35 respondents compared to the 46 participants in 2014). In addition, the reported number of caribou harvested in 2015 was slightly higher than in 2014 with the number of caribou harvested in 2015 being reported as 304 versus 269 reported caribou harvested in 2014. Agnico Eagle also noted that in 2015, 54% of all reported caribou harvested were within five (5) km of the AWAR, which was higher than the average of 40% since the study began. However, Agnico Eagle noted the threshold level of 20% change in hunting patterns within the regional study area has not been exceeded.

As noted previously in Section 2.2.2.1 of this report, Agnico Eagle has suspended the Hunter Harvest Study in 2016 due to participant fatigue. Agnico Eagle committed to consulting with the Baker Lake HTO and the GN representatives to discuss the findings of the study to date, explore other options for collecting hunting and fishing data in the Baker Lake area, and

facilitate greater involvement of the local community, including the HTO, in future years of the study. Further, Agnico Eagle noted that lower participant rates and reduced data made it increasingly difficult to determine hunting patterns in the Baker Lake area and along the AWAR, and to answer fundamental questions on the effect of the mine on regional caribou populations.

Creel Survey (Condition 51)

Agnico Eagle's results of the creel surveys as presented within its 2015 Annual Report indicated that the number of participants from whom creel results were collected had dramatically decreased in 2014 (nine participants), but increased again in 2015 (sixteen participants). However, the participation rate was still considered average to low. Agnico Eagle noted that this was likely a reflection of participant fatigue and declining response rate, given the length of time the study has been ongoing.

Agnico Eagle noted that the total fish catch increased slightly in 2015, as would be expected with the small increase in participation observed from 2014 records. In previous years, a comparable summer and winter peak in fish catch was observed; however, summer fish harvest in 2014 and 2015 was much lower than winter harvest. It was further noted that fishing trips, regardless of relative success rate, did not generally venture beyond the immediate areas of Baker Lake, Whitehills Lake, and along the AWAR. Some fishing effort was observed north of Whitehills Lake in 2015, which was not observed in 2014. However, results generally indicated that study participants were less willing to travel long distances to catch fish, regardless of the AWAR access, which is likely due to the abundance of fish in close proximity to the Hamlet of Baker Lake.

2.3.2. Effects Monitoring by Regulatory Authorities

2.3.2.1. **Summary of Agnico Eagle's response to comments received by Parties**

It is noted that Agnico Eagle provided a response to parties' comments on the 2014 Annual Report in December 11, 2015. Comments were received from Government of Nunavut, Aboriginal Affairs and Northern Development Canada (now INAC), DFO, Environment Canada (now ECCC), and Transport Canada, on or before July 3, 2015.

The NIRB will again provide Agnico Eagle with an opportunity to respond to comments received by parties on Agnico Eagle's 2015 Annual Report following the Board's 2016 October board meeting.

2.3.2.2. **Government of Nunavut**

Within its submission commenting on Agnico Eagle's 2015 Annual Report, the GN commented on the AWAR ground surveys for wildlife monitoring. The GN indicated that the road survey design as described in the 2015 Wildlife Monitoring Summary Report was not adequate as having the driver function as the second wildlife observer meant that one side of the road would not have the same level of survey detail as the other side. For safety reasons the driver tend to be distracted from the task of the survey and if two passes were to be undertaken to allow the

passenger to observe both sides of the road, the first pass would influence the results of the second pass. The GN recommended that the survey design be updated to include two wildlife observers to ensure to ensure that each side of the road is observed with an adequate amount of attention. The GN further recommended that Agnico Eagle consider the implementation of additional monitoring methods 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. It is noted that the recommendation to update the survey design for the AWAR was also brought up by the GN during its review of the Proponent's previous 2014 Annual Report.

The GN also noted that the presence of foxes on the project site, as reported in the wildlife report, was an indication that foxes are finding food resources at the mine site. The GN indicated that pursuant to term and condition 25 of the Project Certificate, the Proponent is required to control waste in a manner that reduces or eliminates the attraction of carnivores. The GN recommended that Agnico Eagle should consider treating incidents involving abnormal aggression by Arctic foxes as a public health concern. The GN further noted that foxes euthanized or found dead on the project site should have samples sent for rabies testing if possible. Finally, the GN recommended that the Proponent re-evaluate its garbage storage and disposal practices in the areas that it is having consistent fox sightings.

The GN commented on Agnico Eagle's AWAR dustfall study and noted that the collected data of dustfall levels had an exceedingly high relative percent difference, which could result in the accuracy of the data being called into question. The GN recommended that Agnico Eagle should consider including a more comprehensive explanation of their dust sampling and collection methods, including a more detailed discussion of potential contamination error, and alternatives including alternative sampling methods if contamination errors persist. The GN further requested that Agnico Eagle should include in follow up a detailed explanation of any sources of error with respect to this data collection method should they be found through their investigation.

The GN reviewed Agnico Eagle's 2015 Hunter Harvest Study and requested clarification on the calculation of threshold of change and to confirm that the threshold of change of 20% of historical harvest activities within the RSA had not been exceeded.

2.3.2.3. **Environment and Climate Change Canada**

ECCC noted that the updated Mine Waste Rock and Tailings Management Report and Plan indicated that the Meadowbank site would remain within the zone of continuous permafrost over the next 50 years but the active layer thickness would be expected to increase, and the total thickness of permafrost may slowly reduce in time. ECCC requested clarification on whether Agnico Eagle had a proposed mitigation plan to mitigate a possible effect on the ability of permafrost to encapsulate potentially acid generating rock, if warming in the north increases as projected within the plan. ECCC noted that the possible increase of the thickness of the active layer could mean increased flow through the active layer and perhaps water contact with PAG material.

ECCC reminded Agnico Eagle that any runoff or seepage that collects in the operation area should be treated as effluent and not allowed to drain into the environment without proper treatment as effluent is defined under the MMER to include runoff and seepage.

ECCC further noted that in review of the Incinerator Waste Management Plan, it was not clear if 'organic matter' included sewage and recommended the Proponent indicate what waste type category sewage is captured under and clarify whether sewage was incinerated during the stack tests. ECCC also requested clarification on what is included in 'solid hydrocarbon waste' that is referenced in the Incinerator Daily Report Log Book. Further, from the review of the Incinerator Daily Report Log Book from June 2015 and from the Incinerator Stack Testing results, ECCC noted that it appeared that there was an exponential increase in the stack test results for dioxin and furans (PCDD/F) emissions with volume of waste incinerated. ECCC recommended that the stack tests be conducted with the maximum waste capacity of the incineration and with typical waste composition.

2.3.2.4. **Fisheries and Oceans Canada (DFO)**

In its submission with respect to whether the conclusions raised by Agnico Eagle in the 2015 Annual Report are valid, DFO noted that it did not amend conditions 4.3, 5.2.2 or 5.3 of the DFO authorization amendment process, which all pertain to the monitoring of the HADD sites at Meadowbank.

With respect to any areas of significance requiring further studies, DFO requested that Agnico Eagle provide an estimate of the approximate time frame of when the pit water quality treatment for copper, silver, selenium, and total nitrogen would achieve water quality within CCME guidance and would be suitable for the introduction of fish. Any updates to the schedule of the Habitat Compensation Monitoring Plan should be reflective of this time frame.

With respect to changes to monitoring programs, DFO is currently reviewing Agnico Eagle's recently submitted updated Habitat Compensation Monitoring Plan and noted that it will be providing comments shortly. At the time of writing this report, no comments were received by the NIRB.

2.3.2.5. **Indigenous and Northern Affairs Canada**

In the review of the annual report, INAC noted that many of the supplementary documentation that is provides as part of its annual report often contained recommendations to the operator to help improve site management. However, INAC noted that it was difficult to determine if the recommendations were implemented. INAC recommended that Agnico Eagle include, within the annual report, a tracking table that captures recommendations from all parties and report on the implementation of these recommendations. INAC recommended the table include the following information:

- Whether a recommendation was adopted or not;
- How it was implemented;
- The rationale as to why a recommendation was not considered; and

- Track the information from year-to-year to ensure any recommendations deferred would be addressed in the following year's annual report.

INAC provided examples of recommendations that could not be tracked within its correspondence including the *2015 Annual Geotechnical Inspection Report* and the *Meadowbank Dike Review Board Reports*.

INAC noted that Agnico Eagle should be reporting all on-site seepage including where there is an indication of potential seepage as required by the NWB Water Licence. As an example, INAC referred to the ponding that was observed at Saddle Dam 2 and the recommendation within the *2015 Annual Geotechnical Inspection Report* to determine whether the seepage was from the Tailings Storage Facility.

INAC noted that the piezometers used to collect data relating to groundwater flow to assist in monitoring the integrity of dikes and dams was reported to freeze-up. INAC indicated that it is important to record occurrences of piezometer freeze-up as data generated are not reliable. INAC further recommended that Agnico Eagle report data gaps generated by frozen or malfunctioning piezometers or any other monitoring equipment. INAC recommended that Agnico Eagle propose mechanisms to replace faulty equipment or prevent future damage to these instruments with a discussion on the implications of incomplete or inaccurate data on monitoring programs.

Within its comment submission, INAC noted that it was unclear from the reports submitted whether repairs have been performed annually on the culverts that was installed on the road to the Vault Pit or whether the culverts have remained damaged since the initial geotechnical inspection report from 2013. INAC recommended that Agnico Eagle report on the repairs made to drainage infrastructure and to remain diligent in ensuring adequate site water management.

INAC indicated that the comparison of predicted water quantity and quality values were only compared to the 2015 measured values and suggested that a comparison to the originally predicted values and year over year comparison would have provided a robust analysis and would have assisted in identifying trends in the water quantity and quality data.

2.3.3. Areas Requiring Further Study or Changes to the Monitoring Program

2.3.3.1. **Appendix D and the Annual Report**

The NIRB notes that Agnico Eagle's 2015 Annual Report provided a detailed analysis of results from its 2015 monitoring program and that it compared observed impacts noted in 2015 to predictions made within the FEIS. Agnico Eagle's evaluation focused on the VECs that had been identified in the FEIS, including the aquatic environment, the terrestrial and wildlife environment, noise quality, air quality, permafrost and socio-economics. The NIRB acknowledges that Agnico Eagle has worked to improve upon its reporting of findings within its PEAMP and notes the general clarity of the presentation of information in its tables of potential impacts, potential cause(s), proposed monitoring, monitoring conducted for the year, predicted values and measured values/observed impacts. However, the NIRB found that the discussion and analysis within the PEAMP could be expanded upon especially to trends that may be

observed. The overall lack of reference to baseline data or to data from previous years makes it difficult to quantify or measure the relevant effects of the project. While comparison between monitoring as proposed in the FEIS and monitoring undertaken in 2015 was helpful, rationale for why these were different was not always clearly presented. The NIRB also found that some of the sections within the PEAMP provided more clarity than others; a consistent approach across VECs would be helpful in future annual reporting.

2.4. SITE VISIT

Based on the observations made during this site visit, all Meadowbank facilities in operation and all sites currently under construction continue to appear to be well managed, and generally are maintained with adequate environmental protection measures and procedures in place. Details provided by Agnico Eagle during the site visit provided the Monitoring Officer with additional information regarding the company's continued efforts to address ongoing water and waste management issues observed at the site.

As with years past, Agnico Eagle appears to be in compliance with a majority of the terms and conditions contained within the Meadowbank Project Certificate [No. 004]; however, there may be certain situations in which the Proponent has not yet fully met the requirements of the Project Certificate and which require further consideration and attention.

The Monitoring Officer noted that the landfarm and hydrocarbon remediation program undertaken in 2012 appeared to have been successful in treating hydrocarbon contaminated soil as noted by Agnico Eagle staff. This technique is used to treat all of Agnico Eagle's hydrocarbon contaminated soils at the Meadowbank site.

Regarding Condition 8, only one groundwater well appeared to be operational during the 2016 site visit. Agnico Eagle was unable to use production wells instead of groundwater wells to assess existing groundwater conditions, which was previously proposed as an alternative method to sample existing groundwater conditions.

The Monitoring Officer observed the instances of seepage containing potentially hazardous compounds occurring at the Portage waste rock storage facility and at the Assay laboratory that occurred in 2013, and also noted that Agnico Eagle had implemented mitigation measures to contain and treat the water seepage in previous years and appears to be effective.

Condition 25 requires that the Proponent employ legal deterrents to deter carnivores and/or raptors from the Meadowbank site, while Condition 59 requires that the Proponent consult with Elders and the HTOs to design and implement deterrence measures to impede caribou from access to the tailings ponds. Agnico Eagle stated that wildlife (including muskox, caribou, and birds) had been observed around the site and along the AWAR, and that migratory birds would use the tailings storage facility during the spring time. Wildlife tracks have been noted by the Monitoring Officer at the tailings storage facility during previous site visits which provide evidence that wildlife are accessing the tailings storage facility.

Condition 26 requires that spills be cleaned up immediately and that the site be kept clean of debris. There was no evidence of wind-blown material observed around the Meadowbank site and at the ancillary facilities in Baker Lake during the 2016 site visit.

Condition 27 requires that the Proponent use safe, environmentally protective methods at areas used to store fuel or hazardous materials. The Monitoring Officer observed that the fuel storage facilities appeared to be well maintained and properly set up for the re-fuelling of vehicles.

Condition 74 requires that the Proponent employ environmentally protective techniques to suppress any surface dust. To date, only dust suppressants have been used at the mine site and along the access road between the Baker Lake facility and the gatehouse. The Proponent has not fully met the requirements of Condition 74, as dust suppression techniques were not being applied along the AWAR from Baker Lake to the mine site. It is noted that the Proponent has initiated a dust sampling program along the road in 2012 to monitor dust deposition on vegetation along the road. Further, the Proponent has implemented additional studies in 2016 to determine the most effective protective techniques to suppress surface dust from vehicles. Results from the ongoing studies viewed during the site visit and results would be provided in Agnico Eagle's future annual report.

The complete site visit report can be found in Appendix I.

3.0 SUMMARY

The Meadowbank Gold Mine began commercial production in March 2010 and is now in its sixth year of operations. The Proponent appears to be in compliance with the majority of the terms and conditions contained within the Meadowbank Project Certificate, and is generally meeting the objectives of monitoring and mitigation plans and procedures put in place for the Project. However, certain outstanding issues will require the Proponent's attention as discussed throughout this report. These items are addressed in the Board's recommendations provided to the Proponent under separate cover.

Pursuant to NLCA Sections 12.7.2 and 12.7.3, the NIRB will continue to work with Agnico Eagle and other agencies in order to provide the required evaluation of monitoring efforts, results and compliance as outlined within the Board's project-specific monitoring program and in accordance with the requirements set out in the Meadowbank Project Certificate.

Prepared by:	Sophia Granchinho, EP
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Date:	October 26, 2016
Signature:	

Reviewed by:	Kelli Gillard, P.Ag.
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Date:	October 26, 2016
Signature:	

Reviewed by:	Tara Arko
Title:	Director, Technical Services
Date:	October 26, 2016
Signature:	

REFERENCES

Agnico Eagle (Agnico Eagle Mines Ltd). 2014a. *Meadowbank Gold Project 2013 Annual Report.* Prepared by Agnico Eagle Mines Limited – Meadowbank Division. April 2014.

Agnico Eagle (Agnico Eagle Mines Ltd). 2014b. *Appendix I Meadowbank Transportation Management Plan - AWPAR.* Prepared by Agnico Eagle Mines Limited – Meadowbank Division. March 2014.

Agnico Eagle (Agnico Eagle Mines Ltd). 2015. *Meadowbank Mine Mineral Reserve and Resource Data*. December 2015. Available at: http://www.agnicoeagle.com/en/Operations/Northern-Operations/Meadowbank/Pages/default.aspx. Last accessed September 28, 2016.

Agnico Eagle (Agnico Eagle Mines Ltd). 2016a. *Meadowbank Gold Project 2015 Annual Report.* Prepared by Agnico Eagle Mines Limited – Meadowbank Division. April 2016.

Agnico Eagle (Agnico Eagle Mines Ltd). 2016b. *Appendix A2 Annual Report Amaruq Exploration Access Road*. Prepared by Agnico Eagle Mines Limited – Meadowbank Division. April 2016.

Agnico Eagle (Agnico Eagle Mines Ltd). 2016c. *Appendix E2 Incinerator Daily Report Log Book*. Prepared by Agnico Eagle Mines Limited – Meadowbank Division. April 2016.

Agnico Eagle (Agnico Eagle Mines Ltd). 2016d. *Appendix E4 2015 Incinerator Stack Testing Report*. Prepared by Agnico Eagle Mines Limited – Meadowbank Division. April 2016.

NIRB (Nunavut Impact Review Board). 2006. *Final Hearing Report for the Meadowbank Gold Project*. Prepared by the Nunavut Impact Review Board for the Meadowbank Gold Mine Application, Cumberland Resources Inc. August 2006.

NIRB (Nunavut Impact Review Board). 2009. *In the matter of an Application by Agnico-Eagle Mines Limited for the Mine development of the Meadowbank Gold Mine Project Proposal in the Kivalliq Region of Nunavut, Project Certificate NIRB [No. 004]*. Prepared by the Nunavut Impact Review Board for the Meadowbank Gold Mine Project. Original issued December 2006. Amendment issued November 2009.

NIRB (Nunavut Impact Review Board). 2011. *Appendix D – Meadowbank Monitoring Program*. Prepared by the Nunavut Impact Review Board for the Meadowbank Gold Mine Project in accordance with the Project Certificate [004]. July 2011.

NIRB (Nunavut Impact Review Board). 2015. *The Nunavut Impact Review Board's 2014-2015 Annual Report for the Meadowbank Gold Project and Board Recommendations*. Prepared by the Nunavut Impact Review Board for the Meadowbank Gold Mine Project. October 2015.

NIRB (Nunavut Impact Review Board). 2016. *In the matter of an application by Agnico Eagle Mines Limited for the Mine Development of the Meadowbank Gold Mine Project Proposal in the Kivalliq Region of Nunavut, Project Certificate NIRB [No. 004]*. Prepared by the Nunavut Impact Review Board for the Meadowbank Gold Mine Project. Original issued December 2006. Second amendment issued August 2016.

Appendix I:
The NIRB's 2016 Meadowbank Site Visit Report

2016 Site Visit Report

for the NIRB's Monitoring of Agnico Eagle Mines Ltd.'s Meadowbank Gold Project

Nunavut Impact Review Board
File No. 03MN107
October 2016

Full Report Title:	2016 Site Visit Report for the Nunavut Impact Review Board's Monitoring of Agnico Eagle Mines Ltd.'s Meadowbank Gold Project (NIRB File No. 03MN107)
Project:	Meadowbank Gold Project
Project Location:	Kivalliq Region, Nunavut
Project Owner:	Agnico Eagle Mines Ltd. P.O. Box 540 Baker Lake, NU X0C 0A0
Proponent Contact:	Ryan Vanengen, Environment Superintendent – Nunavut Permitting and Regulatory Affairs
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Visit conducted by:	Sophia Granchinho, Manager, Impact Assessment
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	Kristina Benoit, Technical Advisor II Phone: (867) 983-4607; email: kbenoit@nirb.ca
Site visit date:	August 6-7, 2016
Last site visit:	September 6-7, 2015
Report prepared by:	Sophia Granchinho
Photos by:	Sophia Granchinho, Manager, Impact Assessment
Cover photos:	1) Inukshuk at front of Meadowbank Mine Site complex 2) Meadowbank Exploration Camp

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1 INTRODUCTION

The Nunavut Impact Review Board (NIRB or Board) was established through Articles 10 and 12 of the Nunavut Land Claims Agreement (NLCA) and is responsible for the assessment of ecosystemic and socio-economic impacts of projects in the Nunavut Settlement Area pursuant to the NLCA. The NIRB is responsible for post environmental assessment monitoring of projects in accordance with Part 7 of Article 12 of the NLCA.

This report provides the findings that resulted from the NIRB's site visit of the Meadowbank Gold Project that took place on August 6 to August 7, 2016 as part of the NIRB's monitoring program.

1.1 Objectives & Purpose of Site Visit

In December 2006, pursuant to Section 12.5.12 of the NLCA, the NIRB issued Project Certificate No. 004 for the Meadowbank Gold Project (the Project), allowing the Project to proceed in accordance with the Terms and Conditions issued therein. In November 2009, the NIRB formally amended the Project Certificate [No. 004] to include an amendment to Condition 32 pursuant to NLCA 12.8.2 and an approval to change the name of the holder of the Project Certificate [No. 004] from Cumberland Resources Ltd. to Agnico Eagle Mines Ltd. (Agnico Eagle) (NIRB 2009). In August 2016, the NIRB formally amended the Project Certificate [No. 004] to include the Vault Pit Expansion Project proposal for the Project (NIRB 2016).

The objective of the NIRB's site visit was to determine whether, and to what extent, the land or resource use in question is being carried out within the predetermined terms and conditions of the NIRB's Meadowbank Gold Project Certificate [Section 12.7.2(b) of the NLCA].

The observations resulting from this site visit shall, wherever possible, be incorporated into the measurement of the relevant effects of the Project, provide the information necessary for agencies to enforce terms and conditions of land or resource use approvals, and will further be used to assess the accuracy of the predictions contained in the project impact statements in accordance with Section 12.7.2 of the NLCA.

1.2 Meadowbank Project Description

The Project involves the construction and operation of an open pit gold mine located in the Kivalliq Region of Nunavut, approximately 70 kilometres (km) north of the hamlet of Baker Lake on Inuit-owned surface lands. In its 2015 Annual Report (as required by Appendix D), Agnico Eagle indicated that Meadowbank had proven and probable gold reserves of 0.9 million ounces (Agnico Eagle 2015). Agnico Eagle further noted that due to operational changes and the decision to expand the Vault Pit resulted in the revised production guidance at Meadowbank with the expected forecast to close the mine in the third quarter of 2018, which is approximately a year longer than previously forecasted (Agnico Eagle 2015).

The mine site is comprised of a camp, airstrip, associated mining infrastructure and two (2) active open pits: the Portage and Vault pits. Mining activity stopped at Bay-Goose Pit in April 2015 as the ore was depleted and therefore no production occurred after April 2015. In addition

to the mining infrastructure and activities, ancillary Project infrastructure is located approximately 2 km east of the hamlet of Baker Lake and consists of barge unloading facilities, a laydown storage and marshalling area, a temporary laydown storage are for cyanide, a 60 million litre (ML) fuel tank farm, associated interconnecting roads and a 110 km all-weather private access road (AWAR) from the hamlet of Baker Lake to the Meadowbank mine site. Supplies are shipped from locations within Canada via sealift to Baker Lake where they are offloaded at Agnico Eagle's marshalling area and transported to the Meadowbank site via truck haul along the AWAR.

1.3 Preparations for the Site Visit

The NIRB's Monitoring Officer for the Meadowbank Gold Mine Project (the Monitoring Officer) reviewed the following items to prepare for the site visit: the Meadowbank Project Certificate, previous Site Visit Reports, Agnico Eagle's 2015 Annual Report and associated appendices as well as follow-up correspondence from the NIRB's 2015 site visit.

2 SITE VISIT

The 2016 site visit was conducted by Ms. Sophia Granchinho, NIRB's Monitoring Officer for the Meadowbank Project and Ms. Kristina Benoit, Technical Advisor II. In the morning of August 6, 2016 both Ms. Granchinho and Ms. Benoit were met by Mr. Robin Allard, Environmental Coordinator with Agnico Eagle, and driven first to the ancillary Project infrastructure, the Baker Lake bulk fuel storage facility/marshalling area. After viewing the ancillary Project infrastructure, Mr. Allard drove to the Meadowbank mine site. During the drive to the Meadowbank site, the tour stopped at the gatehouse, viewed three (3) quarry sites (quarry 5, 18 and 22), the two (2) snowmachine crossings (kilometre 10 and 82), the dust sampling canisters at kilometre 25, and the three (3) dust testing sites along the road (kilometre 10, 24 and 48), the bridge at kilometre 23. Once at site, the tour included the Vault Pit, part of the Amaruq road up to bridge #1, Vault waste rock facility, Wally Lake diffuser, Vault Pit Attenuation Pond, North Diversion ditch, exploration camp staging area, the emulsion plant and the dust and air quality monitoring station near the emulsion plant, fuel tank storage area, the incinerator, waste and hazardous materials storage area, waste rock facility, the landfill, landfarm remediation site, tailings storage facility, Central Dike, East Dike, active mine areas including Portage Pit B and Portage Pit E (also known as South Portage Pit), and Bay-Goose Pit. Ms. Granchinho, Ms. Benoit, and Mr. Allard also discussed the Meadowbank Project in general and specific items related to the Project Certificate. At the conclusion of the tour of the mine site, Ms. Granchinho, Ms. Benoit, and Mr. Allard met with Mr. Ryan Vanengen, Environment Superintendent to discuss the site tour.

The following morning, August 7, 2016, Ms. Granchinho and Ms. Benoit were met by Mr Vanengen to discuss the site visit, further issues related to environmental compliance, the proposed Whale Tail project and the proposed Amaruq ramp project. Afterwards, Mr. Vanengen drove Ms. Granchinho and Ms. Benoit to the hamlet of Baker Lake.

The site visit provided participants the opportunity to observe all major Project components as well as discuss relevant issues and items related to the Project.

2.1 General Observations

The following are general observations made during the site visit and do not pertain specifically to any particular terms or conditions of the Project Certificate:

a. The Monitoring Officer observed that the environmental emergency sea-cans containing booms, shovels, absorbent pads, and other miscellaneous spill response equipment were located at the Baker Lake laydown facility (see Photo 1). At the time of the site visit, a barge was at the Baker Lake dock facility and offloading equipment (see Photo 2 and Photo 3).

Photo 1: Secondary containment in place prior to fuel transfer at the Baker Lake laydown facility

Photo 2: Fuel Barge anchored off Baker Lake Facility

Photo 3: Barge at Baker Lake Facility

b. While travelling along the AWAR to and from the Meadowbank site and the hamlet of Baker Lake, the Monitoring Officer observed several species of wildlife, which included one (1) young fox, a large number of flocking geese, jaeger, cranes, arctic hare, muskox, and Peregrine falcon. An arctic fox with a dead sik-sik (arctic ground squirrel) was

observed at the Vault Pit during the site visit. Agnico Eagle staff stated that caribou, muskox, and wolves were observed occasionally along the AWAR.

c. While travelling along the AWAR, the Monitoring Officer noted that the road was extensively used by Baker Lake community members. On the return trip to Baker Lake a total of 15 all-terrain vehicles (ATV) were observed on or near the AWAR with the majority of the ATV's observed between kilometre 30 and kilometre 80 (see Photo 4).

Photo 4: ATV stopped along the AWAR to check-in

d. Two snowmachine crossings are located along the AWAR, one near km 8 and the second near km 82. There were no signs of extreme slopes or rocks along the side of the AWAR (see Photo 5 and Photo 6).

Photo 5: Snowmachine crossing near km 8

Photo 6: Snowmachine crossing near km 82

e. Environmental emergency sea-cans were located at all bridge crossings (see Photo 7).

Photo 7: Environmental emergency sea-can at one of the bridges

f. Agnico Eagle indicated that remediation is ongoing at Quarry 22 following storage of contaminated hydrocarbon soil in previous years at this quarry site (see Photo 8).

Photo 8: Quarry 22

g. While no blasting was conducted on the day of the site visit, active drilling was ongoing at Portage Pit (see Photo 9 and Photo 10) and Vault Pit (see Photo 11 and Photo 12). The Monitoring Officer was previously notified that mining at the Bay-Goose Pit had ended in early 2015 and the pit was allowed to fill in naturally with water (see Photo 13 and Photo 14).

Photo 9: View of Portage Pit from viewpoint

Photo 10: Portage Pit

Photo 11: Vault Lake in 2013

Photo 12: Vault Pit in 2016

Photo 13: Mining of the Bay-Goose Pit in 2013

Photo 14: Bay-Goose Pit in 2016

h. Waste rock from Vault Pit was stored in the Vault waste rock storage facility (see Photo 15 and Photo 16). Agnico Eagle staff stated that waste rock from the Vault Pit has been tested to be non-potentially acid forming (NPAG rock). The NPAG rock is stored in the Vault marginal stockpile (see Photo 17) to be re-used on-site.

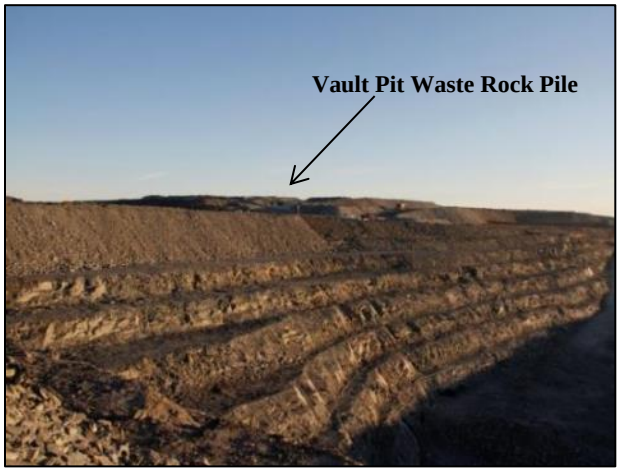

Photo 15: Vault Pit waste rock storage facility in 2015

Photo 16: Vault Pit waste rock storage facility in 2016

Photo 17: Vault Pit marginal stockpile in 2015

i. While at the landfarm site, Mr. Allard described Agnico Eagle's remediation program, which commenced in 2013. The remediation program at the Meadowbank site uses on-site nutrients (sewage sludge) to initiate biodegradation of all contaminated hydrocarbon soil on site and Mr. Allard noted that the program appears to be successful in remediating hydrocarbons (see Photo 18).

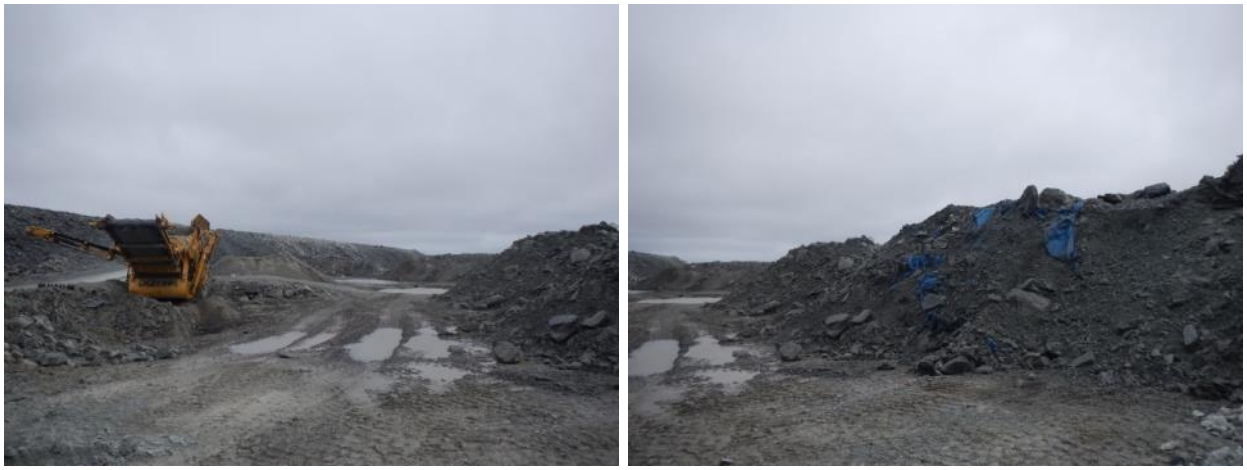

Photo 18: Contaminated soil remediation site (landfarm)

j. The Monitoring Officer also observed Phaser Lake and the recently approved development areas for Phaser and BB Phaser pits that constitute part of the Vault Pit Expansion project approved in August 2016 under Section 12.8.2 of the NLCA (see Photo 19).

Photo 19: Area of proposed development of Phaser and BB Phaser pits

k. The NIRB staff were driven along the newly constructed Amaruq road to bridge #1. Mr. Allard indicated that the road is not complete; as the construction equipment was needed for the Vault Pit mine (see Photo 20).

Photo 20: Bridge #1 along the Amaruq single-lane road

2.2 Observations based on NIRB's Project Certificate [No. 004]

Sections 2.2.1 through 2.2.6 relate to those sections of the Meadowbank Project Certificate as indicated, with specific terms and conditions providing a basis for the noted observations.

2.2.1 Water Quality and Waste Management

Condition 8

> *"…At the time samples are taken Cumberland shall also assess the condition of existing groundwater monitoring wells and replace any defective wells. Cumberland shall continue to undertake semi-annual groundwater samples and re-evaluate the groundwater quality after each sample collection…"*

At the time of the site visit, only one (1) groundwater monitoring well was operational: MW 08-03 (see Photo 21). Mr. Allard noted that well number MW 14-01, which was operational in 2015, was pinched two weeks prior to the site visit. Both wells were successfully sampled in 2015.

Agnico Eagle also noted that they would continue to monitor the production wells for opportunities to collect groundwater samples but to date the results indicate surface water influence and are not consider reliable source of groundwater samples at this time.

Photo 21: Groundwater monitoring well MW-08-03.

In 2013, Agnico Eagle noted seepage from the Portage waste rock storage facility for potentially acid generating rock (which has a high sulphur content, heavy metals and other contaminants) at a location near the south shore of a fish bearing lake (referred to as North Pole 2 or NP-2 lake) (see Photo 22). Agnico Eagle staff stated monitoring of the seepage is ongoing during the open

water season and that accumulated water is pumped directly back to the North Cell tailings storage facility.

Photo 22: Seepage from the Portage waste rock storage facility

In 2013, Agnico Eagle discovered water seeping through the road in front of the Assay laboratory towards Third Portage Lake where cyanide destruction in tailings occurred (see Photo 23). Following investigation, Agnico Eagle determined that the seepage was coming from the process plant, specifically leakage from containment structures due to the test results of the water that indicated levels of cyanide, iron, and copper.

Photo 23: Assay Laboratory

In April 2014 a trench was constructed to intercept any potential water seepage during freshet and pumped back to the mill (see Photo 24). Mr. Allard stated during the site visit that following repairs and sealing of the containment structures within the mill, seepage had diminished, the volumes of water pumped had decreased and no levels of cyanide, iron, and copper were

detected within the tested water. However, to be safe, water from the trench continues to be pumped back for use at the mill.

Photo 24: Trench below Assay Laboratory to prevent water from entering lake

Condition 18

> *"Cumberland shall commit to a pro-active tailings management strategy through active monitoring, inspection, and mitigation. The tailings management strategy will include the review and evaluation of any future changes to the rate of global warming, compliance with regulatory changes, and the ongoing review and evaluation of relevant technology developments, and will respond to studies conducted during mine operation."*

When viewing the tailings storage facility (North Cell), the Monitoring Officer observed the thermistors, installed in 2012 to measure freezeback (see Photo 25), and did not observe any apparent rips in the exposed lining of Saddle dams 1 and 2 or at the Stormwater Dike (see Photo 26).

Photo 25: Tailings Storage Facility (North Cell)

Photo 26: Stormwater Dike

Further, it was noted by Agnico Eagle staff that tailings were being deposited into the South Cell of the tailings facility (see Photo 27). The construction of the different phases of the Central Dike and Saddle Dams were ongoing during the site visit (see Photo 28).

Photo 27: Tailings Storage Facility (South Cell)

Photo 28: Raising the height of Saddle Dam 3

Condition 25

> *"Cumberland shall manage and control waste in a manner that reduces or eliminates the attraction to carnivores and/or raptors. Cumberland shall employ legal deterrents to carnivores and/or raptors at all landfill and waste storage areas…incorporated into the final Waste Management Plan."*

As per previous NIRB site visits, the Monitoring Officer noted during the 2016 site visit that Agnico Eagle continues to segregate and store all domestic, hazardous, and combustible wastes in marked sea-cans prior to these materials being incinerated or shipped to the appropriate and approved off-site disposal facilities (see Photo 29).

Photo 29: Sea-cans used for waste segregation and storage area

In 2014, Agnico Eagle started a pallet recycling program where pallets not needed at site are transported in sea-cans to the high school in Baker Lake for use as building materials in the woodshop. In 2015, a total of six (6) sea-cans full of pallets were transported to the school. Any

additional wood that was not used by the school was then donated to community members for personal use (see Photo 30 of the Meadowbank landfill).

Agnico Eagle stated that the landfill is frequently inspected by employees to ward off any wildlife that may be present.

Photo 30: Landfill at Meadowbank mine site in 2016

Mr. Allard noted during the trip to the site that active Peregrine Falcon nests were observed within various quarry sites along the access road in 2016 with some nest being successful. During the trip to and from the site on the AWAR, Peregrine Falcons were observed at two (2) different quarry sites.

Photo 31: Peregrine Falcon at Quarry #19

Condition 26

"Cumberland shall ensure that spills, if any, are cleaned up immediately and that the site is kept clean of debris, including wind-blown debris."

During the 2016 visit to the Meadowbank site, the Monitoring Officer observed that all areas were kept in a clean state, with no obvious spills. There was no evidence of wind-blown material viewed around the Meadowbank site and at the ancillary facilities in Baker Lake (see Photo 32).

Photo 32: Meadowbank Mine Site

Condition 27

> *"Cumberland shall ensure that the areas used to store fuel or hazardous materials are contained using safe, environmentally protective methods based on practical, best engineering practices."*

During the 2016 site visit, the Monitoring Officer noted that fuel and hazardous materials associated with Agnico Eagle's Meadowbank project appeared to be stored in a safe and environmentally protective manner (see Photo 33 to Photo 35). Any observed water in the containment berms had no visible sheen on the water or discernable hydrocarbon odours at either the Baker Lake or the Meadowbank site fuel facilities (see Photo 36).

Photo 33: Baker Lake Fuel Tank Farm Facility

Photo 34: Baker Lake Aviation Fuel Tank Farm

Photo 35: Meadowbank Fuel Tank Farm Facility

Photo 36: Water within the Baker Lake Fuel Tank Farm containment berm

The Monitoring Officer observed exposed liner-type material at the Baker Lake fuel tank facility (see Photo 34 and Photo 36). As noted previously by Agnico Eagle staff, this was likely not the liner itself but the material layer above the geotextile liner.

During the 2014 site visit, the Monitoring Officer noted that spill pads or drip pans were not in use during refuelling of vehicles by the Meadowbank site employees. During the 2015 site visit, Mr. Pratt stated that drip pans are used during refuelling and spill containers were also located nearby any refuelling locations. These drip pans and spill containers were observed to be in place near the refuelling locations at the Baker Lake facility (see Photo 37).

Photo 37: Refuelling station at the Baker Lake Fuel Tank Farm with Spill Containers in place

2.2.2 All-Weather Private Access Road (AWPAR)

Amended **Condition 32**

"AEM shall operate the all-weather road as a private access road, and implement all such measures necessary to limit non-mine use of the road to authorized, safe and

controlled use by all-terrain vehicles for the purpose of carrying out traditional Inuit activities. The measures AEM shall undertake include, but are not limited to:

a. *Maintaining a gate and manned gatehouse at kilometre 5 of the Private Access Road;*
b. *In consultation with the Hamlet of Baker Lake, the local HTO, and the KivIA, update the All-Weather Private Access Road Management Plan to set out the criteria and processes to authorize and ensure safe and controlled non-mine use of the road by all-terrain vehicles for the purpose of carrying out traditional Inuit activities, and measure to limit all other non-mine use of the road. The updated Plan is to be submitted to the GN, INAC, and KivIA for approval no later than one (1) month after the approval of revised Condition 32;*
c. *The posting of signs in English and Inuktitut at the gate, each major bridge crossing, and each 10 kilometres of road, stating that unauthorized public use of the road is prohibited;*
d. *The posting of signs in English and Inuktitut along the road route to identify when entering or leaving crown land;*
e. *Prior to opening of the road, and annually thereafter, advertise and hold at least one community meeting in the Hamlet of Baker Lake to explain to the community that the road is a private road with non-mine use of the road limited to approved, safe and controlled use by all-terrain vehicle for the purpose of carrying out traditional Inuit activities;*
f. *Place notices at least quarterly on the radio and television to explain to the community that the road is a private road with non-mine use of the road limited to authorized, safe and controlled use by all-terrain vehicles for the purpose of carrying out traditional Inuit activities;*
g. *Record all authorized non-mine use of the road, and require all mine personnel using the road to monitor and report unauthorized non-mine use of the road, and collect and report this data to NIRB one (1) year after the road is opened and annually thereafter; and*
h. *Report all accidents or other safety incidents on the road, to the GN, KivIA, and the Hamlet immediately and to NIRB annually."*

Agnico Eagle maintains one (1) gatehouse at kilometre 5 of the access road, and second gatehouse at an appropriate distance from the entrance to the mine site and camp at Meadowbank. Only the gatehouse at kilometre 5 is manned by Agnico Eagle staff who monitors the safety and security of all personnel using the road. All traffic is required to check-in (via radio or in person) with the employee at the gatehouse prior to proceeding along the road (see Photo 38) from either the mine site or from Baker Lake. The Agnico Eagle employee manning the kilometre 5 gatehouse maintains a daily logbook of all persons travelling the access road for non-mine use, and members of the public travelling along the road are required to sign-off an indication of having read Agnico Eagle's *All Weather Private Access Road Safety Rules & Procedures for Road Access* policy prior to being granted access to the road (see Photo 39).

Photo 38: Gatehouse at kilometre 5, near Baker Lake

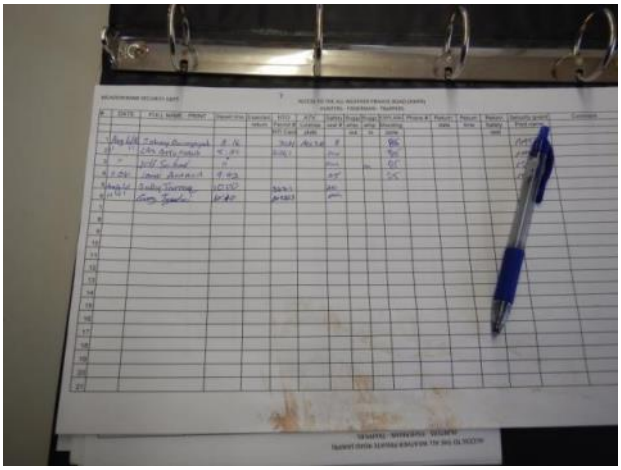

Photo 39: Gatehouse sign-in sheet

Road signs required as per Condition 32(c) were posted in both English and Inuktitut at the gatehouse (see Photo 40), at each major bridge crossing on the side of the environmental emergency sea-cans, and at 10 kilometre intervals along the AWAR.

Photo 40: Signs posted along the AWAR

2.2.3 Wildlife and Terrestrial

Condition 56

"Cumberland shall plan, construct, and operate the mine in such a way that caribou migration paths through the Project, including the narrows west of Helicopter Island are protected. Maps of caribou migration corridors shall be developed in consultation with Elders and local HTOs, including Chesterfield Inlet and placed in site offices and

upgraded as new information on corridors becomes available. Information on caribou migration corridors shall be reported to the GN, KivIA and NIRB's Monitoring Officer annually."

Condition 59

"Cumberland shall, in consultation with Elders and the HTOs, design and implement means of deterring caribou from the tailing ponds, such as temporary ribbon placement or Inukshuks, with such designs not to include the use of fencing."

The Monitoring Officer observed a map dated 2015 outlining caribou migration corridors posted on a bulletin board at the main camp (near the door to the gym). There were two (2) additional maps with no date from the Government of Nunavut on the bulletin board showing caribou migration routes.

As noted earlier in Section 2.1, only one (1) arctic fox was observed along the AWAR and none at the mine site.

2.2.4 Noise

Condition 62

"Cumberland shall develop and implement a noise abatement plan…will be developed in consultation with Elders, GN, HC, and EC and include:

a. The use of sound meters to monitor sound levels in and around the mine site, including workers' on-site living/sleeping quarters and any summer camps adjacent to the site, and in the local study area, with the locations and design of the sound meters selected in consultation with HC and EC. Sound meters are to be set up immediately upon issuance of the Project Certificate for the purpose of obtaining baseline data, and monitoring during and after operations;

b. …

c. Restrictions on blasting and drilling when migrating caribou, or sensitive local carnivores or birds may be affected;

d. …

e. …"

In 2016 there was no discussion on the noise monitoring program for the 2015/2016 year during the site visit. In previous years, Agnico Eagle stated that there are five locations that are monitored for noise each summer; the dominant mine noise sources being activities such as helicopter and other air traffic, the use of heavy equipment, and blasting during construction and operation.

2.2.5 Air Quality

Condition 71

"Cumberland shall, in consultation with EC, install and fund an atmospheric monitoring station to focus on particulates of concern generated at the mine site. The results of air-quality monitoring are to be reported annually to NIRB."

The NIRB staff viewed the air and partisol monitoring stations at the explosives storage area (emulsion plant) and at the northern corner of South Camp Island (see Photo 41). Agnico Eagle staff stated that both dustfall and partisol monitoring occurs year round (see Photo 42)

Photo 41: Air and partisol monitoring station near the emulsion station

Photo 42: Dustfall sampling station at the mine site (2015)

Condition 72

> *"On-site incinerators shall comply with Canadian Council of Ministers of Environment and Canada-Wide Standards for dioxins and furan emissions, and Canada-wide Standards for mercury emissions, and Cumberland shall conduct annual stack testing to demonstrate that the on-site incinerators are operating in compliance with these standards. The results of stack testing shall be contained in an annual monitoring report submitted to GN, EC, and NIRB's Monitoring Officer."*

The Meadowbank site dual chamber forced air incinerator remains in service for the combustion of all non-hazardous, combustible materials at the site (see Photo 43). During the site visit, Agnico Eagle noted ongoing education is required to ensure that wastes such as metal cans are not incinerated. As noted under Condition 25, ongoing education is required with site staff to ensure wastes are segregated appropriately.

Photo 43: Incinerator at Meadowbank mine

Mr. Allard informed the Monitoring Officer that Agnico Eagle protocol procedures were updated at the incinerator to ensure the incinerator temperatures in the secondary chamber reach 1000 ºC to ensure complete combustion and to minimize the formation and release of contaminants. Protocol updates included ensuring the first chamber reaches 700 ºC and new instruments were installed to monitor the temperature in both chambers on an ongoing basis to ensure the chambers do not drop below the required temperatures.

Condition 74

> *"Cumberland shall employ environmentally protective techniques to suppress any surface dust."*

As in previous years, Agnico Eagle staff noted that dust sampling stations were placed along the AWAR at various distances from both the east and west sides the road in two (2) duplicate transects (see Photo 44) to monitor dust deposition distance from the road. Dust canisters are placed 25, 50, 100, 150, 300, and 1000 metres away from the AWAR.

Photo 44: Dust Sampling Station

Mr. Allard also noted that Agnico Eagle is conducting additional studies along the AWAR to determine the most effective protective techniques to suppress surface dust from vehicles. Three (3) tests were being conducted, each of the tests is conducted on a two (2) km section of the AWAR. The products tested were TETRA flakes (calcium chloride) and Dust Stop (organic polymer), and finally testing of a reduction of speed from 50 km to 20 km (see Photo 45 to Photo 46). Along each of the three tests sites, Agnico Eagle installed additional dust sampling stations to determine the most effective protective techniques. In critical areas identified by the community of Baker Lake, Agnico Eagle is using dust suppression. Mr. Vanengen stated that dust suppressants were used along the road near Whitehill Lake.

Photo 45: Dust test study area number one located near km 10: use of TETRA flakes

Photo 46: Dust test study area number three located near km 48: use of Dust Stop

Photo 47: Dust test study area number two located near km 20: reduction of road speed

Agnico Eagle staff also indicated that calcium chloride flakes are applied to the mine access roads to suppress dust around the Meadowbank site and from the Baker Lake dock facility to the gatehouse.

2.2.6 Other

Condition 81

> *"Beginning with mobilization, and for the life of the Project, Cumberland shall provide full 24 hour security, including surveillance cameras and a security office at the Baker Lake storage facility/marshalling area, and take all necessary steps to ensure the safe and secure storage of any hazardous or explosive components within the Hamlet of Baker Lake boundaries."*

During the site visit to the Baker Lake bulk fuel storage facility/marshalling areas, the Monitoring Officer noted that a security office was located at the shore with Agnico Eagle employees on site. The Monitoring Officer observed that these areas were kept clean with sea-cans well organized during the 2016 site visit (see Photo 48). In addition, the 24 hour, 360º security camera was also focused on the cyanide storage facility, which is monitored by security at the site when cyanide is stored at the Baker Lake marshalling facility prior to shipment to the Meadowbank Mine site. The cyanide chemicals are transported within 72 hours of receipt in Baker Lake to the mine site as part of the requirements to be a signatory of and meet compliance with the International Cyanide Management Code (see Photo 49).

Photo 48: Bake Lake dock and laydown facility

Photo 49: Cyanide storage facility at Baker Lake (2015)

3 FINDINGS AND SUMMARY

Based on the observations made during this site visit, all Meadowbank facilities in operation and all sites currently under construction continue to appear to be well managed, and generally are maintained with adequate environmental protection measures and procedures in place. Details provided by Agnico Eagle during the site visit provided the Monitoring Officer with additional information regarding the company's continued efforts to address ongoing water and waste management issues observed at the site.

As with years past, Agnico Eagle appears to be in compliance with a majority of the terms and conditions contained within the Meadowbank Project Certificate [No. 004]; however, there may be certain situations in which the Proponent has not yet fully met the requirements of the Project Certificate and which require further consideration and attention.

The Monitoring Officer noted that the landfarm and hydrocarbon remediation program undertaken in 2012 appeared to have been successful in treating hydrocarbon contaminated soil as noted by Agnico Eagle staff. This technique is used to treat all of Agnico Eagle's hydrocarbon contaminated soils at the Meadowbank site.

Regarding Condition 8, only one groundwater well appeared to be operational during the 2016 site visit. Agnico Eagle was unable to use production wells instead of groundwater wells to assess existing groundwater conditions, which was previously proposed as an alternative method to sample existing groundwater conditions.

The Monitoring Officer observed the instances of seepage containing potentially hazardous compounds occurring at the Portage waste rock storage facility and at the Assay laboratory that occurred in 2013, and also noted that Agnico Eagle had implemented mitigation measures to contain and treat the water seepage in previous years and appears to be effective.

Condition 25 requires that the Proponent employ legal deterrents to deter carnivores and/or raptors from the Meadowbank site, while Condition 59 requires that the Proponent consult with Elders and the Hunters and Trappers Organization (HTOs) to design and implement deterrence measures to impede caribou from access to the tailings ponds. Agnico Eagle stated that wildlife (including muskox, caribou, and birds) had been observed around the site and along the AWAR, and that migratory birds would use the tailings storage facility during the spring time. Wildlife tracks have been noted by the Monitoring Officer at the tailings storage facility during previous site visits which provide evidence that wildlife are accessing the tailings storage facility.

Condition 26 requires that spills be cleaned up immediately and that the site be kept clean of debris. There was no evidence of wind-blown material observed around the Meadowbank site and at the ancillary facilities in Baker Lake during the 2016 site visit.

Condition 27 requires that the Proponent use safe, environmentally protective methods at areas used to store fuel or hazardous materials. The Monitoring Officer observed that the fuel storage facilities appeared to be well maintained and properly set up for the re-fuelling of vehicles.

Condition 74 requires that the Proponent employ environmentally protective techniques to suppress any surface dust. To date, only dust suppressants have been used at the mine site and along the access road between the Baker Lake facility and the gatehouse. The Proponent has not fully met the requirements of Condition 74, as dust suppression techniques were not being applied along the AWAR from Baker Lake to the mine site. It is noted that the Proponent has initiated a dust sampling program along the road in 2012 to monitor dust deposition on vegetation along the road. Further, the Proponent has implemented additional studies in 2016 to determine the most effective protective techniques to suppress surface dust from vehicles. Results from the ongoing studies viewed during the site visit and results would be provided in Agnico Eagle's future annual report.

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Date: October 7, 2016
Signature:

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Date: October 7, 2016
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Reviewed by: Tara Arko
Title: Director, Technical Services
Date: October 3, 2016
Signature:

NIRB File No. 03MN107

REFERENCES

Agnico Eagle (Agnico Eagle Mines Ltd). 2016. *Meadowbank Gold Project 2015 Annual Report.* Prepared by Agnico Eagle Mines Limited – Meadowbank Division. April 2016.

NIRB (Nunavut Impact Review Board). 2009. *In the matter of an Application by Agnico-Eagle Mines Limited for the Mine development of the Meadowbank Gold Mine Project Proposal in the Kivalliq Region of Nunavut, Project Certificate NIRB [No. 004]*. Prepared by the Nunavut Impact Review Board for the Meadowbank Gold Mine Project. Original issued December 2006. Amendment issued November 2009.

NIRB (Nunavut Impact Review Board). 2016. *In the matter of an application by Agnico Eagle Mines Limited for the Mine Development of the Meadowbank Gold Mine Project Proposal in the Kivalliq Region of Nunavut, Project Certificate NIRB [No. 004]*. Prepared by the Nunavut Impact Review Board for the Meadowbank Gold Mine Project. Original issued December 2006. Second amendment issued August 2016.

Appendix II:
Public Information Meeting Summary Report, August 8, 2016

Public Information Meeting Summary Report,

August 8, 2016

for the NIRB's Monitoring of
Agnico Eagle Mines Ltd.'s Meadowbank Gold Project

Nunavut Impact Review Board
File No. 03MN107
October 8, 2016

Full Report Title:	Public Information Meeting Summary Report, August 8, 2016. Created for the NIRB's Monitoring of Agnico Eagle Mines Ltd.'s Meadowbank Gold Mine Site (NIRB File No. 03MN107)
Report prepared by:	Sophia Granchinho, Manager, Impact Assessment
Contact:	Phone: (867) 857-2052; email sgranchinho@nirb.ca
Photos by:	Heather Rasmussen, Policy Analyst Sophia Granchinho, Manager, Impact Assessment
Cover photos:	1) Community Elders in Baker Lake (2015) 2) View of Meadowbank Mine Site (2014)

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APPENDICES

1 NIRB PUBLIC INFORMATION SESSION

1.1 Overview of Public Information Meeting

To ensure ongoing awareness of the Nunavut Impact Review Board (NIRB) process and to encourage effective participation throughout the monitoring process, the NIRB staff held an information session in Baker Lake on August 8, 2016. Through this information session, the NIRB provided an overview of the NIRB's monitoring programs pursuant to Section 12.7.2 of the Nunavut Land Claims Agreement, an update on the NIRB's Meadowbank Gold Project (the Project) monitoring program, and the ways in which the public can participate within the NIRB's monitoring process.

A summary of the comments and concerns related to the Project that were received from community members are categorized by the NIRB in Section 2 of this report. In addition to the NIRB staff, industry representatives, including representatives from Agnico Eagle Mines Ltd. (AEM), were also in attendance.

1.2 Setup of NIRB Public Information Meeting

The public information session was open to all members of the public with snacks and refreshments provided, and door prizes raffled at the end of the meeting. At the meeting, all in attendance were asked to sign in and identify the community or organization they represented (see Appendix A). To facilitate a better understanding of the monitoring of the Meadowbank Gold Mine, the NIRB gave a PowerPoint presentation at the meeting (see Appendix B) that included a discussion of the NIRB process, with a focus on the NIRB's monitoring programs, an update on the Meadowbank Gold Mine, including an overview of Project activities and key components, and events and/or issues identified through the project specific monitoring program.

The presentation concluded with a discussion as to how interested parties and community members could participate in the NIRB's processes. The presentation was shown in both English and Inuktitut, discussed in English, with simultaneous interpretation provided in Inuktitut. The public was encouraged to comment and ask questions relating to the NIRB's process, activities undertaken, project effects, and any concerns related to the Project and current proposals. Both written and verbal comments were accepted at the public information meeting, and verbal comments were recorded by the Proponent. The interpreter provided consecutive translations for the comments presented in Inuktitut.

Agnico Eagle also provided large scale up-to-date maps of the Meadowbank project, which were posted on the walls at the meeting venue.

1.3 Meeting Materials

At the public meeting, the following materials were provided by the NIRB:

- The NIRB's PowerPoint presentation (in English and Inuktitut)
- The Nunavut Land Claims Agreement (in English)
- NIRB Environment Assessment Brochures (in English and Inuktitut)

- The NIRB's 2014-2015 Annual Monitoring Report for AEM's Meadowbank Gold Project (in English)
- Meadowbank Gold Mine Project Certificate (in English)
- AEM's Meadowbank Gold Project 2015 Annual Report (in English)
- Comment Forms (in English and Inuktitut)

Copies of consultation materials, including the presentation, advertisements and sign-in sheet, can be obtained from the NIRB's online public registry at www.nirb.ca through the following criteria

- Project Name: Meadowbank Gold Project
- NIRB File No.: 03MN107
- Application No.: 124588

1.4 Agenda and Venues of Public Information Meeting

The NIRB staff scheduled the public meeting based on consultation with community organizations and travel requirements. The public meeting in Baker Lake was held on August 8, 2016.

1.5 Advertisements

Public notification is an essential tool used to engage the public in effective consultation. The NIRB utilized a number of notification methods to advertise the public information meeting held in Baker Lake. For a sample of all advertisements distributed by the NIRB, please see Appendix C.

Radio
Public service announcement in English and Inuktitut were distributed to the radio station in Baker Lake one week prior to the meeting.

Flyers
Prior to the NIRB visiting the community, local community members were requested to assist with placement of flyers around town, announcing the NIRB meeting in English and Inuktitut. Additionally, flyer placements were verified once staff arrived in each community. Additional posters were placed in key business and community locations if they were not present (e.g., Northern and Co-Op stores, Hamlet offices, Hotels, etc.).

Newspaper
Newspaper advertisements in both English and Inuktitut were printed in the *Kivalliq News* and the *Nunatsiaq News* newspapers two weeks prior to the start of the NIRB meeting.

Cable
Cable television advertisements in both English and Inuktitut were advertised on the local community cable channel one week prior to the start of the NIRB meeting.

2 MEETING NOTES FROM THE NIRB'S PUBLIC INFORMATION MEETING

The following is a list of the comments and concerns that were raised verbally at the public information session for the monitoring of the Meadowbank Gold project (no written comments were received). These comments will help to identify items that need to be addressed or considered throughout the monitoring process.

Please note that all comments have been grouped by topic.

General Comments

- A community member requested clarification on what is Inuit Owned Lands and which areas around the mine site are Inuit Owned Lands.
- Requested information on whether the NIRB will be hosting meetings in the future regarding the Amaruq project.
- Request made by a community member on whether the Meadowbank project could have a third party complete the reporting, as the report should be unbiased.
- Information requested on the number of monitoring officers at the NIRB.
- A community member wondered if the NIRB information on monitoring and the Agnico Eagle reports are available or provided to the Baker Lake community.

Dust

- A community member raised concerns regarding dust along the road and asked whether any changes to vegetation has been observed.
- A community member noted that arctic hare and siksik are attracted to calcium chloride and questioned whether Agnico Eagle could use another form of dust suppressant.

Aquatic Environment and Wildlife

- Concerns raised on the fish health and abundance and whether it is monitored at site.
- A community member requested information on whether studies on the health of animals and human harvesters considered or completed, and whether any dead animals encountered at site are tested for.

Accidents and Spills

- A community member raised the question on who would close the area if a spill were to occur. Would it be NIRB, the KIA or Agnico Eagle?

Monitoring

- A community member raised the question on how many months Agnico Eagle will monitor following closure of the mine site.

Photo 1: Community Meeting in Baker Lake

3 SUMMARY AND CONCLUSION

Community members from Baker Lake who attended the evening presentations related to the monitoring of the Meadowbank Gold Project raised questions, concerns and comments on the monitoring being conducted by the NIRB. The comments and concerns raised were related to dust suppression along the all-weather access road, the health of fish and wildlife, and the monitoring conducted at the site.

There was a general appreciation of the NIRB's process and community members noted that they appreciated the NIRB's presence within the community and to discuss the current proposals. However, community members noted that many of the regulators were not present including the Kivalliq Inuit Association, members from the hamlet and the Hunters and Trappers Organization.

The comments and concerns raised during the public information meeting will aid in the identification of items that need to be addressed or considered throughout the Meadowbank Gold Project monitoring program.

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Title: Director, Technical Services
Date: October 25, 2016

Signature: 

Appendix A: NIRB's Public Information Meeting Sign-in Sheets

Nunavut Impact Review Board
Agnico Eagle Mines Ltd.'s "Meadowbank Gold Project" Monitoring Program
Community Information Session

SIGN-IN SHEETS

Location: Baker Lake **Date:** August 8, 2016

Time: 6:30pm **Page No:** 1

Name (Please Print)	Organization or Community	Signature
Abner Kaluraq	Baker Lake NU	Akmansug aher kanayuk
MARY LAREAU	Baker Lake	[signature]
[illegible]	[illegible]	[signature]
RYAN VANENGEN	AEM	[signature]
Belinda Utatnaq	House keeping	Belinda Ut
Jamiya Ugayuittuq	Baker Lake N.U.	
Gavin	Baker Lake	
ᐅᓴᐃ	ᖃᒪᓂᑐᐊᖅ	
ᓚᑎᓇ	ᖃᒪᓂᑐᐊᖅ	
SAMSON OOKLAGA		
EVA ELYTOOK		
Thomas ELYTOOK	KIAROQ.	[signature]
Thomas Iksiraq		[signature]
STEVEN NIEGO		S. Niego.
Alexander Aloog	Baker Lake	[signature]
Victoria Amarook	Baker Lake	[signature]
Karen Yip	Baker Lake	[signature]
Josephine Oklaga	Baker Lake	Josephine O.
Martha Jorah	BL NU.	[signature]
David Peryouar	BL	

Nunavut Impact Review Board
Agnico Eagle Mines Ltd.'s "Meadowbank Gold Project" Monitoring Program
Community Information Session

SIGN-IN SHEETS

Location: Baker Lake **Date:** August 6, 2014

Time: 6:30 pm **Page No:** 2

Name (Please Print)	Organization or Community	Signature
William Memernalik	Baker Lake, Nu. Printmaker Artist	

Appendix B: NIRB's PowerPoint Presentation

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Nunavut Impact Review Board

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Update on the Meadowbank Gold Project Monitoring Program

ᐊᑎᕐᓯ 2016
August 2016

ᑭᑐᖅᑯᓂ ᐊᖏᑎᓕᕆᔨᒃᑯᓂ?
What is the Nunavut Impact Review Board?

ᓄᓇᕗᒻ ᐊᖏᑎᓕᕆᔨᒃᑯᓂ ᑲᑎᒪᔨᖏᑦᑕ ᑎᒥᖓᕇᖅᑎᑕᐅᔪᓕᕐᓗᓂ ᐃᓄᓗᓴᒃᑲᓂ ᒪᓕᒐᖓᕇᖅᑎᑕᐅᔪᓕᕐᒥᖅ ᐱᓕᕆᐊᖃᓐᓂᖓᓪᓗᓂ ᐊᖏᑎᐅᑦ ᐊᒃᑐᖅᑕᐅᓂᖏᓐᓂᖅᑎᑦ ᐱᓕᕆᐊᖓᔪᖅᑎᓯᒪᓂᖅ ᑲᑎᒪᔨᖏᑦ ᓄᓇᕗᒻᒥᐅᑦ

ᑐᖁᓐᓂ: ᒥᐊᓂᖅᔪᓂᑦᑎᒃ ᐃᑲᔪᖅᑐᐃᓐᓇᓂᑎᓪᓗ ᖃᓄᐃᖓᑎᐊᖅᓂᑎᒃ ᐊᖏᑎᕐᕌᖓᓂᒃ ᓄᓇᕗᒻᒥᐅᓂᓪᓗ ᐊᒃᑐᐃᓐᓇᐅᔪᓂ ᖃᐅᔨᓴᕐᐊᖃᕐᓂᖓᓪᓗᒍ ᓄᓇᕗᒻᒥᐅᓗᑦ



An institution of public government responsible for environmental impact assessment of proposed projects in Nunavut

Mission: To protect and promote the well being of the environment and Nunavummiut through the impact assessment process

ᓯᖏᒃ ᑕᒪᐅᖅᑐᖃᓕᕆᑦ ?
Why are we here?

- ᓄᓇᕗᑦ ᐊᐸᑎᓕᓵᔨᑦ ᐱᓕᓵᐊᖏᑦ
- ᖃᐅᔨᓴᖅᑕᐅᔪᑦ ᐱᓕᓵᐊᓵᓴᐅᔪᑦ
- ᐊᐳᖅᑎᖓᓇᖅᑐᒥ ᔪᓗᒧᑦ ᐅᓴᕋᖅᑕᓵᐊᖕᓇᖅ
- ᐊᐸᑎᓕᓵᔨᑦ ᐱᓕᓵᐊᖏᑦ, ᐊᐳᖅᑎᓇᖅᑐᒥ ᔪᓗᒥᖅ ᐱᔪᑎᖃᖅᑐᑦ
- ᑭᑐᑐᐃᓇᐃᑦ ᐃᓕᐅᖃᖅᑕᐅᓂᖏᑦ

- Overview of the NIRB
- Monitoring programs
- The Meadowbank Gold Project
- Highlights from the NIRB's Meadowbank Monitoring Program
- Public Participation



ᐊᖑᖅᑕᐅᓯᒪᖅᓯᐅᔭᐅᓯᓂᖓᓕᐊᖅᑲᖅᑐᓂᒃ ᓇᓗᓇᐃᖅᑐᐃᓂᖅ
The NIRB's Impact Assessment

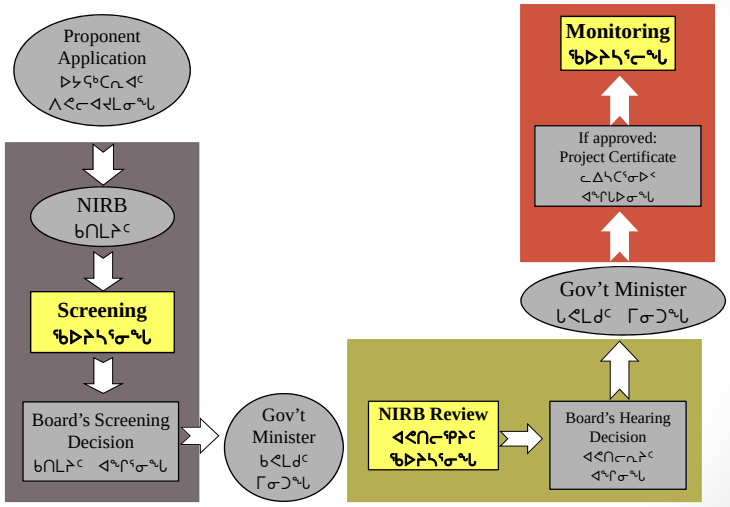
- Screen project proposals – is a review required?
- Review impacts of project proposals
- Determine whether project proposals should proceed, and if so, terms and conditions
- Monitor approved projects

- ᐱᓕᓵᐊᖓᓂᐊᖅᑐᑦ ᖃᐅᔨᓴᖅᑕᐅᓗᑎᒃ – ᖃᐅᔨᓴᖅᑕᐅᔭᓚᐊᖅᑲᖅᐸ?
- ᖃᐅᔨᓴᖅᓂᖓᓐ ᐊᖑᑐᐃᓂᐅᔪᑦ ᐱᓕᓵᓂᖅᓗᑦ ᑐᖅᓯᖅᐅᑎᑦ
- ᐃᓱᒪᓕᐅᖅᓂᖅ ᐱᓕᓵᐊᖅᓄᑦ ᑐᖅᓯᖅᐅᑎᑦ ᑲᔪᓯᖅᓚᐊᖅᑲᖅᓚᖓᔪᖓ, ᑲᔪᓯᓂᐊᖅᓂᖅᐸᑦᓗ, ᖃᐅᓄᐃᑐᓂᒃ ᒪᓕᒐᖃᖅᓂᐊᖅᓚᖓᑦ
- ᐱᓕᓵᐊᖓᔪᑦ ᐃᖏᕐᕋᓂᖏᓐᓂᓂ ᖃᐅᔨᓴᖅᑕᐅᓂᖏᓐ



The NIRB's Impact Assessment Process

ᓄᓇᕗᒻ ᐊᖏᑎᓕᕆᓂᖅᓴᖅ ᑲᑎᒪᔨᖅ ᖃᐅᔨᓴᓂᐅᔪᖅ ᐱᖓᓕᐊᓂᖓ



NIRB's Project Specific Monitoring Programs

ᓄᓇᕗᑦ ᐊᖏᑎᓕᕆᔨᖅ ᑲᑎᒪᔨᖏᑦ, ᐅᓴᖅᑕᕆᐊᖃᑦ ᖃᐅᔨᓴᓂᖏᑦ ᐱᖓᓕᐊᓂᖏᑦ

- Jericho Diamond Mine (2005)
- Doris North (2006)
- Meadowbank (2006)
- Mary River (2012)
- Meliadine (2015)

- ᔪᐅᓕᔪ ᐅᓴᖅᑕᕆᐊᖃᖅ ᑕᐃᒪᒻᒪᑦ (2005)
- ᑐᐊᓕ (2006)
- ᐊᐳᖅᑎᓐᓄᕐᓗᖅᑐᖅ (2006)
- ᒥᐊᓕ ᔪᓐᓇᓂ (2012)
- ᑕᓯᖏᕐᕋᐊᖏᑎᒥ ᐅᓴᖅᓂᓂᐊᖏᖅ (2015)

- Each has a staff person dedicated as a "Monitoring Officer"

- ᐊᖏᑎᓕᕆᔨᔪᔪᓂ ᐱᓕᕆᔨᑦ ᑎᔪᐊᖅᑕᐅᕐᓂᖅᑐᑦ ᖃᒪᓕᖅᓴᒥᓂᖅ ᐅᓴᖅᑕᕆᐊᖅᑐᓂ

ᓄᓇᕗᑦ ᐊᕐᑎᓕᓪᓚᕆᑦ ᑲᑎᕆᖏᑦ ᖃᐅᔨᓴᖏᓐᓂᖅᓯᒪᑦ ᐱᓕᕆᖏᑦ

ᓄᓇᕗᑦ ᐊᕐᑎᓕᓪᓚᕆᑦ ᐅᑯᓂᖓᓐᓄᑦ ᖃᐅᔨᓴᖅᑲᖅᑐᑐᑦ:

- ᐅᓴᖅᑕᓪᓚᐃᓚᐅᑉ ᐊᒃᑐᖏᓂᖓᓐᓄᑦ ᐊᕐᑎᒍᑦ ᐊᒪᓗ ᐃᓄᓕᔪᖅᑐᑦ ᓄᓇᕗᑦ
- ᐱᓕᕆᐊᓪᓚᖅᓯᐅᔾᔨᓪᓗ ᐊᖏᕈᓐᓇᐅᓕᔪᓪᓗ ᐱᖓᓕᐊᖅᑯᐅᔾᔨᑦ ᖃᐅᔨᓴᖅᓯᒪᑦ
- ᐅᑭᐅᑕᒪᑦ ᐱᖓᓕᐊᔾᔨᑦ ᐅᓴᖅᑕᓪᓚᐃᓂᖓᓐᓂ, ᑐᓴᖅᑕᐅᑕᕐᓯᒪᑦ ᓄᓇᓕᒃᓄᑦ
- ᖃᐅᔨᓴᖅᑕᕐᓯᒪᑦ ᓂᓪᓕᐅᕈᓐᓇᐅᔾᔨᑦ ᑐᓴᖅᑕᐅᓪᓗᒍ

The NIRB's Monitoring Programs

The purpose of a monitoring program is to:

- *Monitor environmental and socio-economic effects of the project*
- *Monitor compliance to authorizations and approvals*
- *Conduct annual reporting and provide information to parties*
- *Assess accuracy of predictions*




Monitoring Responsibilities
ᖃᐅᔨᓴᖅᑕᓪᓚᕆᑦ ᐱᓕᕆᖏᑦ

NIRB ᐊᕐᑎᓕᓪᓚᕆᑦ ᐱᓕᕆᖏᑦ	Proponent ᐅᓴᖅᑕᓪᓚᐃᑦ ᐱᓕᕆᖏᑦ	Regulatory Authority ᐊᖏᕈᑎᑎᖃᓐᓇᖅᑐᑦ ᑎᒥᑦ
• Information distribution • Review of Annual Reports • Site visit(s) • Annual report of findings • Board recommendations	• Ongoing reporting to NIRB: • Annual Report • Monitoring and Management Plans • Obtain and maintain current authorizations • Reporting to licensing agencies	• Issue authorizations and approvals • Report on project effects • Monitor compliance
ᖃᐅᔨᒪᓴᖏᑦ ᑐᓴᕐᑕᐅᓕᖅᓯᒪᓂᖅ ᐅᑭᐅᑕᒪᑦ ᖃᐅᔨᓴᖅᑎᑦ ᖃᐅᔨᓴᖅᑕᕐᓯᒪᑦ ᐅᓴᖅᑕᓪᓚᐃᓚᐅᑉ ᑕᒻᓴᓕᐅᑕᕐᓯᒪᑦ ᐅᑭᐅᑕᒪᑦ ᑐᓴᕐᑕᐅᓕᖅᓯᒪᓂᖅ ᐅᖃᓕᒫᖅ ᐱᓕᕆᐊᖅᑯᐅᔾᔨᑦ	ᐱᖓᓕᐊᔾᔨᑦ ᑐᓴᕐᑕᐅᓕᖅᓯᒪᓂᖅ ᐊᖏᕈᑎᑎᖃᓐᓇᖅᑐᑦ ᐅᑭᐅᑕᒪᑦ ᐱᖁᓕᐊᖅᑐᑦ ᑎᑎᕋᖅᑕᕐᓯᒪᑦ ᖃᐅᔨᓴᖅᓯᖅ ᐊᒪᓗ ᐊᐅᓚᓕᓂᖅ ᕿᓐᓄᒃᓕᒪᑦ ᐊᖏᕈᑎᑎᖃᓐᓇᖅᑐᑦ ᐱᖁᓕᐊᖅᑯᐅᔾᔨᑦ ᐊᖏᕈᑎᑎᖃᓐᓇᖅᑐᑦᓗ ᐊᖏᕈᓕᓗᑦ ᓴᓇᖅᑐᓂᖅᑕᑦ	ᑐᓂᓗᑎᓪᓗ ᐊᖏᕈᓕᓗᑦ ᐊᒪᓗ ᐊᖏᕈᓕᐅᔪᓪᓚᐃᖃᖅᑐᑦ ᐅᓴᖅᑕᓪᓚᐃᓂᖅ ᐱᓕᕆᐊᖅᑯᐅᔾᔨᑦ ᒪᓕᓚᐅᔪᓪᓚᐃᖃᖅᑐᑦ ᐅᓴᖅᑕᓪᓚᐃᓂᖅᓴᑦ ᖃᐅᔨᓴᖅᑕᕐᓯᒪᑦ

Meadowbank Gold Mine Project
ᐊᐳᖅᑎᓐᓇᖅᑐᒥ ᔪᓚᒧᑦ ᐅᓴᖅᑕᕆᐊᖃᕐᐲᖅ ᐱᓕᕆᐊᓂᖏᓐ

- In December 2006, NIRB issued Project Certificate
- In 2007, Agnico-Eagle Mines (AEM) acquired the Meadowbank Gold Mine.
- In 2009, NIRB amended the Project Certificate [004]
  - Amendment to Condition 32 pursuant to NLCA 12.8.2

- ᑎᓯᐱᓗ 2006, ᐊᕐᑎᑎᑕᕆᔨᒃᑯᑦ ᑐᓂᓯᔪᑦ ᐱᑕᕆᐊᖃᑦᓯᒪᑦ ᓇᓚᓇᐃᑯᑦᑎᒋᑦ
- 2007-ᒥᑦ, ᐊᖏᓂᔪᒃᑯᑦ (AEM) ᐱᓴᖏᑦ ᐊᐳᖅᑎᓐᓄᓴᖅᑐᒥᑦ ᔪᓚᒧᑦ ᐅᓴᖅᓂᓂᐊᖃᕐᐲᖅ.
- 2009-ᒥᑦ, ᐊᕐᑎᑎᑕᕆᔨᒃᑯᑦ ᐃᖃᑭᒋᐊᖅᓯᔪᑦ ᐱᑕᕆᐊᖃᑦᓯᒪᑦ ᓇᓚᓇᐃᑯᑎ [004]
  - ᐃᖃᑭᒋᐊᖅᓯᓂᖅ ᖃᓇᐃᖏᓕᓂᖅ 32 ᒪᑕᒃᓴᔪ ᓄᓇᑦᓂᓕᒧᑦ ᐊᖏᕐᖃᑎᒌᒋᔪᑎ 12.8.2

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Meadowbank Gold Mine Project
ᐊᐳᖅᑎᓐᓇᖅᑐᒥ ᔪᓚᒧᑦ ᐅᓴᖅᑕᕆᐊᖃᕐᐲᖅ ᐱᓕᕆᐊᓂᖏᓐ

- In 2016, NIRB recommended that the Vault Pit Expansion Project proposal be approved
  - Minister of INAC accepted the NIRB's recommendation
  - Project Certificate Workshop to amend Project Certificate No. 004

- 2016-ᒥᑦ, ᐊᕐᑎᑎᑕᕆᔨᒃᑯᑦ Vault ᐃᓚᑦᑐᖅᓯᒪᔪᖅᑎᑦ ᐊᖏᕐᕈᑎᐊᖃᖅᑎᑦᑐᑐᒧᑦ ᓇᓱᒪᕐᕈᐅᑎᓂᒃᑯᑦ
  - ᐃᓄᓕᑕᕆᔨᑐᖅᑯᓐᓄᑦ ᒥᓂᑦᑕᐅᐸ ᐱᓴᖏᑦ ᐊᕐᑎᑎᑕᕆᔨᒃᑯᑦ ᐃᒪᓐᓇᐸᖅᑐᑐᒧᖏᓐ
  - ᐱᑕᕆᐊᖃᑦᓯᒪᑦ ᓇᓚᓇᐃᑯᑎᐅᐸ ᒥᖅᓴᓄᑦ ᑲᑎᒪᔨᑎᑎᒍᑦ ᐊᖃᑦᓯᒪᑦ ᓇᓚᓇᐃᑯᑎ ᓇᓴᐅᑎ 004

10

Meadowbank Gold Mine Project
ᐊᐳᖅᑎᓐᓇᖅᑐᒥ ᔪᓚᒧᑦ ᐅᔪᖅᑕᓂᐊᕐᕕᖅ ᐱᓕᕆᐊᓂᖓ

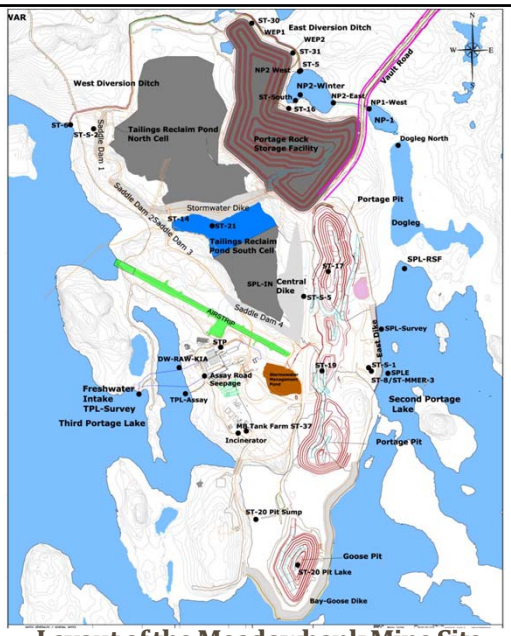
- Mine site 70 km north of Baker Lake
  - Camp
  - Airstrip
  - Associated mining infrastructure
- Three open pits
  - Portage
  - Bay Goose

- ᐊᐳᖅᑎᓐᓇᖅᑐᖅ ᖃᒪᓂᑐᐊᑦ ᓴᓂᐊᓂ, 70km, ᐊᖏᓱᓂᖃᖅᑐᖅ
  - ᐱᕆᓂᕕᖅ
  - ᒥᕕᖅ
  - ᐅᔪᖅᑕᓂᐊᓂᕐᒧᑦ ᐃᓗᓚᔪᐊᑦ
- ᐱᖏᓱᓪᑦ ᓄᓇᒥ ᐊᑦᓱᓕᖅᑐᓕᐊᔪᑦ ᐅᔪᖅᑕᕐᕕᐃᑦ
  - ᐳᐊᑕᑦ
  - ᔪᓱ ᐃᒪᖏᓂ
  - ᓴᐅᑦ

Meadowbank Gold Mine Project
ᐊᐳᖅᑎᓐᓇᖅᑐᒥ ᔪᓚᒧᑦ ᐅᔪᖅᑕᓂᐊᕐᕕᖅ ᐱᓕᕆᐊᓂᖓ

- ᖃᒪᓂᑐᐊᕐᒥ ᖃᑕᐅᔪᔨᐊᖃᕐᕕᖅ ᐊᒪᓚ ᐅᒥᐊᕐᔨᐊᓄᑦ ᑐᓪᓗᕕᖅ
  - ᐅᖅᓱᐊᓚᓄᑦ ᖃᑕᐅᔪᕐᔨᐃᑦ
  - ᓱᒃᐅᓄᑦ ᐅᕐᒪᒪᐃᑐᓪᓗᕕᖅ
- 110 km ᑕᑭᑎᒋᔨᖅ ᐅᑭᐅᓚᖅᑕᒥ ᐊᑐᕈᓇᖅᑐᖅ ᐊᕐᕋᑦ, ᖃᒪᓂᑐᐊᕐᒥᑦ ᐅᐳᖅᑎᓐᓇᖅᑐᒧᑦ

- Baker Lake bulk fuel storage facility/marshalling area
  - Fuel tank farm
  - Laydown area
- 110 km all-weather road linking Baker Lake to Meadowbank site



Layout of the Meadowbank Mine Site

ᐊᐳᖅᑎᓂᖅᑐᒥ ᐅᓴᖏᓐᓂᐊᖏᑕᐅᓂᐊᕐᓗᐅᑦ ᐊᖏᕈᓴᒪᓂᖅᓱᒃ

AEM's Project Activities 2015 – 2016

ᐊᓱᓕᓂᕆᑦ ᐱᓕᕆᐊᖏᑎ 2015 – 2016

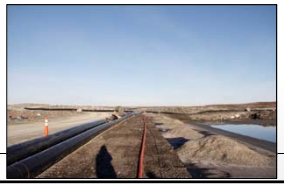
- Operation and mining at Portage, Bay Goose pits and Vault Pit
- Construction of the Central Dike Phase 4 and, Saddle Dam 3, 4 and 5

- ᐊᐅᓪᓚᖏᓂᒍᑦ ᐊᒡᒪᓗ ᐅᓴᖏᓐᓂᐊᖏᓂᖅ Portage-ᒥᑦ, Bay Goose-ᒥᑦ ᐊᒡᒪᓗ Vault ᐃᓗᓕᕐᑐᖅᓯᒪᔪᖏᑦᑕᑦ
- ᓴᓇᔨᐅᓂᖅᓱᒃ ᐃᒪᖏᒍᑦ ᓯᔪᓗᓕᒃ ᓯᑕᒪᕐᓂᖅᓱᓂᑦ ᐊᒡᒪᓗ, Saddle Dam 3, 4 ᐊᒡᒪᓗ 5

AEM's Project Activities 2015 – 2016
ᐊᑲᓂᓯᑯᓪ ᐱᓕᕆᐊᖅᑎ 2015 – 2016

- Environmental monitoring
- Ongoing exploration

- ᐊᖏᑎᓕᕆᓂᖅᑎᑲᓂ ᖃᐅᔨᒋᐊᖃᑦᑕᕐᓂᖅ
- ᖃᓄᓂᖅᓴᐃᓂᖅᑕᖃᐃᓐ ᓇᖅᑐᖅ



NIRB's Monitoring of the Meadowbank Project
ᐊᖏᑎᓕᕆᔨᓯᑯᓪ ᐃᖅᑭᕐᓂᖅᓴᑦ ᐊᐳᖅᑎᓰᖅᑐᑦ ᖃᐅᔨᓴᕐᓂᖅᓴᐅ

- ᐊᕐᔪᒍᒥᒃ ᐅᓂᒃᑲᖅ (ᐃᐳᕈ 2016)
- ᐅᖃᐅᔨᓴᕐᓂᐅᖅ ᑲᑎᖅᓯᐊᓗᓂᓂ ᐊᕐᔪᒍᒥᒃ ᐅᓂᒃᑲᒥ (ᔪᓂ 2016)
- ᐅᓴᕐᖏᓂᐊᕐᕐᓴᖅ ᑕᑯᓴᖅᑐᕐᓗᑐᒍ ᓄᓇᓕᖅᒥᓗ ᑐᓴᖅᑎᕐᔨᓗᓂᓂ (ᐊᒋᑦᔨ 2016)
- ᐊᖏᑎᓕᕆᓂᕐ ᑲᑎᒪᓂᖅᑎᑦ ᑐᓴᖅᑎᑦᓗᑦᑎ (ᐊᖅᑐᐃᑦ 2016)

- Annual Report (April 2016)
- Comments on Annual Report (June 2016)
- Site Visit and Community Info Session (August 2016)
- Update to the Board (October 2016)

NIRB's Monitoring of the Meadowbank Project
ᐊᐢᑎᑕᓗᓴᒃᑯᑦ ᐃᖅᑭᕋᓂᖅᓯᒪᑕ ᐊᐳᖅᑎᓭᖅᑐᑦ ᖃᐅᔨᓴᕐᓂᖅᓯᒪᓕ

- ᐊᐢᑎᑕᓗᓴᑦ ᑲᑎᒪᔨᖅᑭ ᓴᖅᑭᑎᓯᒪᔪᑦ ᖃᐅᔨᓴᕐᓂᕐᒧᑦ ᐅᓂᒃᑲᖅᑐᒃ ᐊᑐᑕᕐᑯᐅᐊᓂᖅᓴᓗ (ᓄᕕᐱᓗ 2016)
- ᐊᒃᑲᓂᑯᑦ ᑭᐅᐊᑎᖅᑭᓂᒃ ᐊᑐᑕᕐᑯᐅᓯᒪᔪᓂᒃ ᑐᓂᔨᐅᓗᑐᓂ (ᑎᓯᒪᓗ 2016-ᐃᒡᕐ 2017)

- Board issues Monitoring Report and Recommendations (November 2016)
- Receive AEM response to recommendations (December 2016 – March 2017)

2015 Site Visit Observations
2015 ᐱᑕᖃᕐᓇᖅᑎ ᑕᑯᔭᖅᑐᖅᓯᒪᔨᓗᓂ ᖃᐅᔨᓴᓐᓂᑦ

- Successful treatment of hydrocarbons
- Wildlife deterrents needs to be replaced
- Well maintenance of fuel storage facilities
- Requirements of dust suppression (Condition 74)

- ᐱᑕᖃᐊᖏᐊᓂᖅᓂᖅ hydrocarbon-ᖏᓂᕆᖅᑕᐅᔨᖅ
- ᓂᕆᔨᑎᓂᒃ ᖃᑭᓯᑎᕆᑎᓂᕆᖅ ᐃᓇᖅᑭᖅᑕᐅᔭᖃᖃᐊᖅᖅᑐᖅ
- ᐃᒪᖅᑲᐅᓯᖏᓇᖅᑎᑦ ᐱᑕᖃᐊᖅᖅᓂᖅ ᐅᖅᓯᐊᓗᐃᑦ ᑐᖅᓯᐊᓗᐃᑦᑐᓂᑦ
- ᐱᔭᖃᐊᖅᖅᓂᖅ ᐳᔨᑦᑕᕐᑐᖅᑐᕆᕆᑦᑕᐃᓕᒥᔨᓐᑎᑐᒃ (ᖅᑲᓇᐃᖓᔭᖃᐊᖅᖅᓂᖅ 74)

Your Input is Valuable!

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General information and Inuit Qaujimajatuqangit is important to the NIRB!

How can you get involved?

- Review AEM's annual reports
- Submit written comments and questions
- Phone the NIRB's office toll-free to talk about the project with our staff

ᖃᓄᖅ ᐃᓕᐅᖃᑕᐅᔪᑲᓇᖅᐸᑦ ?

- ᐊᒃᓂᔪ ᐅᓴᖅᑕᕆᐊᑦ ᑎᑎᖅᓯᒪᓴᖅᑭᑦ ᑎᑎᕿᕆᓕᖅᓯᑦ
- ᐃᓱᒪᒋᔭᑎᑦ ᐱᓕᕆᐊᕆᔪᓯᑎᑦ ᑎᑎᕕᓗᑦ ᑐᓂᑭᑦ ᐊᐢᑎᓕᕆᔨᔪᓂᑦ
- ᓄᓇᕐᒥ ᐊᐢᑎᓕᕆᔨᑦ ᑎᑎᕕᐃᓕᖅ ᐅᖃᖅᑐᓂᑦ ᐅᖃᓗᐃᑦᑕᕐᓗᑦ ᑐᓴᕆᐊᖅᑕᕆᓕᑦ, ᐱᓕᕆᔨᑦ ᐃᑲᔪᖏᑎᐊᕐᑐᑦ




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Thank you - Matna!

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Questions?

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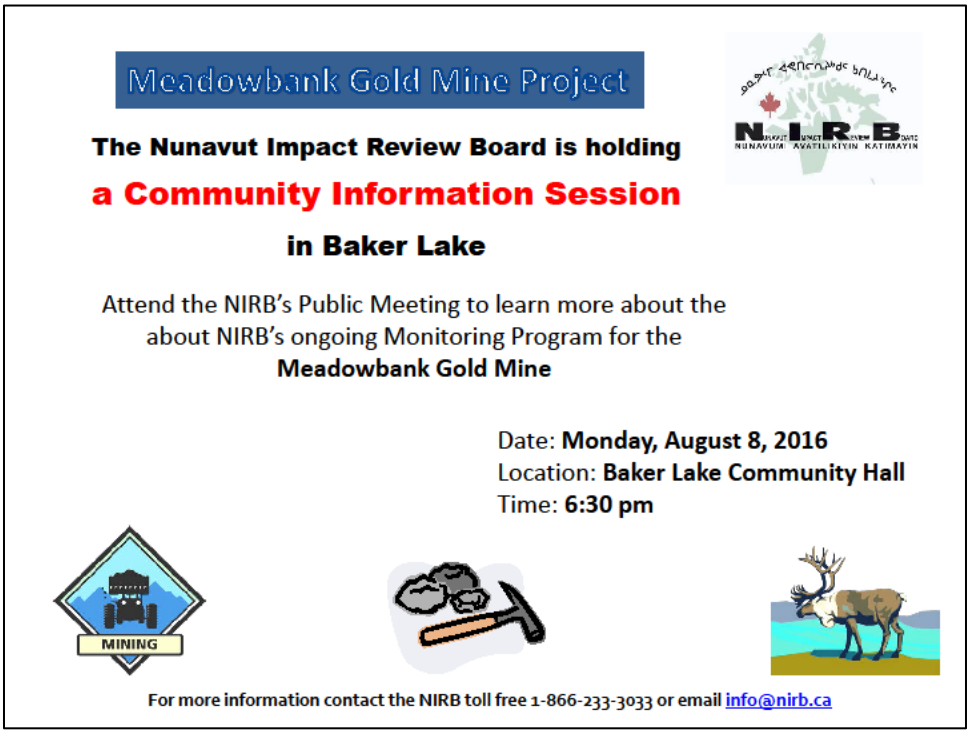
Appendix C: Cable Advertisement and Poster



NIRB File No.: 03MN107
NWB File No.: 2AM-MEA1525
DFO File No.: 03-HCAA-CA7-00191 & 03-HCAA-CA7-00190
ECCC File No.: 6100 000 008/002
INAC File No.: 5510-5-3-9
NRCan File No.: NT-010
TC File No.: 7075-70-1-33

November 4, 2016

Ryan Vanengen
Environment Superintendent – Nunavut
Agnico Eagle Mines Ltd.
P.O. Box 549
Baker Lake, NU X0C 0A0

Sent via email: ryan.vanengen@agnicoeagle.com

Re: The Nunavut Impact Review Board's *2015-2016 Annual Monitoring Report for the Meadowbank Gold Project* and Board's Recommendations

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Dear Ryan Vanengen:

The Nunavut Impact Review Board (NIRB or Board) is hereby releasing its *2015-2016 Annual Monitoring Report for Agnico Eagle Mines Ltd.'s Meadowbank Gold Project* (Monitoring Report) along with the 2016 Site Visit Report for the NIRB's monitoring of the Meadowbank Gold Project (NIRB File No. 03MN107; Appendix I within the Monitoring Report). The enclosed Monitoring Report is based on the NIRB's monitoring activities as set out within the Meadowbank Project Certificate [No. 004] and pursuant to Sections 12.7.1 and 12.7.2 of the Nunavut Land Claims Agreement. This report provides findings that resulted from monitoring of this Project that took place from October 2015 to September 2016.

By way of a motion carried during its regular meeting held in October 2016, the Board has issued the following recommendations to assist Agnico Eagle Mines Ltd (Agnico Eagle) in achieving compliance with the Meadowbank Gold Mine Project Certificate. These recommendations ensure that the NIRB has all the information necessary to adequately discharge its mandate with respect to provisions within Section 12.7 of the Nunavut Land Claims Agreement as they pertain to the Meadowbank Gold Mine Project.

Transportation Management Plan

The NIRB notes that the 2014 version of the *Transportation Management Plan* did not provide a discussion on mitigation measures related to dust from traffic on the all-weather access road (AWAR).

Recommendation 1: The Board request that Agnico Eagle provide an updated *Transportation Management Plan* that includes mitigation measures related to dust and is reflective of Condition 74. This updated plan should be provided within 30 days of receipt of the Board's recommendations.

Participation in Surveys – Conditions 54

In response to the Board's 2015 recommendations regarding the Hunter Harvest Study, Agnico Eagle stated that the Hunter Harvest Study would be suspended for one (1) year until 2017 due to participant fatigue. In addition, Agnico Eagle noted that it will be consulting with the Baker Lake Hunters and Trappers Organization (HTO) and the Government of Nunavut (GN) representatives to discuss the findings of the study to date, explore other options for collecting hunting and fishing data in the Baker Lake area, and facilitate greater involvement of the local community, including the HTO, in future years of the study. As written, Condition 54 requires the Proponent to conduct a hunter harvest survey to determine the effect on ungulate populations from increased access via the AWAR. The Board is encouraged that Agnico Eagle is proposing to conduct consultation with the community of Baker Lake in order to explore innovative ways to improve HTO and hunter participation, and to develop the study into a more community-based initiative.

Recommendation 2: The Board request that Agnico Eagle provide a summary of the consultation conducted with the Baker Lake Hunters and Trappers Organization, other community organizations and the Government of Nunavut that was to be held in 2016. In addition, the summary should include the results and the next steps in the development of the Hunter Harvest Study. It is recommended that a response be provided to the NIRB within 30 days.

On-site Incinerators – Condition 72

Condition 72 requires that the Proponent conduct annual stack testing of the on-site incinerators to demonstrate that they are operating in compliance with the required standards. In addition to stack testing, Agnico Eagle conducted ash sampling from the incinerator on a quarterly basis in 2015, which was an increase from one time per year sampling frequency. However, it was noted that chromium was not tested for in April 2015. The testing of chromium is important as it could indicate sources of non-combustible materials such as pop cans that are not allowed to be incinerated.

Recommendation 3: The Board request that Agnico Eagle provide an explanation for the reason why chromium was not tested for in April 2015 during the ash sampling of the incinerator. It is recommended that this be provided within 30 days to the Board.

Suppression of surface dust – Condition 74

Condition 74 directs the Proponent to employ environmentally protective techniques to suppress any surface road dust. During the 2016 site visit, Agnico Eagle reiterated that no dust suppressants were in use along the AWAR and were not used since the beginning of the Project. Dust suppression techniques have been limited to haul roads at the mine site, between the

Meadowbank gatehouse and Exploration Camp site, and the airstrip. Agnico Eagle noted that dust suppression measures included the use of calcium chloride between the Meadowbank gatehouse and Exploration Camp site and water applied to the mine site roads (including the Vault road) and the airstrip.

The Board notes that the Agnico Eagle initiated a dust sampling program along the road in 2012 to monitor dust deposition on vegetation along the road. Further, Agnico Eagle implemented additional studies in 2016 to determine the most effective protective techniques to suppress surface dust from vehicles. Agnico Eagle committed to including the results from the ongoing studies in future annual report(s).

In its response to the Boards' 2015 recommendations Agnico Eagle maintained that it is meeting Condition 74 and based its conclusion on several factors, including the necessity of undertaking the addition of chemical dust suppressants as a mitigation measure, and on whether there has been an impact to the surrounding areas because of dust caused by road traffic.

In reviewing the revised *Transportation Management Plan* as submitted by Agnico Eagle in 2014, it is noted that there was no discussion provided on mitigation measures related to dust from the road. As previously observed by the Board, Condition 33 of the Project Certificate required that the *Access and Air Traffic Management Plan* be updated to include an '*All-weather Private Access Road Management Plan*'. In Agnico Eagle's response to the Board's 2015 recommendation, this was done and provided to the NIRB in 2010, which in turn was updated and renamed to the *Transportation Management Plan*. Further, Agnico Eagle has stated in the past that it believes that Condition 74 does not apply to the AWAR as it is not specified in the "All Weather Road" section of the Project Certificate. The NIRB would like to point out that the updated *Access and Air Traffic Management Plan* from 2010 identified three (3) types of roads that would provide on-site access: 1) the on-site haul roads; 2) the service roads; and 3) the AWAR. Further, the plan specified that "[d]ust control on the roads will be achieved through regular watering during the dry periods…". The NIRB stresses that Condition 74 applies to all mine roads, which, as noted by Agnico Eagle in the previous *Access and Air Traffic Management Plan*, includes the AWAR.

The NIRB recognizes the efforts made by Agnico Eagle to suppress dust around the Meadowbank and Exploration Camp sites, and further recognizes the dustfall monitoring program conducted along the AWAR since 2012 and the additional studies conducted in 2016. However the NIRB would like to remind Agnico Eagle of commitments made during the environmental assessment process and furthermore, of Condition 74 which requires the application of dust suppression measures along all project roads including the AWAR. The NIRB notes that Agnico Eagle has been in non-compliance with this condition since the Project entered operations, as no dust suppression measures have been employed along the AWAR from Baker Lake to the mine site.

Recommendation 4: The Board reminds Agnico Eagle that Condition 74 applies to the suppression of dust on all surface roads including the all-weather access road, and as such request that Agnico Eagle provide a plan of action for dust suppression along the all-weather access road during dry periods. This plan of action should further detail how it would meet the requirements of Condition 74 for the remaining years of the Project life. This information should be provided within 30 days' receipt of receiving the Board's recommendations.

Appendix D, the Annual Report and the PEAMP

The NIRB notes that Agnico Eagle's 2015 Annual Report provided a detailed analysis of results from its 2015 monitoring program and that it compared observed impacts noted in 2015 to predictions made within the final environmental impact statement (FEIS). Agnico Eagle's evaluation focused on the valued ecosystemic components (VECs) that had been identified in the FEIS, including the aquatic environment, the terrestrial and wildlife environment, noise quality, air quality, permafrost and socio-economics. The NIRB acknowledges that Agnico Eagle has worked to improve upon its reporting of findings within its post-environmental assessment monitoring program (PEAMP) and notes the general clarity of the presentation of information in its tables of potential impacts, potential cause(s), proposed monitoring, monitoring conducted for the year, predicted values and measured values/observed impacts. However, the NIRB found that the discussion and analysis within the PEAMP could be expanded upon especially to include trends that may be observed. The NIRB acknowledges Agnico Eagle's previously conveyed interpretation of Appendix D as not explicitly dictating that the PEAMP involve producing a trend analysis of previous years' monitoring data; however, the Board would like to note that the objective of the PEAMP as detailed in Appendix D is to provide this trend analysis as part of the summary report.

Further, it was noted by INAC in its review of the water quantity and quality values, that the values presented were only compared to the 2015 measured values and suggested that a comparison to the originally predicted values and year over year comparison would have provided a robust analysis and would have assisted in identifying trends in the water quantity and quality data.

The overall lack of reference to baseline data or to data from previous years makes it difficult to quantify or measure the relevant effects of the project. While comparison between monitoring as proposed in the FEIS and monitoring undertaken in 2015 was helpful, rationale for why these were different was not always clearly presented.

Recommendation 5: The Board require that Agnico Eagle provide a full discussion and summary on the post-environmental assessment monitoring program (PEAMP) for the Project. This must include a discussion that references the baseline and previous years' monitoring data and further indicate whether any trends have been observed at the mine site for each VEC where an impact has been observed. The discussion should include whether the trends of effects over time are potentially indicating impacts from or associated with the Meadowbank Project. This should be provided within 30 days' receipt of the Board's recommendations.

Aquatic Environment

Agnico Eagle noted within the 2015 Annual Report that the Core Receiving Environment Monitoring Program (CREMP) determined that there were some apparent mine-related changes in conventional parameters relative to baseline/reference conditions at one (1) or more near-field and mid-field areas. Agnico Eagle further noted that while these results represented mine-related changes, the observed concentrations were still relatively low and unlikely to adversely affect aquatic life. Agnico Eagle stated that these trends would need to be reviewed again in 2016. The NIRB observed that for the 2014 Annual Report, Agnico Eagle reported similar apparent mine-related changes and remarked that follow-up studies were recommended and would be conducted in 2015. The 2015 Annual Report and the PEAMP section did not discuss these

follow-up studies and what the potential sources of the apparent mine-related changes were. Further discussion on these mine-related changes is required.

In reviewing the PEAMP section of the Annual Report it is noted that the section summarized the results of each underlying monitoring program, including the CREMP. This section noted that any significant mine-related changes in the water quality that had the potential to cause risks to the aquatic environment were not observed nor detected. This statement appeared to be in conflict with the discussion under Section 8.9 of the Annual Report.

The PEAMP section of the 2015 Annual Report did not provide any discussions on the CREMP or Agnico Eagle programs or any discussion on the changes observed/detected at the aquatic stations. Agnico Eagle did not 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 is considering finding other near-field stations that could be used for baseline/reference conditions. As noted previously, a year over year comparison would provide a robust analysis and would have been useful to help identify trends in the data collected for the aquatic environment, specifically for the water quality and sediment quality data

Recommendation 6: The Board requires that Agnico Eagle provide a full trend analyses and discussion on the aquatic environment based on the data collected to date under the Core Receiving Environment Monitoring Program (CREMP) and indicate whether any impacts are being observed from the proposal and whether the analyses meets or exceeds the predictions made within the FEIS. This is required as noted before under Appendix D for the post-environmental assessment monitoring program (PEAMP). This should be provided within 30 days' receipt of the Board's recommendations.

Recommendation 7: The Board requests that Agnico Eagle 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 is considering finding other near-field stations that could be used for baseline/reference conditions. This should be provided within 30 days' receipt of the Board's recommendations.

Noise Quality Monitoring

In review of the 2015 Annual Report, it was noted that the measured sound levels in 2015 exceeded predicted sound levels only at station R5 on one (1) occasion. Agnico Eagle stated that this was likely because the FEIS predictions for noise did not include helicopter activities at the exploration camp and AWAR, which is located adjacent to this monitoring station as noise sources in the modeling parameters. Therefore, Agnico Eagle concluded that predicted noise levels modelled for this location were not realistic based on actual site activities. The NIRB would like to emphasize that the noise model presented within the FEIS is expected to be a reasonable accurate basis for impact predictions. Agnico Eagle should consider updating the model predictions to identify any issues with the previous model and to further provide information whether the impacts previously assessed in the FEIS have significantly changed. This should provide further clarity to parties whether or not impacts from noise are being observed at the mine site.

Recommendation 8: The Board request that Agnico Eagle reassess the noise model for this location based on the current information available at the Meadowbank Gold Mine Site to identify any issues with the previous model and to further provide information whether the impacts previously assessed in the Final Environmental Impact Statement have significantly changed. The updated model and information should be provided in the next annual report

Comments from Parties on the 2015 Annual Report

Parties were requested to provide comments on Agnico Eagle's 2015 Annual Report. Comments were received from parties on or before June 6, 2016.

Recommendation 9: The Board request that Agnico Eagle review the comments received from Parties on the 2015 Annual Report and provide a response to these comments as part of its package to the Board's recommendations.

The Board respectfully requests that for items requiring follow-up action by Agnico Eagle that a response be provided within the timeline as requested for each of the recommendations. Where no timeline has been stipulated for a response, the Board requests that Agnico Eagle submit a plan of action for addressing these items prior to **December 2, 2016**.

If you have any questions or require further clarification regarding these recommendations in particular or relating to the NIRB's monitoring program for the Meadowbank project, please contact the undersigned directly at (867) 857-2052 or sgranchinho@nirb.ca.

Sincerely,

Sophia Granchinho, M.Sc., EP
Manager, Impact Assessment
Nunavut Impact Review Board

cc: Stéphane Robert, Agnico Eagle Mines Ltd.
Jamie Quesnel, Agnico Eagle Mines Ltd.
Meadowbank Distribution List

Enclosure (1): The Nunavut Impact Review Board's *2015-2016 Annual Monitoring Report for the Meadowbank Gold Project*

AGNICO EAGLE

December 9th, 2016

Sophia Granchinho
Senior Technical Advisor
Nunavut Impact Review Board
29 Mitik St, P.O. Box 1360
Cambridge Bay, NU
X0B 0C0

Re: NIRB File 03MN107 – Agnico Eagle's response to Nunavut Impact Review Board's *2015-2016 Annual Monitoring Report for the Meadowbank Gold Project* and Board's Recommendations

Dear Ms. Granchinho,

As requested, the following information and comments are intended to address the recommendations outlined in response to the NIRB recommendations and comments in the letter dated November 4th, 2016 - The Nunavut Impact Review Board's *2015-2016 Annual Monitoring Report for the Meadowbank Gold Project* and Board's Recommendations.

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

Agnico Eagle Mines Limited – Meadowbank Division

Regards,

Jamie Quesnel
Jamie.quesnel@agnicoeagle.com
819-759-3555 x6838
Environment Superintendent-Nunavut

Erika Voyer
Erika.voyer@agnicoeagle.com
819-759-3555 x6980
Senior Environmental Coordinator

cc: Luis Manzo, Kivalliq Inuit Association
Karén Kharatyan, Nunavut Water Board
Jennifer Thomas, Fisheries and Oceans Canada
Elizabeth Patreau, Fisheries and Oceans Canada
Tina Price, Government of Nunavut
Rachelle Besner, Natural Resources Canada

Jackie Barker, Transport Canada
David Abernethy, Indigenous and Northern Affairs Canada
Ian Parsons, Indigenous and Northern Affairs Canada
Melissa Pinto, Environment and Climate Change Canada

AGNICO EAGLE

Table of Contents

1 Nunavut Impact Review Board

1.1 Transportation Management Plan

Concern: The NIRB notes that the 2014 version of the *Transportation Management Plan* did not provide a discussion on mitigation measures related to dust from traffic on the all-weather access road (AWAR).

Recommendation 1: The Board request that Agnico Eagle provide an updated *Transportation Management Plan* that includes mitigation measures related to dust and is reflective of Condition 74. This updated plan should be provided within 30 days of receipt of the Board's recommendations.

Agnico Eagle's Response:
Agnico Eagle will provide an update of the AWAR Transportation Management Plan once the complete analysis of the 2016 summer dust study will be completed. The updated plan will be provided with the 2016 Annual Report. Please see Agnico's response to Recommendation 4 for more details.

1.2 Participation in Surveys – Conditions 54

Concern: In response to the Board's 2015 recommendations regarding the Hunter Harvest Study, Agnico Eagle stated that the Hunter Harvest Study would be suspended for one (1) year until 2017 due to participant fatigue. In addition, Agnico Eagle noted that it will be consulting with the Baker Lake Hunters and Trappers Organization (HTO) and the Government of Nunavut (GN) representatives to discuss the findings of the study to date, explore other options for collecting hunting and fishing data in the Baker Lake area, and facilitate greater involvement of the local community, including the HTO, in future years of the study. As written, Condition 54 requires the Proponent to conduct a hunter harvest survey to determine the effect on ungulate populations from increased access via the AWAR. The Board is encouraged that Agnico Eagle is proposing to conduct consultation with the community of Baker Lake in order to explore innovative ways to improve HTO and hunter participation, and to develop the study into a more community-based initiative.

Recommendation 2: The Board request that Agnico Eagle provide a summary of the consultation conducted with the Baker Lake Hunters and Trappers Organization, other community organizations and the Government of Nunavut that was to be held in 2016. In addition, the summary should include the results and the next steps in the development of the Hunter Harvest Study. It is recommended that a response be provided to the NIRB within 30 days.

Agnico Eagle's Response:
Discussions were held with stakeholders throughout the year. In all, 5 meetings were held to initiate discussions on past experiences and path forward for the Hunter Harvest

Study (HHS). Parties involved included community agents, the BL HTO, GN and KIA. The process also included the Community affairs department from Agnico Eagle. This department will play a greater role in ensuring that proper communication channels are taken and that a stronger link is present in the community of Baker Lake, increasing the chances of success in the future development of a collaborative HHS. Included in the meetings was a workshop held in Winnipeg on November 18th, 2016 to discuss the Hunter Harvest Study. Members of the Baker Lake HTO, the KIA and the GN were present. Overall, the general consensus was the need to collect useful and meaningful data. Community involvement was also mentioned in being essential to making the program a success. Easier access from all participants to data collected could bring added incentives to the program.

Moving forward Agnico Eagle will continue to work with the GN, KIA and HTO to ensure a representative number of participants and long term success of the program.

In 2017, Agnico Eagle endeavours to achieve this by:

- *Facilitating greater involvement/partnership of the local community, including the HTO;*
- *Involving the GN Wildlife Officer or a suitable GN representative in the study;*
- *Increasing Agnico Eagle's community affairs involvement in the study development and unveiling; and*
- *Ensure consistency and compatibility with the previous HHS.*

1.3 On-site Incinerators – Condition 72

Concern: Condition 72 requires that the Proponent conduct annual stack testing of the on-site incinerators to demonstrate that they are operating in compliance with the required standards. In addition to stack testing, Agnico Eagle conducted ash sampling from the incinerator on a quarterly basis in 2015, which was an increase from one time per year sampling frequency. However, it was noted that chromium was not tested for in April 2015. The testing of chromium is important as it could indicate sources of non-combustible materials such as pop cans that are not allowed to be incinerated.

Recommendation 3: The Board request that Agnico Eagle provide an explanation for the reason why chromium was not tested for in April 2015 during the ash sampling of the incinerator. It is recommended that this be provided within 30 days to the Board.

Agnico Eagle's Response:

Chromium was requested on the chain of custody provided for the April 2015 ash sample. The external laboratory did not proceed to the analysis as requested. Upon reception of the certificate of analysis, which did not include chromium, the laboratory was contacted and requested to analyse the sample for this parameter. Unfortunately,

there was not enough ash sample left to proceed. Since previous results were well within guidelines, it was decided to assess future results in the next planned sample.

1.4 Suppression of surface dust – Condition 74

Concern: Condition 74 directs the Proponent to employ environmentally protective techniques to suppress any surface road dust. During the 2016 site visit, Agnico Eagle reiterated that no dust suppressants were in use along the AWAR and were not used since the beginning of the Project. Dust suppression techniques have been limited to haul roads at the mine site, between the Meadowbank gatehouse and Exploration Camp site, and the airstrip. Agnico Eagle noted that dust suppression measures included the use of calcium chloride between the Meadowbank gatehouse and Exploration Camp site and water applied to the mine site roads (including the Vault road) and the airstrip.

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Agnico Eagle's Response:

In 2016, Agnico has initiated a dust assessment pilot program on the AWAR. Following a Community Liaison Meeting and meetings with the HTO, a planning meeting and field visit were organized with HTO members to identify areas on the AWAR where the community has expressed concerns regarding the dust generated by the traffic on the road. Following the field assessment, Agnico tested dust control methods in 2016 on three sections of the roads. The Duststop, the Tetraflake and speed reduction were the three methods tested on the AWAR for a period of 2 months between July and September 2016. Additional dust monitoring was also completed for the areas where dust control methods where applied. Results of the dust monitoring, along with details on dust control methods tested in summer 2016 will be provided with the 2016 Annual Report.

For 2017, Agnico intends to continue dust control on the areas already treated in the past, i.e. Baker Lake to Baker Lake gatehouse, spud barge area in Baker Lake and Meadowbank Gatehouse to EMR area. Dust control will also continue for the mine haul road and the airstrip. In addition to these areas, Agnico intends to treat selected areas of the AWAR between the Meadowbank gatehouse and the Baker Lake gatehouse. The product Tetraflake (CaCl) will be used to treat the selected areas on the AWAR. Calcium chloride is a product approved as dust suppressant in Nunavut (Environmental Guideline for Dust suppression, GN, 2002). Additional dust monitoring will be completed for the areas where dust control method will be applied on the AWAR, to monitor the efficiency of the product. Details of the 2017 application and dust monitoring plan will be provided with the 2016 Annual Report.

It is important to mention that monitoring along the AWAR continues to demonstrate that dust from the AWAR does not appear to be causing impacts greater than those predicted in the FEIS. This has been discussed with the NIRB and community members on many occasions. In applying dust suppression, all stakeholders acknowledge the potential risks to the environment if products are applied to the entire AWAR. As a result, Agnico will

continue to apply dust suppression in key areas around Whitehills, near Baker Lake and in highest traffic areas along the road and therefore believe we are using "environmental protective techniques" to suppress dust along the AWAR, have addressed concerns from the NIRB and community members. The program proposed for 2017 will be evaluated and adjusted if required with the future monitoring results and further discussions with NIRB and the community.

1.5 Appendix D, the Annual Report and the PEAMP

Concern: The NIRB notes that Agnico Eagle's 2015 Annual Report provided a detailed analysis of results from its 2015 monitoring program and that it compared observed impacts noted in 2015 to predictions made within the final environmental impact statement (FEIS). Agnico Eagle's evaluation focused on the valued ecosystemic components (VECs) that had been identified in the FEIS, including the aquatic environment, the terrestrial and wildlife environment, noise quality, air quality, permafrost and socio-economics. The NIRB acknowledges that Agnico Eagle has worked to improve upon its reporting of findings within its post-environmental assessment monitoring program (PEAMP) and notes the general clarity of the presentation of information in its tables of potential impacts, potential cause(s), proposed monitoring, monitoring conducted for the year, predicted values and measured values/observed impacts. However, the NIRB found that the discussion and analysis within the PEAMP could be expanded upon especially to include trends that may be observed. The NIRB acknowledges Agnico Eagle's previously conveyed interpretation of Appendix D as not explicitly dictating that the PEAMP involve producing a trend analysis of previous years' monitoring data; however, the Board would like to note that the objective of the PEAMP as detailed in Appendix D is to provide this trend analysis as part of the summary report.

Further, it was noted by INAC in its review of the water quantity and quality values, that the values presented were only compared to the 2015 measured values and suggested that a comparison to the originally predicted values and year over year comparison would have provided a robust analysis and would have assisted in identifying trends in the water quantity and quality data.

The overall lack of reference to baseline data or to data from previous years makes it difficult to quantify or measure the relevant effects of the project. While comparison between monitoring as proposed in the FEIS and monitoring undertaken in 2015 was helpful, rationale for why these were different was not always clearly presented.

Recommendation 5: The Board require that Agnico Eagle provide a full discussion and summary on the post-environmental assessment monitoring program (PEAMP) for the Project. This must include a discussion that references the baseline and previous years' monitoring data and further indicate whether any trends have been observed at the mine site for each VEC where an impact has been observed. The discussion should include whether the trends of effects over time are potentially indicating impacts from or associated with the Meadowbank Project. This should be provided within 30 days' receipt of the Board's recommendations.

Agnico Eagle's Response:

Agnico disagrees that a trend analysis is required as part of the PEAMP, according to the proponent's responsibilities identified under Appendix D of the Project Certificate, and reiterates that such analyses are provided as required in individual monitoring reports. Nevertheless, as requested by NIRB, AEM will add a commentary within the PEAMP on whether any trends have been observed at the mine site for each VEC where impacts in excess of those predicted have been observed.

1.6 Aquatic Environment

Concern: Agnico Eagle noted within the 2015 Annual Report that the Core Receiving Environment Monitoring Program (CREMP) determined that there were some apparent mine-related changes in conventional parameters relative to baseline/reference conditions at one (1) or more near-field and mid-field areas. Agnico Eagle further noted that while these results represented mine-related changes, the observed concentrations were still relatively low and unlikely to adversely affect aquatic life. Agnico Eagle stated that these trends would need to be reviewed again in 2016. The NIRB observed that for the 2014 Annual Report, Agnico Eagle reported similar apparent mine-related changes and remarked that follow-up studies were recommended and would be conducted in 2015. The 2015 Annual Report and the PEAMP section did not discuss these follow-up studies and what the potential sources of the apparent mine-related changes were. Further discussion on these mine-related changes is required.

In reviewing the PEAMP section of the Annual Report it is noted that the section summarized the results of each underlying monitoring program, including the CREMP. This section noted that any significant mine-related changes in the water quality that had the potential to cause risks to the aquatic environment were not observed nor detected. This statement appeared to be in conflict with the discussion under Section 8.9 of the Annual Report.

The PEAMP section of the 2015 Annual Report did not provide any discussions on the CREMP or Agnico Eagle programs or any discussion on the changes observed/detected at the aquatic stations. Agnico Eagle did not 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 is considering finding other near-field stations that could be used for baseline/reference conditions. As noted previously, a year over year comparison would provide a robust analysis and would have been useful to help identify trends in the data collected for the aquatic environment, specifically for the water quality and sediment quality data

Recommendation 6: The Board requires that Agnico Eagle provide a full trend analyses and discussion on the aquatic environment based on the data collected to date under the Core Receiving Environment Monitoring Program (CREMP) and indicate whether any impacts are being observed from the proposal and whether the analyses meets or exceeds the predictions made within the FEIS. This is required as noted before under Appendix D for the post-

environmental assessment monitoring program (PEAMP). This should be provided within 30 days' receipt of the Board's recommendations.

Agnico Eagle's Response:

Trend analysis is done on an annual basis as part of the CREMP program. CREMP reporting changed substantially starting in 2011 with a stronger focus on assessing potential temporal and spatial trends in the data related to mining activity. Emphasis is placed on identifying temporal changes to support the AEMP and ultimately the environmental management process, rather than on providing a detailed description of the annual results in isolation. The CREMP report applies numerical decision criteria (i.e., triggers and thresholds) to assess the magnitude of change in CREMP monitoring variables. Water and sediment chemistry data are initially compared to the trigger values. Further comparison to the threshold values is undertaken only if trigger values are exceeded. The application of trigger/threshold values complements the spatial-temporal trends assessment initiated in the 2011 CREMP (Azimuth, 2012), which used trend plots (each showing monitoring results since 2006) to identify patterns of change consistent with one or more of the mining activities (described in Section 1.4 of the 2015 CREMP Report [Azimuth, 2016]).

Water Quality

Formal statistical analysis of the 2015 water quality data identified major cations (Ca, Mg, K, Na), hardness, conductivity, alkalinity, and total dissolved solids as parameters that were elevated at one or more of the near-field and mid-field stations relative to baseline/reference conditions (refer to Section 3.2.2.2 of the 2015 CREMP report for details). We have been tracking the progression of these changes for the past several years. It is important to note that none of these parameters have effects-based thresholds (i.e., CCME WQGs), and the slight increase in concentrations relative to baseline were considered unlikely to adversely affect biota.

In addition, formal comparisons between surface water quality results and the FEIS predictions were made in the 2015 CREMP as per commitments made during the NWB A Licence renewal process and recommendations made by NIRB on the 2014 CREMP report. To ensure consistency with the decision-making context of the FEIS, the assessment criteria used in the FEIS for defining the predicted magnitude of impacts to receiving water quality were also used to classify the results of the comparisons:

- *Very High – water quality concentrations > MMER*
- *High – 10x CCME WQG < water quality concentrations < MMER*
- *Medium – 1x CCME WQG < water quality concentrations < 10x CCME WQG*
- *Low – water quality concentrations < 1x CCME WQG*
- *Negligible – water quality concentrations similar to baseline*

As stated in the 2015 CREMP report:

"The CREMP is detecting changes in some general water quality parameters that appear to be related to mining activity. These changes are also reflected in higher concentrations of some parameters when compared to the model predictions in FEIS. Most metals are below the predicted concentrations for Third Portage Lake (Table 3.2–5), Second Portage Lake (Table 3.2–6), and Wally Lake (Table 3.2–7) with the exception of isolated instance of aluminum, iron, and manganese. Strontium consistently exceeded the model predictions in all three lakes, but importantly did not exceed the trigger (95th percentile of baseline) indicating current strontium concentrations are representative of pre-development conditions. It is important to point out that none of the above parameters that exceed the trigger values or FEIS model predictions have trigger values that were set in the context of effects-based threshold values (e.g., CCME water quality guidelines). Thus, CREMP water quality results are consistent with the "low" significance (i.e., <1x CCME WQG) rating applied to model predictions in the FEIS (Cumberland, 2005)."

In summary, changes in water quality have been identified in the CREMP. These changes are most apparent at certain near-field stations and are likely related to the discharge of effluent and from dust. None of the identified changes seen to date are associated with parameters for which CCME has derived WQGs and none are of sufficient magnitude to result in adverse effects to aquatic life. These trends will continue to be tracked and assessed for their potential to exceed levels of environmental concern in the receiving environment.

Sediment Quality

Formal statistical comparison of sediment chemistry data against trigger values is completed in years when sediment cores are collected (i.e., to allow for isolation of the surface layer). Given that sediment conditions changes more slowly than water, the coring study is conducted every three years to match the timing of Environmental Effects Monitoring under the Metal Mining Effluent Regulations. As a complement, but not used to formally evaluate sediment chemistry against the triggers, sediment grab samples are collected annually (paired with benthic invertebrate community sampling). In years when only sediment grabs are collected, such as 2015, the approach to describing trends is purely visual (i.e., interpreted from temporal plots). Formal statistical testing of the sediment core chemistry results against triggers/threshold was last completed as part of the 2014 CREMP report (Azimuth, 2015b). With the exception of chromium at Third Portage Lake East Basin (TPE), there were no anomalous temporal/spatial patterns observed in 2014 for any sediment contaminants. A change in chromium was first noticed at TPE in 2009 when coring results showed an "increase" in concentrations despite samples being collected in July prior to the onset of Bay-Goose Dike construction (which started early August 2009). The 2014 coring program was expanded at TPE to assess whether apparent changes in sediment chromium concentrations at TPE were due to spatial bias or whether there was a real temporal trend of increasing sediment chromium concentrations. The results of the 2014 coring program suggested chromium concentrations were likely increasing due to inputs from the ultramafic rock used to

construct the Bay-Goose Dike (2014 CREMP Report). A focused study on chromium bioavailability was undertaken in 2015 to assess the potential for toxicity to benthic organisms as a result of increasing chromium concentrations. Detailed results of the sequential extraction analysis and sediment toxicity tests are provided in Section 3.2.3.3 of the 2015 CREMP report. In summary, the weight of evidence assessment of the available data indicated low bioavailability of chromium in the sediment, and low likelihood of toxicity to the benthic invertebrate community at TPE. The TPE chromium trend will continue to be closely monitored, but results presented in the 2015 CREMP did not merit additional targeted studies in 2016.

Recommendation 7: The Board requests that Agnico Eagle 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 is considering finding other near-field stations that could be used for baseline/reference conditions. This should be provided within 30 days' receipt of the Board's recommendations.

Agnico Eagle's Response:

A discussion on apparent mine-related changes in water and sediment chemistry the potential cause(s) was discussed in response to Recommendation 6 (see above).

Agnico Eagle is not considering finding other near-field stations that could be used for baseline/reference conditions. The underlying study design of the CREMP follows a before-after / control-impact (BACI) framework, but also includes elements of a gradient design (i.e., "impact" areas are represented by near-field, mid-field and far-field areas) (CREMP Design Document; Azimuth, 2012). Successful implementation of a BACI design requires the collection of pre-development data at control (reference) and impact (exposure) areas in order to distinguish between naturally-occurring changes and those related to mining. Agnico Eagle devoted significant resources to characterizing baseline water and sediment chemistry concentrations at reference and exposure stations, which allowed for the development of a statistically powerful BACI framework to detect potential changes in water and sediment chemistry over time that are likely attributed to mining activities.

Near-field areas by definition are situated in close proximity to potential mine influences such as dikes and effluent discharge. These areas provide the first line of early-warning for introductions of potential stressors into the receiving environment. If new near-field station(s) were established, there would be no way of determining whether existing concentrations of parameters in water and sediment represent pre-mining conditions. In other words, they could not reasonably be used as reference stations. Furthermore, all the data collected at any new near-field stations would fall in the "after" period of the BACI design. Without "before" data, there would be no way of determining whether observed changes were due to natural variability, both spatially and temporally, or to mining influences. The inability to differentiate natural variability from potential mining

related changes is the primary reason Agnico Eagle is not considering adding additional near-field stations to the CREMP study design.

1.7 Noise Quality Monitoring

Concern: In review of the 2015 Annual Report, it was noted that the measured sound levels in 2015 exceeded predicted sound levels only at station R5 on one (1) occasion. Agnico Eagle stated that this was likely because the FEIS predictions for noise did not include helicopter activities at the exploration camp and AWAR, which is located adjacent to this monitoring station as noise sources in the modeling parameters. Therefore, Agnico Eagle concluded that predicted noise levels modelled for this location were not realistic based on actual site activities. The NIRB would like to emphasize that the noise model presented within the FEIS is expected to be a reasonable accurate basis for impact predictions. Agnico Eagle should consider updating the model predictions to identify any issues with the previous model and to further provide information whether the impacts previously assessed in the FEIS have significantly changed. This should provide further clarity to parties whether or not impacts from noise are being observed at the mine site.

Recommendation 8: The Board request that Agnico Eagle reassess the noise model for this location based on the current information available at the Meadowbank Gold Mine Site to identify any issues with the previous model and to further provide information whether the impacts previously assessed in the Final Environmental Impact Statement have significantly changed. The updated model and information should be provided in the next annual report

Agnico Eagle's Response:
The model will be evaluated in the next annual report and predicted impacts within the FEIS discussed further.

2 DFO

2.1 1a - Whether the conclusions reached by AEM in the 2015 Annual Report are valid

Concern: AEM's Habitat Compensation Monitoring Report p.3 Section 1.3.1 AWAR Monitoring Objectives states "Additional conditions pertaining to monitoring of HADD sites were no longer required as per the HCMP (that was designed in consultation with DFO) and as part of the DFO authorization amendment process."

DFO did not amend conditions 4.3, 5.2.2 or 5.3 which all pertain to the monitoring of HADD sites.

Agnico Eagle's Response:

Agnico Eagle is in agreement that Conditions 4.3 and 5.3 were not amended and will clarify in future reports. Regarding Condition 5.2.2, this item requires "Monitoring to assess if the installation of crossing structures has adversely affected upstream and downstream fish migration according to the schedule in 5.2 above". Agnico would like to note that as per the 2014 HCMP (which was developed in consultation with DFO) monitoring of migratory movements (Condition 5.2.2) is now only conducted for the R02 crossing where the habitat compensation feature was installed, rather than at all 5 crossings where HADD occurred. This revision was consistent with monitoring intent in the original 2007 AWPAR HADD monitoring plan (Appendix J of the 2007 AWPAR Annual Report): "Furthermore, we suggest that the adaptive management philosophy underlying the conditions of the Authorization be followed to allow critical review of monitoring components and/or frequency after several years of data are available." Since monitoring of fish movements for 4 consecutive years (2008 - 2011) indicated no impediment to fish passage at the HADD-designated crossings, it was determined that ongoing monitoring would focus only on the crossing where the compensation feature was constructed (R02). The 2014 HCMP with this revision underwent review by DFO after submission of drafts on April 28, 2013, and July 23, 2013.

2.2 1b - Any areas of significance requiring further studies

Concern: AEM's Annual Report, p.29 states "treatment may be required for copper, silver, selenium and total nitrogen as the pit water quality may exceed CCME limits."

DFO requests AEM provide an estimate of the approximate time frame by which such treatment would achieve water quality within CCME guidance and suitable for the introduction of fish. Any updates to the schedule of the Habitat Compensation Monitoring Plan should be reflective of this time frame.

Agnico Eagle's Response:

It is anticipated that if required, the water treatment of the reclaim water stored in the South TSF Reclaim Pond would begin near the end of the pit mining and TSF operations, during the summer months of 2018. The objective is to actively treat the reclaim water before it is transferred to the Portage Pit, if treatment is required to meet CCME guidelines for copper, silver, selenium and total nitrogen. Treatment options were included in the Water Quality Forecast presented in the 2015 Annual Report, and will be again included in the next forecast model provided in the 2016 Annual Report. As previously stated, water quality must meet Type A stipulates prior to breaching to ensure the protection of aquatic biota. Agnico Eagle believes the HCMP currently reflects this time frame. Furthermore, the pits will be monitored in accordance with the NWB Type A conditions.

2.3 1c - changes to the monitoring program which may be required

Concern: DFO is currently reviewing AEM's recently submitted updated Habitat Compensation Monitoring Plan and will be providing comments shortly.

Agnico Eagle's Response:
Comments on the Habitat Compensation Monitoring Plan have been received from DFO and in the process to be addressed.

2.4 2a)i) - How the authorizing agency has incorporated the terms and conditions from the Project Certificate into their permits, certificates, licences or other government approvals, where applicable

Concern: In response to AEM's 2013 Annual Report, DFO provided the NIRB with copies of *Fisheries Act* Authorizations issued for the Meadowbank Project. No new Authorizations have been issued since.

Agnico Eagle's Response:
When DFO completed the review of the 2015 Annual Report, no new Authorizations were issued. In July 2016, Agnico Eagle have received an Authorization NU-14-1046 for the Phaser Lake fishout and dewatering. Requirement of this Authorization will be included in the 2016 Annual Report.

2.5 2a)iii) a summary of AEM's compliance status with regard to authorizations that have been issued for the Project

Concern: Regarding *Fisheries Act* Authorization NU-03-0190 condition 5.3, DFO was unable to locate a photographic record.

Regarding *Fisheries Act* Authorization NU-08-0013, DFO was unable to locate any mention of monitoring the Western Channel or construction of the proposed habitat shoal.

Agnico Eagle's Response:
Fisheries Act Authorization NU-03-0190 condition 5.3: Thank you for bringing this to the attention of Agnico as this was an oversight in our reporting. Below are presented the pictures of the R02 AWAR compensation features taken in summer 2015.

Fisheries Act Authorization NU-08-0013: As previously discussed by DFO and Agnico, and further agreed upon during our teleconference on June 19, 2014, as of 2012, the Western Channel Crossing authorization is not valid as it is incorporated into NU-03.0191.3 (as it was consumed by mining operations in the Portage Pit in 2011 and accounted for in the revised 2012 NNLP). Therefore, no monitoring was completed.

3 Environment and Climate Change Canada (ECCC)

3.1 Comment 1 - Mine Waste Rock and Tailings Management Report

Concern: Section 2.1.4.3 (Impact of Global Warming on Site Conditions, pg 12) of the Updated Mine Waste Rock and Tailings Management Report and Plan states that " Studies indicate that the boundaries of discontinuous and continuous permafrost are expected to move northward due to global warming *Woo et al., 1992) (Figure 2-2). Predictions based on a warming of 4C and 5C over the next 50 years (NRC, 2004) (Approximately double the rate predicted above) suggests that the Meadowbank site would remain within the zone of continuous permafrost, but the active layer thickness would be expected to increase, and the total thickness of permafrost may slowly reduce with time". If this is true, does Agnico Eagle Mines Ltd. (the Proponent) have a proposed mitigation plan to mitigate a possible effect on the ability of permafrost to encapsulate potentially acid generating (PAG) rock, if warming in the north

increases as projected. The possible increase of the thickness of the active layer could mean increased flow through the active layer and perhaps water contact with PAG material.

Agnico Eagle's Response:

The Portage Rock Storage Facility (PRSF) is composed of an internal sector comprising potentially acid generating (PAG) waste rock and a cover comprising of non-acid generating (NPAG) waste rock. The PAG rock portion of the PRSF has subsequently been capped, around the perimeter as the facility has risen, progressively, during operations with a 4m layer of NPAG rock to constrain the active layer within relatively inert materials. The control strategy to minimize the onset of oxidation and the subsequent generation of acid rock drainage includes freeze control of the waste rock through permafrost encapsulation and capping with an insulating convective layer of NPAG rock. The waste rock below the capping layer is expected to freeze, resulting in low rates of acid rock drainage (ARD) generation in the long term.

A thermal monitoring plan was developed to observe the freezeback of the tailings storage facility (TSF) and PRSF in order to comply with the Nunavut Water Board (NWB) water license 2AM-MEA1525. The License requires a monitoring plan to monitor temperatures of the TSF and PRSF during and after mining operations. Instrumentation has been installed in the PRSF to monitor the freeze back in the waste rock. Results to date from the thermistors indicate that freeze back is occurring in the PRSF structures. Thermal monitoring will continue during operations and closure. Based on the results of thermal modelling, it is expected that the material within the PRSF will freeze within two years of placement (BGC, 2004 - Meadowbank Gold Project Preliminary Geothermal and Slope Stability Modelling of Rock Storage Facilities). Additional modelling work will be completed as part of the PRSF cover performance assessment, taking into consideration climate change. An adaptive management plan includes monitoring of water quality during operations to confirm modelling predictions and to allow adjustments to the closure plan as required. Results of the modelling will be provided in the Final Closure and Reclamation plan for Meadowbank site.

3.2 Comment 2 - Mine Waste Rock and Tailings Management Report

Concern: Section 6 (Mine Waste Rock, pg 52) of the Updated Mine Waste Rock and Tailings Management Report & Plan states that "The diversion ditch system further prevents any watershed freshet from reaching the RSF mitigating any potential contamination". It should be noted that any runoff or seepage that collects in the operations area (mine site) should be treated as effluent and not allowed to drain into the environment without proper treatment.. Effluent is defined under the Metal Mining Effluent Regulations (MMER) to include runoff and seepage, and therefore it is advised that the Proponent continue to monitor and develop an adaptive management plan in order to mitigate any issues that may arise.

Agnico Eagle's Response:

The diversion ditch system located around the tailings storage facility (TSF) and the Portage Rock Storage Facility (PRSF) is designed to collect non-contact water only. The diversion ditches collect runoff water from the nearby watersheds to avoid any contact with operations area. Diversion ditch water is monitored as per Water License 2AM-MEA1525 and Freshet Action Plan requirements. No contact water collected in the operations area is directed towards the diversion ditch. The contact water collected on site in the Portage area is managed via Water management structures such as sumps WEP1 and WEP2 and pumped to the South Cell Reclaim Pond. WEP1 and WEP2 sumps were built to ensure proper management of the contact water.

Currently, two effluents at Meadowbank are under MMER regulations; station ST-10/MMER-2, Vault Attenuation Pond to Wally Lake, and station ST-8/MMER-3, East Dike seepage to Second Portage Lake.

3.3 Comment 3 - Incinerator Waste Management Plan

Concern: Section 5.2 (Acceptable Waste for Incineration/Waste Oil Furnaces, pg 10) of the Incinerator Waste Management Plan lists 'organic matter including food' as acceptable for incineration. It is not clear if 'organic matter' includes sewage, as sewage is no longer listed. If sewage is incinerated at the mine site, the Proponent should indicate under what waste type category sewage is captured, in both the Incinerator Waste Management Plan and the Incinerator Daily Report Log Book. The Proponent should also clarify whether sewage was incinerated during the stack tests.

Agnico Eagle's Response:

"Organic matter" doesn't include sewage. No sewage is incinerated. As per the "Operation and Maintenance Manual: Sewage Treatment Plant (Version 5, 2015), sewage sludge from the STP treatment units is transferred to the Tailings Storage Facility. The treated wastewater is pumped into the Stormwater Management Pond which is emptied in the Tailings Storage Facility when full. Therefore, no sewage was incinerated during stack testing.

3.4 Comment 4 - Incinerator Daily Report Log Book

Concern: The Incinerator Daily Report Log Book lists 'solid hydrocarbon waste' as solid burned material, however it is not clear what materials are included under this term. The Proponent should clarify what is included in 'solid hydrocarbon waste'.

Agnico Eagle's Response:

Solid hydrocarbon waste includes absorbent pads or rags containing hydrocarbon and that were used to contain and clean up spills or were used during maintenance operations occurring on site.

3.5 Comment 5 - Incinerator Stack Testing Report

Concern: The Incinerator Stack Testing Report states that the 2015 incinerator stack tests were carried out on June 19, 20, and 21. The Incinerator Daily Report Log Book lists the types of wastes (percentage of food waste, dry waste, and solid hydrocarbon waste), and the total volume of waste as a percentage of the maximum capacity of the incinerator. The table below provides waste data from the Incinerator Daily Report Log Book and the stack test results for dioxins and furans (PCDD/F) for June 19, 20, and 21. It appears that there is an exponential increase in PCDD/F emissions with volume of waste incinerated. From the test conducted with the incinerator 50% full to the test with incinerator 75% full, the PCDD/F emissions increased by almost 6 times. The stack tests should be conducted with the maximum waste capacity of the incineration and with a typical waste composition. Wastes should be collected prior to the tests to ensure that there is enough for full burn. It is noted from the Incinerator Daily Report Log Book that there were many days where 100% (some days with more than 100%) of the maximum waste capacity of the incinerator was burned.

Agnico Eagle's Response:

Agnico Eagle agrees and incorporated this comment into its 2016 stack testing procedures. Discussions were held with the relevant department to ensure proper procedures are followed. Tests were conducted from June 30th to July 3rd and the percentages of total estimated volume of the primary chamber were 100%, 100%, 90%, and 90%, respectively, which is representative and consistent with load volumes at the incinerator on site.

Agnico Eagle will ensure that future stack tests are conducted with the maximum waste capacity of the incineration and with a typical waste composition.

4 Government of Nunavut

4.1 Comment 1 - All-Weather Access Road Ground Surveys

Reference: Appendix G13 2015 Wildlife Monitoring Summary Report

Summary of proponent's conclusions: "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 Universal Transverse Mercator (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 March 2016 All Weather Access Road (AWAR) Systematic Ground Surveys 35 addition, all vehicle operators report ungulates seen along the road to the dispatcher."

Comments and supporting rationale: The road survey design is not adequate. Having the driver function as the second observer means that one side of the road will not have the same level of survey detail as the other side. For safety reasons the driver will be distracted from the task of the survey. If two passes are undertaken to allow the passenger to observe both sides of the road, the first pass will influence the results of the second pass.

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

Pursuant to term 33 part 2 of the Project Certificate for this project the Proponent will facilitate the monitoring of environmental and socio-economic impacts of the AWAR and undertake adaptive management.

The GN recommends AEM consider the implementation of additional monitoring methods 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.

> ***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 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.*

4.2 Comment 2 - Interactions between Arctic Fox and the Project / Project Personnel

Reference: 2015 Wildlife Monitoring Summary Report Pages 27-30

Summary of proponent's conclusions: "Fox activity stayed relatively similar to 2014. Improved practices for waste segregation and incineration, the use of enclosed food waste facilities, and skirting around buildings have improved Arctic fox protection and decreased fox-human interactions. Weekly inspections by environmental personnel provided monitoring data that indicated re-occurrences of Arctic fox on-site, but no trapping was required in 2015 (Appendix A). One nuisance Arctic fox was euthanized after deterrence methods were not effective (see Appendix C for Incident Report), and another Arctic fox was found dead after fighting with another fox (see Table 6.1)."

Comments and supporting rationale: In The Proponent's results they state that one Arctic fox was euthanized while in table 6.1 two incidents mention the euthanizing of Arctic foxes. The Feb 15 incident I table 6.1 states "Foxes fighting, dead fox found and fox euthanized" while table 6.2 states "Killed in fight with another fox. Carcass removed and Incinerated". Please explain these inconsistencies.

An incident states that a fox was found "tied to a rope" by mill workers and then released. Please explain what is meant by the term "tied", was the fox entangled or was it deliberately tied to a rope?

A February 16 incident states that an employee was bitten by a fox. Aggression is a sign of the rabies virus. This along with the fight resulting in one fox killing another the previous day is of serious concern to the GN. What action was taken following these incidents with regards to public safety including the alerting of conservation officers and local medical professionals?

The persistent presence of foxes on the project site is an indication that they are finding food resources at these locations. Pursuant to term 25 of the Project Certificate The Proponent shall control waste in a manner that reduces or eliminates the attraction of carnivores. All carnivores should be promptly and aggressively deterred, leaving no time for animals to linger or become habituated.

Recommendation: AEM should consider treating incidents involving abnormal aggression by Arctic foxes as a public health concern. Foxes euthanized or found dead on the project site should have samples sent for rabies testing if possible.

Pursuant to Project Certificate term 25 the GN also recommends that the Proponent re-evaluate its garbage storage and disposal practices in the areas that it is having consistent fox sightings.

Agnico Eagle's Response:

Inconsistencies within results and table are attributable to transcript variations within different logs. To alleviate these variations, a standardized system was implemented in 2016 that will centralize information.

The fox that was reported as being tied was not purposely tied but appeared to get tangled in a roped in an area around the mill.

Aggressive behaviors and issues are addressed by increased patrolling by the Environmental Department and deterring when needed and deemed safe to do so. Wildlife behavior and interactions are part of the site induction at Meadowbank. In addition, memos are also sent site wide to discuss particular incidents when needed. The Environmental Department also assists to department "tool-box" meeting to address wildlife safety issues and concerns.

Any concerns about aggressive animal behavior are addressed to the GN-DOE officer in Baker Lake and any feedback received applied. Mortality is also reported directly to the Officer and when requested, carcasses brought to the GN-DOE office for further evaluation. If an animal is suspected to have the rabies, the wildlife officer will be advised and then, at his discretion, he can conducted rabies test.

Waste management is consistently monitored by the Environmental Department through site inspections on a weekly basis. Any concerns are addressed and corrected. For example, lids on garbage roll-off were modified to make easier use by housekeeping staff and ensure waste were properly disposed and remains unavailable for wildlife.

4.3 Comment 3 - Relative Percent Difference with the Dust Collection Data

Reference: AWAR Dustfall Study Page 8

Summary of proponent's conclusions: "The relative percent differences (RPD) values calculated for total dustfall for duplicate canisters were 8, 45, 19, and 44% at distances of 50, 100, 150, and 300m from the road, respectively (one duplicate per distance). Alberta Environment (206) indicates results should be treated with caution when field duplicates exceed 25% (in water samples), and that the source of the difference should be investigated (e.g. field or laboratory contamination). No similar recommendations were found specifically for dustfall samples, but spatial variability of the magnitude observed does not appear to be uncommon; up to 99% RPD was found in samples collected just 20m apart."

Comments and supporting rationale: In the assessment of dustfall levels in relation to the All Weather Access Road (AWAR) the proponents collected data has an exceedingly high RPD. High RPD's can result in the accuracy of the data being called into question. Pursuant to term 33 part 2 of the Project Certificate for this project The Proponent will facilitate the monitoring of environmental and socio-economic impacts of the AWAR and undertake adaptive management.

Recommendation: AEM should consider including a more comprehensive explanation of their dust sampling and collection methods, including a more detailed discussion of potential contamination error, and alternatives including alternative sampling methods if contamination errors persist.

The Proponent should also include in follow up a detailed explanation of any sources of error with respect to this data collection method should they be found through their investigation.

Agnico Eagle's Response:

As recommended by the GN, Agnico will include a more comprehensive explanation of dust sampling methods in the 2016 Annual Report, as well as a discussion of potential sources of error and alternative sampling methods, if necessary. However, Agnico also notes that as described in the 2015 AWAR Dustfall Study Report, the nature of the media being sampled is known to result in substantial variability between field duplicates, and

high RPD values may not be suggestive of contamination error but rather a realistic representation of the spatial variability of settleable particulate matter at the field scale.

4.4 Comment 4 - Hunter Harvest Survey

Reference: Appendix G13 2015 Wildlife Monitoring Summary Report

Summary of proponent's conclusions: "In 2015, the percent of harvest within the RSA was 84%, slightly down from 2014 (83%) and higher than the average from 2007 to 2014 (79%; see Table 8.2). Comparatively, in the historical NWMB study (i.e., baseline condition), percent Caribou harvest within the RSA was 67%. To date, the threshold level of 20% change in hunting patterns within the RSA has not been exceeded (e.g., in 2015, 67% baseline compared to 84% = 17% change; see Table 8.2 and Figure 8.5)(Note: previous annual reports reported results and exceedances of 20% within 5 km of the road, but according to the TEMP [2006] actual thresholds of 20% are linked to the RSA). The total number of Caribou harvested within 5 km of the AWAR in 2015 was 165 animals, which represented 54% of all harvests recorded by participants and is higher than the average of 40% since 2007 (Table 8.2). In the historical NWMB study (i.e., baseline condition), Caribou harvests within 5 km of the road were estimated to be 18% of total harvest year round (Table 8.2). As participant rates decline, interpretations of data become more challenging because of the inherent biases of a smaller sample set."

Comments and supporting rationale: The GN would like clarification of the Proponents calculations that the threshold of a change of 20% of historical harvest activities within the RSA has not been exceeded. The established historical norm was a 67% share for harvesting of caribou within the RSA by Baker Lake Hunters. The threshold of a 20% change in activity would, according to the GN's preliminary calculations, place the harvesting proportion at 53.6% and 80.4% for minimum and maximum values respectively. The threshold of 80.4% of harvesting activity occurring within the RSA would therefore have been exceeded during the last 3 years 2013, 2014, 2015. Pursuant to term 33 part 2 of the Project Certificate for this project the Proponent will facilitate the monitoring of environmental and socio-economic impacts of the AWAR and undertake adaptive management.

Recommendation: The GN requests that AEM either provide further written clarification of their calculations or update section 8.5 and table 8.3 of the Wildlife Monitoring Summary Report to reflect the exceedance of the 20% change in the RSA historical harvest activity threshold.

Agnico Eagle's Response

Since the initiation of the Hunter Harvest Study (HHS) and analyses of annual HHS results (i.e., annual reports from 2008 to 2014), the total percent change within the LSA has been used as the threshold level and not a 20% change from average percent usage, as interpreted by the GN. The initial Terrestrial Ecosystem Management Plan (TEMP; Cumberland 2006) for the project stated, "Increased hunter harvest levels are likely to be observed along the all-weather access road, however, overall harvest rates in the Baker Lake area will not change significantly (i.e., >20%)". For the 2015 annual report, Agnico

realized that the threshold levels set in the TEMP applied to the RSA (Appendix C, TEMP) and not the LSA; therefore, this change was made in the 2015 report.

4.5 Comment 5 - Socio-economic Monitoring

Reference: 2015 Annual Report sections 11.10 and 11.11; and 2014 Meadowbank Socio-Economic Monitoring Report (Appendix J7), Terms & Conditions 63, 64, 65

Summary of proponent's conclusions: The Proponent participated in the 2015 Kivalliq Socio-Economic Monitoring Committee (KivSEMC) annual meeting and retained Stratos Inc. to develop the Meadowbank Socio-Economic Monitoring Program in consultation with the GN and INAC.

Comments and supporting rationale: The Proponent engaged in the work of the KivSEMC during the 2015 annual meeting in Rankin Inlet, sharing project-specific socio-economic information with regional stakeholders as per Project Certificate condition 63.

Agnico Eagle retained Stratos Inc. to work collectively with member organizations of the The Meadowbank Socio-Economic Monitoring Committee (AEM, GN, INAC) to develop the Meadowbank Socio-Economic Monitoring Program in accordance with Term and Condition 64. The GN is satisfied with the monitoring program, which provides a comprehensive assessment of the Project's socio-economic benefits and impacts on Kivalliq communities and Nunavut. The monitoring program also includes data and information on employee community of origin as outlined in condition 65.

Recommendation: The GN appreciates AEM's ongoing active participation with the regional KivSEMC and will continue to work with them and the Meadowbank Socio-Economic Monitoring Committee to ensure ongoing delivery of project-specific socio-economic information to impacted stakeholders.

Agnico Eagle's Response:
Agnico Eagle acknowledges the GN's comments and looks forward to continue to work with GN and INAC to ensure ongoing delivery of project-specific socio-economic information that will satisfy NIRB Project Certificate Condition.

5 Indigenous and Northern Affairs Canada (INAC)

5.1 Comment 1a - Annual Report

Concern: AEM provides supplementary documentation as part of its annual report. Included in the documentation provided are an annual geotechnical inspection report (produced by Golder Associés Ltée or Golder) and reports produced from meetings held by the Meadowbank Dike Review Board (MDRB). This supplementary documentation often contains recommendations to the operator to help improve site management. However, during our review of the materials provided, we were not always able to determine if these recommendations were implemented.

It would be beneficial if AEM developed, and included in its annual report, a tracking table that captures recommendations from all parties and reported on the implementation of these recommendations. The table could include information regarding whether a recommendation was adopted, how it was implemented and/or the rationale as to why a recommendation was not considered. A few examples of recommendations that could not be tracked include the following:

2015 Annual Geotechnical Inspection Report by Golder (Appendix B1, Annual Report)

- Recommendation to replace the safety berm on several areas of Bay-Goose Dike.
- Recommendation to puncture and repair a balloon filled with water that is present in the geomembrane liner installed on the Stormwater Dike.
- Recommendation to monitor the water quality of the ponding occurring at the Stormwater Dike and to provide the information to the engineering department so it can be determined whether or not the water is seepage from the North Cell.
- Recommendation to repair the geomembrane liner between Tanks 1 and 2 and at the south side of Tank 2 and 3 at the Baker Lake fuel tank farm and re-cover the liner with fill.
- Recommendation to repair two small channels of erosion and control the erosion of the foundation pad at the Meadowbank Main Camp fuel tank area.
- Recommendation to flag the piezometers that recorded data below 0°C in the past and to be very careful when interpreting their data as they might be broken.

Meadowbank Dike Review Board Reports (Appendix B4, Annual Report)

- Recommendation relating to the installation of equipment used to monitor temperature in the proposed cover of the Tailings Storage Facility with a suggestion to consider the approach used at the Diavik site.
- Recommendations relating to confirming the findings of the Willowstick survey which used electro-magnetic geophysical surveys to assist in identifying the potential pathways of seepage occurring at the Central Dike.

The above list is not inclusive of all recommendations that could not be tracked. INAC also recommends that this tracking carry over from year-to-year, so that any recommendations deferred to be completed in subsequent years, will be addressed in the following year's Annual Report.

Agnico Eagle's Response:

In the 2015 Meadowbank Annual Report, responses to the recommendations and comments from the Annual Geotechnical Inspection and the Meadowbank Dike Review Board Report are available. These responses from Agnico Eagle address all recommendations outlined in the reports, and explain how Agnico Eagle intends to address or implement the recommendations.

The implementation plan to address the recommendations of the 2015 Annual Geotechnical inspection is available in Appendix B1 of the 2015 Meadowbank Annual Report, following the Inspection Report.

The Meadowbank Dike Review Board Reports 17 and 18 are available in Appendix B4 of the 2015 Meadowbank Annual Report, along with the Agnico Eagle's responses to the recommendations. Agnico Eagle responses are sent to the members of the board for their review. During the yearly board meeting held at Meadowbank, Agnico Eagle responses are discussed with the board members and the board may request additional information if required.

5.2 Comment 1b -Seepage Monitoring Program

Concern: The water licence issued for the Meadowbank project requires the generation of a report regarding the operator's Seepage Monitoring Program (2AM-MEA1525 Part I, Item 14). INAC is of the opinion that AEM should be reporting all on-site seepage, including where there is an indication of potential seepage. An example was provided in the 2015 Annual Geotechnical Inspection Report by Golder (Appendix B1, Annual Report) which stated that ponding was observed at Saddle Dam 2, and recommended follow-up actions to determine whether it was seepage from the Tailings Storage Facility.

Agnico Eagle's Response:

In 2015, Agnico Eagle reported all on-site seepages in Section 8.3.7 of the 2015 Meadowbank Annual Report.

As part of the 2015 Annual Geotechnical Inspection, Golder made the following recommendations:

"Saddle Dam 1 has a permanent sump with a pump back system. For Saddle Dam 2, such a system is not considered necessary as no seepage is reported, but AEM should be prepared in case of any change especially since water has been observed ponding in the rockfill of SD2 during the inspection."

And

"Water was observed on the downstream side ponding within the rockfill embankment between Sta. 20+275 to Sta. 20+475. It is recommended to be on the lookout for change of the thermal regime of its foundation and upstream toe from the installed thermistors."

The following responses were provided by Agnico Eagle in Appendix B1 (Geotechnical Inspection Report) of the 2015 Annual Report:

"If required, a similar pumping system as the one located at Saddle Dam 1 would be installed at Saddle Dam 2. However, for now, a pumping system is not necessary at Saddle Dam 2."

And

"Moreover, thermistors located in Saddle Dam 2 are reviewed on a regular basis to detect any change or anomaly in temperature trend within the structure. No trend indicating changes in the thermal regime of Saddle Dam 2 have been observed to date. Review of the thermistors results will continue."

5.3 Comment 1c - Piezometer

Concern: AEM uses piezometers to collect data relating to groundwater flow, which assists in monitoring the integrity of dikes and dams. INAC made note of references to piezometer freeze up within the Annual Report and supporting documentation. It is important to record occurrences of piezometer freeze-up as data generated from a frozen piezometer is not reliable. INAC recommends that AEM report data gaps generated by frozen or malfunctioning piezometers or any other monitoring equipment, and propose mechanisms to replace faulty equipment or prevent future damage to these instruments. Additionally, AEM should discuss the implications of incomplete or inaccurate data on monitoring programs.

Agnico Eagle's Response:

Piezometers are installed to monitor water pressure, within or close to dewatering or tailings dams and pits area. The monitoring of the instrumentation on site, including the piezometers, is performed and recorded on a regular basis and will continue throughout the operations and in closure where applicable. A register of all the broken instruments is filed on a monthly basis by the geotechnical engineering team and is reported in the instrumentation report. When a piezometers is found to be nonfunctional or unreliable because or freeze up or other damages, it is recorded and considered in the data interpretation. If deemed necessary, a broken piezometers or any other geotechnical instrumentation is replaced when possible, if, for example, no other geotechnical instrument provide information for the given area or if the information provided by the broken instrument is judged critical to the proper interpretation of the geotechnical data.

5.4 Comment 1d – Geotechnical Inspection

Concern: Beginning in 2003, Golder's annual geotechnical inspection reports have reported on the condition of water management infrastructure installed on the road to the vault pit and have reported blockages in many culverts during freshet. Again, the 2015 Geotechnical Inspection Report noted damage to culverts, including one that had an entirely obstructed inlet due to rockfill and a broken outlet. It is unclear whether repairs have been performed each year and the new culverts damaged again, or if these culverts have remained unrepaired since 2003.

INAC recommends that AEM report on repairs made to drainage infrastructure and remain diligent in ensuring adequate site water management.

Agnico Eagle's Response:

It should be noted that the culverts on the Vault road were installed in 2013 when the road was built, and not 2003. As mentioned in Agnico Eagle's response to the recommendation of the 2015 Annual Geotechnical Inspection, available in Appendix B1 of the 2015 Meadowbank Annual Report, the Vault road and the culverts are regularly monitored since the installation of the culverts in 2013. Similar inspections were performed during the 2016 freshet and throughout operation activities as per the Freshet Action Plan. The culverts' area located on the Vault Road between the diversion ditches and Lake NP1 is closely monitored during freshet period as per the Freshet Action Plan. Snow removal in strategic areas has proven to be effective to ensure proper flow during freshet. Snow removal was completed around some of the culverts before freshet 2016 to ensure proper flow of water and to minimize erosion. No obstructed flows were observed during the 2016 freshet. Additional snow removal on the Vault road culverts will be performed if required before the next freshet to ensure proper water management. Turbidity barriers can be installed as a mitigation measure if needed.

It is worthwhile to mention also that as part of the Freshet Action Plan, inspections are undertaken at all culverts along the AWAR to ensure that water during freshet is flowing freely and no erosion is occurring. If necessary, snow and ice removal may be required to allow the water to flow as per design specifications.

5.5 Comment 1e – Predicted Water Quality and Quantity

Concern: AEM currently provides a comparison of predicted water quality and quantity values, and the actual values recorded during their annual reporting cycle. INAC is of the opinion that a comparison of originally predicted values and year-overyear water quantity and quality values would provide for a more robust analysis and would assist with identifying trends. The identification of trends could assist in identifying problem areas in terms of water quality and quantity prior to the occurrence of issues such as water licence exceedances.

Agnico Eagle's Response:

As per NIRB Comments to 2014 Annual Report "(…) provide comparisons between originally predicted and measured water quantity and quality in 2014. This comparison only uses the current year, but a year over year comparison would help identify trends." In the 2015 Annual Report, the predicted water quantity and quality within the pits was compared to the measured water quantity and quality. This comparison uses a year over year comparison.

The comparison between the predicted water quantity and quality within the pits will be compared to the measured water quantity and quality done for 2012 to 2015. The appendix C4 of the 2015 Meadowbank Annual Report provides a comparison between

predicted (originally predicted in support of the NWB license) and measured water quality and quantity within Portage, Goose and Vault Pit. The appendix includes the measured data for 2015, and also from 2012 to 2014.

As required by the Water License 2AM-MEA1525, the Water Quality Forecast model is completed yearly with the measured data from site, as well as the water balance used on site. This model is calibrated yearly with updated data from site and includes the current water management practices. Review of the water quality predictions for pit reflooding is completed in this forecast. The forecast identify parameters that may require treatment at closure according to the CCME limits, and also present treatment options that could be considered if treatment is required.

6 Kivalliq Inuit Association

6.1 General

Concern: Many abbreviations are used throughout the report, but not all are spelled out in full when they are first introduced in the text. A list of abbreviations at the beginning of the report would be a useful reference and would greatly increase clarity and comprehension of the text.

Recommendation 1: Please provide a list of abbreviations at the beginning of the report.

Agnico Eagle's Response:
Agnico Eagle agrees and will incorporated to the 2016 Annual report a list of abbreviation to increase clarity and comprehension of the text.

6.2 Section 1: Introduction

Concern: The 2015 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;
- 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 KIA.

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

Agnico Eagle's Response:

Agnico Eagle reported data to Environment and Climate Change Canada (ECCC) via the RISS electronic database reporting system. All of these reported data were part of the annual report (2015 Annual Report Section 8.2 and Table 8.2 to 8.9) and will continue to be included. Agnico also provided to ECCC in 2015 the EEM Interpretative Report Cycle 2. This report can also be found in the 2015 Annual Report in Appendix G3. Agnico Eagle will continue to provide to KIA and other regulators copies of reports and data submitted to ECCC via the Annual report.

6.3 Dikes 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 2015 (i.e., dewatering dikes, Tailing Storage Facilities and Stormwater Dike).

Central Dike

Seepage at the downstream toe of the Central Dike, which was first reported in the fall of 2014, continued in 2015. AEM began pumping the seepage back into the South Cell RSF in April 2015. A total of 2,948,024 m^3 was pumped into the South Cell RSF over the course of 2015. Water quality was monitored for changes in turbidity and clarity and a flowmeter was installed to measure volume of water pumped. AEM reports that *"By July 7th, pumping was still on going with a larger pump"* (p. 13) but it is not clear if pumping continued after that date in 2015.

Recommendation 3: Please clarify whether pumping at the Central Dike seepage continued after July 7th, 2015.

Agnico Eagle's Response:

Pumping at the toe of the Central dike started on April 14, 2015 and was ongoing for the remaining of 2015. Please see table below which details the monthly pumped volume in 2015. In the 2016 Annual Report, Agnico Eagle will provide a similar table including the monthly pumped volume.

2015 - Month	*Pumped Volume (m^3)*
January	*0*
February	*0*
March	*0*
April	*22,185*
May	*66,794*
June	*287,802*
July	*498,141*
August	*596,735*
September	*392,244*
October	*458,572*
November	*337,878*
December	*287,674*
Total	***2,948,024***

Concern: AEM conducted monthly water quality sampling of seepage water in the summer of 2015. Based on results, it concluded that the source of the seepage water was South Cell reclaim water. AEM states that "*the concentration of some parameters, namely copper, cyanide, sulfates, to name a few, confirms a link between water ponding at the D/S and the SC reclaim water*" (p. 13). Insufficient information is presented to support this conclusion. No quantitative results are presented on the seepage water, nor a full list of the parameters used to link the Central Dike seepage with its source. Furthermore, it is unclear how the South Cell Tailings Storage Facility (TSF) can be identified as the source of seepage when the seepage is being added to the South Cell through pumping. Any similarities between the two waterbodies could be due to the fact that they are being mixed together in the South Cell.

Recommendation 4: Please provide the quantitative results of monitoring that was used to link the Central Dike seepage water with the South Cell reclaim water, including a full list of parameters linking the two and their respective measurements in both locations.

Agnico Eagle's Response:
See attached in Appendix H the Table 8-14 for the ST-21 station (reclaim water in the South Cell) and Table 8-29 for the station ST-S-5 (Central Dike Seepage) provided in the 2015 Annual Report.

Recommendation 5: Please explain how the confounding factor of mixing between the Central Dike seepage water and the South Cell reclaim water was controlled for in testing for the source of the seepage water.

Agnico Eagle's Response:
Water sampling at the downstream as well as in the South tailings cell has been performed, as per the Water license requirement and include analysis for metals, cyanide and major anions. As stated, the concentration of some parameters, namely

copper, cyanide, sulfates, confirms a link between the water ponding at the downstream of Central Dike and the South Cell reclaim water. The main parameter indicating that the downstream water contains reclaim water is the cyanide total, as only the reclaim water contains cyanide, used in the gold recovery process. The seepage water appears to have a better water quality than South Cell likely because of the dilution with runoff and possible mix with underground water.

It is important to state that Agnico has been performing investigation work to better understand and characterized the Central Dike seepage. Additional information will be available on the Central Dike seepage in the Annual Report 2016.

Concern: Further support for South Cell reclaim water being the source of the seepage was gained through a transfer of seepage water to the decommissioned Goose Pit in September 2015, which indicated an equivalent drawdown in South Cell TSF during transfer. AEM reports that 50,000 m^3 of seepage water could be transferred to Goose Pit without compromising water quality at closure (following Canadian Council of Ministers of the Environment (CCME) guidelines for the protection of aquatic life).

The tailings deposition to the South Cell TSF that began in November 2014 was redirected to the North Cell temporarily from June through October 2015. This change was partly to fulfill design specifications of the North Cell and partly to allow assessment of the seepage. North Cell water was pumped to the South Cell as reclaim water during this time. The South Cell TSF became operational again for tailing deposition in October 2015 and a permanent winterized pumping system was installed prior to the onset of winter. AEM indicates that seepage flow diminished from 800 m^3/h to 400 m^3/h within two weeks of the resumption of tailings deposition and has remained stable since then. AEM expects that seepage rates will continue to decline with increased deposition. Yet, in Section 8.3.7.2, AEM reports that leakage from the South Cell TSF "*is increasing proportionately with tailings deposition*" (p. 112). This appears to contradict the statements made in Section 3.1.1 (p. 13).

Recommendation 6: Please clarify whether tailings deposition in the South Cell TSF leads to increased or decreased seepage at the Central Dike

Agnico Eagle's Response:

In terms of design, the accumulation of tailings in the South Cell basin is expected to lead to a decrease of the seepage flow measured at the downstream of the structure. This statement is supported mainly by 2 arguments:

1) The tailings have a low permeability factor and the deposition of tailings in the basin will eventually lead into the creation of a low permeability barrier at the interface of the lake bed sediment. This layer will then isolate the reclaim water from the bottom of South Cell which has been identified as the main source for the seepage.

2) The tailings are expected to freeze (as observed in the North cell) over the course of time creating an impervious barrier at the bottom of the South Cell.

To reinforce the understanding of the mechanism of seepage and ensure that the current forecasted rates of seepage are accurate, Agnico continues to investigate and study the behaviour of the Central Dike. Following several studies undertaken in the last 2 years, Agnico mandated Golder, the designer of the structure, to take on additional work on the seepage models. This study will gather all the information that has been accumulated over the course of the last years and combine them together to develop new seepage models which will focus on a feasible accuracy. This study will incorporate a 3D geological model (including structural model), thermal model (for the permafrost boundaries), instrumentation calibration (piezometers), as-built information, geophysical survey, drilling investigation and packer testing.

Concern: Golder Associates make several recommendations to reduce erosion risk of the Central Dike (Appendix F of Appendix C2 – 2015 Water Management Report and Plan) which we support.

Recommendation 7: We recommend that AEM follows Golder's recommendations to maintain the integrity of the Central Dike, notably that it:

- Continue to develop and maintain tailings beaches adjacent to the Central Dike and to operate the reclaim pond towards the centre of the South Cell.
- Reduce the hydraulic gradient and extend the inverse filter from the downstream toe of the Central Dike to the West road.
- Monitor mitigation measures to control how conditions evolve.
- Regularly inspect the Central Dike.
- Continue water quality monitoring of the seepage water, especially for turbidity.

Agnico Eagle's Response:

Agnico continues to monitor the Central Dike on a daily basis with regular field inspections as well as instrumentation monitoring. Tailings beach creation against the structure is one of the main guideline for the tailings deposition plan as well as keeping the reclaim water pond away from the dike. The water quality and turbidity of the reclaim and downstream seepage is also measured on a frequent basis. As for the invert filters and the reduction of the hydraulic gradient, it needs to be understood that realizing both at the same time is not feasible due to the current configuration. To be able to place the invert filters from the downstream to the west road, the downstream water pond would need to be dried out to ensure efficacy of the work. If the pond is dried out, it would increase considerably the hydraulic gradient. It has been judged by Agnico and agreed with by the MDRB that for the integrity of the Central Dike, it was better to keep the downstream water pond elevation at 115 MASL. The placement of the invert filter was therefore not retained.

Concern: The Goose Pit was decommissioned in April 2015. AEM reports that four "small" seepage areas were identified along the Bay Goose Dike but that no turbidity was observed in the seepage and the volume of seepage was less than expected. As a result, no downstream seepage collection or monitoring is being carried out because the seepage through the dike is not considered significant. No quantification of the amount of seepage is provided in the report, which makes it difficult to evaluate whether the issue should be a concern or not (although AEM refers to the Annual Geotechnical Inspection in Appendix B1 as having details on the seepage).

Recommendation 8: Please provide details on the amount of seepage measured along the Bay Goose Dike directly in the report.

Agnico Eagle's Response:
Agnico will provide the seepage rate measured at the downstream of Bay Goose Dike directly in the 2016 Annual report.

6.4 Lake Level Monitoring

Concern: Discharges into Third Portage Lake, Second Portage Lake and Wally Lake have not resulted in large magnitude changes in water level. The water levels reported in Table 4.2 of the annual report varied over the course of the year by a maximum of 0.34% in Wally Lake, 0.27% in Third Portage Lake and 0.71% in Second Portage Lake. AEM states these measurements were within the range of naturally occurring levels but does not present supporting data to inform this claim.

Recommendation 9: AEM should present the range of naturally occurring water levels for each season in the annual report to validate its claim that variations in water level within the receiving environment have not been impacted by discharge volume. This is especially important given the planned dewatering of the Phaser Pit in 2016.

Agnico Eagle's Response:
Impacts of discharge on water level in the receiving environment are described in the PEAMP Section 12.1.1.1 and Table 12.2 of the 2015 Annual Report. Overall Modeling predicted the natural range of water levels in Third Portage Lake to be 133.82 – 134.19 masl., and the impact assessment indicated that this range would not be exceeded (Physical Environment Impact Assessment Report, 2005). Although these values accounted for 1-in-100 year precipitation or drought events, prior to operation, water levels were already below this range when monitoring began (prior to any significant freshwater consumption) in 2009 and continue to be as of now. Although rates of dewatering (i.e. pumping rates) were underestimated during the FEIS, water levels have not significantly changed at monitoring stations since monitoring began. Similarly, discharge volumes from the Vault Attenuation Pond to Wally Lake were underestimated in the FEIS (mainly due to changes in site designs since that time) but impacts to water levels in Wally Lake have not been observed, as anticipated. Following this analysis, Agnico Eagle concluded the water level in Third Portage, Second Portage and Wally

Lakes were within the range of naturally occurring levels. During dewatering of Phaser Lake, water level in Wally Lake will be measured weekly and reported in the 2016 Annual Report. Impacts of the Phaser Lake dewatering on Wally Lake water level will be discussed in the 2016 Annual Report.

Agnico Eagle 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.

6.5 Water Balance Water Quality Model Reporting Summary

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

- Phaser and Vault Pit modifications;
- Updated truck mining fleet;
- Updated stockpile status;
- Modification to the Central Portage Pit Waste Rock Storage design and overall volume; and
- South Cell and North Cell Tailings Storage Facilities net acid generating (NAG) capping volumes and timeframe.

This updated plan was included in AEM's Vault Pit Expansion application to the NIRB; HESL reviewed it at that time. The water balance was also updated in 2015 to reflect the above modifications and elongation to the life of mine (LOM) associated with prolonged mining activities. These include:

- Fresh water consumption revision;
- 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 TSF run off inflows related to their underlying watersheds;
- Flooding sequence and volumes update to take into account the updated run off inflows;
- Updated dewatering of Phaser Lake – when approved by regulatory agencies;
- Updating the seepages section; and
- Changing the tailings dry density as observed through bathymetric analysis.

The updated water quality model indicates that copper, silver, selenium and total nitrogen may require treatment so that the pit water quality meets CCME criteria at mine closure. This represents a change from the statement made in the 2014 Annual Report, which predicted that only copper and selenium might require treatment.

Recommendation 10: Please explain why silver and total nitrogen levels are now predicted to exceed CCME guidelines for protection of aquatic life in pits at mine closure.

Agnico Eagle's Response:

A higher silver concentration (0.028) in the mill effluent was used in the water quality forecasting model (Table 3-1 in 2015 Water Quality Forecasting Update, in Appendix to the Water Management Report and Plan) when compared to the previous model (0.0001, value shown in Table 3-1 of 2014 report). This higher value was based on the average of four mill effluent samples taken in 2015, where one measurement was approx. 100 times higher than the other three samples. The silver content depends of the type of rock processed at the mill. In order to be conservative in the forecasting, the average of all four samples was used in the model. The final forecasted concentration of silver in Portage Pit (0.0003) is slightly higher than the CCME guideline (0.0001) and at equilibrium should be closed to the guideline (0.000124). The next water quality forecast model will reassess the silver concentrations used in the model based on the latest mill effluent samples taken in 2016.

For Total Nitrogen, the forecast is based on a higher ammonia load added by the mill effluent (+50 vs +41 mg N/L/mth). It was decided to increase the ammonia load for the forecasting model based on the ammonia measurements taken in the Reclaim Pond in 2015. Combined with a higher reclaim water volume transferred to Portage Pit compared to the 2014 model, this resulted in a higher ammonia load transferred to Portage Pit and consequently a higher Total Nitrogen load. However, it is important to recall that the water quality forecast model is based on a mass balance approach that does not take into account any natural degradation cycle that could occur over the summer months.

Recommendation 11: AEM should plan to continue treatment of the TSF water as per the updated water quality model until potential discharges meet the applicable CCME guidelines. Please indicate the feasibility of treatment (and expected treatment quality) for Cu, Ag, Se and TN.

We note that this change in water quality predictions was not included in the Evaluation of Impact Predictions under Section 12 of the Annual Report.

Agnico Eagle's Response:

The TSF water is not treated during operations, but reclaimed and used for processing ore in the mill. The TSF water will be part of the pit reflooding process at closure. When deciding if water treatment will be required at closure, treatment of TSF water could be performed if required in order for the pit water to meet CCME guidelines or site specific criteria developed during the closure process.

Cu and Ag can be removed effectively by a treatment system consisting of neutralization and coagulation/flocculation. For selenium, if it is present as selenite (Se(IV)), it can be removed by coagulation/flocculation with an iron based coagulant. Alternatively, it can also be adsorb onto a specialized reactive iron based media that will adsorb the selenium. As for TN, more active treatment such as aeration or "in-situ" treatment by

stripping or biological treatment can effectively reduce the ammonia load that contributes to the TN load. Treatment of TSF water could be performed if required in order for the pit water to meet CCME guidelines or site specific criteria developed during the closure process.

In order to better ascertain the effectiveness of the treatment options, laboratory and/or in-situ pilot tests could be considered if required to validate the treatment method.

Section 12 – Post-Environmental Assessment Monitoring Program (PEAMP) – Evaluation of Impact Predictions, includes a review of monitoring conducted in 2015 in relation to impacts described in the Final Environmental Impact Statement (FEIS; Cumberland, 2005). As outlined in the FEIS, the Core Receiving Environment Monitoring Program (CREMP) is intended to monitor large-scale (e.g. basin-wide) changes in physical and biological variables to evaluate potential impacts from all mine related sources in the receiving environment. It therefore serves as the most important monitoring program for evaluating short term and long term potential impacts to populations. According to the Type A, the dikes will only be breached once the water quality in the pits meets CCME guidelines, baseline concentrations or site specific criteria developed during the closure plan approval process. This applies also for the Vault area. Therefore, Agnico does not believe that the water quality forecast results and the treatment options for the TSF water should be included in Section 12. Agnico will continue to present the water quality forecast including the treatment option as part of the Water Management Plan and will be discussed in Section 4 of the Annual Report.

6.6 Predicted vs Measured Water Quality [and Quantity]

Concern: A comparison of predicted and measured water quality and quantity within Portage, Goose and Vault Pits was conducted for 2012-2015. Under the water license, AEM is required to explain percent differences of >20% between predicted and measured values.

The volume of water measured in the Portage Pit was more than 20% below the volume predicted for 2013 to 2015. AEM explains that this is 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 2012 and 2015.

The volume of water measured in Goose Pit was more than 20% below the volume predicted for 2012 to 2015, 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 and 2015. AEM suggests this is due to *"more precipitation including larger freshet and rainfalls in 2015"*. While this may be the case for 2015, it does not explain the 75%

higher than expected volume measured in 2014 and would appear to contradict the lower volumes observed in Portage and Goose Pits in 2015.

Recommendation 12: Please explain possible reasons for the greater than expected water volumes measured in Vault Pit in 2014 and consider these against the reasons for reduced volumes in Portage and Goose Pits.

> ***Agnico Eagle's Response:***
> *The difference in Vault pit can be explained by the fact that there was more precipitation including larger freshet and rainfalls that would contribute to larger runoff volume going into the pit. Also, the talik zone within Vault Pit is being redefined with additional instrumentation and could explain why water volume into the pit is higher than the volume predicted in Golder (2007). The current Vault Pit design is different than the original design, which could explain the difference for the water collected within the pit.*
>
> *For Portage and Goose Pits, the runoff and groundwater sources and volumes predicted that collectively make up the water in the pits are less than what was originally predicted for operations.*
>
> *It is also important to note that the water balance and the runoff evaluation for the pits completed in operations include more information years after years. It is therefore not unexpected that the original volume predictions, based on limited field data and information, can differ from the volumes measured.*

Concern: Water quality in the three pit sumps (Portage, Goose and Vault) showed similar patterns in 2015 to previous years. Most parameters of concern exceeded their predicted concentrations by more than 20% in all pit sumps. AEM suggests that exceedances in Portage and Goose are likely caused by the large discrepancy between measured and predicted water volumes (i.e., Portage has 136% less volume than predicted, Goose has 105% less volume than predicted). According to AEM, these smaller than predicted volumes reflect good management of seepage, groundwater and local runoff.

Vault Pit sump water quality is of particular concern. AEM indicates that "*a limited amount of samples were taken and for many of the parameters the accredited laboratory didn't reach a detection limit that allows for comparison with the predicted values. Therefore the relative % difference is automatically higher than 20%"*.

AEM indicates that water quality from the three pits is "*monitored extensively and not discharged directly into the environment*". In the case of Portage and Goose Pits, water feeds into the South Cell TSF, while Vault Pit water enters the Vault Attenuation Pond, where it can be treated for total suspended solids (TSS) prior to discharge into Wally Lake. Since Goose Pit is now closed for mining, all water inflow will be left in it and used as part of the re-flooding program planned for mine closure.

HESL is concerned with the degree of error associated with the water quality predictions for the three pit sumps. We are also concerned with the current situation for measuring and treating Vault Pit water. While we recognize that none of the Vault Pit water is directly discharged into the receiving environment, the uncertainty surrounding parameter measurements makes it difficult to evaluate current conditions and potential risks to the receiving environment and hence asses the need for mitigation and adaptive management. We are concerned with Vault Pit water quality due to concentrations being significantly higher than predicted and emphasize the need to assess the implications on the receiver, Wally Lake. In addition, in Appendix C4, it would be helpful to highlight which parameters exceed CCME Water Quality Guidelines (WQGs) and MMER authorized limits for each of the pit sumps.

Recommendation 13: Please explain why limited samples were taken from the Vault Pit sump.

> ***Agnico Eagle's Response:***
> *Water from the Vault Pit sump was sampled monthly during open water as per the requirements in the NWB water license. In 2015 due to safety issues (no secure access to go to the sump), water samples were taken only in June and July 2015. In 2016, samples were taken in June, August and September.*
>
> *An action plan will be developed with the mine operation to assist in safe sampling of sumps during the next open water season, in order to get more sampling results for the pit sumps.*

Recommendation 14: AEM should ensure that the accredited laboratory used to analyze pit water quality can reach the required detection limits for pertinent comparisons for all future monitoring.

> ***Agnico Eagle's Response:***
> *Agnico Eagle will continue to update its water quality model using the best information available. 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.*
>
> *Agnico Eagle will continue to ensure that the accredited laboratory can reach the required detection limits.*

Recommendation 15: Potential impacts on Wally Lake of the Vault Pit water quality should be discussed in the report.

> ***Agnico Eagle's Response:***
> *The water collected in Vault Pit is pumped to the Vault attenuation pond. The water from the Attenuation Pond is sampled before discharge, as per Water License requirement, to ensure that the water meets the Water License and MMER criteria for*

discharge. In the event that the water from the Vault Attenuation Pond would not meet discharge criteria, the water would not be discharged to Wally Lake.

The effluent discharge of the Vault Attenuation Pond to Wally Lake (at ST-10) met the Water License discharge requirements and met the MMER limits in 2015, as required by the Water License. The Water License discharge requirements were established to minimize the impact on Wally Lake.

During closure, the Vault dike will only be breached once the water quality within the Vault Pit area meets CCME guidelines or site specific criteria developed during the closure plan approval process. The Water Quality Forecast model submitted in the Annual Report 2015 as part of the Water Management Plan includes a section on Vault area (Section 5).

Recommendation 16: Please include an indication in Appendix C4 of which parameters exceed CCME WQGs for each of the pit sumps. This will assist in our assessment of potential environmental risks despite these locations being isolated from the receiving environment.

Agnico Eagle's Response:
Agnico Eagle will include in the tables Predicted Water Quantity and Quality (2012-2016) of the 2016 Annual Report, Appendix C4, an indication of which parameters exceed CCME Water Quality Guidelines and MMER authorized limits for each of the pit sumps.

In Table 3-2 of the Water Quality Forecast, the average 2015 results sampled at Portage Pit ST-19 and the sample taken at Goose Pit ST-20 are highlighted in red when the measurements exceed the CCME WQGs. In the 2016 report, it will be possible to highlight the measurement that exceeds the CCME WQGs for each sample taken in ST-19 and ST-20 in the tables annexed to the report.

Concern: AEM reports that elevated levels of silver, copper, total nitrogen and selenium may exceed CCME guidelines in Portage and Goose Pits at closure, necessitating treatment prior to discharge into the receiving environment. Potential treatment options are discussed for all of these parameters except selenium.

Recommendation 17: Please include a discussion of potential treatment options for selenium prior to dike breaching at closure.

Agnico Eagle's Response:
With regard to selenium, if treatment is required, the type of the treatment option will be based on the speciation of the selenium. If the selenium is present as selenite (Se(IV)), it can be effectively remove by coagulation and flocculation using an iron based coagulant. Alternatively, it can also be adsorb onto a specialized reactive iron based media that will adsorb the selenium. If required, the reclaim water is recommended to be treated before it is transferred to Portage Pit.

Agnico will be conducted a speciation test on the selenium present in the mill effluent and/or the reclaim water. Based on these results, it will be possible to better assess the type of treatment that could be required. Laboratory and/or in-situ pilot tests should be considered to validate the treatment method for this parameter.

6.7 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 FEIS predictions, 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 NIRB's Monitoring Officer.

AEM indicates that it characterized potentially acid generating (PAG) and non-potentially acid generating (NPAG) materials of waste rock by analysing 25% of blast holes for percentages of sulphur and carbon. The results are located in a separate database and are not reported in the Annual Report due to the large volume of data. It would be useful, however, for AEM to provide a summary of the proportion of each type of waste rock found in this analysis in the Annual Report.

Recommendation 18: AEM should provide a summary in the Annual Report of the proportion of PAG, NPAG and uncertain waste rock found in the sampling of 25% of blast holes.

Agnico Eagle's Response:
Agnico Eagle will provide in the 2016 Annual Report a summary of the PAG, NPAG and uncertain waste rock found in the sampling of 25% of blast holes.

Recommendation 19: As requested by the NIRB, AEM should continue comparing measured results to the values used in the FEIS and discussing implications of these differences on preventative and control measures in the Waste Management Plan.

Agnico Eagle's Response:
Agnico Eagle will follow the Operational ARD/ML Testing and Sampling Plan according to Water License 2AM-MEA1525 and approved by the NWB. Geochemical monitoring results are discussed in the section 5.1 of the 2015 Annual Report. Comparison of the measured results to the FEIS is explained for Vault pit. This comparison will be provided in the 2016 Annual Report, along with preventative and control measures.

Concern: 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. To date no indication of PAG leaching has been observed. No description of the monitoring method is given (e.g., how many samples will be collected, where, and how often).

Recommendation 20: AEM should provide details on the approach that is used to monitor the waste rock disposal method and indicate in which monitoring plan full details can be found. 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:

In the section 5.1 Geochemical Monitoring of the Annual Report, the operational acid/base accounting and paste pH test work used for waste rock designation (PAG and NPAG rock) is described as well as the frequency of sampling. This information is also available in the Operational ARD/ML Testing and Sampling Plan (AEM, Version 2, 2013). Agnico will continue to describe the method used in Section Geochemical Monitoring of the Annual Report, referring to the specific plan.

The mine dispatch system Wenco is used at the mine site since 2013. The system is used to ensure that proper material is adequately disposed. The material disposed at the Waste Rock Storage Facilities (RSF) is controlled by the dispatch system to ensure PAG and NPAG materials are places at the proper location on the RSF.

Seepage or run off from the RSF is monitored in sumps as per NWB water license 2AM-MEA1525. Thermistors are installed in the PAG waste rock and the NAG cover portion of the Portage RSF to monitor the thermal behavior of the RSF.

Concern: AEM has recommended in previous annual reports that surface water chemistry sampling at fish-bearing watercourses be discontinued, unless turbidity issues were visually observed. In 2015, four formal erosion inspections were completed by qualified environment technicians in May and June, and weekly visual inspections were conducted during All Weather Access Road (AWAR) inspections. Daily inspections were also made in collaboration with the Meadowbank Site Services Department, which traverses the road daily for ongoing maintenance. 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.

Recommendation 21: AEM describes a schedule for monitoring for turbidity issues in 2015 which combines formal and informal inspections. Please provide details on what steps will be to taken to monitor erosion at fish-bearing watercourses in future, to ensure there is a systematic approach.

Agnico Eagle's Response:

As per the Freshet Action Plan Section 2.7; "Weekly inspections will be undertaken at all culverts along the AWAR to ensure that water during freshet is flowing freely and no erosion is occurring. If elevated TSS levels are observed sampling will occur and the

results assessed. In addition snow and ice removal may be required to allow the water to flow as per design specifications." Theses formal erosion inspections along the AWAR will be undertaken during the freshet period but also after heavy rain fall. Agnico Eagle also conduct all year long weekly AWAR inspection and the monitoring of the visual turbidity plumes along the AWAR, culverts and HADD crossings are one of the aspects monitored. Overall, the erosion at the HADD crossings are monitored on a weekly basis but a closer monitoring is complete during the pre-freshet and freshet period.

6.8 Tailings Freezeback and Capping Thickness

Concern: Monitoring of thermal conditions in TSF structures is conducted as part of the mine's permafrost monitoring program. AEM reports that three thermistors were installed in Saddle Dam 1 in 2009 to monitor its thermal condition: SDI-T2, SDI-T3 and SDI-T4. However, results from an additional thermistor, SDI-T1 are also reported. It is not clear when SDI-T1 was installed.

Recommendation 22: Please indicate when SDI-T1 was installed in Saddle Dam 1.

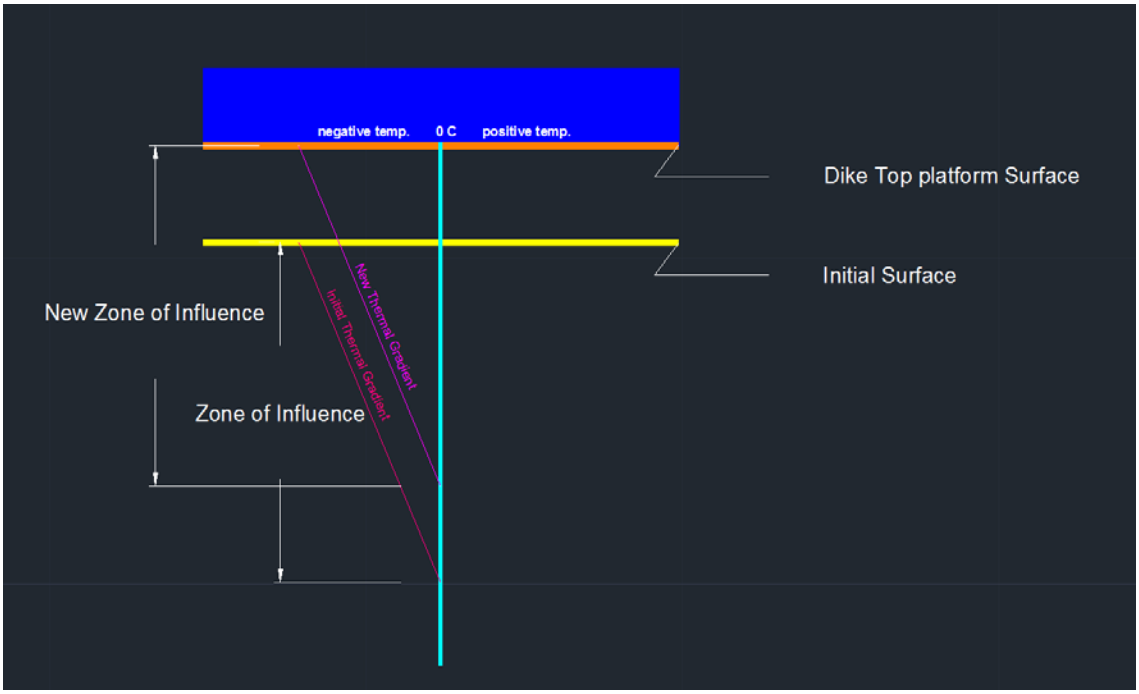
Agnico Eagle's Response:
The thermistor SD1-T1 has been installed on November 22, 2009.

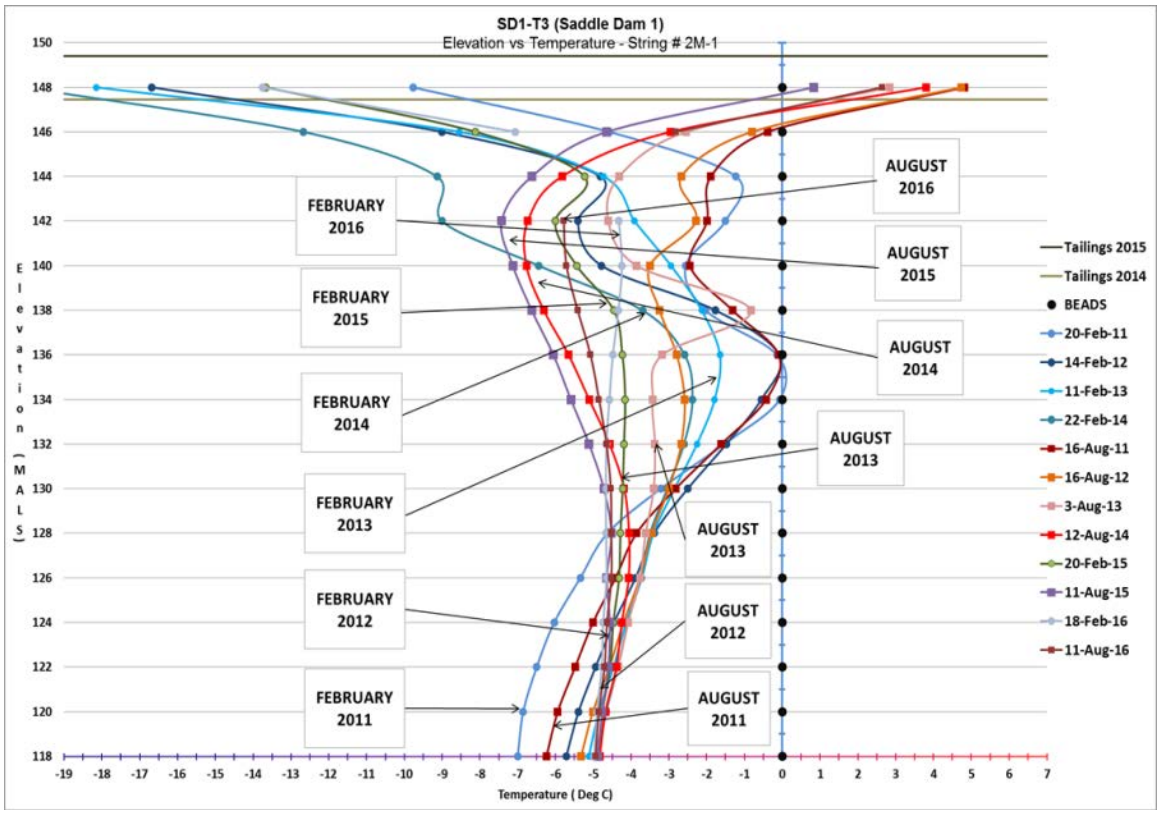
Concern: AEM reports that the dike foundation of Saddle Dam 1 remains frozen year-round, but that the temperature of the foundation material (soil and bedrock) has increased by an average of 4-5°C since 2010, depending on location within the dike. No subsequent discussion or interpretation of this temperature increase is presented.

Recommendation 23: AEM should place the reported Saddle Dam 1 temperature increases into context. For example, is the 4-5°C unusual or unexpected? What is the reason for the increasing trend since 2010? What are the implications for the dike's integrity? What are the predictions for temperature change in the future within this dike, given climate change?

Agnico Eagle's Response:
To understand and predict how a permafrost foundation will behave overtime, it is important to first understand the permafrost creation mechanism on land. The permafrost condition is created from one specific frontier condition. This frontier is the cold atmosphere. From the laws of thermodynamics, conservation of energy and equilibrium, the permafrost regime operates on a full year basis cycle. When an infrastructure is put in place, the frontier is moved upward. This means that the depth of influence is also move upwards. Concretely, for the saddle dam 1, it is normal and expected to observe an increase in the temperature in parts of the permafrost foundation since its construction. The dike itself moves the cold atmosphere frontier condition upward and then forces a rearrangement of the permafrost equilibrium at this specific emplacement. For more clarity, please refer to the figure presented below. Since the completion of the construction, the system is progressing to reach a new equilibrium. Please refer to the graph provided below of the thermistor SD1-T3 for visual

on this. It can be observed on the graph that the temperature has been increasing since the completion of construction, the gap in between the winter and the summer temperature of one year is decreasing. This means that it is getting closer to the state of equilibrium. These results have been presented to the MDRB and Golder (designer); no concerns have been raised. Studies have been undertaken in the last 2 years to evaluate the impact of climate change on the TSF and RSF. One of the conclusions of the studies was that the initial criteria in terms of closure for the TSF were respected even when with a conservative climate change scenario.





Recommendation 24: AEM should install thermosyphons to protect permafrost in Saddle Dam 1 should internal temperatures rise above freezing.

Agnico Eagle's Response:

Should the temperatures continue to increase as an unexpected behaviour, Agnico will evaluate different techniques to ensure that the temperatures of the foundation of Saddle Dam 1 would remain frozen.

6.9 General Waste Disposal Activity

Concern: AEM indicates that waste was disposed of through incineration, landfilling, recycling and shipment to hazardous waste disposal companies. A summary statement presenting the proportion and type of waste diverted to each of these streams would be useful in this section.

Recommendation 25: Please provide a statement summarizing the total amount of waste generated at the mine in 2015 and what proportion and type of waste was diverted to incineration, landfilling, recycling, and hazardous waste disposal offsite respectively.

Agnico Eagle's Response:

In 2015, Agnico Eagle generated approximately 17,440 tonnes of waste. This represents 49.1% of general waste disposed in the landfill, 3.1% of organic waste disposed in the incinerator, 46.1% of waste recycled on and off-site, and 1.7% of industrial/hazardous waste sent to an approval facility off-site. Please refer to the Table below. Agnico Eagle will include a similar Table in the 2016 Annual report.

Waste	Weight (tonne)	% of total waste	Disposal / Recycling location
General	8,561	49.1	Landfill On-site disposal
Organic	545	3.1	Incinerator On-site disposal
Industrial/Hazardous	289	1.7	Off-site disposal + recycling
Waste oil	358	2.1	On-site recycling
Steel	1,449	8.3	Off-site recycling
Wood	88	0.5	Baker Lake recycling
Batteries	38	0.2	Off-site recycling
Tire	6,112	35	Off-site recycling
Total	**17,440**	**100**	

6.10 Incinerator

Concern: The average mercury level measured in the stack testing exceeded ECCC guidelines in 2014. AEM subsequently initiated an investigation into the possible cause of this exceedance and suggested it could be due to incineration of alkaline batteries, despite the existence of a battery recycling program. As a result, AEM launched an extensive awareness campaign across all mine departments to encourage proper disposal of batteries onsite. We are pleased to see that follow-up stack testing in 2015 found that the average mercury level was well below ECCC guidelines.

AEM reports that as a result of discussions with ECCC, the frequency of stack testing was changed in 2012 to every other year, instead of annually. We recommend that more frequent stack testing be adopted if these biennial test events find exceedances in mercury, dioxin and/or furan emissions.

Stack testing results are summarized in a monitoring report submitted to the Government of Nunavut (GN), ECCC and NIRB. We request that a copy of such reports also be provided directly to the KIA.

Recommendation 26: AEM should implement more frequent stack testing if the biennial monitoring reveals exceedances in mercury, dioxin and/or furan emissions.

Agnico Eagle's Response:

Agnico Eagle agrees and already increased the stack testing frequency when the mercury exceedance occurred in 2014. Additional stack testings were done in 2015 and 2016 and results are all below the emission standard. Canada-wide Standards (CWS) for Dioxins

and Furans and the CWS for Mercury Emissions states that "where five years' data has been accumulated with all results reported below the Level of Quantification (emission standard), the stack testing frequency may be revised to a biennial schedule". In order to be compliant with these recommendations, Agnico Eagle will complete stack testing in 2017, 2018 and 2019. The stack testing frequencies will then return to biennial if all results are below the emission standard. Agnico Eagle will include clarification on stack testing frequency into the next revision of the Incinerator Waste Management Plan.

Recommendation 27: AEM should provide copies to the KIA of all stack testing monitoring reports submitted to the Government of Nunavut, ECCC and NIRB.

Agnico Eagle's Response:
Agnico Eagle had included the 2015 Stack Testing Report in Appendix E4 of the 2015 Annual Report. Previous Stack Testing Reports were also included in the Annual Reports. This report will continue to be submitted to all authorities via the Annual Report.

6.11 Spill Management

Concern: AEM reported more spills to the GN Spill hotline in 2015 (18) than in any previous year since 2011. AEM states that the increase is "*mainly due to mechanical issues with the equipment due to the cold weather, site conditions and possibly current maintenance procedures. Operators' awareness and pre-operational checking of equipment may also be contributing"* (p. 72). It is not clear why any of these identified issues would cause an increase in 2015 compared with any other year, as presumably cold weather, site conditions, maintenance procedures and operational behaviour have not changed significantly in 2015 compared with previous years. AEM indicates that it is currently investigating how to address the increase and will develop an action plan in 2016. We look forward to reviewing the results of this investigation and subsequent recommended actions.

Recommendation 28: Please explain why the potential factors identified (i.e., cold weather, site conditions, maintenance procedures, operation behaviour) would be a particular problem contributing to the rise in reported spills in 2015, compared with 2011-2014 and please provide the KIA with the action plan for reducing future spillages.

Agnico Eagle's Response:
A spill reduction action plan was implemented in 2016 and is still ongoing. To the initial factors identified was also added equipment wear to explain the overall spill increase, in addition to improvement in reporting and monitoring of the spills. Operator awareness and pre-operational checking of equipment may also be contributing to the increase in spills.

The combination of the mentioned contribution factors serves as the basis of the rationale behind the variation noted in 2015. Within the action plan, increased data gathering needed for proper assessment was initiated. The involvement of the

concerned stakeholders was provided and regular meetings held. This includes a review of current practices, operations and any other relevant matters the action plan may reveal. A team of personnel from the Maintenance, Mine operations, and Environment and Strategic Optimization departments is investigating ways to reduce spills at Meadowbank. A KPI was developed to monitor and follow the situation. Action plan will be provided in annual report.

All spills reported internally and to regulators are managed appropriately on site according to our spill contingency plan. Spills are contained and cleaned, contaminated material is disposed to the appropriate area (landfarm, TSF if required) and the clean-up actions are monitored closely by the Environment team.

Concern: Table 7.2 presents a summary of non-reportable spills in 2015. A total of 148 non-reportable spills occurred of a range of hazardous materials, including motor, engine and hydraulic oil, diesel, coolant, fuel, calcium chloride, contaminated water, and grey water and kitchen grease. Volumes spilled ranged from as little as 1 L to as much as 1000 L. No discussion of the non-reportable spills is presented. It is not clear why they are not reported, nor how the frequency (which seems high) compares with previous years. While AEM states that spill prevention training was provided to employees in 2015, there is no critical evaluation of whether this training is sufficient given the apparently high rate of spills occurring onsite.

Recommendation 29: Please explain why the 148 non-reportable spills are not reported. Also, please provide discussion on the implications of this apparently high spill rate. In particular, how does the rate compare with previous years? Is the current spill prevention training adequate, given this high rate? What is being done to reduce the frequency of non-reportable spills?

Agnico Eagle's Response:

Table 1 of Section 3.2 -Materials and Reportable (to regulatory authorities) spills on site of the Spill Contingency Plan show the reportable quantity for each type of substance to be reported to the GN spill hotline. These 148 spills were not reported to the GN spill hotline as they do not meet the minimum thresholds for reporting to regulatory authorities. These spills are all listed in Table 7.2 of the 2015 Annual Report. All of these spills are also reported via the NWB monthly report.

All spills reported internally are managed appropriately on site according to our spill contingency plan. Spills are contained and cleaned, contaminated material is disposed to the appropriate area and the clean-up actions are monitored closely by the Environment team.

See above answer on the spill reduction action plan initiated in 2016. As part of the plan, mitigation measures have been undertaken. Proper identification of root cause was discussed and drafted to ensure efforts were applied to the proper channels. Spill response training is provided within the site induction for all employees. Onsite training

is provided by the Environmental Department via toolbox meetings with different department.

6.12 Core Receiving Monitoring Program (CREMP)

Concern: AEM reports that there are some "*statistically significant mine-related changes relative to baseline/reference conditions identified in 2014*" (p. 96) in water chemistry of Meadowbank Study Lakes. Despite exceedances of early warning triggers for several water quality parameters, AEM concludes that "*observed changes are still relatively low and unlikely to adversely affect aquatic life*" (p. 96). No evidence is provided to support the argument that these exceedances are not harmful to aquatic organisms.

Recommendation 30: Please provide support for the statement that water chemistry exceedances "*are…unlikely to adversely affect aquatic life*" and a discussion of actions that have been taken in response to these early warning trigger exceedances.

Agnico Eagle's Response:

Agnico Eagle will refer to Section 3.2.2 of 2015 CREMP report found in Appendix G1 of the 2015 Annual Report for an exhaustive description. The 2015 Annual Report main document, Section 8.1, is only a summary of the key points found in the 2015 CREMP Report (Appendix G1)

Historical trend assessment results related to each of the mining activities are discussed at length in the 2012 CREMP report. For each parameter/area that exceeded the trigger, formal statistical testing of the observed result was conducted using the BACI statistical model (one-tailed; looking for uni-directional changes only). In this analysis, the model interaction term (or BACI effect term) represents the change at the test area relative to baseline after accounting for natural temporal changes (i.e., temporal changes at the reference area); for simplicity, changes are noted "relative to baseline/reference" conditions. Results are provided in Table 3.2–4 of the 2015 CREMP Report; key results (i.e., those parameter/area combinations where the 2015 results were statistically different [p<0.0516]) were as follows:

- *Laboratory Conductivity/Hardness – TPN, TPE, SP, TPS, TE, and WAL showed an increase relative to baseline/reference conditions. Conductivity is a composite variable that responds positively to increasing concentrations of ionic compounds (e.g., chlorides, sulphates, carbonates, sodium, magnesium, calcium, potassium and metallic ions). The observed change, therefore, is indicative of changes in its underlying compounds (e.g., see ionic compounds below for additional context).*

- *Ionic Compounds (Calcium, Magnesium, Potassium, Sodium) – TPN, TPE, and TPS showed an increase (relative to baseline/reference) in all of these major ions; TE and WAL showed increases in calcium and magnesium. Concentrations at these NF and MF areas have typically been <6 mg/L (calcium), <2 mg/L (magnesium), < 1.5 mg/L*

(sodium), and <1 mg/L (potassium) (i.e., still quite low). Slight increases of these ionic compounds in the Meadowbank study lakes are unlikely to adversely affect biota.

- *TDS – TPN, TPE, SP, TPS, and WAL showed an increase relative to baseline/reference conditions. Similar to conductivity, TDS is a composite variable based on the combined amount of all inorganic and organic substances contained in a sample. The current TDS discharge limit in the water use licence (2AM-MEA1525) is 1,400 mg/L for both the maximum average concentration and maximum allowable grab sample concentration. Weber-Scannell and Duffy (2007) reviewed TDS toxicity to aquatic life. While they recommend deriving ion-specific limits for aquatic life (i.e., rather than for TDS), none of the literature studies they compiled showed effects at TDS concentrations less than 250 mg/L and they report mean TDS in the world's rivers of approximately 120 mg/L. There are no federal water quality guidelines for TDS in Canada or the US. In Alaska, TDS may not exceed 500 mg/L without a special permit and 1000 mg/L at any time (ADEC, 2012). A TDS receiving environment benchmark 500 mg/L was adopted at Diavik (WLWB, 2013). Thus, these changes leading to TDS concentrations on the order of 15 to 45 mg/L are very low and not of concern.*

- *Alkalinity – SP showed an increase in bicarbonate and total alkalinity in 2015 relative to baseline/reference conditions. Bicarbonate (HCO3 -) comprised 100% of the total alkalinity faction, typical of surface water with pH in the range of 6.5 to 9. Bicarbonate alkalinity at SP has consistently exceeded the trigger dating back to 2011, and in 2013 the mean concentration was 10.1 mg/L (Azimuth, 2014)18. The mean concentration at SP increased in 2015 (11.5 mg/L) relative to 2013. The temporal trend of slightly increasing is unlikely to adversely affect biota at SP.*

- *TKN – WAL showed an increase in total Kjeldahl nitrogen (TKN) relative to the trigger value specific to Wally Lake. Exceedance of the trigger values was limited to the May and July sampling events. The 2014 TKN data was flagged as unreliable due to DL issues with the contract laboratory, but compared to 2013, an overall increase in TKN was noted in the spring (April/May) and early summer (July) sampling events in 2015 (Figure 3.2–21). Concentrations dropped for the late summer (August and September) and fall (November) sampling events in 2015, and were within the range reported in 2013 (0.13 to 01.5 mg/L [2015]; 0.12 to 0.14 mg/L [2013]). TKN is the sum of total ammonia nitrogen (i.e., NH3 and NH4 +) and organically bound nitrogen. Ammonia (as N) was detected in seven of ten samples in 2015, but in all seven cases the concentration was well below the trigger (derived from an effects-based trigger). On a percentage basis, total ammonia accounts for between approximately 5% and 10% of the TKN, indicating the majority of the nitrogen is bound to and/or incorporated in organic material. The slight increase in TKN above the statistically-derived trigger values is unlikely to adversely affect biota in Wally Lake; nonetheless, monitoring of this trend will continue in 2016.*

Similar to previous years, the CREMP is detecting changes in some general water quality parameters that appear to be related to mining activity. These changes are also reflected in higher concentrations of some parameters when compared to the model predictions in FEIS. Most metals are below the predicted concentrations for Third Portage Lake, Second Portage Lake, and Wally Lake with the exception of isolated instance of aluminum, iron, and manganese. Strontium consistently exceeded the model predictions in all three lakes, but importantly did not exceed the trigger (95th percentile of baseline) indicating current strontium concentrations are representative of pre-development conditions. It is important to point out that none of the above parameters that exceed the trigger values or FEIS model predictions have trigger values that were set in the context of effectsbased threshold values (e.g., CCME water quality guidelines). Thus, CREMP water quality results are consistent with the "low" significance (i.e., <1x CCME WQG) rating applied to model predictions in the FEIS (Cumberland, 2005).

In the absence of available thresholds, trigger values for these substances were set at the 95th percentile of baseline data (i.e., in the absence of any mine-related inputs, 5% of the samples would be expected to exceed the trigger). Consequently, the BACI model results reported above only indicate that statistically significant changes have been detected. Available information suggests that the observed concentrations of these parameters, while increasing relative to baseline/reference conditions, are well below levels of concern. As in the past, it is recommended that these trends continue to be monitored in 2016.

Pursuant to the new assessment strategy for MF and FF areas outlined in the CREMP: 2015 Plan Update, formal analysis of the trigger/threshold exceedances in 2015 was applied to the decision criteria to determine the level of effort and frequency of sampling required at the MF and FF areas in 2016. The assessment strategy uses the water quality assessment results from current year (e.g., 2015) to inform sampling at MF and FF areas the following year (i.e., 2016). Given that 2015 is the first year of implementing the sampling effort and frequency assessment, the data were analyzed starting from the "Year +1" step of the flow chart where results from the MF areas are used to inform sampling at both MF and FF locations.

Trigger/threshold screening results are presented in Table 3.2–8 according to their corresponding degree of change (i.e., no trigger exceedance, minor changes, moderate changes, and major changes). The outcome of the assessment for sampling at NF, MF and FF areas in 2016 is summarized below:

- *Near-field (TPE, TPN, SP, and WAL): Trigger exceedances were documented for parameters without effects-based thresholds (e.g., conductivity, hardness, and cations). The full program will be completed at the NF locations in 2016.*
- *Mid-field (TE and TPS): Trigger exceedances were documented for parameters without effectsbased thresholds (e.g., conductivity, hardness, and cations). Spot*

sampling through ice is recommended in 2016 to confirm the results. No open water sampling is required in 2016 unless contingency sampling is conducted in accordance with elevated limnology measurement.

- *Far-field (TEFF): No trigger exceedances were noted for TEFF in 2016. Spot sampling through ice is recommended in 2016 based on minor changes at TE in 2015. No open water sampling is required in 2016 unless contingency sampling is conducted in accordance with elevated limnology measurement.*

Based on the new sampling intensity strategy incorporated into the CREMP: 2015 Plan Update (Azimuth, 2015a), the minor changes observed at TPS/TE and TEFF warrant water quality verification sampling at these MF and FF areas in the spring 2016. No other sampling (e.g., sediment chemistry or benthic invertebrate community) is needed at these locations in 2016.

Concern: Phytoplankton and benthic invertebrate results show changes from reference conditions but AEM reports that none of the trends are statistically significant. The p-value for statistical analyses, however, is not provided. AEM reports that there was "*an 'apparent' reduction in total abundance (>20%) at TPE, TEFF and WAL when compared to INUG, but none of the results were statistically significant*" (p. 97) for benthic invertebrates.

The use of abbreviations in this section, without the existence of a list of abbreviations in the document, makes it very difficult to follow (see Recommendation #1).

Recommendation 31: Please indicate what p-value is used for all statistical analyses.

Agnico Eagle's Response:

Agnico Eagle agrees and will include a list of abbreviation in the 2016 Annual Report for clarity. In the 2015 CREMP report (Appendix G1) a list of abbreviation is presented at the beginning of the report for all specific term related to the CREMP.

The p-values used for all statistical analyses on water are 0.05. The p-values for all analyses on phytoplankton and benthic invertebrate are 0.1. This information can be found on Table 3.2-4, 3.2-14, 3.2-16, 3.2-17, 3.3-6, 3.3-8 and 3.3-9 of the 2015 CREMP Report.

Concern: Under the section on CREMP monitoring at Baker Lake, AEM states that "*a minor decrease in phytoplankton biomass was noted at BBD in 2015, but the result is considered representative of the variability in this endpoint given there were no instances of trigger exceedances in water quality parameters in 2015*" (p. 97). This statement does not provide sufficient information to adequately evaluate the significance of the observed phytoplankton biomass decline. Notably, 'minor decrease' is not defined. Furthermore, the 'BBD' site is not explained (and does not appear to be spelled out elsewhere in the report) nor clearly marked on any figure in either the report or in the appended Water Quality and Flow Monitoring Plan. In addition, no reference to baseline conditions is made when concluding that the decrease must

be due to the natural variability of the phytoplankton community. This omission is surprising, given that CREMP monitoring at Baker Lake has been ongoing since 2008, and one of the stated aims of CREMP monitoring is to use temporal trend assessment to determine if any changes are associated with mine-related activities.

Recommendation 32: Please define 'minor decrease' when discussing the observed decline in phytoplankton biomass in Baker Lake.

Agnico Eagle's Response:

Agnico Eagle will refer to Section 3.3.4 of 2015 CREMP report found in Appendix G1 of the 2015 Annual Report for an exhaustive description. The 2015 Annual Report main document, Section 8.1, is only a summary of the key point found in the 2015 CREMP Report (Appendix G1).

The "minor decrease" in phytoplankton in Baker Lake, describe on page 97 of the 2015 Annual Report, was a 34% reduction (p=0.084), which falls between the 20% trigger and 50% threshold. That said, the result was driven by one of the replicate values only and the others were well within the range of expected values. The previous added to the fact that there were no trigger exceedences in water quality permitted to Agnico Eagle to qualify the decrease of minor. Thus, the change was not attributed to AEM's activities. Please also see Agnico Eagle response to KIA Recommendation 34 below.

Recommendation 33: Please include the 'BBD' site in the list of abbreviations (See Recommendation #1 re: need for list of abbreviations), and include all Baker Lake sites on a figure in both the Annual Report and in the Water Quality and Flow Monitoring Plan.

Agnico Eagle's Response:

Agnico Eagle agrees and will include a list of abbreviation in the 2016 Annual Report for clarity. In the 2015 CREMP report (Appendix G1) a list of abbreviation is presented at the beginning of the report for all specific term related to the CREMP.

Agnico Eagle will include figures showing all CREMP stations in the 2016 Annual report to facilitate the reading. These figures will be the same (Figure 2-1 and 2-2) as the one found in the CREMP 2015 Design Document. These Figures will not be added in the Water Quality and Flow Monitoring Plan (WQFMP). However, a note will be included in the next revision of the plan to refer to the CREMP 2015 Design Document. Most sections regarding the CREMP in the WQFMP already refer to this document.

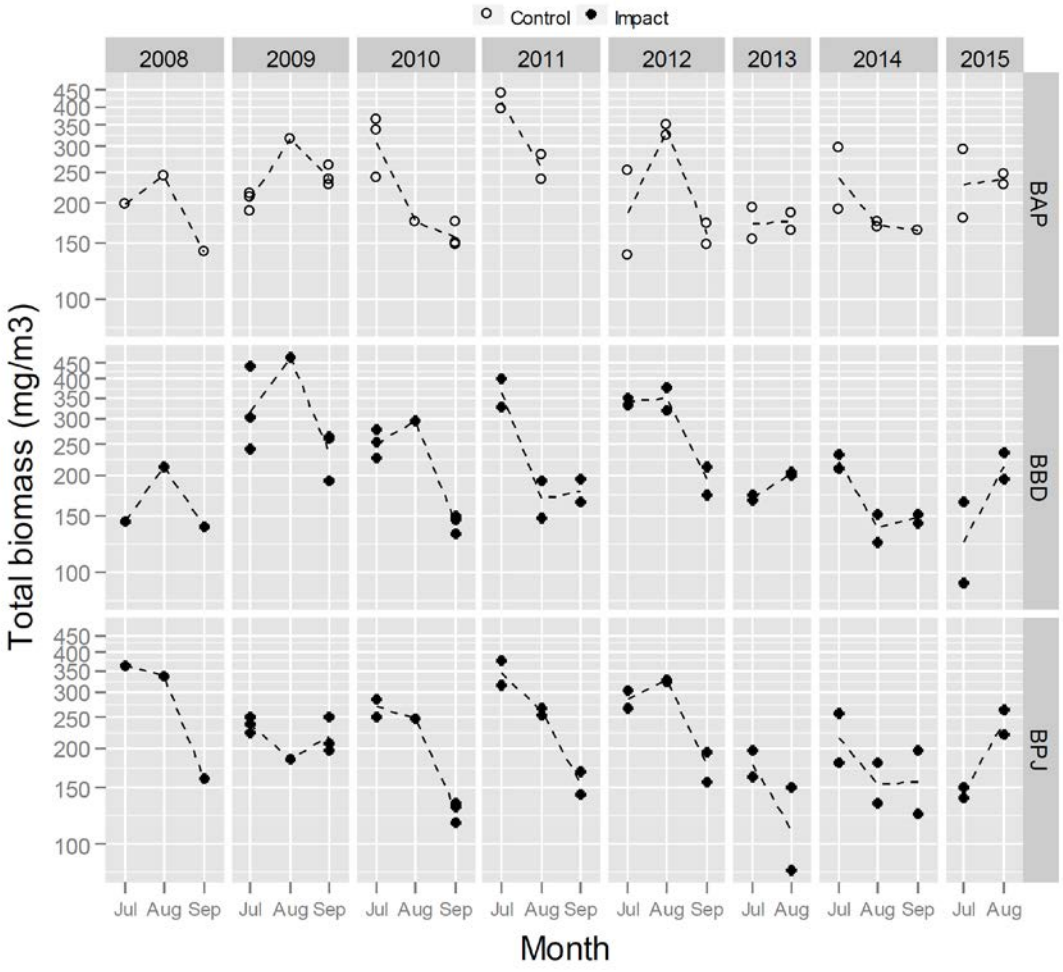
Recommendation 34: Information on the background natural variability in phytoplankton biomass in Baker Lake is needed in order to conclude that observed changes are just part of this natural variability. Please provide evidence that this is in fact the case by comparing the 2015 result with findings from 2008-2014 CREMP data for Baker Lake.

Agnico Eagle's Response:

Agnico Eagle will refer to Section 3.3.4.2 of 2015 CREMP report found in Appendix G1 of the 2015 Annual Report for an exhaustive description. The 2015 Annual Report main document, Section 8.1, is only a summary of the key point found in the 2015 CREMP Report (Appendix G1).

Total phytoplankton biomass at Baker Lake Barge Dock (BBD) for July was variable between the two samples, but overall slightly lower than the July 2013 and 2014 sampling events. Low biomass at BBD-37 in July (~90 mg/m^3) resulted in a statistically significant reduction in phytoplankton biomass of 34% (p=0.084). By August, phytoplankton biomass had increased to ~215 mg/m^3, similar to the results observed at Baker Lake Akilahaarjuk Point (BAP) (~235 mg/m^3). Low phytoplankton biomass for individual sampling events/replicate samples has previously been observed (e.g., August 2013 at Baker Lake Proposed Jetty (BPJ)) without any apparent long-term downward trend towards lower phytoplankton productivity. See Table below for the total phytoplankton biomass results since 2008. Overall, Chlorophyll-a, major taxa composition and species richness was comparable to all previous years.

The reduced phytoplankton biomass observed at BBD in 2015 is considered representative of the variability in this endpoint given there were no instances of trigger exceedances in water quality parameters in 2015. Phytoplankton biomass will continue to be monitored for potential temporal trends, but no follow-up measures are recommended other than routine monitoring for 2016.



6.13 Vault Attenuation Pond Discharge

Concern: AEM reports that sub-lethal toxicity samples were collected "*from the discharge location, the receiving environmental exposure area (WLE or ST-MMER-2-EEM-WLE) and reference area (TPS or ST-MMER-1-EEM-TPS)*" (p. 98) in 2015. It is difficult to understand the location and exact name of the individual sampling locations from the information provided.

Recommendation 35: Please clarify the name and location of the sampling sites located at the discharge location, the receiving environmental exposure area and the reference area, respectively. In particular, please address the following questions:

- Is ST-MMER-2 the discharge location?
- Is WLE the same as ST-MMER-2-EEM-WLE? Where is WLE on Figure 3?
- Is TPS the same site as ST-MMER-1-EEM-TPS?

Please also make reference to the figures in the report that indicate the location of these sampling sites.

Agnico Eagle's Response:

- *ST-MMER-2 is the discharge location.*
- *WLE is the same as ST-MMER-EEM-WLE and is the receiving environment exposure area.*
- *TPS is the same as ST-MMER-1-EEM-TPS and is the receiving environment reference area.*

Agnico Eagle omitted to put WLE on Figure 3 of the 2015 Annual Report, so please refer to figure in Appendix A for the exact sampling location. Agnico Eagle will make sure to illustrate all sampling locations in the 2016 Annual Report.

Concern: AEM states that the results of the 2015 Environmental Effects Monitoring (EEM) effluent characterization monitoring were previously reported to ECCC. It is not clear why this information is not also presented in the Annual Report.

Recommendation 36: Please provide the results of the 2015 EEM effluent characterization monitoring of the Vault Attenuation Pond Discharge in the Annual Report.

Agnico Eagle's Response:

Agnico Eagle has provided the 2015 EEM effluent characterization of the Vault Attenuation Pond Discharge. The results can be found on Table 8.6 and discussion on Section 8.2.2 of the 2015 Annual Report.

6.14 East Dike Discharge

Concern: AEM reports that East Dike Seepage Discharge was monitored under the MMER in 2015. As with Section 2.8.2.2 Vault Attenuation Pond Discharge, it is difficult to understand the location and name of some of the sampling locations discussed in this section. Furthermore, AEM states that "*...sampling locations are highlighted on Figures 3 and 2*" (p. 99), but Figure 3 is the Vault Area Sampling Locations, which is not where the East Dike Discharge is located. We believe the statement should read "*…sampling locations are highlighted on Figures 1 and 2*".

Recommendation 37: Please clarify the name and location of the sampling sites located at the East Dike discharge location, the receiving environmental exposure area and the reference area, respectively. In particular, please address the following questions:

- Is ST-MMER-3 the same as SPLE ST-8 as it appears in Fig. 1?
- Where is ST-MMER-1-EEM-TPS? It does not appear to be on either Fig. 1 or Fig. 2.

Please also correct the text on p. 99 to indicate that Figs. 1 and 2 show the sampling locations.

Agnico Eagle's Response:

- *ST-MMER-8 is the discharge location.*
- *SPLE is the same as ST-MMER-EEM-SPLE and is the receiving environment exposure area.*
- *TPS is the same as ST-MMER-1-EEM-TPS and is the receiving environment reference area. This sampling location is the same reference area as the one use for Vault Attenuation Pond Discharge reference area (See Figure 2 – 2015 Annual* Report).

Please refer to figure in Appendix B and C for the exact sampling location. As KIA mentioned, we should read in Section 8.2.3 "These sampling locations are highlighted on Figures 1 and 2."

Concern: AEM states that the results of the 2015 EEM effluent characterization monitoring for the East Dike Discharge were previously reported to ECCC. It is not clear why this information is not also presented in the Annual Report.

Recommendation 38: Please provide the results the 2015 EEM effluent characterization monitoring for the East Dike Discharge in the Annual Report.

Agnico Eagle's Response:

Agnico Eagle had provided the 2015 EEM effluent characterization of the East Dike Discharge. The results can be found on Table 8.9 and discussion on Section 8.2.3 of the 2015 Annual Report.

6.15 EEM Interpretive Report Cycle 2

Concern: Significant differences in several parameters were recorded for the sentinel fish species Lake Trout between samples taken in Third Portage North Lake (TPN) and two reference lakes (i.e., Lake Trout were heavier in TPN compared with both reference lakes when adjusted for length, and were shorter and lighter in TPN compared with one reference lake when adjusted for age determined from otoliths). No interpretations of these results are made in the report, making it difficult to evaluate the implications of these findings.

Recommendation 39: Please discuss possible reasons for the significant differences observed between TPN and reference lake trout populations, and evaluate potential implications for the health of the TPN fish populations.

Agnico Eagle's Response:

Agnico Eagle will refer to Section 3.4 of EEM Cycle 2 Interpretative Report found in Appendix G3 of the 2015 Annual Report for an exhaustive description. The 2015 Annual Report main document, Section 8.2, is just a summary of the key point found in the EEM Cycle 2 Interpretative Report (Appendix G3).

There is natural variability among fish populations and this natural variability can result in statistically significant differences. The EEM approach recognizes this fact through the use of critical effect sizes. Differences that are less than the critical effect size are generally considered to be within the range of natural variability. As there is only one parameter that differs significantly between Third Portage Lake and Pipe Dream Lake, and this difference is less than half of the critical effect size, the population parameters in Third Portage Lake are considered to be within the range of natural variability and not to indicate that there is any cause for concern with respect to the lake trout population in Third Portage Lake.

6.16 Mine Site Water Collection System

Concern: Several of the features making up the Mine Site Water Collection System discussed in the Annual Report are not included in Figures 1 and 2, making it difficult to evaluate the water quality monitoring program, as well as the mitigation measures for the Portage Waste Rock Storage Facility seepage. In addition, it is not clear what the 'NP2-Winter' label refers to in Figures 1 and 2, since it is not explained in the text.

Recommendation 40: Please indicate the locations of the following features on Figures 1 and 2:

- the Portage Attenuation Pond
- ST-9
- RF-1 and RF-2
- NP-2 South.

Agnico Eagle's Response:

Agnico Eagle acknowledge KIA comment's and will include in the 2016 Annual Report location of ST-9, RF-1, RF-2 and NP-2 South. The Portage Attenuation Pond do not exist anymore as since November 19, 2014 tailings deposition began in the South Cell, the Portage Attenuation pond ceased operation and became the South Cell TSF. Please refer to the figure in Appendix C for the exact location of these features.

Recommendation 41: Please explain what 'NP2 Winter' is (labelled in Figures 1 and 2).

Agnico Eagle's Response:

NP2-winter is an under ice sample in NP-2 Lake collected as part of the Freshet Action and Incident Response Plan (Section 3.1 and Appendix 1). It is the only sample taken in winter in regards to the ST-16 Seepage. This sample is collected monthly during winter for the same monitoring parameters as ST-16, NP-2, NP-1 and further downstream lakes, Dogleg and Second Portage. Result of this monitoring can be found in Table 8-21 of the 2015 Annual Report.

Concern: Water quality sampling was limited at two sites in 2015 because of safety issues (no secure access): Goose Island Pit Sump/Lake ST-20 and Vault Pit Sump ST-23.

Recommendation 42: Please indicate what steps are being taken to fix the safety issues limiting sampling at ST-20 and ST-23.

Agnico Eagle's Response:
Water from the Vault Pit sump was sampled monthly during open water as per the requirements in the NWB water license. In 2015 due to safety issues (no secure access to go to the sump), water samples were taken only in June and July 2015. In 2016, samples were taken in June, August and September.

An action plan will be developed with mine operation to assist in safe sampling of sumps during the next open water season.

In 2016, the access was cleared and secured in Goose Pit and sampled were collected from July to October, during open water season, for ST-20 Pit Lake.

Concern: AEM reports that "*copper is slightly elevated above CCME at NP-2 South and NP-2 East"* (p. 105), but does not mention that it is also elevated above CCME at NP-2 West. The hardness corrected CCME guideline for protection of aquatic life for copper is 0.002 mg/L. Average levels in 2015 at NP-2 South, NP-2 East and NP-1 West were 0.005, 0.006 and 0.005 mg/L respectively. AEM does not provide any criteria by which to assess whether these levels are *slightly* or *significantly* elevated above CCME guidelines from a biological perspective. No discussion of potential impacts on aquatic organisms is provided.

Recommendation 43: Please indicate in the text that copper is also elevated above the CCME limit at NP-2 West.

Agnico Eagle's Response:
Agnico Eagle agreed and will correct the 2016 Annual Report to reflect this comment.

Recommendation 44: Please qualify the statement that 2015 average copper levels at NP-2 South and NP-2 East are "*slightly elevated*" by providing evidence that such levels are not a serious concern for aquatic life. Please report comparisons of current water quality with those present prior to development in addition to "average" levels during operation of the mine.

Agnico Eagle's Response:
Maximum average values of total copper at NP-2 in 2015 were 0.006 mg/L, which is higher than the CCME guideline of 0.002 mg/L, but substantially lower than both Water License criteria (0.2 mg/L) and MMER criteria (0.6 mg/L). CCME guidelines are generally considered to be conservative targets for long-term water quality - "Guideline values are meant to protect all forms of aquatic life and all aspects of the aquatic life cycles, including the most sensitive life stage of the most sensitive species over the long term (CCME, 1999 - http://ceqg-rcqe.ccme.ca/download/en/312)". Water quality was not monitored at NP-2 prior to 2014. However, data from reference lakes in the Meadowbank area indicates typical background concentrations of total copper are

<0.001 mg/L, although concentrations in receiving lakes have occasionally exceeded CCME guidelines as well (2016 CREMP Report, Fig. 3.2-31). Since monitoring of NP-2 will be ongoing through 2018, longer-term trends in copper concentrations will be assessed in relation to CCME guidelines, as appropriate.

6.17 Blast Monitoring

Concern: AEM states that peak particle velocity (PPV) and overpressure monitoring data were recorded at stations around North Portage Pit, South Portage Pit, Bay Goose Pit and Vault Pit, as "*illustrated in Figure 1 and 2 of the report*". These figures, however, do not actually show any blast monitoring stations. Furthermore, neither Figure 1 nor 2 show the Vault Pit; it is depicted in Figure 3, which is not mentioned in the text.

Recommendation 45: Please indicate in the appropriate figures the locations of all blast monitoring stations.

Agnico Eagle's Response:

It should have been indicated "The blast monitoring stations are illustrated in Figure 1 and Figure 2 of the Blast Monitoring Report found in Appendix G6 of the 2015 Annual Report". Agnico Eagle refers to these figures for the blast monitoring stations for Goose, Portage and Vault and will make the reference clearer in the 2016 Annual Report.

6.18 Habitat Compensation Monitoring Program

Concern: AEM reports that catch per unit effort at dike face monitoring stations "*was similar to or higher than reference stations*" (p. 118). While details on the reference stations exist in Appendix G8, it would be useful to provide information on the location of the reference stations directly in the report as well.

Recommendation 46: Please describe the number and location of reference stations used in the monitoring of habitat compensation features as part of the Annual Report.

Agnico Eagle's Response:

Agnico Eagle agrees and will include detailed number and location of reference stations use for the monitoring of habitat compensation features as part of the Annual Report. The next monitoring of habitat compensation features will be completed in 2017; the 2017 Annual Report will include the details as per recommendation.

6.19 Summary of Results of AEMP – Related Monitoring Programs

Concern: AEM reports that "*phytoplankton and benthic metrics demonstrated variability that could not be explained as mine related*" (p. 122) but no further explanation to support this statement is provided.

Recommendation 47: Please explain why changes in phytoplankton and benthic metrics are not likely due to mine activity.

Agnico Eagle's Response:

Agnico Eagle will refer to Section 3.2.4 and 3.2.5 of 2015 CREMP report found in Appendix G1 of the 2015 Annual Report for an exhaustive description. The 2015 Annual Report main document, Section 8.1, is only a summary of the key point found in the 2015 CREMP Report (Appendix G1).

The phytoplankton community taxa biomass and taxa richness data from 2015 are generally similar to previous years and within the range of historical baseline/reference conditions. These results continue to show that any minor changes to water quality as a result of mining activities (e.g., increased concentrations of some major ions relative to baseline/reference) are not resulting in persistent and adverse changes to the phytoplankton communities in the Meadowbank exposure lakes.

Benthic invertebrate community abundance and richness were particularly high for a number of areas in 2015, most notably TPS and INUG. Despite some variability, the benthic invertebrate metrics (total abundance and taxa richness) were generally within the range reported for the various locations, with no apparent decreasing trends. In summary, no mine-related effects to the benthic invertebrate communities in the Meadowbank project lakes were observed in 2015.

Concern: AEM indicates that a number of water chemistry parameter concentrations exceeded early warning triggers or changed from baseline conditions, warranting concern. In particular, the following parameters had elevated concentrations at various mine locations: alkalinity, conductivity, hardness, major cations (calcium, potassium, magnesium, sodium), total dissolved solids, and total Kjeldahl nitrogen. Yet, AEM states that "*while these results represent mine-related changes, the observed concentrations are still relatively low and unlikely to adversely affect aquatic life*" (p. 122). The mine-related changes mentioned are not quantified and no supporting evidence to support the statement that they are unlikely to have adverse effects is provided. The lack of information makes it impossible to evaluate the significance of these water chemistry changes to the aquatic biota. Furthermore, in Table 8.62 these water chemistry changes are ranked as having low permanence (i.e., rapidly reversible, on the order of months to years), but no discussion of how this was determined is provided.

Recommendation 48: Please provide evidence to support the conclusion that mine-related changes in the various water chemistry parameters is unlikely to have adverse on aquatic life, including an explanation of why these changes are considered to be rapidly reversible.

Agnico Eagle's Response:

Agnico Eagle will refer to Section 3.2.2 of 2015 CREMP report found in Appendix G1 of the 2015 Annual Report for an exhaustive description. The 2015 Annual Report main

document, Section 8.1, is only a summary of the key point found in the 2015 CREMP Report (Appendix G1).

Please refer to Agnico Eagle's response to KIA recommendation 30 for evidence that support the conclusion that mine-related changes in the various water chemistry parameters is unlikely to have adverse on aquatic life.

The conventional water chemistry parameters (alkalinity, conductivity, hardness, Ca, K, Mg and Na) are considered to be rapidly reversible because there were elevated relative to reference/baseline conditions but the increase is qualify as low.

Concern: AEM states that a "*healthy periphyton community growth with increasing biomass was observed*" (p. 122) within the dike faces. It is not clear what the increasing biomass trend is relative to: is the comparison spatial (i.e., with reference sites) or temporal (i.e., with reference conditions)? More discussion of this observation would be useful to explore possible reasons for the increase. No information on the periphyton and interstitial water quality monitoring is provided in Table 8.62.

Recommendation 49: Please provide details on the periphyton data comparison. Specifically, is the observation of increasing biomass relative to reference sites or reference conditions? Please also discuss what might be causing the observed biomass increase at the dike faces.

Agnico Eagle's Response:

Agnico Eagle will refer to Section 3.2.2 of 2015 Habitat Compensation Monitoring Program Report found in Appendix G8 and Periphyton Technical Memorandum found in Appendix B of the 2015 Annual Report for an exhaustive description. The 2015 Annual Report main document, Section 8.7, is only a summary of the key point found in the 2015 Habitat Compensation Monitoring Program Report (Appendix G8).

Analysis of the early-stage periphyton communities at the East Dike and Bay-Goose Dike HCFs showed diatoms were the predominant taxa group responsible for early colonization of the HCFs. In general, periphyton community succession has progressed from diatom-dominated early-stage communities to a more heterogeneous mix of cyanobacteria, diatoms, and to a lesser extent, chlorophyte taxa in the mid-stage communities (≥ 5 years post construction). The shift from a diatom-dominated to heterogeneous periphyton community on the HCFs is characterized by increased species diversity measures (i.e., increased taxa richness and Simpson's Diversity). At the East Dike HCF, taxa richness and Simpson's Diversity values are nearly identical to the reference area in Second Portage Lake indicating the presence of community similar to background conditions. Increased community diversity (i.e., greater proportion of cyanobacteria) was also observed at the Bay-Goose Dike HCFs in 2015 relative to 2011, and the same trend of increased diversity is anticipated based on the community composition changes at the East Dike. Biomass has also steadily increased on the HCFs in Second Portage and Third Portage Lakes in the post-dike construction phase, but total

biomass is still lower compared to the reference areas. It is now apparent that 3 to 5 years is not a sufficient amount of time for full colonization of new barren rock surfaces to background levels of biomass as was first postulated. The presence of a structurally similar periphyton community at each of the HCFs relative to their respective reference areas indicates a healthy periphyton community. Biomass growth is expected to continue as periphyton community succession progresses.

Recommendation 50: Please include a summary of findings for periphyton and interstitial water quality data in Table 8.62.

Agnico Eagle's Response:
Table 8.62 found in the 2015 Annual Report main document summarized only the result of the CREMP. This is for this reason that no information on periphyton and interstitial water quality that are related to the Habitat Compensation Monitoring Program. No Habitat Compensation monitoring was completed in 2016, the next program is planned for 2017. Agnico Eagle will add in the 2017 annual report discussion on the Habitat Compensation Monitoring Program.

6.20 Identification of Potential Risks and Discussion

Concern: Several mine locations are referred to as either near-field, mid-field or far-field sites in the AEMP, but no explanation is provided. A table summarizing the criteria for each designation, as well as which locations fit under each designation, would be very helpful for evaluating potential risks.

Recommendation 51: Please provide a table and maps to explain the near-field, mid-field and far-field designations and include locations that fit under each designation.

Agnico Eagle's Response:
Figures 1.3-1, 1.3-2 and 1.3-3 of the 2015 CREMP Report found in Appendix G1 of the 2015 Annual Report shown location of the near-field, mid-field and far-field sampling station. Please see Appendix D attach with this document.

Near-field (NF) areas – Areas are situated in close proximity to the development, in particular, near dikes, dewatering discharge, and proposed effluent sources. These areas provide the first line of early-warning for introductions of stressors into the receiving environment. In the Meadowbank study lakes, these areas include: Third Portage Lake North (TPN), Third Portage Lake East (TPE), Second Portage (SP), and Wally Lake (WAL; note that planned mining activity started there in July 2013). For Baker Lake, there are two NF areas, one targeting the hamlet's barge landing area (Baker Barge Dock [BBD]) and the other AEM's fuel storage facility (Baker Proposed Jetty [BPJ]).

Mid-field (MF) area – This area designation was added in 2011 to be consistent with the area categorizations used in the CREMP: Design Document 2012 (Azimuth, 2012d) and

includes Tehek Lake (TE) and Third Portage Lake South (TPS). TE is adjacent to the inlet from Second Portage Lake and was exposed to elevated TSS during construction of the East Dike in 2008, prompting the addition of a new far-field area (Tehek far-field) in 2009. Consequently, MF designation is more accurate for TE. TPS was initially envisioned as an internal reference area in the 2005 AEMP. However, given the connectivity to TPN and the slight changes in hardness related parameters, it is more appropriately considered a MF area. That said, given the degree (i.e., relatively minor) and nature (i.e., limited to certain non-metal parameters only) of the observed changes and the termination of discharges to TPN, TPS should still be appropriate as a reference area for EEM water quality monitoring.

Far-field (FF) area – The intent of this area is to monitor water and sediment quality downstream of project infrastructure to provide insights into the spatial extent of any effects observed at the near-field areas. The Tehek far-field (TEFF) area is a key location that will ultimately determine whether or not contaminants are detectable downstream of the entire mine development. Lake waters from Second and Third Portage Lakes and the Vault Lakes (Vault, Wally, Drilltrail) meet at the southern end of Second Portage Lake and discharge via a single channel into Tehek Lake. Monitoring the water and sediment quality and the health of the benthic invertebrate community in the basin adjoining the discharge point from Second Portage Lake will help determine if any effects identified at SP are extending into TE and beyond into TEFF.

Reference (Ref) areas – By definition, reference areas are sufficiently removed from the mine that they are presumed to be unaffected by any infrastructure (roads, dikes, runways) and point sources (aerial and aquatic) associated with mine development. Inuggugayualik Lake (INUG) and Pipedream Lake (PDL) are external reference areas chosen for the purposes of making comparisons with the project lakes (EVS, 1999; Azimuth, 2005b). Monitoring of reference areas is important in order to distinguish between possible mine-related changes in water quality or ecological parameters and natural changes, unrelated to the mine. The reference areas are situated about 16 km west at INUG and 12 km northwest at PDL of the mine site. They are both headwater lakes and flow north into the Arctic Ocean. Despite the different drainage basin, both these lakes satisfy the requirements of an external reference lake from a physical/chemical perspective because they are at similar in latitude, have similar geology, relief and climate, do not have any significant inflows and has generally similar limnological features, water chemistry and aquatic biological community structure to the project lakes (Azimuth, 2005b). Pipedream Lake, added to the CREMP in 2009, was originally investigated as a candidate reference area in 1998 (EVS, 1999) from a fisheries perspective. For Baker Lake, an internal reference area is located several kilometers to the east of the hamlet along the north shore of the lake (Baker Akilahaarjuk Point [BAP]) and a second reference area was added in 2011 based on a recommendation from additional analysis and interpretation of the historical Baker Lake data, which is located on the same shoreline, east of BPJ and west of BAP.

Station Abbreviation	*Station Complete Name*	*Location*
BAP	Baker Lake – Akilahaarjuk Point	*Reference*
BPJ	Baker Lake – proposed jetty	*Near-field*
BES	Baker Lake – east shore	*Reference*
BBD	Baker Lake – barge dock	*Near-field*
INUG	Inuggugayualik Lake	*Reference*
PDL	Pipedream Lake	*Reference*
SP	Second Portage Lake	*Near-field*
TE	Tehek Lake	*Mid-field*
TEFF	Tehek Lake Far-field	*Far-field*
TPE	*Third Portage Lake East*	*Near-field*
TPN	*Third Portage Lake North*	*Near-field*
TPS	*Third Portage Lake South*	*Mid-field*
WAL	Wally Lake	*Near-field*

Concern: The difference in Lake Trout size and weight observed between Third Portage Lake populations and reference lake populations is explained as possibly being due to "*an inherent difference*" between the receiving lake and reference lakes and "*an artifact of using lake trout as a sentinel species*" (p. 130). No further explanation is given. This lack of discussion is problematic, because it suggests that a foundation of the CREMP is fundamentally flawed (i.e., using the two reference lakes chosen for fish comparisons and using Lake Trout as a sentinel species), yet no solution to the potential problem is identified. It is not clear why AEM believes that the observed differences are due to artifacts of study design and not mine-related impacts. Furthermore, if there are inherent differences between Third Portage Lake and the two reference lakes, and if Lake Trout is not a suitable sentinel species, then there is little confidence in the data and an alternative approach to monitoring fish needs to be established.

Recommendation 52: Please explain why the observed differences in the Lake Trout populations is considered due to factors related to study design and not mine-related impacts. Given this conclusion, please indicate how the study design will be changed to overcome these problems, allowing for more robust monitoring of potential mine-related impacts on fish populations.

Agnico Eagle's Response:

Agnico Eagle will take the KIA comments in consideration while preparing the Environmental Effects Monitoring Cycle 3 Study design to be submitted to Environment and Climate Changes Canada in 2017. It should be noted that the CREMP and the EEM are two different studies.

There is natural variability among fish populations and this natural variability can result in statistically significant differences. The EEM approach recognizes this fact through the use of critical effect sizes. Differences that are less than the critical effect size are

generally considered to be within the range of natural variability. As there is only one parameter that differs significantly between Third Portage Lake and Pipe Dream Lake, and this difference is less than half of the critical effect size, the population parameters in Third Portage Lake are considered to be within the range of natural variability and not to indicate that there is any cause for concern with respect to the lake trout population in Third Portage Lake.

Concern: AEM reports that there were no statistically significant differences in the benthic community or fish habitat due to changes in chromium concentrations in TPE sediment. It would be useful to provide the significance level in the report, (e.g., $p<0.05$ or $p<0.01$?) so that readers can gauge the magnitude of the differences observed.

Recommendation 53: Please indicate the significance level of statistical analyses of chromium concentrations and benthic invertebrates and fish habitat.

Agnico Eagle's Response:
Agnico Eagle agrees and will include any relevant significance level directly in the 2016 Annual report of statistical analyses of chromium concentration and benthic invertebrates. It should be noted that this conclusion was based on no statistically significant difference or decline in total abundance and taxa richness. The p-value for Chromium is 0.05 and 0.1 for benthic invertebrate.

6.21 Recommended Management Actions

Concern: AEM concludes that it has "*adequately addressed*" (p. 131) all incidences where trigger levels were exceeded (i.e., chromium in TPE sediment, conductivity, TDS, ionic and nutrient parameters in water quality at near-field stations, seepage at the assay road and NP-2 from 2013). However, we have identified several shortcomings in the data presentation and interpretation of results which prevent the conclusion that these issues have been adequately addressed (i.e., see Recommendations 20-26, 32, 35, 37, 40-43, 45 and 46).

Recommendation 54: Please address our requests for clarification, further discussion, and justification of interpretation on the trigger level exceedances in order to conclude that these issues have been adequately addressed (see Recommendations 31-35, 40, 43-45, 48-51, 53, 54).

Agnico Eagle's Response:
Please refer to Agnico Eagle's responses to KIA Recommendations 31-35, 40, 43-45, 48-51, 53 and 54.

6.22 Noise Monitoring

Concern: AEM reports that noise levels exceeded the target levels on three occasions at Station R5 (two exceeded the daytime target sound level of 55 dBA and one exceeded the nighttime target sound level of 45 dBA). The noise level exceedances at Station R5 are attributed to

helicopter activity because the site is described as being near the helicopter pad at the exploration camp. Station R5 is also located close to a caribou migration route, and helicopter activity is minimized during the migration period.

Station R5 is not shown on any of the mine area maps (i.e. Figures 1-3). AEM does not provide any noise data from the migration period to illustrate that these noise management efforts actually have any impact on noise levels.

Recommendation 55: Please indicate the location of Station R5 on a map.

> ***Agnico Eagle's Response:***
> *Location of all noise stations, including R5, are illustrated in Figure 1 of the 2015 Noise Monitoring Report found in Appendix G9 of the 2016 Annual Report.*

Recommendation 56: Please also provide an analysis of noise monitoring on site during the caribou migration period to investigate whether the helicopter activity mitigation measures actually result in reduced noise levels during this sensitive period.

> ***Agnico Eagle's Response:***
> *Noise monitoring is depending on certain weather and environment conditions (wind, temperature, precipitation, accessibility) that could make noise monitoring during migration season ineffective. Noise monitoring at the Meadowbank site is done consistently during available season and data is provided in the annual report.*

6.23 Air Quality Monitoring

Concern: AEM reports that the estimated greenhouse gas emissions for the Meadowbank site for 2015 were 187, 280 tonnes CO2 equivalent (compared with 179, 889 tonnes in 2014).

Question 1: Why did greenhouse gas emissions increase from 2014 to 2015?

> ***Agnico Eagle's Response:***
> *The greenhouse gas emission increase from 2014 to 2015 represent 7,391 tonnes CO_2 equivalent. This increase is mainly due to the augmentation of fuel consumption for the heavy duty equipment. As Vault Pit is at approximately at 8 km North East of the main mine site, a significant increase in the diesel consumption (app. 3.5Ml) for the hauling of ore has been observed. Please refer to Agnico Eagle's to recommendation #57 below for a review of action taken to reduce our greenhouse gas emissions.*

Recommendation 57: We recommend that AEM conducts an annual review to investigate ways to reduce greenhouse gas emissions from the Meadowbank project.

Agnico Eagle's Response:

Agnico Eagle investigates annually different ways/project to increase the efficiency of different equipment on site. By having equipment more efficient on site, Agnico Eagle automatically decreases the greenhouse gas as the consumption of fuel and energy are fewer. Even if Agnico Eagle have project to reduce the GHG, the energy required by Vault Pit is higher than energy required by Portage Pit. As vault Pit is now in fulltime operation, the GHG automatically shows a slight increase. Please see below different project completed by Agnico Eagle to date:

- *Generator efficiency improvement with new operation matrix phase 2, at the Power House;*
- *Replace old model of lights by the new model of lights (LED);*
- *Complete the installation of the automatic system to follow-up the fuel consumption (fuel tracking system) on each vehicle on site. This system provides a better control of our fuel consumption so a better estimated of the GHG related to this fuel consumption;*
- *Installed 9 VFD (variable frequency drive) on the agitators for the Leach tanks, this installation aims to reduce de speed and power at the same time;*
- *We improved the efficiency of the heat recovery system and performed a site wide balancing of the glycol loop heating our buildings.*
- *We plan to introduce the use of Summer fuel in our operation during summer 2017 that will improve global efficiency of all our equipment (generators and mobile fleet). The summer fuel is approximately 1.5% more efficient than the Arctic fuel so will lead to fewer greenhouse gas emissions.*

6.24 Wildlife Monitoring – Annual Monitoring

Concern: Appendix G13 presents details on the wildlife monitoring results for 2015. AEM presents the breeding bird monitoring program results in Section 4 of Appendix G13. No information is provided on the location or number of sites for the breeding bird PRISM (Program for Regional and International Shorebird Monitoring) plots, nor the location of the breeding bird transects. In particular, it is unclear where the control and mine survey sites are located, which would help in the interpretation of the results.

Recommendation 58: Please provide a map illustrating the location and number of monitoring sites for both the PRISM plots and transects.

Agnico Eagle's Response:

To reduce the size of its annual reports, Agnico has chosen to refer the reader to previous annual reports that provide more extensive details on survey objectives, methods, and locations (see Section 4.4.1 – "Details on the field methodology for PRISM plots are provided in previous annual Wildlife Monitoring Summary Reports."). However, we are pleased to provide maps of the PRISM and bird transect locations here for the benefit of your review. Please see Appendix E attach with this document.

Concern: AEM presents the results for the Breeding Bird PRISM Plots in Section 4.5.1 of Appendix G13. Although results are presented graphically and summarized in the text, detailed statistical information is not provided consistently, making it difficult to judge the significance of results. For example, AEM states that: "*ANCOVA analysis suggested that there were no temporal trends, or differences in abundance between control and mine sites…*" (p. 10) for Lapland Longspur, yet no statistical results are included for this analysis (i.e., X2, df, p-value). Similarly, statistical information is missing for Horned Lark results as well as species richness trends. Statistical results only seem to be provided when they are deemed significant, but it is helpful to also provide "non-significant" results so that the reader can make their own conclusion.

Recommendation 59: Please provide statistical test results in the text for both significant and non-significant findings. These can be included as an Appendix to the Annual Report.

> ***Agnico Eagle's Response:***
> *Please find in Appendix F a detailed statistical reported for the Breeding Bird PRISM Plots.*

Concern: Section 5 of Appendix G13 summarizes the Raptor Nest Monitoring program. The purpose of the monitoring program is twofold:

- To ensure raptor nest failures are not caused by mine-related activities (threshold level is one nest failure per year); and
- To ensure that no mine-related mortality of raptors occurs (threshold level is one individual per year).

Four active Peregrine Falcon nests were monitored in 2015 along the AWAR. In the annual report, AEM states that "*raptor nest management plans were not warranted at any of the active nest sites as no project-related effects on falcon nesting success were observed*" (p. 138). However, Table 5.2 of Appendix G13 shows that the nest at Quarry 19 was probably not successful and that the success of the nest at Quarry 21 was not confirmed. Given this incomplete information, it is not clear how AEM comes to the conclusion that there were no mine-related effects on Peregrine Falcons. Furthermore, the information on nesting activity does not address the second goal of the monitoring program, which is to ensure no mine-related mortality of raptors, and this issue is not discussed in Appendix G13 or the annual report.

Recommendation 60: AEM should explain how it comes to the conclusion that no mine-related effects on Peregrine Falcon nesting success exists, given the uncertainty in the monitoring data. Furthermore, please explain how mine-related mortality of raptors is monitored.

> ***Agnico Eagle's Response:***
> *We concluded that mine-related effects on nesting falcons did not occur because mining and quarrying activity did not occur at Quarry 19, and activity at the Quarry 21 was*

limited to the winter (except for one piece of equipment that was removed during the summer).

Mine-related mortality of falcons is monitored during daily mine site inspections (Section 6) and all-weather access road ground surveys (Section 7); however, no raptor mortality has been documented to date.

Concern: Only information on Peregrine Falcon is presented. Were other raptor species present in the survey area in 2015? If so, why are they not included in the report?

Recommendation 61: Please indicate whether other raptor species are monitored as well.

Agnico Eagle's Response:
Gyrfalcon, rough-legged hawk, short-eared owl, and snowy owl have not been seen nesting along the road or near the mine site. Peregrine falcons are the only raptor species documented as nesting; therefore, they are the focus of Agnico Eagle surveys.

6.25 Wildlife Monitoring – Harvest Study Results

f. Details of annual aerial surveys to assess waterfowl densities

Concern: AEM reports that densities of waterbird nests at the mine site and along the AWAR were too low between 2005-2012 to determine changes in nest abundance or success. AEM states that these low densities, combined with "*the absence of data suggesting that mine or road-related effects are occurring*" (p. 139) is the reason why the waterbird nest surveys have been discontinued. However, the information provided in Appendix G13 Table 6.4 appears to contradict these statements. In the fourth row of the table it indicates that the threshold level of one nest failure per year was not exceeded in 2015 and that "*Daily/Weekly Systematic Mine Site Ground Surveys; Waterbird Nest Surveys*" (p. 32) are carried out.

It is not clear whether waterbird surveys have, in fact, been discontinued. If they have, it is impossible to determine whether this action was warranted, given the absence of any data on waterbird nest densities over the survey period.

Recommendation 62: Please clarify the status of waterbird surveys. Please also provide data on the number of nests observed over the 2005-2012 survey period.

Agnico Eagle's Response:
Dedicated waterbird surveys along wetland transects within 200 m of the all-weather access road and mine facilities have not been conducted since 2012 (see Section 6, 2012 annual report). However, waterbird nests are searched for during daily mine site inspections. If an active waterbird nest is located, a nest management plan will be developed.

The numbers of waterbird nests observed adjacent to mine site facilities from 2005 to 2012, and along the all-weather access road from 2007 to 2012 are provided in the following tables. Please note that total lengths of waterbird transects at the mine site and along the all-weather access road are 51.5 and 37.8 km, respectively.

Table 1: Summary of Waterbird Nest Survey Results for Mine Site Facilities (2005 to 2012).

Bird Species	2005	2006	2007	2008[1]	2009	2010	2011	2012
Canada Goose	0	1	0	0	0	0	0	0
Common Loon	0	0	0	0	1	0	0	0
Long-tailed Duck	1	0	0	0	0	0	0	0
Northern Pintail	1	0	0	0	0	0	0	0
Semipalmated Plover	0	1	0	0	0	0	0	0
Semipalmated Sandpiper	0	4	0	0	0	1	1	0
TOTAL WATERBIRD NESTS	**2**	**6**	**0**	**0**	**1**	**1**	**1**	**0**

Table 2: Summary of Waterbird Nest Survey Results for the All-Weather Access Road (2007 to 2012)

Bird Species	2007	2008	2009	2010	2011	2012
Cackling Goose	0	0	0	0	0	1
Canada Goose	3	4	6	2	4	3
Greater White-fronted Goose	1	0	0	0	0	0
Herring Gull	1	2	1	0	0	0
Long-tailed Duck	1	4	2	0	5	0
Parasitic Jaeger	0	2	1	1	0	0
Red-breasted Merganser	0	0	0	0	0	1
Semipalmated Sandpiper	0	1	5	0	0	1
Dunlin	0	0	0	1	0	0
Northern Pintail	0	0	0	1	0	0
Unidentified Shorebird	0	0	0	0	1	0
TOTAL WATERBIRD NESTS	**6**	**13**	**15**	**5**	**10**	**6**

Concern: Appendix G13 summarizes potential project effects, thresholds and results of monitoring for 2015 in Table 10.1 (p. 64 of Appendix G13). Thresholds were exceeded for mine-related waterfowl mortality (two dead waterfowl vs. threshold of one) and possibly for sensory disturbance of ungulates according to Table 10.1. Yet these exceedances are not discussed in the relevant section of the annual report.

Recommendation 63: Please discuss the nature of the wildlife exceedances, as well as implications and subsequent mitigation measures to be adopted, in Section 8.13 of the annual report.

Agnico Eagle's Response:

Agnico Eagle just would like to remind that the 2015 Annual Report main document is only a summary of the key point found in the 2015 Wildlife Summary CREMP Report (Appendix G13) and does not included an exhaustive description but rather a summary of the important finding of the report.

Please refer to Section 12.2.3 of the 2015 Annual Report. Two Terrestrial Ecosystem Monitoring Program thresholds were exceeded or potentially exceeded in 2015 (waterfowl mortalities (One duck mortality - suspect collision with building/window (cause unknown) and one Canada goose mortality - TSF-related; and potentially, sensory disturbance of caribou related to the AWAR). Additional mitigation to reduce waterfowl mortalities will be implemented in 2016, including increased monitoring of the tailings storage facility (daily) during the waterfowl migratory period, and increased frequency of deterrent use if required. To address results suggesting potential deflection of caribou walk paths in relation to the Meadowbank AWAR, an analysis of collar data by the GN (in partnership with Agnico) as part of the caribou collaring and monitoring program will be conducted to determine project-related effects due to the AWAR. Agnico will continue to closely monitor caribou movement in the weeks leading up to these annual migrations using the latest available satellite-collaring and AWAR survey data as well as incidental reports from staff utilizing the AWAR on a regular basis (e.g., security personnel). Notification and announcements, staff re-education, specific dispatch protocols, and temporary road closures will continue to be implemented as in previous years, as a proactive management strategy.

6.26 Closure – Mine Site

Concern: The Portage Rock Storage Facility is designed for storage of PAG waste rock in a manner that will minimize acid rock drainage generation over the long-term. The strategy focuses on freeze control of the PAG waste rock, with a 4 m layer of NPAG rock capping the PAG rock that is encapsulated in permafrost. AEM states that "*the waste rock below the capping layer is expected to freeze, resulting in low rates of acid rock drainage (ARD) generation in the long term*" (p. 146). A similar approach is used in the Tailings Storage Facility so that "*the tailings will freeze in the long term, and …the talik that currently exists below 2PL Arm will freeze before seepage from the TSF will reach the groundwater below the permafrost*" (p. 146).

The strategy for long-term storage of PAG waste rock is contingent on there being permafrost over the long-term. How has climate change been incorporated into the design and modelling of the storage strategy? If permafrost is disappearing because of higher temperatures, the likelihood acid rock drainage generation will occur increases. Our comments 22 and 23 (Section 2.5.3.2) addressed higher than expected ground temperatures for earthworks and concerns about the integrity of freeze-dependent earthworks. Do these observations alter conclusions on the feasibility of isolating PAG rock by freezing over the long term?

Recommendation 64: Please indicate how climate change effects on permafrost are taken into account in the design and modelling of success of the freeze control strategy for PAG waste rock and discuss this in the context that the temperature of the foundation material at the Saddle Dam 1 (soil and bedrock) has increased by an average of 4-5°C since 2010, depending on location within the dike. Ensure this information is incorporated into the updated Closure and Reclamation Plan.

Agnico Eagle's Response:

Climate change effects on permafrost are taken into account in the design and modelling of the freeze control strategy for PAG waste rock, as described in the 2014 Interim Closure and Reclamation (provided in the 2014 Annual Report) prepared by Golder and Associates, and more specifically section 2.4.1.1.

Climate change will continue to be considered in the development of the closure design of the PAG waste rock storage facility. In 2016, thermal modelling study for the Rockfill Storage Facility including on site monitoring data was developed. This modelling includes the effect of climate change. Details of the RSF cover design will be included in the final closure plan, to be provided 1 year prior to closure, as per the Water License 2AM-MEA1525.

In 2015, modelling study including climate change for the TSF capping was also completed. As detailed earlier in previous response to recommendation 23, it is important to note that the temperature increase in the foundation of SD1 is not related to climate change.

6.27 Socio Economic – Meadowbank Workforce

Concern: AEM reports that the job classification system at Meadowbank was reviewed and modified in 2014 "*to better differentiate between different positions*" (p. 166). This resulted in the creation of a new category: 'Professionals'. The definition and requirements of each category were also reviewed and some re-classified from 'Skilled' to 'Semi-skilled'. Despite these changes, AEM does not present the new definitions and requirements for each job category in the report.

Recommendation 65: Please provide the revised definitions and requirements for each job category listed in Tables 11.6 and 11.7.

Agnico Eagle's Response:

Please refer to Appendix G attach with this document for the "Agnico Eagle Occupations Classification System"

6.28 Socio Economic – Labor Pool Initiative

Concern: AEM reports that it visited six Kivalliq communities in 2015 to recruit participants for the Labor Pool initiative (which aims to "*create a pool of work ready, pre-qualified [Inuit]*

candidates…to draw future employees from", p. 177). No information is given on the number of individuals selected for the program, nor on the success of the initiative (e.g., How many were selected for the initiative? How many of those selected completed the e-learning training, 5-day Work Readiness training and the orientation week? How many from the previous 2014 program have been hired for on call assignments?).

Recommendation 66: Please provide details on the number of Inuit who participated in the Labor Pool initiative in 2015, as well as how many completed each of the three components of the program, and how many have been hired from the 2014 program.

Agnico Eagle's Response:

The Labour Pool is a process with various steps to gain employment at one of Agnico Eagle's Nunavut projects. People who want to be hired have to apply online via our Nunavut website. Once their online application is filled-in, they may be called back to participate in the mandatory trainings (Work Readiness and Orientation Week). In 2015, 155 people attended the Work Readiness program from which 111 participated in the Orientation Week Training program. The e-learning training is completed during the Orientation Week. Among the employees that have completed their mandatory training in 2014, 72 people were offered employment opportunities with Agnico Eagle. Note that only the Work Readiness was required prior gaining employment until April 2015 when the Orientation Week was implemented.

6.29 Socio Economic – Work Readiness Training Program

Concern: AEM reports that it provides a Work Readiness Training program to prepare Inuit for employment opportunities at Meadowbank. In 2015, 155 people from six Kivalliq communities participated. Additional analysis of the success of this program would be useful. For example, when was the program started? How many people have completed the program in total? How many graduates have gone on to join the AEM labour force?

Recommendation 67: Please provide details on the success of the Work Readiness Training Program. In particular, please indicate when the program was started, how many people have completed it, and how many graduates have joined the AEM labour force. Please provide discussion in the context of earlier conclusions (see Section 2.2.1) that the mine's recruitment, retention and training programs for Inuit progressed well over the year, and with reference to Section 12.6.1 of the Annual Report.

Agnico Eagle's Response:

The Work Readiness Training has been available to Kivalliq residents throughout the year 2015 and is a mandatory training program to aim employment at any of Agnico Eagle's Nunavut projects. For the year 2015, there were 155 successful participants who became available for the next mandatory training program: the Orientation Week. As stated in the report, 111 people participated in this initiative. Only then are they available for employment. We are currently in an optimisation phase of our employment

tracking systems. Therefore, we cannot provide the exact number of people who gained employment that have participated in both the Work Readiness and Orientation Week in 2015. We should be able to report those numbers for the 2016 year-end report.

6.30 Socio Economic – Cross Cultural Training Program

Concern: AEM reports that 521 employees received cross cultural training in 2015. How is it determined who participates in the program? Is it voluntary, or mandatory for certain people?

Recommendation 68: Please clarify the selection process for participation in the Cross Cultural Training Program. If voluntary, what steps has AEM taken to improve participation rates?

Agnico Eagle's Response:
The Cross-Cultural training is mandatory for all Agnico Eagle employees. The program is delivered on a regular basis at the Meadowbank site.

6.31 Socio Economic – Kivalliq Science Educations Community

Concern: AEM provided funding for regional math and science camps as well as a Kivalliq Science Fair in 2015. Were these initiatives for high school students? How many participants were there? Is this the first year of the initiative?

Recommendation 69: Please provide more details on the science and math programs supported by AEM. In particular, who are the programs geared towards? How many people participated? When did the initiative begin?

Agnico Eagle's Response:
AEM has supported proposals from the Kivalliq Science Educators Community (KSEC) since 2012. In 2015 the KSEC program included a range of initiatives targeted to reach Kivalliq school students, including attendance at the Canada-Wide Science Fair (Fredericton, NB, 3 participants), KSEC Inuit Science Awards(2 awards), Science Culture Camp (Baker Lake, 31 participants), Science Engineering Technology (SET) Challenge (all Kivalliq Communities, 810 participants), Math Month (all Kivalliq Communities, 516 participants), Kivalliq Regional Science Fair (26 participants) and Kivalliq Schools Science Fairs, (471 participants). The total of all participants (school students) in all of the KSEC activities was 1,578. Agnico invested $25,000.00 in cash and $15,000.00 in kind costs towards KSEC activities in 2015.

6.32 Socio Economic – Kivalliq Mine Training Society

Concern: Employment Skills Development Canada (ESDC) has developed a two-year pilot project, in partnership with AEM to provide mine training. AEM reports that the program "*would see five of Canada's program areas bundled in a seamless application and delivery program*" (p. 180). A one year extension of the program for 2015-2016 was approved by ESDC, and a further

extension is being considered for 2016-2017. It is not clear what the five program areas are that form the foundation of the pilot project.

Recommendation 70: Please indicate what the five program areas are that comprise the pilot project.

Agnico Eagle's Response:

The 5 program areas that ESDC "bundled" as part of the pilot project with the Kivalliq Mine Training Society included the following program areas: Adult Learning, Literacy and Essential Skills Program (ALLESP), New Horizons for Seniors Program (NHSP), Opportunities Fund (OF); Skills Link (SL); and Skills and Partnership Fund (SPF). The bundled programs assisted the KMTS to consider program delivery that achieved the following:

1. To promote and deliver training initiatives to Kivalliq residents that meet the labour demands of the region's economy;
2. To increase the ability of Kivalliq residents to be informed of and participate in training and employment programs;
3. To have a positive impact on the labour pool in the Kivalliq region by increasing the number of people who are ready, willing and able to be employed;
4. To increase the participation of persons with disabilities, aboriginal youth, and elders in community based projects and training opportunities;
5. To engage youth who have dropped out of school working in partnership with the local schools to identify these youth;
6. To offer programs that lead to employment, including literacy and numeracy programs, culture based programs, essential skills training for youth and persons with disabilities;
7. To build and enhance partnerships with mining companies, service providers such as Kivalliq Partners In Development (KPID), Nunavut Arctic College(NAC) Nunavut Literacy Council (NLC), the Government of Nunavut, HRSDC and the Kivalliq communities;
8. To conduct 650 Client assessments of literacy, numeracy and essential skills in collaboration with Nunavut Literacy Council;
9. To provide community programs and outreach to persons with disabilities, elders, youth and seniors by providing regular meetings that focus on literacy, skills development and labour market initiatives;
10. To partner with Kivalliq employers to understand their labour market needs – will have profiles and an outline of employer needs from AEM, the Jail, and housing labour market projections and other employers as identified; and
11. To promote skilled staff and the local labour force to employers in partnership with KPID.

6.33 Section 12: Post-Environmental Assessment Monitoring Program (PEAMP) – Evaluation of Impact Predictions

Concern: Table 12.1 summarizes the potential impacts of mine-related activities on valued ecosystem components (VECs) identified in the Final Environmental Impact Statement (FEIS).

Noise is listed as a potential impact for raptors but not for other terrestrial wildlife (i.e., waterfowl, breeding birds, small mammals, predatory mammals, ungulates) in Table 12.1. It is not clear why noise is included just for raptors, when it is already listed as a VEC affecting all wildlife. Mortality is also listed as a potential impact for all terrestrial wildlife except for raptors and waterfowl. Why is mortality not considered a risk for these types of bird?

It is not clear what the category 'breeding birds' includes, since raptors and waterfowl are listed separately. Which group would breeding raptors and breeding waterfowl fall under? If the breeding bird category refers exclusively to breeding songbirds it would be preferable to include that information in the category name to avoid confusion.

Recommendation 71: Please provide a discussion on whether the potential need to treat pit water quality (based on newer modelling results) prior to discharge represents a divergence from predictions as presented in the Final Environmental Impact Statement. Please include a discussion of potential implications at closure. Also, see Recommendation #11.

> ***Agnico Eagle's Response:***
> *It is important to note that the water quality in the pits after reflooding will be subject to CCME guidelines or site specific criteria once the water level in the Goose and Portage Pits are equal to the water level in Third Portage Lake. The dikes will only be breached once the water quality in the pits meets CCME guidelines or site specific criteria developed during the closure plan approval process. This applies also for the Vault area. Therefore, the water quality forecast results and the treatment options for the TSF water will not be included in Section 12. Please refer to Agnico's response for recommendation 11 for more details.*

Recommendation 72: Please explain why noise is listed as both a VEC affecting wildlife and a potential impact affecting just raptors.

Please also explain why mortality is not considered a potential impact for raptors and waterfowl.

Please discuss how the 'breeding birds' category is defined.

> ***Agnico Eagle's Response:***
> *In Table 12.1, "noise" was erroneously identified as a potential project impact on raptors. This column of Table 12.1 should only identify potential impacts to the VEC (e.g. increased mortality, habitat loss). Since noise is considered a stressor, not an effect, it*

should not be included in this category. Similarly, mortality is considered a potential impact for raptors and waterfowl, and is assessed in the PEAMP (see Table 12.5), but was erroneously excluded from the summary description in Table 12.1. Agnico Eagle will amend and clarify Table 12.1 in the 2016 Annual Report.

The VEC described as "breeding birds" in Table 12.1 should read "other breeding birds", and will be clarified. As indicated in Table 2.1 of the Terrestrial Ecosystem Impact Assessment (FEIS - October, 2005), the key species associated with this VEC are Rock ptarmigan, Lapland longspur, Horned lark, Savannah sparrow, and Semipalmated sandpiper. While Agnico Eagle appreciates that the VEC terminology could be more descriptive, this phrase has been applied since the FEIS was submitted by Cumberland Resources Inc. in 2005, and has been maintained for continuity.

Concern: Table 12.1 includes potential impacts on several socio-economic VECs (traditional ways of life, wellness, infrastructure and social services, and sites of heritage significance). No reference to the FEIS is given for impact predictions or management and mitigation measures.

Recommendation 73: Please explain why the socio-economic VECs listed in Table 12.1 are not linked with the FEIS.

Agnico Eagle's Response:
All of the FEIS prediction on Socio-Economic VECs can be found on FEIS, Section 4.21.4, FEIS App B and Table B15 for Impact predicted and on FEIS, Section 4.24.3 for Management and Mitigative Measures. In the 2016 Annual Report, Agnico Eagle will see if it is possible to be more precise for each socio-economic VECs.

6.34 PEAMP Terrestrial and Wildlife Environment - Accuracy of Predictions

Concern: In Table 12.5 under Predatory Mammals AEM reports that "*one fox* [was] *euthanized after not responding to deterrents*" (p. 198), which meets the threshold of one mortality per year. However, Table 6.1 of Appendix G13 (p. 27) lists two incidences of foxes being euthanized, one on 15 February 2015 ("*Foxes fighting. Dead fox found. Fox euthanized*") and the other on May 1 2015 ("*Tried to deter. Euthanized*").

Recommendation 74: Please clarify how many Arctic Foxes were euthanized on site in 2015.

Agnico Eagle's Response:
1 arctic fox was euthanized in 2015 on May 1st. The incident in February should not have been entered as such but as a consequence of the reported "fighting". Please also see Agnico Eagle's response to GN Comments #2 above.

6.35 PEAMP - Noise

Concern: AEM states that a significant effect of noise (i.e., disturbance of wildlife, reduced habitat effectiveness) was associated with three mine components: pit development, the mine plant and the airstrip. Monitoring of noise was thus proposed for pit development, waste rock, tailings handling and the mine plant. There does not appear to be monitoring for effects of the airstrip, despite it being identified as contributing a significant noise effect on wildlife.

Recommendation 75: Please indicate whether noise monitoring was carried out in association with the airstrip. If it was not carried out, please explain why not.

> ***Agnico Eagle's Response:***
> *The Noise Monitoring and Abatement Plan were developed to monitor and protect wildlife. Monitoring stations are located to capture all noise sources in relation to wildlife – mine site interactions. For that reason, noise monitoring is being carried to capture potential impacts due to airstrip noise on wildlife.*

6.36 PEAMP - Noise - Accuracy of Predicted Impacts

Concern: Table 12.6 seems to indicate that monitoring for noise did occur at the airstrip, contradicting the introductory text in Section 12.3. See Recommendation #75.

> ***Agnico Eagle's Response:***
> *Please refer to Agnico Eagle's response to KIA Recommendation 75.*

6.37 PEAMP Permafrost - Accuracy of Predicted Impacts

Concern:4- Potential Impact: Permafrost changes in waste rock area.
There appears to be text missing (or incorrect punctuation) under Point B of the Predicted Effect in the FEIS, which reads:

"*B- Placement of lifts on natural ground in the summer may continue to cause temporary and localized. Deepening of the active layer, warming of near surface permafrost and possible subsidence, particularly in low lying areas"* (p. 209).

There is text missing under Point C of the Predicted Effect in the FEIS, which reads:

"*C – where new lifts are added to older lifts, permafrost will continue to aggrade…the net effect will be permafrost aggradation and general ground*" (p. 209).

Recommendation 76: Please correct the wording in Points B and C of the Predicted Effect in the FEIS so that the text makes sense.

Agnico Eagle's Response:

B - Placement of lifts on natural ground in the summer may continue to cause temporary and localized changes to permafrost deepening of the active layer, warming of near surface permafrost and possible subsidence, particularly in low lying areas;

C - Where new lifts are added to older lifts, permafrost will continue to aggrade into both new and older waste rock lifts and new active layers will form. Although the summer, placement conditions will include a temporary and localized loss of new permafrost, but overall the net effect will be permafrost aggradation and general ground frozen condition.

Concern: 5- Potential Impact: Potential settlement of buildings and 6 – Potential Impact: Permafrost changes below pipelines.

No monitoring was conducted for loss of permafrost under heated structures (buildings) nor for permafrost changes below pipelines, despite both having predicted effects and proposed monitoring in the FEIS. In both cases the observed impact was recorded as *"no observed thawing"* (p. 153). It is not clear how the conclusion of no thawing around foundations or pipelines can be made in the absence of monitoring of these features.

Recommendation 77: Please explain why no systematic monitoring is carried out for potential settlement of buildings and permafrost changes below pipelines, and indicate how the lack of thawing is determined in each case.

Agnico Eagle's Response:

No ground temperature measurements have been undertaken at or near buildings on site. Using standard building maintenance best management practices to ensure the safety of occupants according to the mines act, to date there has been no observed thawing of foundations. Regular inspections are carried on the buildings and no signs of settlement have been observed.

Regular inspections are conducted on the pipes and no observation of pipe damages due to settlement or sign of permafrost thawing due to pipelines has been observed.

The buildings and the all the pipes will be removed at closure.

6.38 PEAMP Socio Economic - Effectiveness of Monitoring

Concern: There are grammatical errors in the paragraph describing Effectiveness of Monitoring. It would be helpful to proofread and revise to improve the clarity of the text.

Recommendation 78: Please proofread and correct language in Section 12.6.3 to improve clarity.

Agnico Eagle's Response:

Potential impacts to socio-economic identified in the FEIS are realistic based on results obtained in the Socio-Economic Monitoring and the Baker Lake Wellness reports. Overall, the mine has a positive economic impact on Nunavut Community. Agnico contributes to the development of the community by hired contractors and Nunavut community workers, even if they are unskilled. Meadowbank thru is socioeconomic program help the worker to develop itself via the multiples program as describe in Section 11.11 Socio Economic above. Agnico also have a positive impact on the scholarship of the young. The students are more interested to graduate because they know they can find a job with good benefits within the Agnico Eagle Company. On the other side, with the living standards increased, there are some concerns associated with the lack of money management skills and the expenditure for drug, alcohol and gambling within the Nunavut Communities. Overall, all of the predictions made in the FEIS are accurate.

6.39 Emergency Response Plan - Medical Evaluation (MEDEVAC) Plan

Concern: AEM outlines the procedure for removing injured persons from the source of danger and administering emergency first aid. Contact phone numbers for area hospitals and health centres are provided in the event a medical evacuation is deemed necessary. In addition, AEM indicates that if a medevac is necessary, "*the Health Care provider, will call one of the following airlines:…*" (p. 53). The phone numbers that are listed, however, are for the Bake Lake Medical Clinic and the Rankin Inlet Medical Clinic, not for airlines.

Recommendation 79: Please correct the contact information and phone numbers for airlines to be contacted in the event of a medevac.

Agnico Eagle's Response:

Agnico Eagle had reviewed and called at both number stated on the Emergency Response Plan (Page 53) and there is no error. Furthermore, Agnico Eagle called on a yearly basis all phone number in the Emergency Response Plan to make sure these number are still valid, and the plan is updated if needed.

6.40 Emergency Response Plan - Fatality Occurring On Site

Concern: AEM divides Section 4.10 of the Emergency Response Plan into three parts: (i) Incident Site; (ii) Recovery and On-site Morgue and (iii) Missing Person. No text is provided under the third heading (Missing Person).

Recommendation 80: Please indicate what the procedure is for searching for a missing person.

Agnico Eagle's Response:

There was a formatting error while doing the Emergency Plan. The updated management plan will be submitted as part of the 2016 Annual Report. Please find

below the procedure for the missing person as well at the procedure MBK-HSS-EMR-PRO Missing person in Appendix I.

As soon as a worker is missing from his regular work (at beginning of shift or during the day) the supervisor will ensure that the worker's room, workplace, and public areas have been searched, in addition to checking with the Medical Clinic personnel.

After this primary search, if the worker is still missing, the Meadowbank Security Officer (SO) must be advised. If the Security office is closed, the Front desk Officer will be advised.

If nobody can be reached at the Camp front entrance offices, then, the Medical Clinic personnel should be notified. The nurse will take charge and follow up with the searches by getting in touch with the Security Officer and/or the ERT Incident Commander (IC).
The procedure: MBK-HSS-EMR-PRO Missing person will then be initiated.

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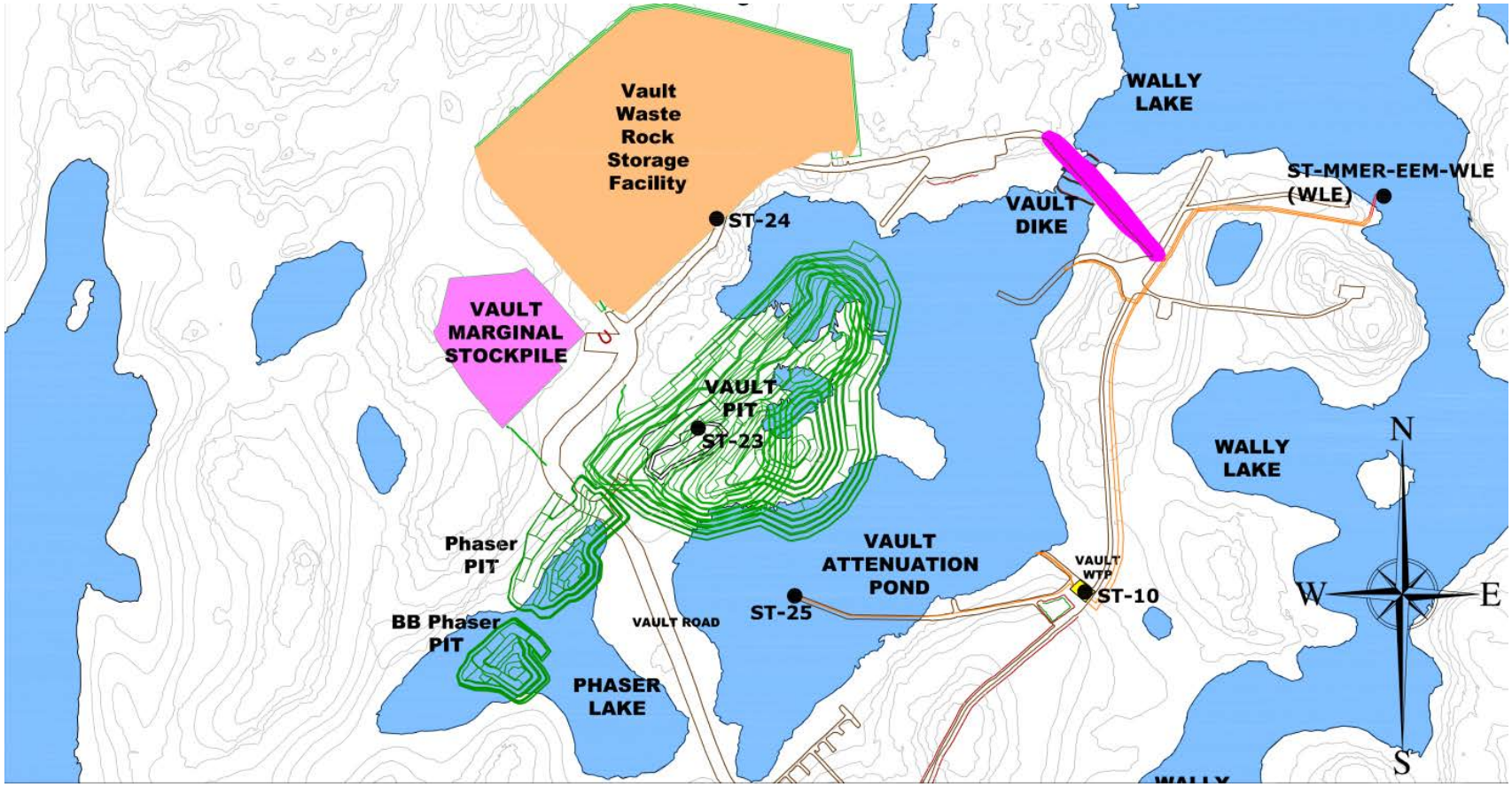
APPENDIX A
Vault Area Sampling Location


Vault
Waste
Rock
Storage
Facility
ST-24
VAULT
MARGINAL
STOCKPILE
VAULT
PIT
ST-23
Phaser
PIT
BB Phaser
PIT
PHASER
LAKE
VAULT ROAD
VAULT
ATTENUATION
POND
ST-25
VAULT
WTP
ST-10
VAULT
DIKE
WALLY
LAKE
ST-MMER-EEM-WLE
(WLE)
WALLY
LAKE
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W
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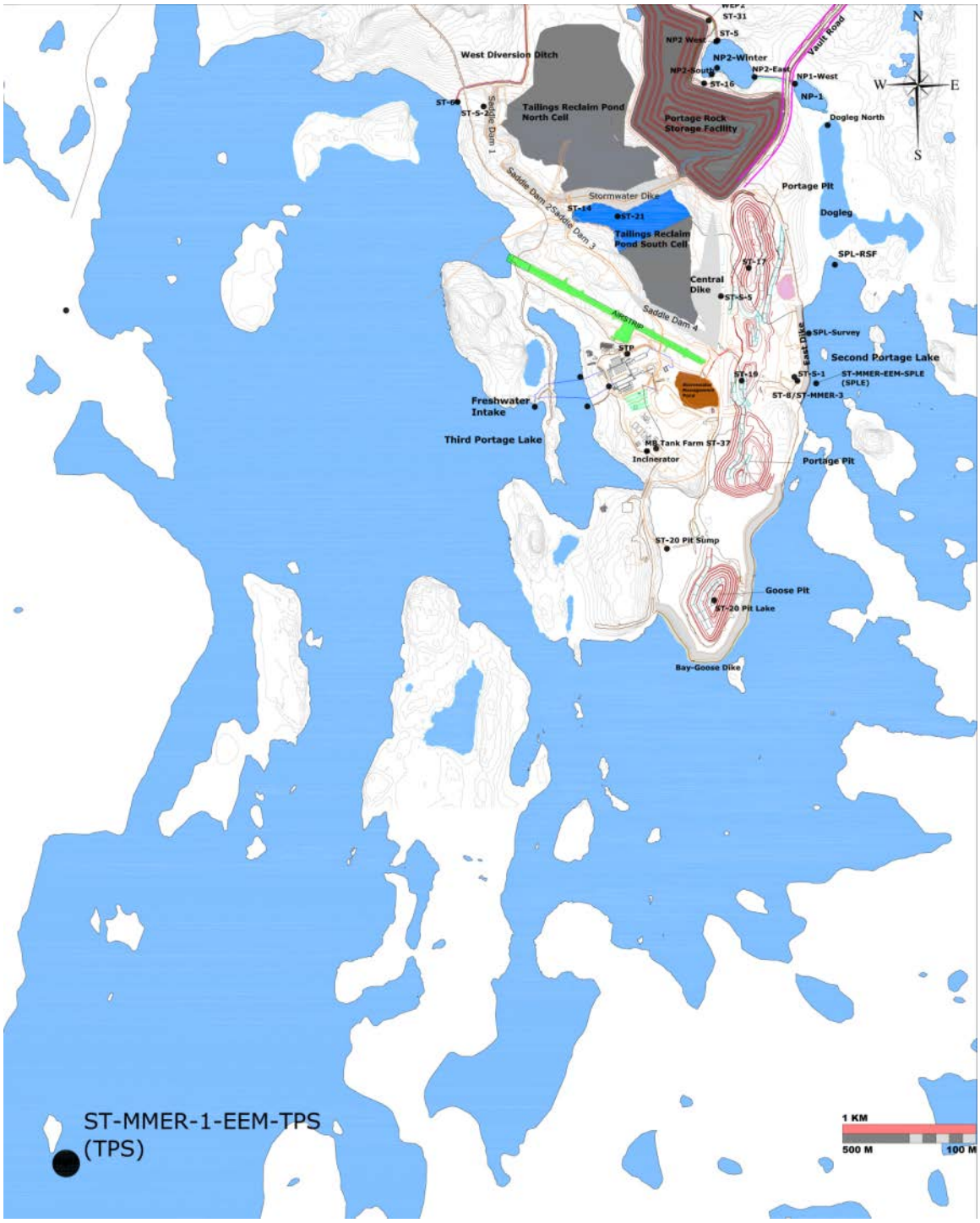
APPENDIX B
EEM Receiving Environment Sampling Location


ST-31
ST-5
NP2 West
NP2-Winter
NP2-South
NP2-East
ST-16
NP1-West
NP-1
Vault Road
Dogleg North
West Diversion Ditch
ST-6
ST-S-2
Saddle Dam 1
Tailings Reclaim Pond North Cell
Portage Rock Storage Facility
Portage Pit
Stormwater Dike
ST-14
ST-21
Saddle Dam 2
Saddle Dam 3
Tailings Reclaim Pond South Cell
Dogleg
SPL-RSF
ST-17
Central Dike
ST-S-5
Saddle Dam 4
Airstrip
STP
SPL-Survey
East Dike
Second Portage Lake
ST-19
ST-S-1
ST-MMER-EEM-SPLE (SPLE)
ST-8/ST-MMER-1
Freshwater Intake
Third Portage Lake
MS Tank Farm ST-37
Incinerator
Portage Pit
ST-20 Pit Sump
Goose Pit
ST-20 Pit Lake
Bay-Goose Dike
N
W
E
S
ST-MMER-1-EEM-TPS (TPS)
1 KM
500 M
100 M

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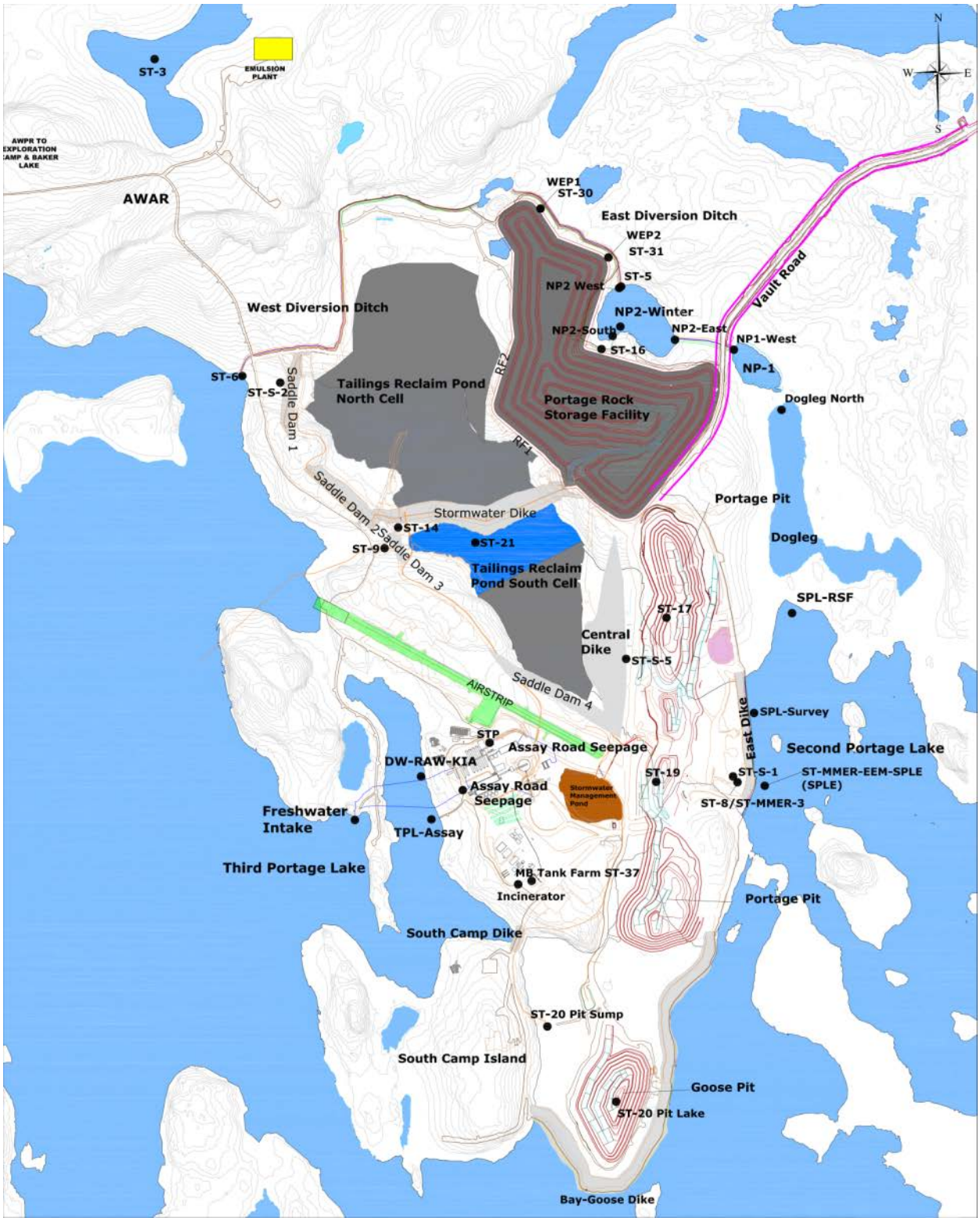
APPENDIX C
Meadowbank Sampling Location


ST-3
EMULSION PLANT
AWPR TO EXPLORATION CAMP & BAKER LAKE
AWAR
WEP1
ST-30
East Diversion Ditch
WEP2
ST-31
ST-5
NP2 West
NP2-Winter
NP2-South
NP2-East
NP1-West
ST-16
NP-1
Vault Road
West Diversion Ditch
ST-6
ST-S-2
Saddle Dam 1
Tailings Reclaim Pond North Cell
RF2
Portage Rock Storage Facility
RF1
Dogleg North
Saddle Dam 2
Saddle Dam 3
Stormwater Dike
ST-14
ST-21
ST-9
Tailings Reclaim Pond South Cell
Portage Pit
Dogleg
SPL-RSF
ST-17
Central Dike
ST-S-5
AIRSTRIP
Saddle Dam 4
East Dike
SPL-Survey
STP
Assay Road Seepage
Second Portage Lake
DW-RAW-KIA
ST-19
ST-S-1
ST-MMER-EEM-SPLE (SPLE)
Assay Road Seepage
Stormwater Management Pond
ST-8/ST-MMER-3
Freshwater Intake
TPL-Assay
Third Portage Lake
MB Tank Farm ST-37
Incinerator
Portage Pit
South Camp Dike
ST-20 Pit Sump
South Camp Island
Goose Pit
ST-20 Pit Lake
Bay-Goose Dike
N
W
E
S

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APPENDIX D
CREMP near-field, mid-field and far-field sampling stations

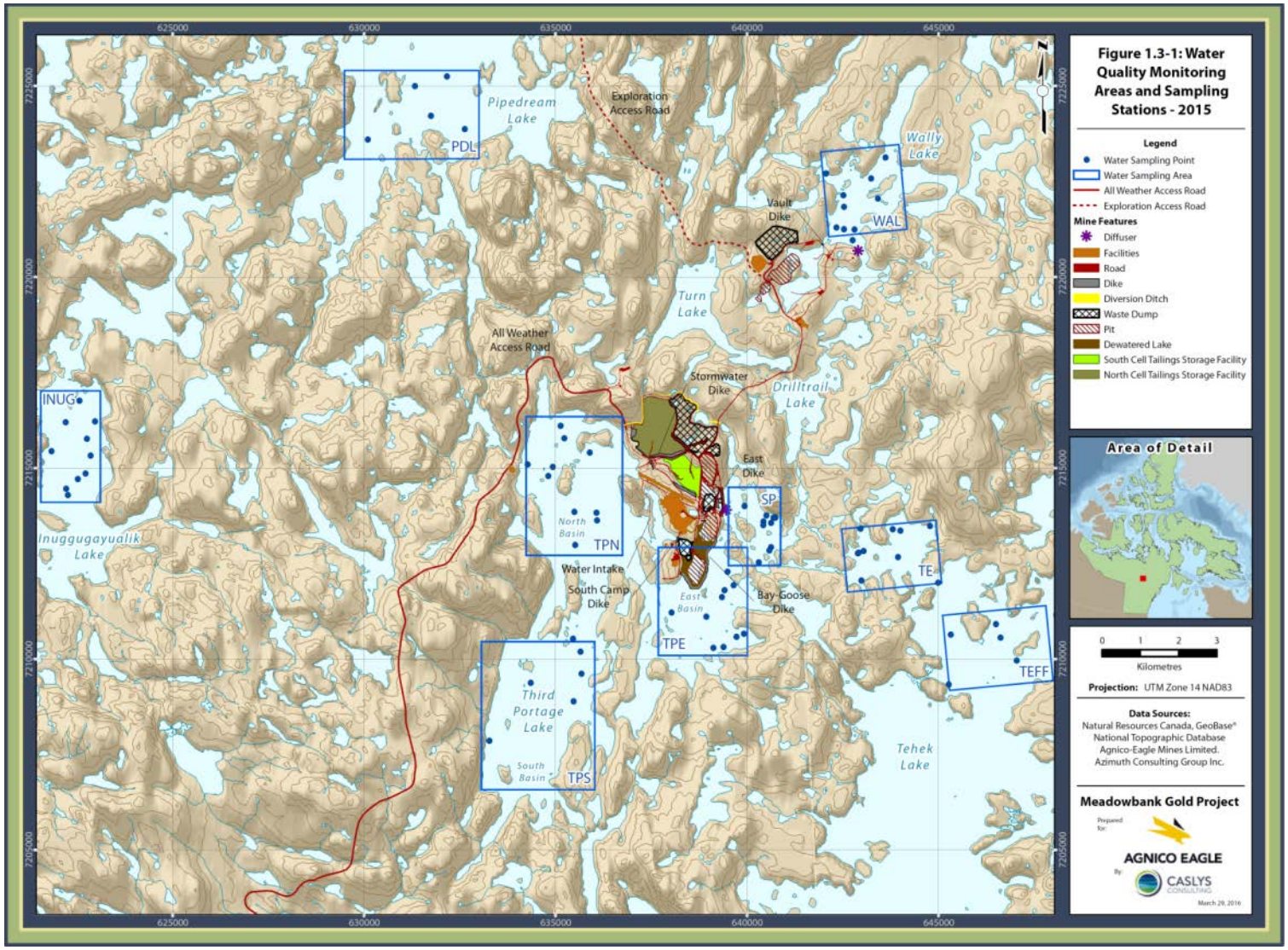


Figure 1.3-1: Water Quality Monitoring Areas and Sampling Stations - 2015
Legend
Water Sampling Point
Water Sampling Area
All Weather Access Road
Exploration Access Road
Mine Features
Diffuser
Facilities
Road
Dike
Diversion Ditch
Waste Dump
Pit
Dewatered Lake
South Cell Tailings Storage Facility
North Cell Tailings Storage Facility
Area of Detail
Kilometres
Projection: UTM Zone 14 NAD83
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.
Azimuth Consulting Group Inc.
Meadowbank Gold Project
AGNICO EAGLE
CASLYS
March 29, 2016
Pipedream Lake
Exploration Access Road
PDL
Wally Lake
WAL
Vault Dike
Turn Lake
All Weather Access Road
Stormwater Dike
Drilltrail Lake
INUG
East Dike
SP
North Basin
TPN
Inuggugayualik Lake
Water Intake
South Camp Dike
East Basin
Bay-Goose Dike
TE
TPE
TEFF
Third Portage Lake
South Basin
TPS
Tehek Lake

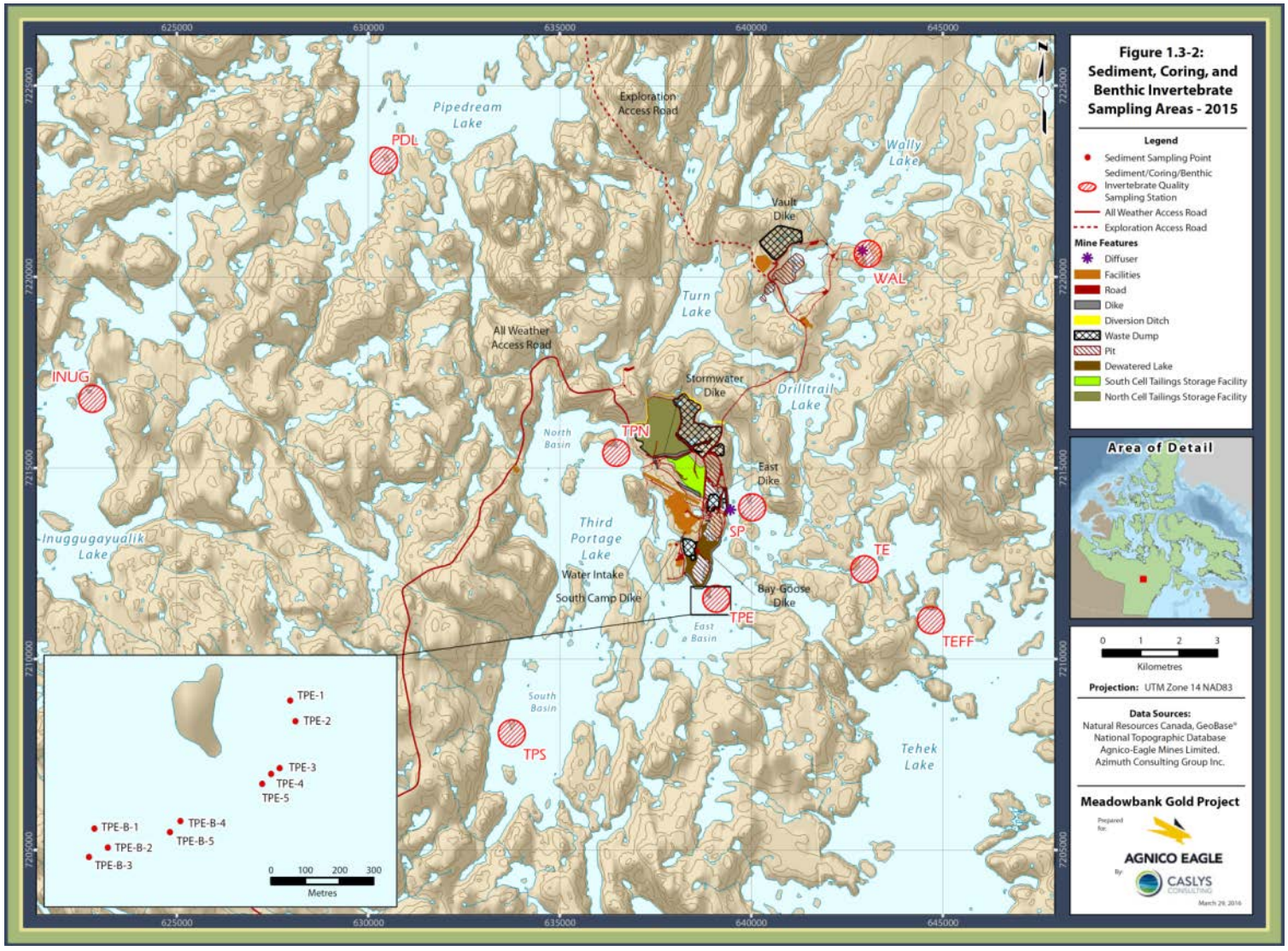
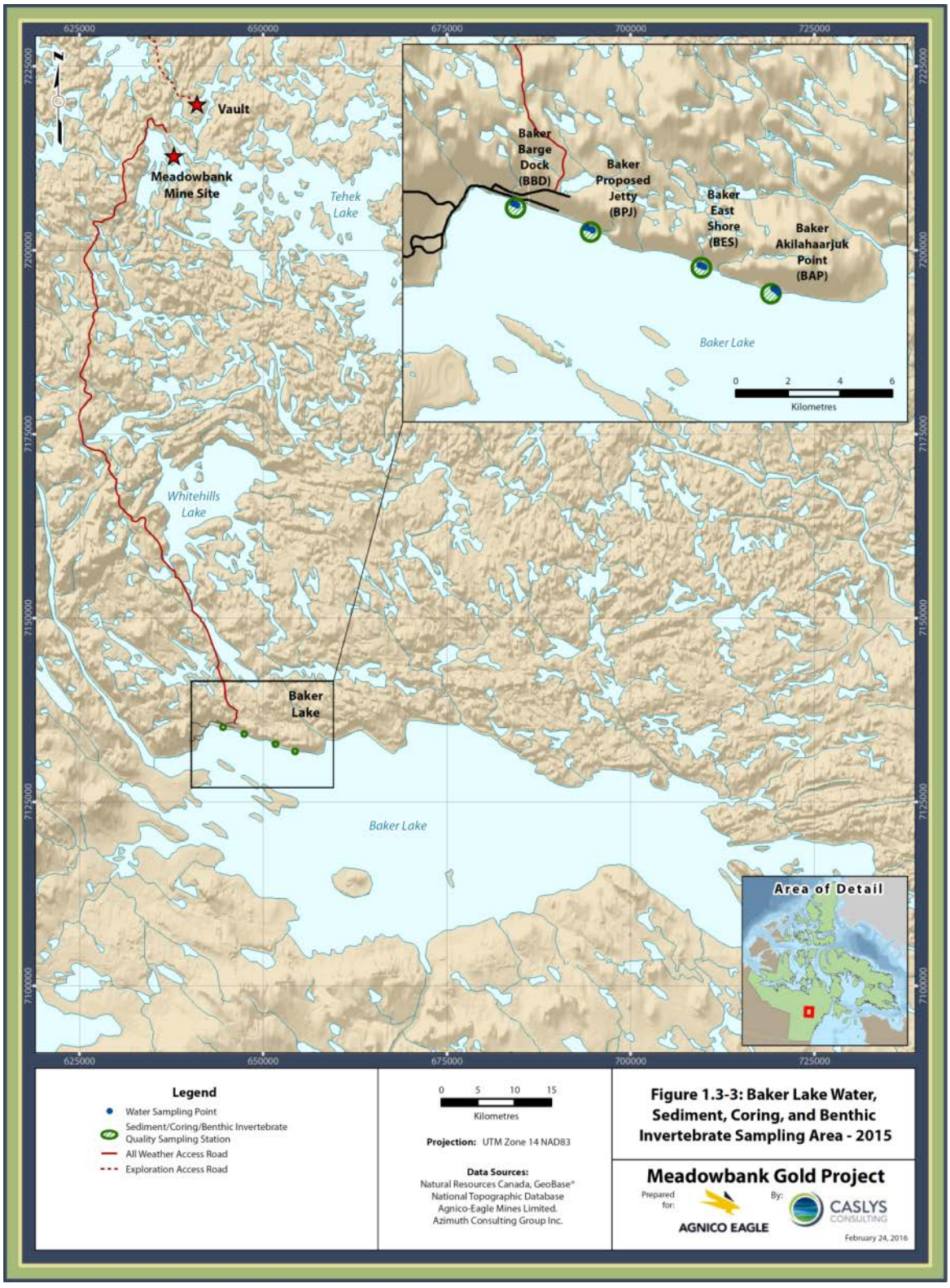
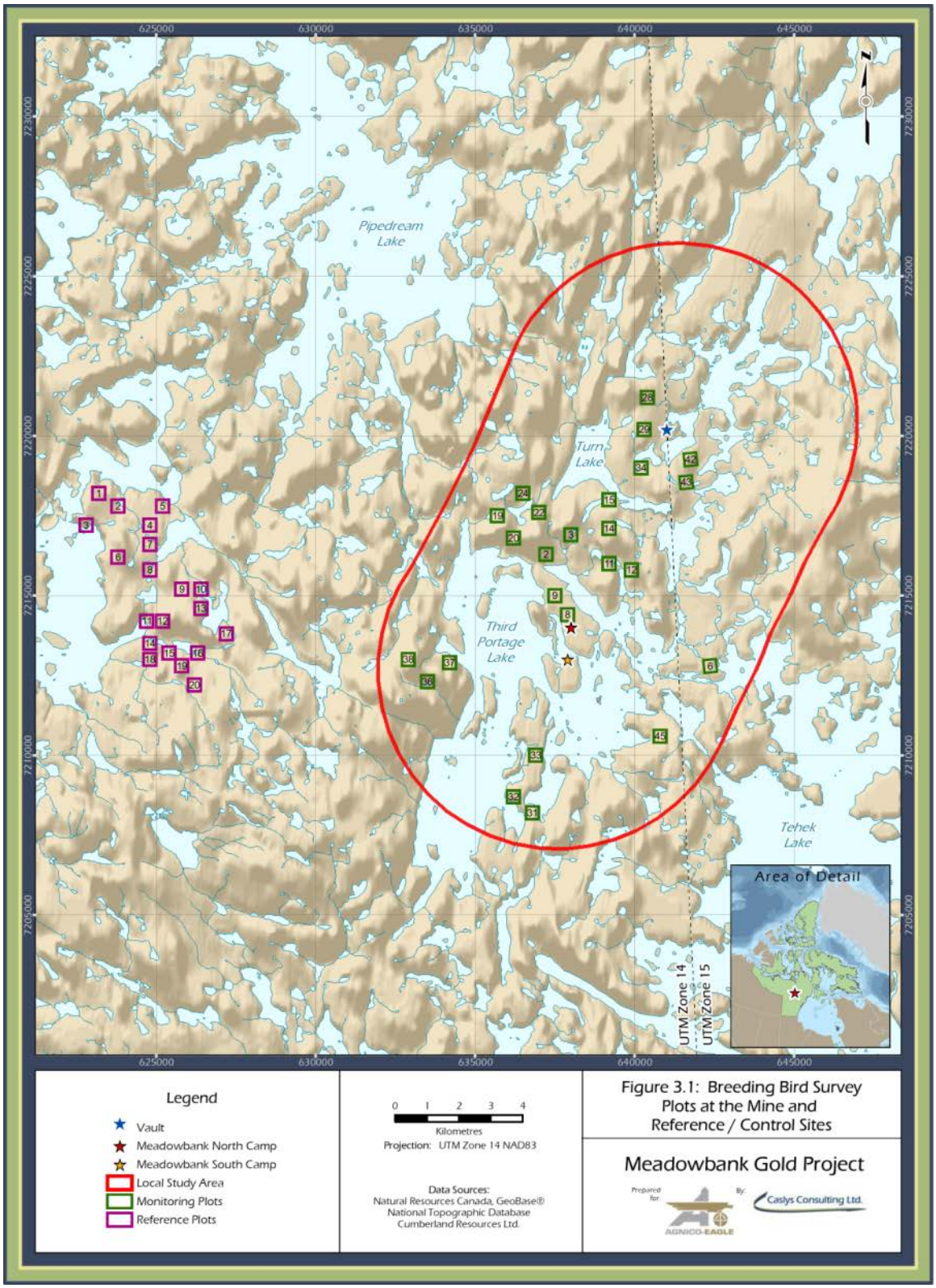


Figure 1.3-2:
Sediment, Coring, and Benthic Invertebrate Sampling Areas - 2015
Legend
Sediment Sampling Point
Sediment/Coring/Benthic Invertebrate Quality Sampling Station
All Weather Access Road
Exploration Access Road
Mine Features
Diffuser
Facilities
Road
Dike
Diversion Ditch
Waste Dump
Pit
Dewatered Lake
South Cell Tailings Storage Facility
North Cell Tailings Storage Facility
Area of Detail
Kilometres
Projection: UTM Zone 14 NAD83
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.
Azimuth Consulting Group Inc.
Meadowbank Gold Project
Prepared for:
AGNICO EAGLE
By:
CASLYS CONSULTING
March 29, 2016
Pipedream Lake
Exploration Access Road
PDL
Wally Lake
Vault Dike
WAL
Turn Lake
All Weather Access Road
INUG
Stormwater Dike
Drilltrail Lake
North Basin
TPN
East Dike
SP
Inuggugayualik Lake
Third Portage Lake
Water Intake
South Camp Dike
Bay-Goose Dike
TE
TPE
East Basin
TEFF
South Basin
TPS
Tehek Lake
TPE-1
TPE-2
TPE-3
TPE-4
TPE-5
TPE-B-1
TPE-B-2
TPE-B-3
TPE-B-4
TPE-B-5
0 100 200 300
Metres
625000
630000
635000
640000
645000
7225000
7220000
7215000
7210000
7205000


625000
650000
675000
700000
725000
7225000
7200000
7175000
7150000
7125000
7100000
Vault
Meadowbank Mine Site
Tehek Lake
Whitehills Lake
Baker Lake
Baker Barge Dock (BBD)
Baker Proposed Jetty (BPJ)
Baker East Shore (BES)
Baker Akilahaarjuk Point (BAP)
Baker Lake
0 2 4 6
Kilometres
Area of Detail
Legend
Water Sampling Point
Sediment/Coring/Benthic Invertebrate Quality Sampling Station
All Weather Access Road
Exploration Access Road
0 5 10 15
Kilometres
Projection: UTM Zone 14 NAD83
Data Sources:
Natural Resources Canada, GeoBase® National Topographic Database
Agnico-Eagle Mines Limited.
Azimuth Consulting Group Inc.
Figure 1.3-3: Baker Lake Water, Sediment, Coring, and Benthic Invertebrate Sampling Area - 2015
Meadowbank Gold Project
Prepared for:
AGNICO EAGLE
By:
CASLYS CONSULTING
February 24, 2016

AGNICO EAGLE

APPENDIX E
PRISM Plot and Transects Maps


625000
630000
635000
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645000
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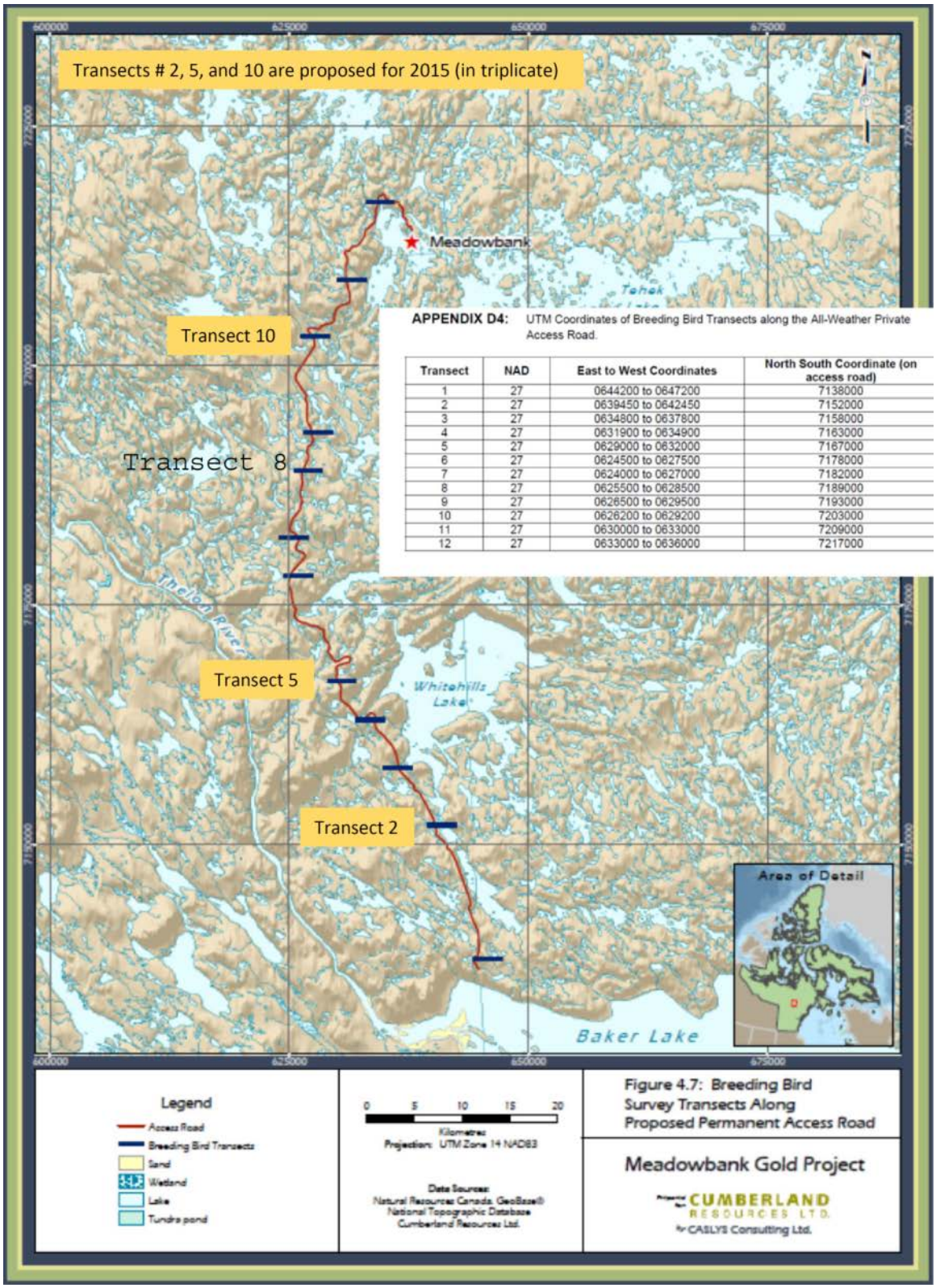
7225000
7220000
7215000
7210000
7205000
Pipedream Lake
Turn Lake
Third Portage Lake
Tehek Lake
Area of Detail
UTM Zone 14
UTM Zone 15
Legend
Vault
Meadowbank North Camp
Meadowbank South Camp
Local Study Area
Monitoring Plots
Reference Plots
0 1 2 3 4
Kilometres
Projection: UTM Zone 14 NAD83
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Cumberland Resources Ltd.
Figure 3.1: Breeding Bird Survey Plots at the Mine and Reference / Control Sites
Meadowbank Gold Project
Prepared for
AGNICO-EAGLE
By:
Caslys Consulting Ltd.



APPENDIX D4: UTM Coordinates of Breeding Bird Transects along the All-Weather Private Access Road.

Transect	NAD	East to West Coordinates	North South Coordinate (on access road)
1	27	0644200 to 0647200	7138000
2	27	0639450 to 0642450	7152000
3	27	0634800 to 0637800	7158000
4	27	0631900 to 0634900	7163000
5	27	0629000 to 0632000	7167000
6	27	0624500 to 0627500	7178000
7	27	0624000 to 0627000	7182000
8	27	0625500 to 0628500	7189000
9	27	0626500 to 0629500	7193000
10	27	0626200 to 0629200	7203000
11	27	0630000 to 0633000	7209000
12	27	0633000 to 0636000	7217000

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APPENDIX F
Bird PRISM Plot Data Summary Analyses - 2003 to 2015

Bird PRISM Plot Data Summary Analyses - 2003 to 2015

November 10, 2015

Prepared By: John Boulanger, Integrated Ecological Research
Prepared For: Martin Gebauer, Nunavut Environmental Consulting on behalf of Agnico Eagle Mines (AEM)

1 Introduction

This short report details analysis of bird community PRISM plots collected as part of AEM's Meadowbank Mine monitoring project. This report will be incorporated into the annual report being currently being prepared.

This report provides basic summaries of the PRISM plot data using a variety of measures of species abundance, richness, and diversity. In addition, analyses are conducted to test for differences in trends for mine and control plots.

2 Methods

We used the following indices to compare mine and control areas, and consider temporal trends (**Table 1**). Each is described in detail below.

Table 1: Indices of bird communities

Indicator	Statistic	Comments
Species Abundance	Mean count of all species	A general index of species abundance
Species Richness	Count of species observed	
Species Diversity	Shannon Weiner Function	Takes into account abundance and richness
Species Evenness	Shannon Weiner Function/ log (species richness)	Evenness or equitability of species

2.1 Species Relative Abundance

The number of birds counted in each survey is a potential index of relative abundance of birds in each habitat type. The counts for plots and location were tabulated to investigate differences in relative abundance under the assumption that detection probability of birds was similar in each PRISM plot.

Relative abundance was compared on a species-specific basis. Differences between treatment and mine sites, and yearly trends were also tested using analysis of covariance (ANCOVA) to control for various factors affecting species metrics therefore allowing a more precise test of mine effects (Milliken and Johnson 2002). Poisson or negative binomial regression was used to model count data (McCullough and Nelder 1989) with a log link function. The Poisson distribution is based upon counts and can accommodate data with zero counts. In addition, assumptions regarding mean counts and variances can be accommodated through the estimation of a dispersion parameter that adjusts variances for mean counts (McCullough and Nelder 1989). The dispersion parameter is

estimated by the Pearson chi-square of the model divided by its associated degrees of freedom (McCullough and Nelder 1989). One other potential issue with this data set was that some plots were measured multiple times (each year). A generalized estimating equation model (Liang and Zeger 1986) was used to correct variances for this form of repeated measures.

The general model that was used included terms for year, location (treatment and control), julian day of survey, distance of mine plots from disturbance (**Figure 1**), and an interaction of year and location. In addition, a model with a binary impact term was assigned for mine sites in and after 2008 that were potentially affected by development. This term, in addition to the other terms, tested for a change in relative abundance in mine sites that would presumably be due to mine impacts. Day of survey was entered to account for the fact that later surveys may have influenced counts.

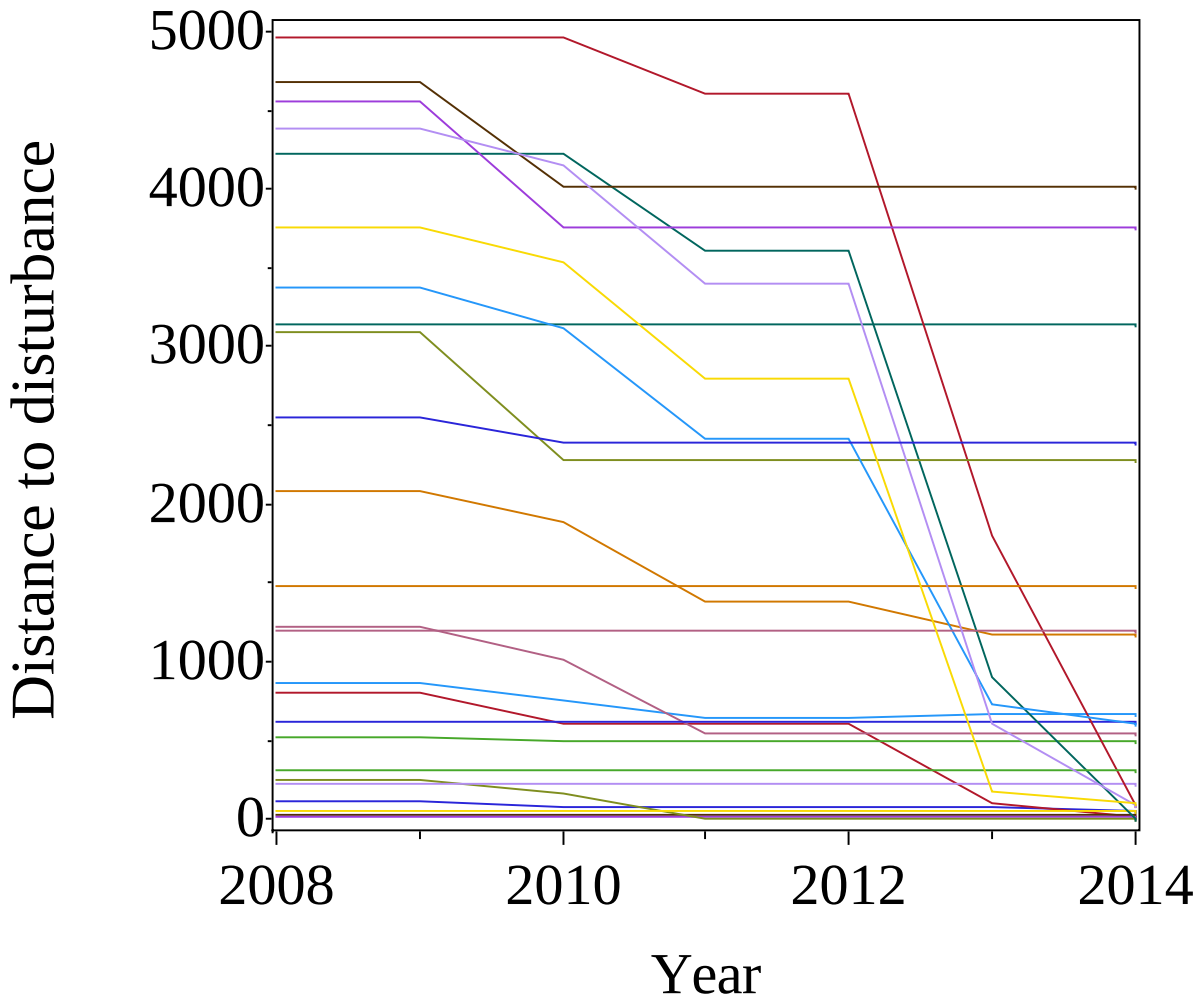

Figure 1: Change in the distance from disturbance for the mine plots. Each line indicates the change in distance of disturbance from an individual mine plot.

2.2 Species Richness

2.2.1 Trends in the Number of Species Counted per PRISM Plot

Species richness is simply the number of unique species sighted in a PRISM plot. We summarized species richness using a variety of methods.

2.2.2 Trends in the Number of Species Counted per PRISM Plot

The mean number of species counted per PRISM plot was summarized graphically. In addition, the ANCOVA model was used to test for temporal and spatial trends in species counted using the same general approach as relative abundance analyses.

2.2.3 Species Richness Demographics

We also considered the demographics of species richness, namely the probabilities that a new species might occur in a control or mine PRISM plot relative to the probability that a species that was detected previously in the plot will be redetected in subsequent years. This analysis was done using the Pradel (Pradel 1996) mark-recapture model in program MARK (White and Burnham 1999). For this analysis, the occurrence of a species in a given survey is entered as a capture for each species detected. This forms a capture matrix of species observed during each transect survey. The Pradel model then estimates detection probability of bird species, the rate of additions of new species (f), and the rate of loss of species (ϕ) for each year the survey is conducted (Boulinier et al. 1998; Cam et al. 2000). Rate of fidelity is the probability that a species present in one year will still be present in the next year. The rate of additions of new species is the number of new species arriving in plots for one year per species in the previous year. The rate of additions and losses can be added to estimate λ, which is the overall rate of species turnover. If λ is 1, the community is stable, if it is less than 1, it is losing species, and if it is greater than 1, it is gaining species.

Mine and control plots were entered as groups in the analysis. Models were constrained to explore if the mine plots showed unique demographics for 2008 to 2015 when development occurred. In addition, the mean distance of detection of an individual species from the footprint was then estimated for the mine and control plots. This distance indicated where a species was most likely to be found relative to the mine footprint. Distances of PRISM plots (and species) from the mine footprint were based on yearly records as indicated in **Figure 1**. In addition, the proportion of mine plots that had been disturbed that a species occurred in was also summarized, which would indicate the likelihood that a given species would occur in the proximity of disturbance.

This general approach was similar to the ANCOVA approach used in other analyses. Namely, larger-scale temporal and spatial trends were first tested (by grouping mine and control sites and considering year-specific variation in parameters). Once a base model was defined, individual species covariates were used to determine if disturbance potentially influenced demographics. For example, some species may prefer edge environments created by disturbance, in which case the rate of additions of these species might be higher for mine PRISM plots that are closer to disturbance. In contrast, disturbance may cause some species to show lower yearly fidelity to habitat areas, which would reduce estimated fidelity. Model support was evaluated using the sample size adjusted Akaike Information Criterion (AICc). The model with the lowest AIC score was considered to be most supported by the data. The difference between the most supported models and other models was indexed by the Delta AICc value. Any models with Delta AIC values less than 2 were also considered. The estimates of demography from each model

were then averaged using the proportional support of each model as estimated by the AICc weight (w_i) (Burnham and Anderson 1998).

2.3 Species Diversity

Species diversity indices consider both the abundance and richness of species in an area. An area that has a higher density of dominant species but with few unique species will exhibit a lower species diversity index than an area that has abundance spread over many species. Species diversity was estimated using the Shannon Weiner H' function (Krebs 1998). The Shannon Weiner H' function is transformed to a N1 index, which represented the number of equally common species that would produce a similar H' value (MacArthur 1965). A higher N1 value would indicate that the community is more diverse. In addition we compared the evenness of communities. Evenness is a measure of the evenness of abundance of all species in a community. The higher the evenness score the more even the abundance of species in a community. Evenness was estimated as the Simpson's evenness index (Krebs 1998). If all species are equally abundant, then this value is 1. As the community becomes less even, this value approaches 0. All indices were calculated in SAS using formulas from Krebs (1998). We used a jackknife method to obtain variance estimates (Manly 1997) for species diversity and evenness estimates.

3 Results

3.1 Species Relative abundance

The Lapland Longspur (LALO), Horned Lark (HOLA), and Savannah Sparrow (SVSP) were the most common species. We used Poisson regression to explore temporal trends in the abundance of the two most common species. Of most interest was if there were temporal trends in their abundance and whether trends were different between mine and control plot areas.

Abundance of the Horned Lark was relatively similar in mine and control plots with a slight negative trend. ANCOVA analysis detected a linear trend in abundance (χ^2=10.7,df=1, p=0.0011); however, no significant impact of treatment (control/mine) or distance from disturbance was detected (**Figure 2**). Observation of the distribution of counts suggested similar trends in both control and mine plots.

The Lapland Longspur showed no distinctive trends and similar abundances in control and mine plots (**Figure 3**). ANCOVA analysis suggested that there were no temporal trends, or differences in abundance for Lapland Longspurs between control and mine sites or specific differences (impacts) of mine areas (after 2007). In addition, there was no significant association of Lapland Longspur abundance with distance from disturbance

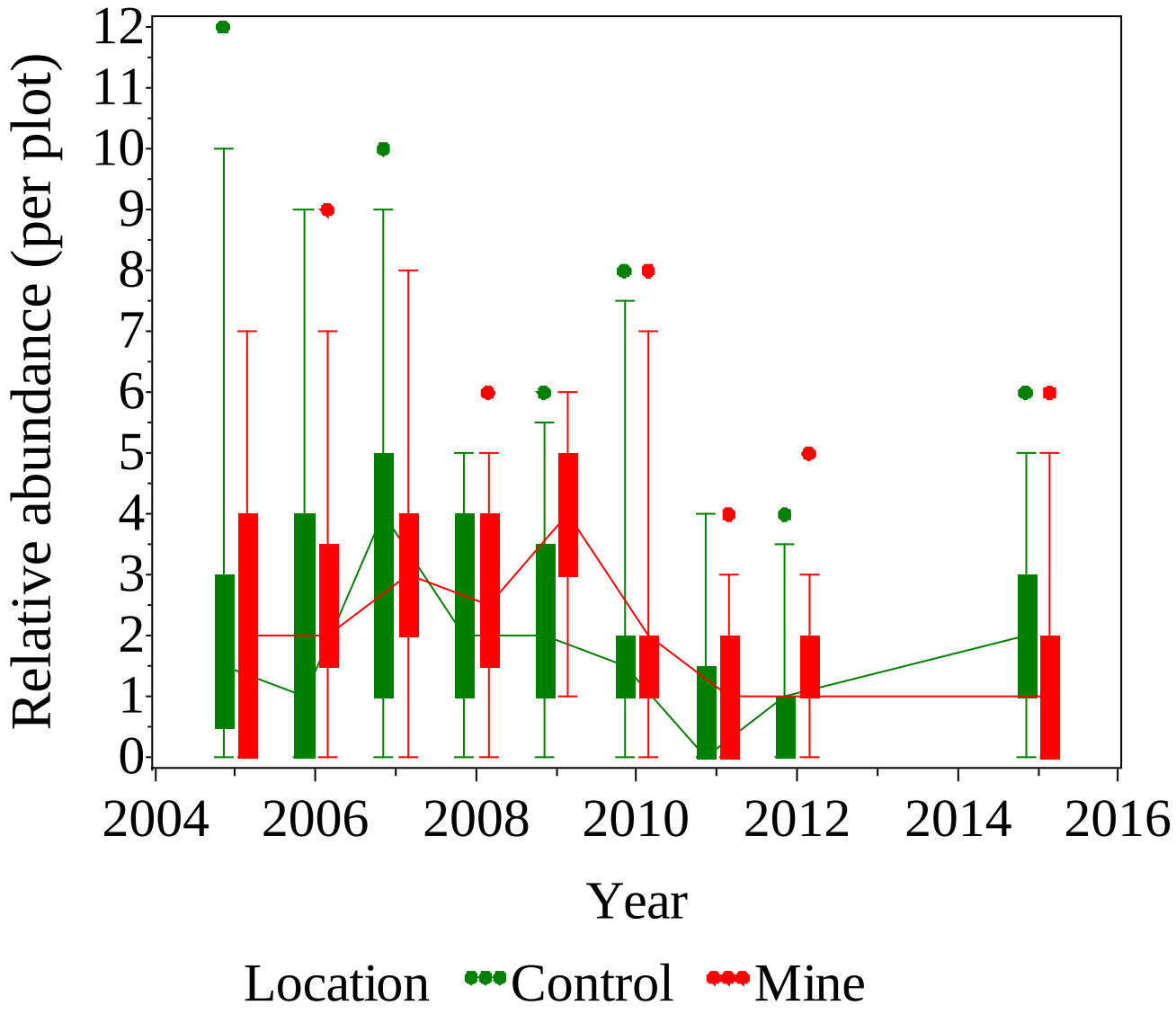

Figure 2: Temporal trends in relative abundance of the Horned Lark as a function of mine and control areas. Mine areas were potentially impacted by mine site development in 2008 and years after (**Figure 1**). Box plots connect median counts for each year. The width of the box delineates the 25th and 75th percentiles. The whiskers denote the 5th and 95th percentiles. Outlier observations are denoted by individual data points.

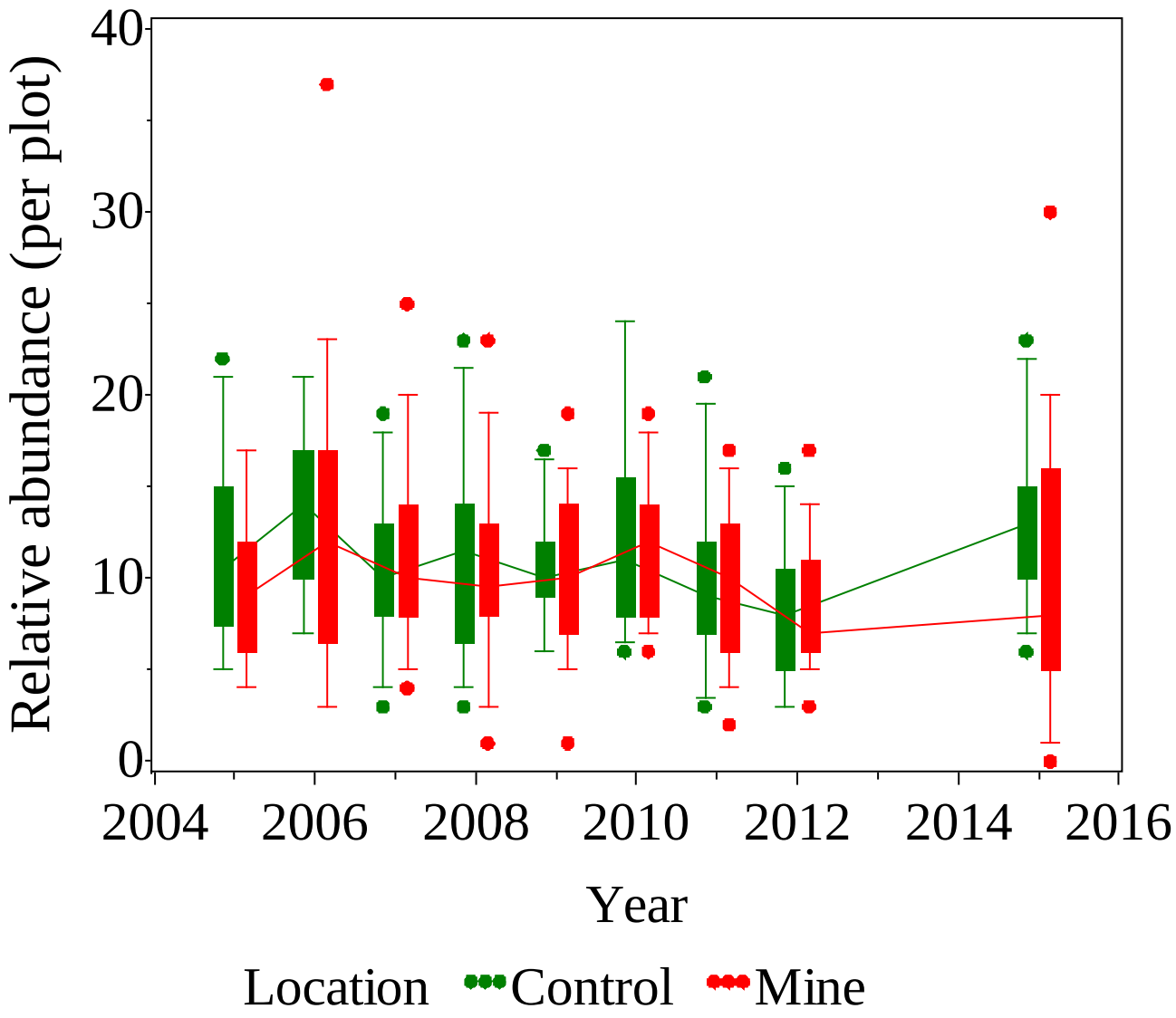

Figure 3: Temporal trends in relative abundance of the Lapland Longspur as a function of mine and control areas. Mine areas were potentially impacted by mine site development in 2008 and years after. Error bars are 95% confidence intervals of mean estimates.

3.2 Species Richness

3.2.1 Trends in Numbers of Species Counted per Plot

Species richness (the mean number of unique species counted at plots each year) was initially compared graphically (**Figure 4**). It can be seen that species richness increased up to 2009 then decreases in 2010 and 2012. Richness increased with control plots up to 2015 and remained stable for mine plots. Trends were similar between mine and control plots.

Analysis of covariance suggested that overall trend could be described by a cubic polynomial trend where abundance increased then levelled off after 2010 with all terms significant α=0.05. A term that allowed separate slopes for treatment and control areas after 2011 was significant (χ^2=6.81, df=2, p=0.033); however, the difference in species counted was not significantly associated with distance from disturbance or proportion of plot disturbed (for the mine plots)(see **Table 2**).

Table 2a: ANCOVA results from the 2015 PRISM plot analysis. Analysis of GEE parameter estimates. Impact was a binary covariate set to 1 if year>=2008 for mine areas so that the effect of distance from mine was only estimated for these plots after development occurred. Repeated measurements of plots were modelled using generalized estimating equations with an exchangeable correlation matrix.

Empirical Standard Error Estimates							
Parameter	**Location**	**Estimate**	**Standard Error**	**95% Confidence Limits**		**Z**	**Pr > |Z|**
Intercept		0.6483	0.2374	0.1830	1.1137	2.73	0.0063
Yr (linear term)		0.2790	0.0892	0.1043	0.4538	3.13	0.0018
yr*yr (quadratic)		-0.0264	0.0114	-0.0486	-0.0041	-2.32	0.0202
yr*yr*yr (cubic)		0.0009	0.0004	0.0000	0.0017	2.02	0.0431
Impact*log(distance)*Location	Control	0.0000	0.0000	0.0000	0.0000	.	.
	Mine	0.0005	0.0063	-0.0117	0.0128	0.09	0.9302
Trend after 2011*Location	Control	-0.0995	0.0747	-0.2459	0.0469	-1.33	0.1829
	Mine	-0.1582	0.0586	-0.2731	-0.0433	-2.70	0.0070
Day (seasonality)		-0.0018	0.0019	-0.0055	0.0019	-0.97	0.3324

Table 2b: Score statistics for Type 3 GEE Analysis. Type 3 statistics are best for evaluating overall significance of categorical terms and are less sensitive to ordering of parameters in the model.

Source	DF	Chi-Square	Pr > ChiSq
yr	1	9.39	0.0022
yr*yr	1	5.43	0.0198
yr*yr*yr	1	4.13	0.0422
Impact*log(distance)*Location	1	0.01	0.9318
Trend after 2011*Location	2	6.81	0.0333
day	1	0.91	0.3403

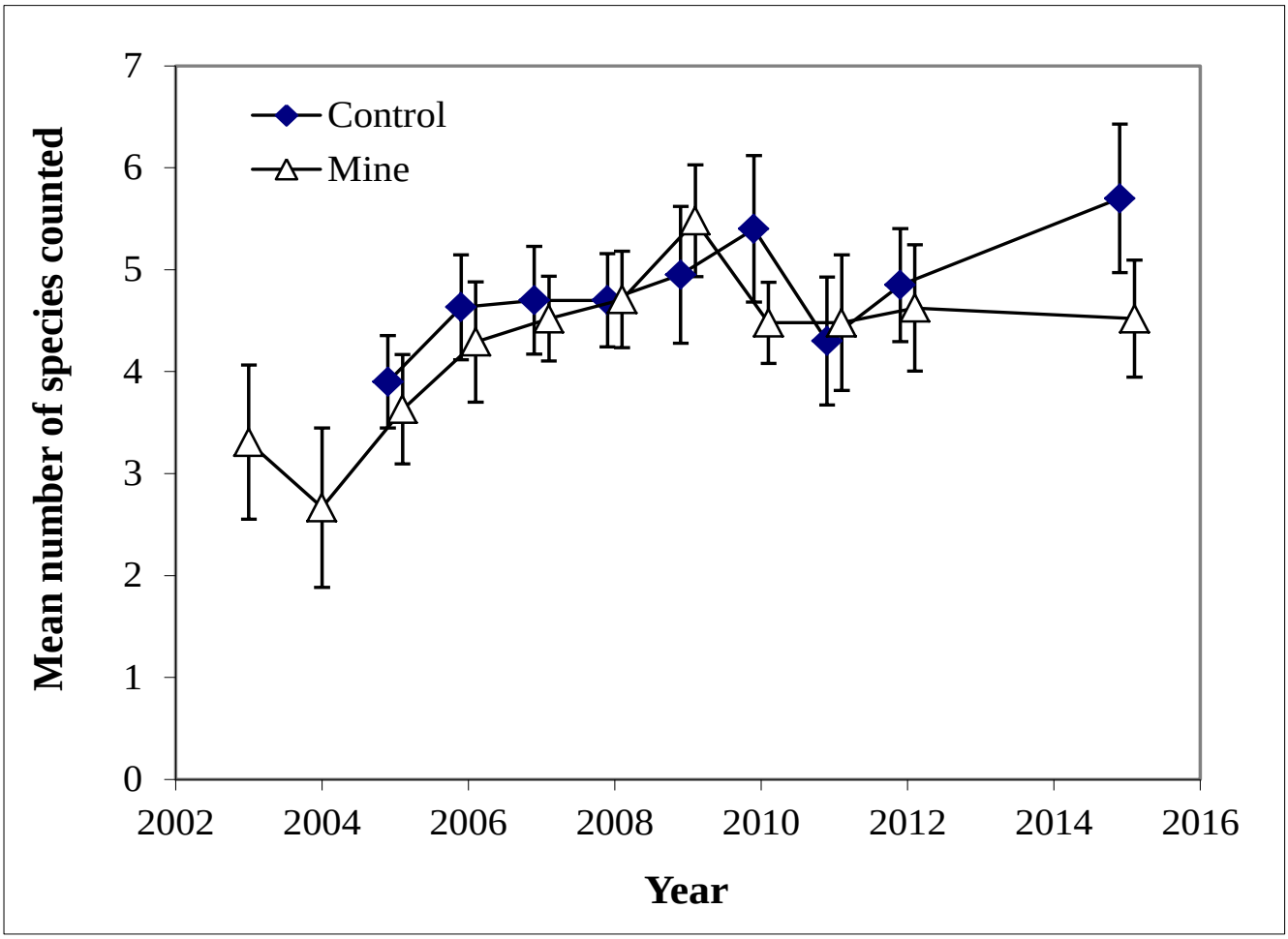

Figure 4: Species richness (mean number of species counted) as a function of year of survey and plot location. Mine areas were potentially impacted by mine site development in 2008.

3.2.2 Trends in Species Richness Demography.

New species were detected on both control and mine sites up to year 2015 (**Table 3**).

Table 3: New species identified in control or mine plots for each year surveyed.

Location	Year	New Species			
Control	2005	CAGO			
Control	2006	HORE	PESA	RBME	RTLO
Control	2008	AGPL			
Mine	2006	LTJA	SAND	SEPL	
Mine	2007	SNBU	WCSP		
Mine	2008	AMRO	CAGO	LESA	SACR
Control	2009	SACR	SEPL	SHOR	
Mine	2009	AMGP	BASA	DUNL	HERG
Control	2010	LTJA	NOPI	SNBU	
Control	2011	AMGP	DUNL	GWFG	
Mine	2012	CACG			
Mine	2015	PEEP	RBME		
Control	2015	RNPH	WCSP	LESA	

Summaries of the number of species detected, cumulative species detected, new species detected, and previous species detected by location and year suggest relatively similar trends between mine and control sites (**Figure 5**); however, some differences, such as numbers of new species detected and detections were apparent between mine and controls. The Pradel model analysis (described next) provides a model-based methodology to test for difference in these rates.

3.2.3 Pradel Model Analysis.

Initial Pradel model selection was focused on detecting spatial or temporal variation in detection probabilities of species at PRISM plots. No covariates were found that were supported; therefore, detection was set at constant levels for the rest of the analysis.

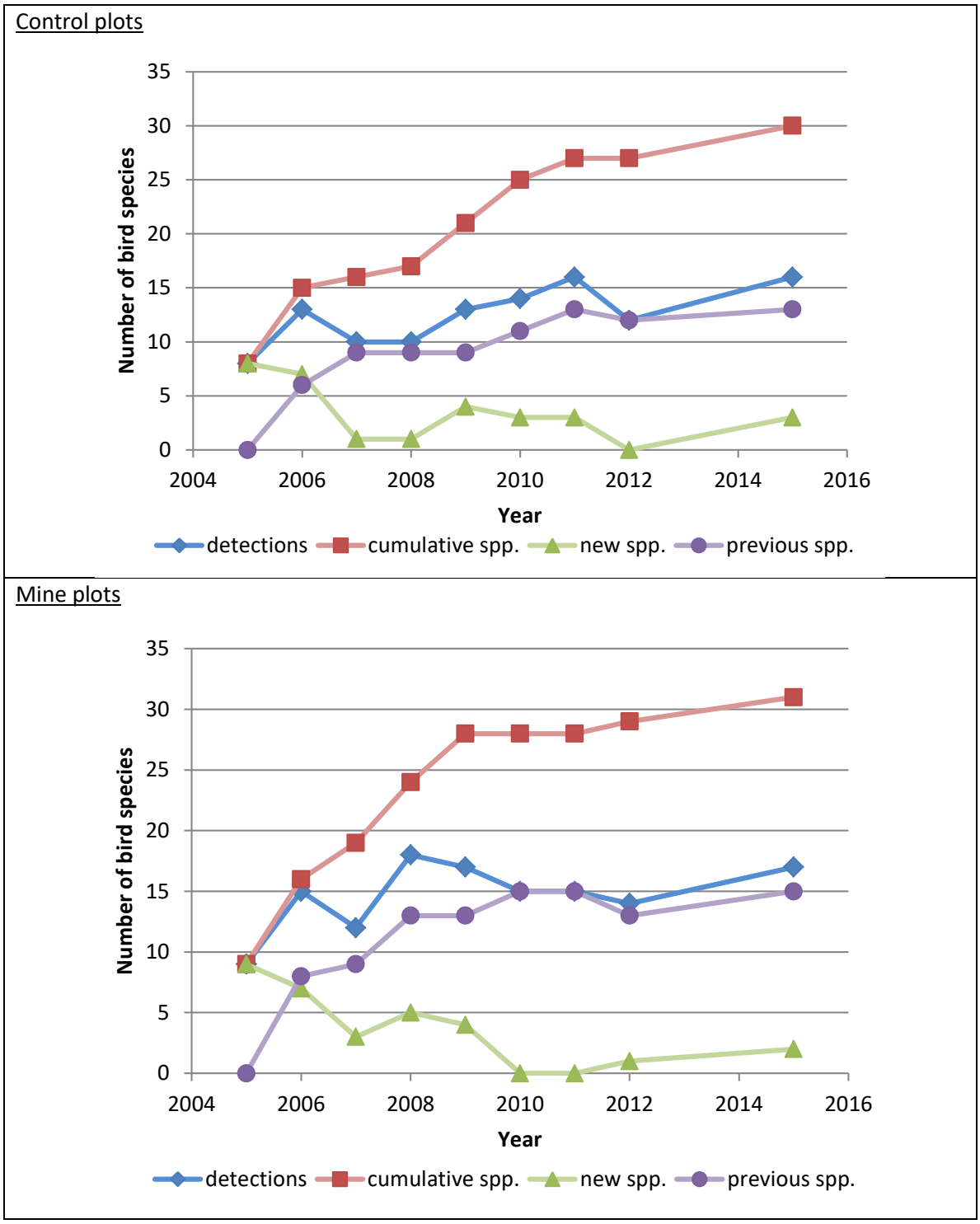

Figure 5: Summary of species richness trends for mine and control plots.

The next phase of Pradel model selection involved testing for temporal or larger scale differences in demographic parameters (fidelity and rates of addition). Models that assumed yearly variation in mine and control (symbolized as *m/c*) (Models 19, 21, and 23) or overall year-specific variation in parameters (Model 22) were less supported than a model that assumed all parameters were constant (Model 16). Linear trend models that assumed a similar yearly change symbolized as *T* were next introduced. A model that had linear trends in additions but constant fidelity was most supported (Model 9). This model was used as the base model for the next phase of model building.

For the next phase of Pradel model building, disturbance-specific parameters were introduced such as distance of mine PRISM sites from the footprint (d_{mine}), proportion of mine sites that were disturbed that a species was detected (pdisturb), as well as an impact term that assumed unique rates for the time period in which mine development occurred (*impact*). Of the models considered, a model that assumed fidelity and rates of addition related to the log of the distance from mine footprint was most supported (Model 1). A model that also included the distances from the control sites (Model 11) was less supported suggesting that distance from mine site only affected demography of birds on the mine areas (see **Table 4**).

A plot of predicted fidelity and additions as a function of distance from the mine footprint suggests that rates of addition was increased and fidelity was decreased in close proximity (< 1km) to the mine footprint (**Figure 6**). Basically, this result suggests that new species were more likely to be seen near the mine footprint but also species were less likely to show fidelity to plots in close proximity to the mine.

Temporal trends in model averaged estimates from mine and control areas demonstrate that species rate of change is mainly dictated by fidelity of species to areas rather than new species arriving each year. The rate of new species went down each year, which was presumably due to the fact that sampling had identified the common and the less common birds over the course of the study (**Figure 7**).

A plot of species rate of change for mine and control areas suggests similar trends with positive increase in species for both mine and control plots up to 2010 for mine areas and 2012 for control areas (**Figure 8**). The rate of change for both areas was slightly below 1 in 2015 indicating a potential reduction in the number of species. Confidence limits for species richness rate of change overlapped 1 for all years; therefore, these trends are not statistically different than a stable species richness rate of change.

Table 4: Pradel model selection for species richness analysis. Notation is as follows: "year" implies year-specific parameters, m/c implies mine and control specific parameters, T implies a linear trend, d_{mine} or $d_{control}$ implies mean distance of species detection from disturbance, impact denotes years when mine development occurred, and pdisturb is the mean proportion of disturbance in PRISM plots where a species was detected. A model that assumed all parameters were constant is shaded for reference. Sample size adjusted Akaike Information Criterion (AICc), the difference in AICc between the most supported model for each model (ΔAICc), AICc weight (wi), number of model parameters (K) and deviance is given.

No	Fidelity	Additions	AICc	ΔAICc	w_i	K	Deviance
1	log(d_{mine})	T+log(d_{mine})	659.6	0.00	0.39	6	647.3
2	constant	T+log(d_{mine})	661.6	1.95	0.15	5	651.3
3	pdisturb	T+log(d_{mine})	662.0	2.34	0.12	6	649.6
4	pdisturb	T+log(d_{mine})	662.3	2.64	0.10	6	649.9
5	constant	T+(d_{mine})	663.0	3.35	0.07	5	652.7
6	impact(08-15)	T+log(d_{mine})	663.7	4.04	0.05	6	651.3
7	log(d_{mine})	T+(d_{mine})	664.5	4.84	0.03	6	652.1
8	pdisturb	T+pdisturb	664.8	5.19	0.03	6	652.5
9	constant	T	666.1	6.43	0.02	4	657.9
10	constant	T+impact(08-15)	667.2	7.55	0.01	5	656.9
11	constant	T+log(d_{mine})+log($d_{control}$)	667.6	7.94	0.01	5	657.3
12	T	T	667.9	8.25	0.01	5	657.6
13	m/c+log(d_{mine})	T+m/c+log(d_{mine})	668.7	9.03	0.00	6	656.3
14	constant	impact(08-15)	668.9	9.22	0.00	6	656.5
15	year	constant	671.7	12.06	0.00	7	657.2
16	constant	constant	672.0	12.39	0.00	3	665.9
17	constant	year	672.3	12.65	0.00	10	651.3
18	impact(08-15)	impact(08-15)	673.8	14.16	0.00	5	663.5
19	m/c	m/c*year	673.9	14.29	0.00	15	641.8
20	T	constant	674.0	14.42	0.00	4	665.9
21	m/c*year	m/c*year	678.9	19.25	0.00	23	627.9
22	year	year	679.8	20.22	0.00	17	643.1
23	m/c*year	m/c*year[A]	708.1	48.50	0.00	37	620.5

[A]Year and m/c specific variation in detection was modelled

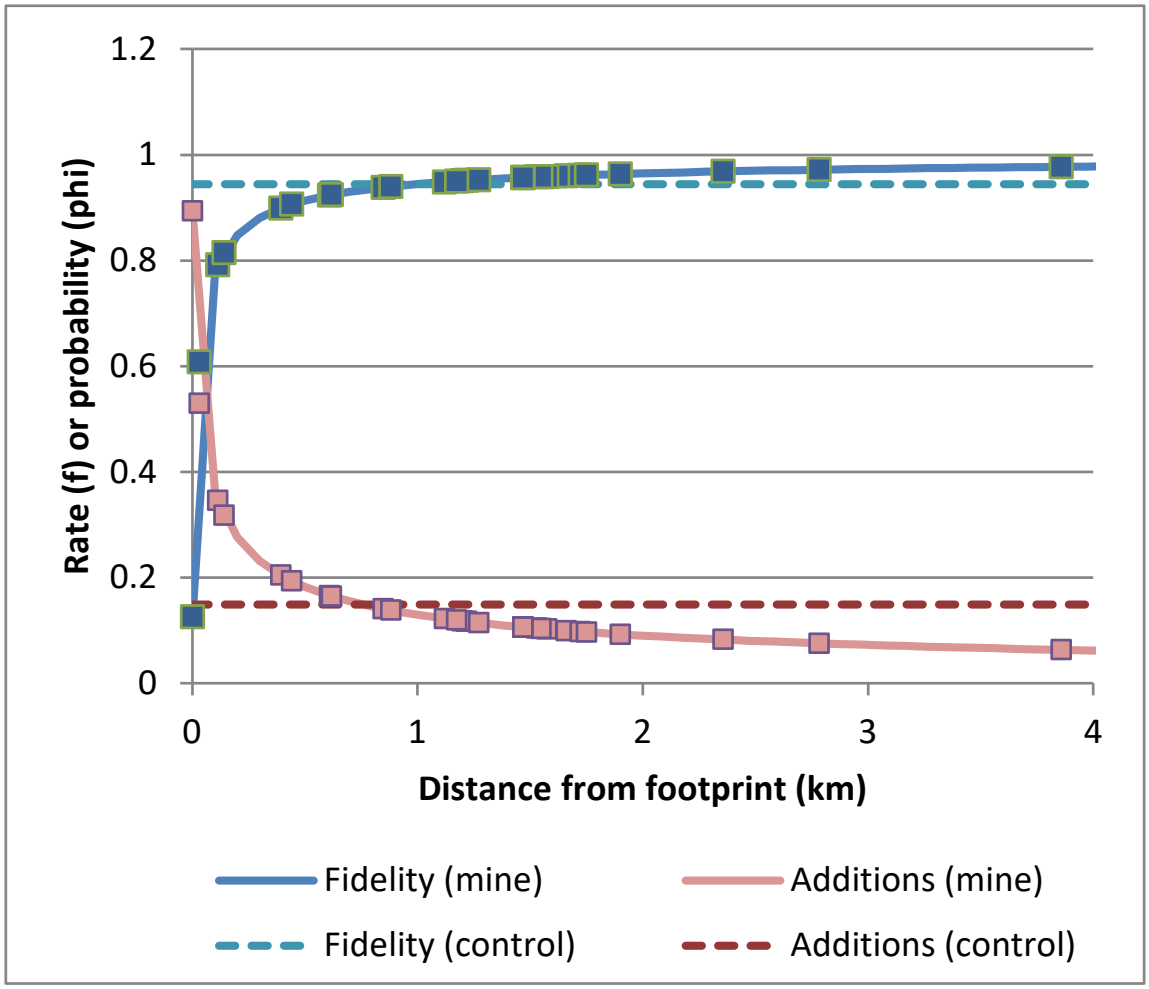

Figure 6: Rates of addition (f) and fidelity (ϕ) as a function of mean distance from mine footprint for the mine PRISM plots (**Table 3**, Model 1). Estimates of rates of addition and fidelity were constant for control plots at 0.15 and 0.94 as indicated by dashed lines in the plot. Individual data points for each species are also shown.

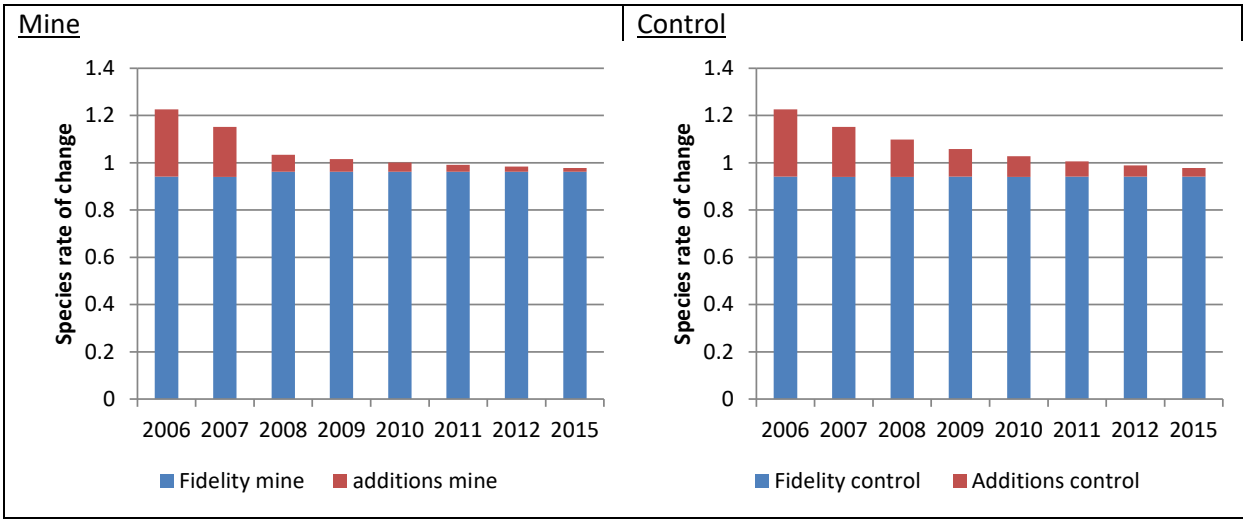

Figure 7: Model averaged estimates of rates of fidelity and addition (which add up to species rate of change) for mine and control sites

3.3 Species diversity

Overall species diversity was compared graphically for mine and control plots to assess similarities between plots prior to mine development. A more diverse community should have a more even distribution of species. It can be seen from **Figure 9** that both mine and control sites were heavily dominated by Lapland Longspur (LOLA), Horned Lark (HOLA), Savannah Sparrow (SVSP), Common Redpoll (CORE), and Rock Ptarmigan (ROPT). Most other species were only occasionally sighted on plots.

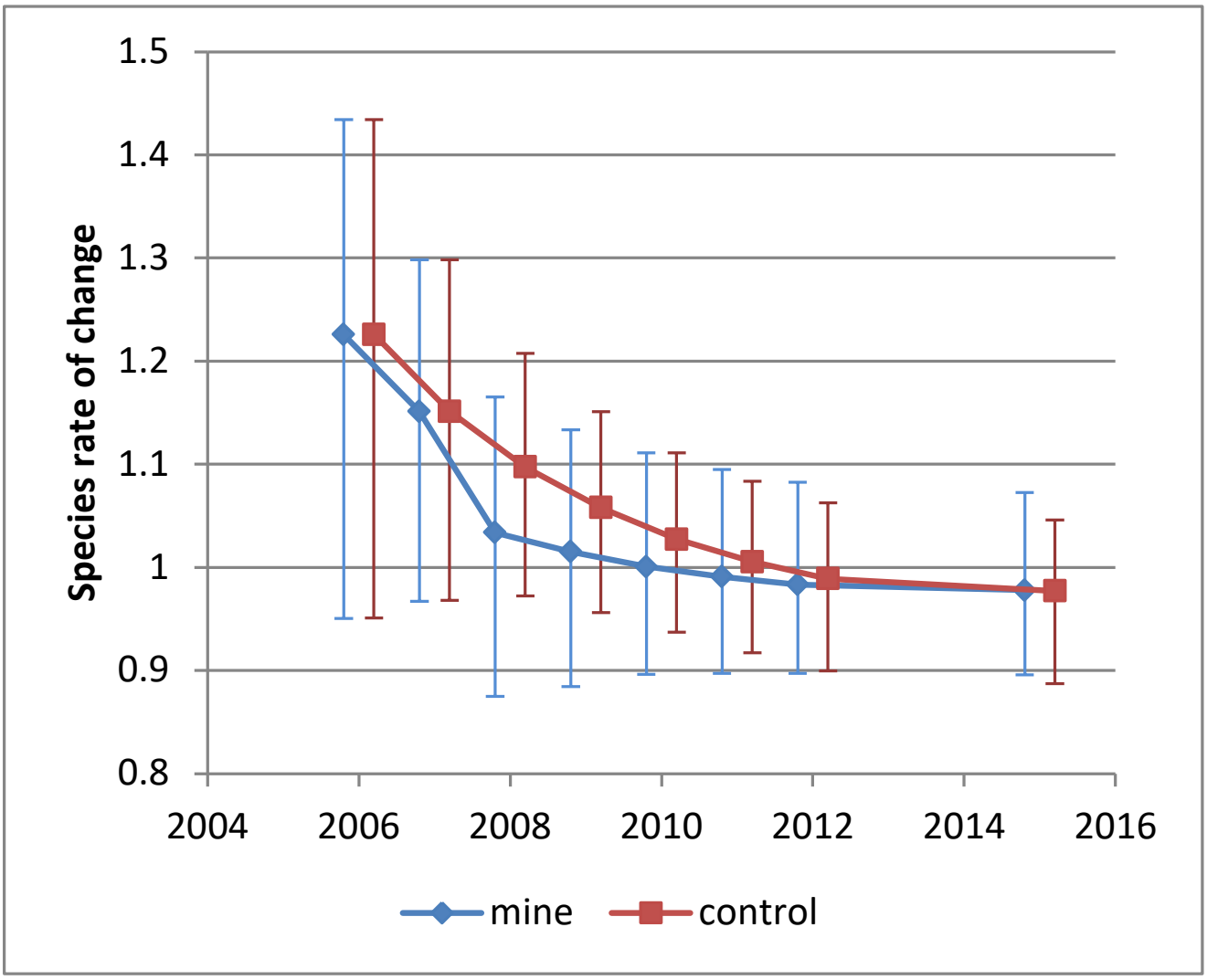

Figure 8: Model averaged estimates of rates of fidelity and addition (which add up to species rate of change) for mine and control sites

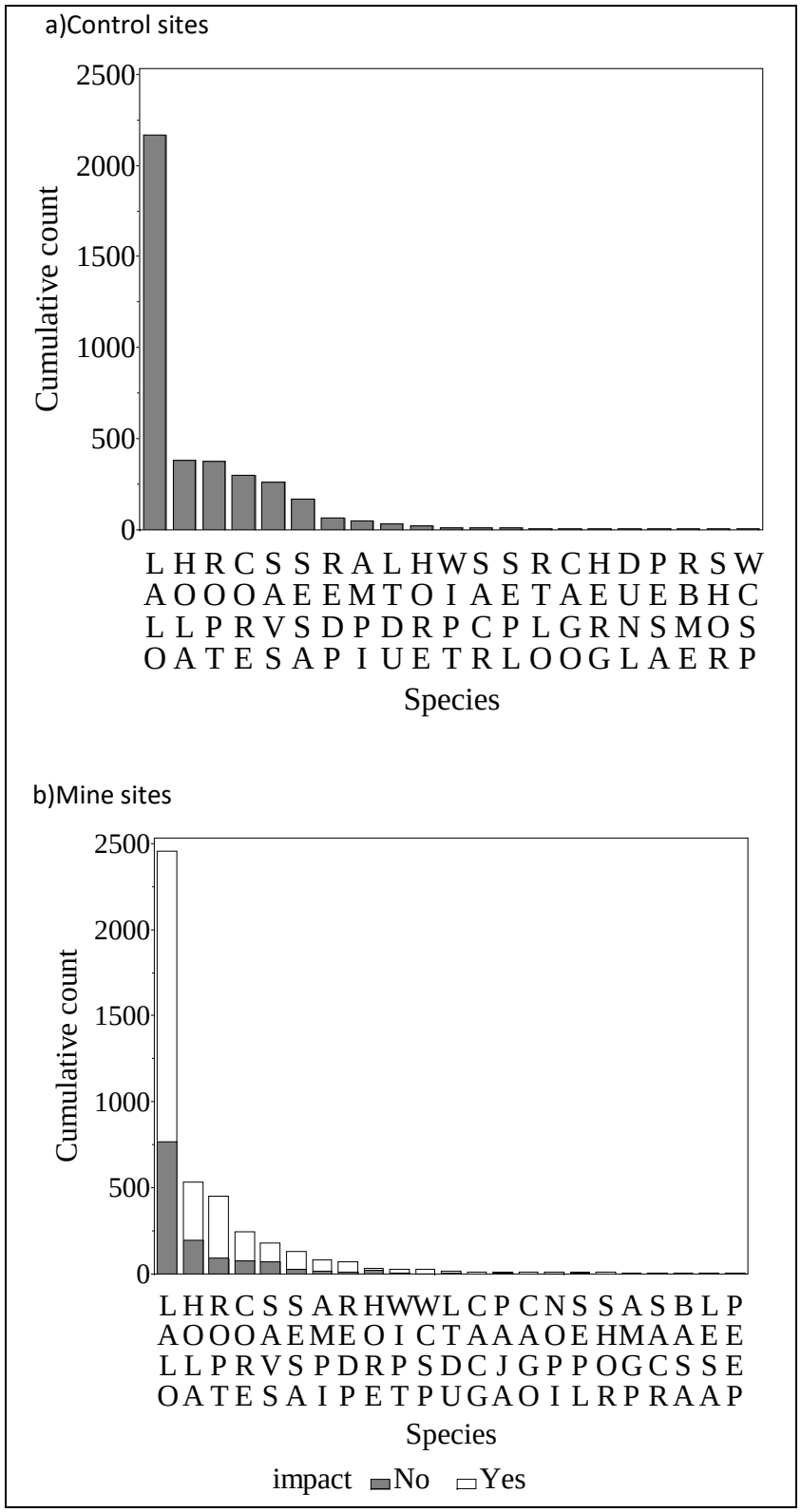

Figure 9: Cumulative counts of species for control (a) and mine (b) sites for pre-impact surveys conducted in 2005 to 2011. Only species that were observed more than twice for the entire duration of surveys are shown.

The Shannon N1 species diversity and evenness were used to compare species diversity trend across years for mine and control sites. Results suggested that evenness and species diversity were equal for control and mine plots in all years **(Figure 10**) as indicated by overlap of confidence intervals. Species diversity increased for both mine and control sites up to 2009 then decreased in 2010 before increasing again. Evenness was higher in 2004; however, a large degree of variance around estimates makes interpretation difficult. Evenness was also relatively similar for mine and control sites as indicated by overlap of confidence limits. Species diversity and evenness was similar for 2015.

4 Discussion

The objectives of analyses in this paper were to assess the similarity of mine and control plots and assess potential initial changes in mine area plots as a result of development that occurred after 2008 as well as assess overall trends in plots up to the 2015 field season. These results show that most community indices are temporally variable with little difference in the overall trends of mine and control plots. Various factors such as seasonality, weather, and larger-scale trends in distribution and abundance could influence the community metrics. It is for this reason that a treatment and control design in which measurements are taken before and during development is essential to allow differentiation of environmental and anthropogenic effects on bird communities.

The Pradel analysis documented small scale differences in species demography in the immediate area of development (**Figure 6**). The increase in rates of addition and decrease in fidelity suggests that disturbed areas are more likely to have new species observed but also have lower fidelity of species. From the context of edge dynamics, this result is not surprising. Often disturbed areas create edge habitat that may attract new species; however, these species may be more likely to be transient. The net effect of the two factors seemed to offset each other and as a result overall species demographics was similar between mine and control areas (**Figures 7** and **8**).

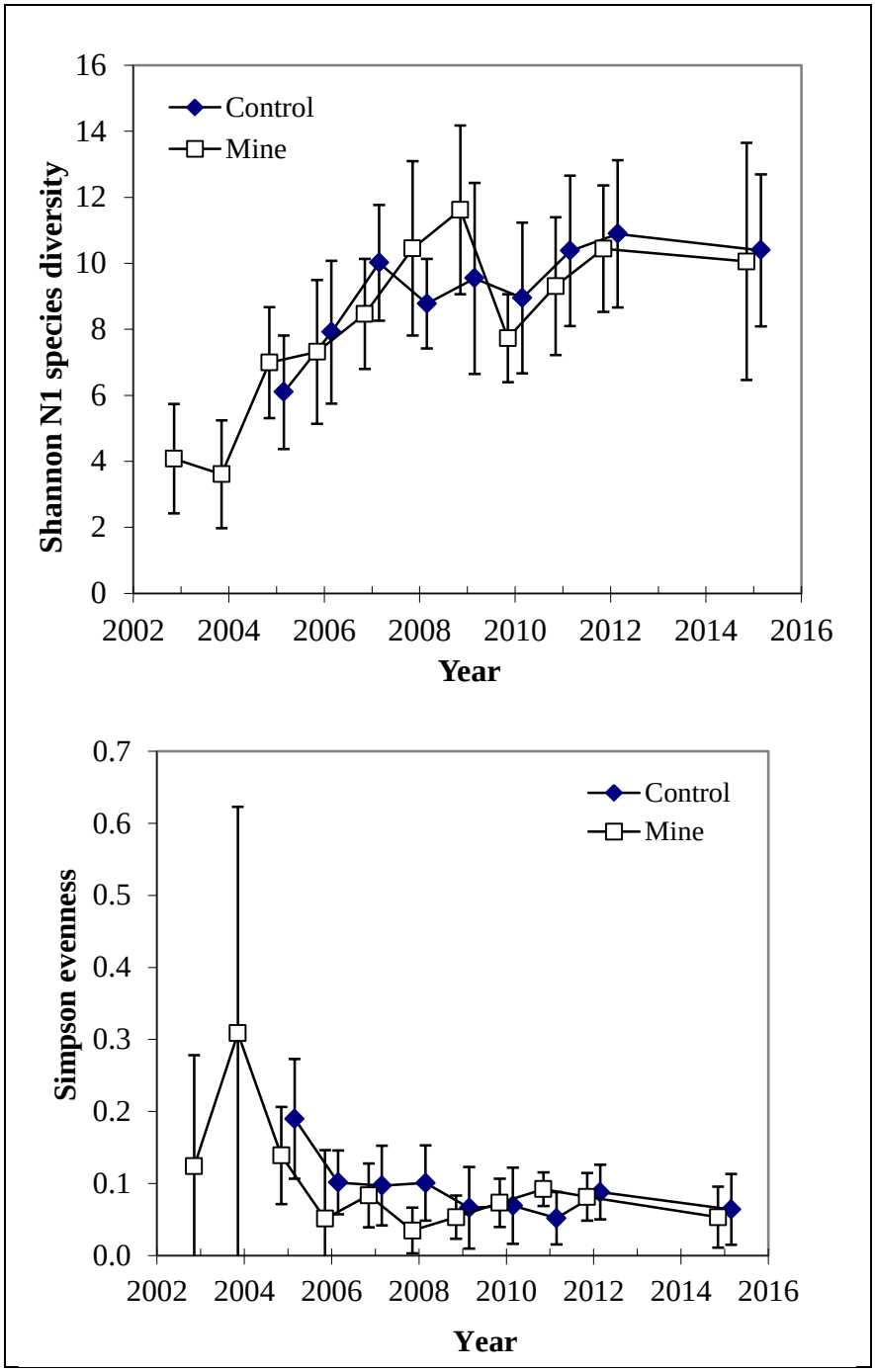

Figure 10: Species diversity and evenness scores for mine and control sites as a function of year surveyed. The Shannon-Weiner N1 value represents the number of equally common species that would produce a similar species diversity score.

5 Literature Cited

Boulinier, T., J. D. Nichols, J. R. Sauer, J. E. Hines, and K. H. Pollock. 1998. Estimating species richness : The importance of heterogeneity in species detectability. Ecology 79:1018-1028.

Burnham, K. P., and D. R. Anderson. 1998. Model selection and inference: a practical information theoretic approach. Springer, New York, New York, USA.

Cam, E., J. D. Nichols, J. R. Sauer, and J. E. Hines. 2000. Relative species richness and community completeness: birds and urbanization in the mid-Atlantic States. Ecological Applications 10: 1196-1210.

Krebs, C. J. 1998. Ecological Methodology (Second edition). 2 edition. Benjamin Cummins, Menlo Park, CA.

Liang, K.-Y., and S. Zeger. 1986. Longitudional data analysis using generalized linear models. Biometrika 73: 13-22.

MacArthur, R. H. 1965. Patterns of species diversity. Biological Reviews 40: 510-533.

Manly, B. F. J. 1997. Randomization and Monte Carlo Methods in Biology. 2nd edition. Chapman and Hall, New York.

McCullough, P., and J. A. Nelder. 1989. Generalized Linear Models. Volume 2. Chapman and Hall, New York, New York, USA.

Milliken, G. A., and D. E. Johnson. 2002. Analysis of messy data, Volume III: Analysis of covariance. Chapman and Hall, New York, New York, USA.

Pradel, R. 1996. Utilization of mark-recapture for the study of recruitment and population growth rate. Biometrics 52: 703-709.

White, G. C., and K. P. Burnham. 1999. Program MARK: survival estimation from populations of marked animals. Bird Study Supplement 46:120-138.

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APPENDIX G
Occupation Classification

Agnico Eagle Occupations Classification System

The table below was developed to show the conditions considered for each category and includes example of job titles. AEM positions are now classified in one of five categories identified as unskilled, semi-skilled, skilled, professionals and management.

Job Category	Lead Statement	Main duties	Example Titles	Employment Requirements	Reference to NOC
Unskilled	Unskilled workers perform work that requires no specific education or experience. They hold positions that are not necessarily critical to achieving production although they are important for the smooth running of operations. No specific skill level and education requirements. Basic on-the-job training is usually provided for these occupations.	Perform material handling, clean-up, packaging Clean work areas and equipment Assist in repairing, maintaining and installing material and equipment Move tools, equipment and other materials to and from work areas	Janitor, Dishwasher, Labor, Helper	High school degree may be required.	Skill level D
Semi-skilled	Semi-skilled workers perform jobs that require some skills but do not possess the skill level and/or experience to perform specialized work. Occupations usually require high school diploma and/or occupation specific training.	Operate and clean equipment Follow operating procedures and achieve production targets Perform routine maintenance of machinery Record production data and complete reports	Security Guards, Building Mechanic, Driller & Blaster, Process Plant operators, Heavy Equipment Operators, Apprentice	High school degree may be required. On-the-job training is provided. Relevant experience depending on the position.	Skill level C
Skilled	Skilled workers possess special skills, training, knowledge, and ability in their work. They occupy jobs that are generally characterized by high education or expertise levels. Occupations usually require college or apprenticeship training. In house skilled training may be seen as an equivalent to formal education.	<u>TRADES</u> Maintain and repair tools and equipment Read and interpret drawings and sketches to determine specifications and calculate requirements Install, repair and maintain industrial mobile and fixed systems Test equipment and components <u>TECHNICIANS</u>	Electricians, Heavy Duty Mechanic, Mining Technicians, Millwright, Environmental Technician	<u>TRADES</u> Completion of high school level usually required. Completion of an apprenticeship program or equivalent Red Seal endorsement according to the level of the position occupied <u>TECHNICIANS</u> Completion of high school level usually required.	Skill level B

		Conduct or direct mining survey programs Prepare and analyze notes, sketches and maps Record measurements and other information Assist professionals in supervising technical delivery of work		Completion of a college degree Relevant experience in the concerned discipline	
Professionals	Professionals occupy a profession recognized as such and support the operations of near or far from their own expertise. They are normally subject to professional standards and can be part of an established order that envelops the performance of their work. Occupations that usually requires university education.	Plan, develop, implement and evaluate strategies including policies, programs and procedures to address an organization's requirements. Determine and advise on appropriate and safe working methods Plan, organize and supervise the technical aspect of work	Engineers, Geologist, Nurses, HR professionals	University degree Relevant experience according to the level of the position	Skill level A
Management	Managers plan, organize, direct, control and evaluate the activities of a department or service. They are performing in different sectors directly related to operations or to the support of mining operations. Occupations that usually requires university education or equivalent extensive work experience with a supervisory component to the job.	Plan, organize, direct, control and evaluate the activities and operations of a department; Develop and implement policies, standards and procedures Supervise, co-ordinate and schedule the activities of workers; Establish methods to meet work schedules and co-ordinate work activities with other departments	Supervisors, Superintendents	University degree Extensive experience in the discipline Experience with supervision of a team	Skill level A

The category ‘unskilled’ includes all entry level jobs that require no special qualifications in hiring or during employment. Simple on the job training is offered when hiring which is mainly used to transmit knowledge about the working methods to be used and the safety rules. These positions do not present opportunities for advancement and no special skills are acquired on the job unless technical skills related to work performed and acquired through experience.

The occupants of this type of position are known to perform simple tasks all of which require the exercise of little or no previous experience or independent judgment although a familiarity with the occupational environment is necessary. This category is typically associated with janitors, dishwashers and labor positions.

The ‘semi-skilled’ category, although it does not require an important level of qualification, requires more abilities than the ‘unskilled’ type of positions. The level of responsibility associated with these positions is also higher. A person holding such a position is recognized as partially qualified but not enough to do specialized work independently. Occupants of these positions have technical qualifications which have mostly been learned on the job and acquired through experience. In some cases minimal education is required but can usually be replaced by on the job training. None of the positions in this category require extensive education or formal certification.

The ‘skilled’ category includes positions in which employees are capable of working independently and turning out accurate work. Employees in these positions occupy positions that require higher degrees of judgment and decision making to perform their duties. While most jobs require some level of skills, "skilled workers" bring some degree of expertise to the performance of a given job. This category in the current classification system includes all trades and technician positions. Although these positions are different in the exercise of their own functions they all share the feature that they require special skill, knowledge, or ability in their work. These positions require that occupants possess a certain level of education either through an apprentice program or at the college level. In some exceptional cases and considering the particular context of the mining world, specialized training offered on the job will be considered equivalent to a specialized training followed in institutions. This is mainly because in house training meets recognized industry standards that they are considered equivalent.

The ‘professional’ category includes all professions that require university education. Compared to the ‘management’ category, positions in this group usually do not include a supervisory aspect to the job. Competence of employees in this category can usually be measured against an established set of standards. Professionals possess a high level of expertise in their fields that was acquired through extensive education and relevant experience. In the present case no position occupied by Inuit employees are classified in this category.

Finally the ‘management’ category includes all positions whose primary responsibilities are managing people and directing work. All positions in this category include supervisory duties of employees and require a high level of education, especially at university level. Management positions are those of administration, management, coordination and control of the operations and support services at the mine. An employee occupying a position in this category is normally responsible for planning and directing the work of a group of individuals, monitoring their work, and taking corrective actions when necessary. In the present case no position occupied by Inuit employees are classified in this category.

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APPENDIX H
Table 8-14 (ST-21) and 8-29 (ST-S-5) 2015 Results

Table 8.14: 2015 Tailings Reclaim Pond Water Quality Monitoring (ST-21)

Date	Units	15-Jan-2015	10-Feb-2015	4-Mar-2015	7-Apr-2015	5-May-2015	1-Jun-2015	6-Jul-2015	3-Aug-2015	8-Sep-2015	6-Oct-2015	1-Nov-2015	12-Jan-2014
Field Parameters													
pH			8.6	8.6	8.5	8.1	8.5	7.2	6.6	7.6	8.2	7.9	8.6
Turbidity	NTU		11.95	16.81	20.6	16.5	13.45	2.44	5.53	7.12	11.58	3.25	5.25
Conventional Parameters													
Alkalinity	mg CaCO3/L	117	116	126	113	80	76	107	157	150	135	137	144
Hardness	mg CaCO3/L	894	1099	1224	1325	1395	1329	1315	1029	1176	1222	1263	1461
TDS	mg/L	1924	2190	2628	2946	3411	2801	2270	2328	2230	2184	2433	2926
TSS	mg/L						21			4	12	10	10
Nutrients and Biological Indicators													
Ammonia (NH3)	mg N/L	3.4	7.1	7.3	6.3	7.6	3.4	2.0	0.4	0.6	0.1	0.6	1.6
Ammonia-Nitrogen	mg N/L	31.3	53.7	54.6	59.7	57	57.3	45.8	16.1	31.2	5.8	35.4	35.4
Nitrate	mg N/L	7.5	9.1	11	10.8	10.7	10.4	10.5	8.5	7.3	7.8	9.1	10.7
Nitrite	mg N/L	0.32	0.57	0.3	0.27	0.35	0.33	0.35	0.48	0.28	0.29	0.21	0.22
Major Ions													
Chloride	mg/L	406	439	543	638	770	637	633	378	436	1329	445	562
Fluoride	mg/L	2.5	0.26	0.42	< 0.02	2.4	0.03	0.03	0.04	< 0.02	0.44	0.4	0.13
Sulphate	mg SO4/L	1200	1456	1537	1670	1604	1557	1235	1316	1473	1650	1651	1998
Cyanide													
Total cyanide	mg/L	16.3	14.7	13.1	0.76	22.9	6.13	0.64	0.047	0.078	0.31	1.45	3.58
Cyanide WAD	mg/L										0.16	0.56	0.22
Total Metals													
Aluminum	mg/L			0.014	0.16			0.09			< 0.006	0.089	0.060
Arsenic	mg/L			0.048	0.013			< 0.0005			0.019	0.059	0.01
Barium	mg/L			0.12	0.13			0.0801			0.059	0.058	0.09
Beryllium	mg/L			< 0.0005	< 0.0005			< 0.0005					
Cadmium	mg/L			0.0008	0.0008			< 0.00002			0.0007	0.001	0.0010
Chromium	mg/L			0.0035	< 0.0006			< 0.0006			< 0.0006	0.0041	0.0016
Copper	mg/L			3.3	4.2		4.283	0.71	0.20	0.11	0.73	2.6	0.82
Iron	mg/L			0.97	1.8		1.4	0.15	0.23	0.47	0.7	0.6	0.78
Mercury	mg/L			0.00083	0.00054			0.00025			0.00008	0.00004	0.0003
Lead	mg/L			< 0.0003	< 0.0003		< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Lithium	mg/L			< 0.005	0.13			< 0.005					
Manganese	mg/L			0.038	0.03			0.21			1.2	1.01	0.21
Molybdenum	mg/L			0.34	0.39			0.30			0.30	0.33	0.32
Nickel	mg/L			0.39	0.46			0.09			0.090	0.15	0.082
Antimony	mg/L			0.082	0.051			0.009					
Selenium	mg/L			0.086	0.094			0.046			0.042	0.058	0.082
Tin	mg/L			< 0.001	< 0.001			< 0.001					
Silver	mg/L										0.001	0.003	0.0003
Strontium	mg/L			2.23	3.54			1.45					
Thallium	mg/L			< 0.005	< 0.005			< 0.005			< 0.005	< 0.005	< 0.005
Titanium	mg/L			0.49	0.51			0.44					
Uranium	mg/L			0.032	0.028			0.025					
Vanadium	mg/L			< 0.005	< 0.0005			< 0.0005					
Zinc	mg/L			0.004	0.004			< 0.001			0.001	0.003	< 0.0010
Dissolved Metals													
Aluminum	mg/L	0.037	0.036	0.024	0.026	0.23	0.022	< 0.006	< 0.006	< 0.006	< 0.006	0.01	0.014
Arsenic	mg/L	0.0203	0.022	0.0379	0.0126	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0015	0.0025	0.0088	< 0.005
Barium	mg/L	0.08	0.12	0.12	0.13	0.11	0.11	0.077	0.058	0.049	0.059	0.054	0.076
Cadmium	mg/L	0.00026	0.00068	0.00079	0.00094	0.00066	0.00086	< 0.00002	0.00078	0.00061	0.00043	0.00081	0.0008
Copper	mg/L	2.56	0.699	2.05	2.17	5.54	1.86	0.66	0.19	0.06	0.65	2.40	0.016
Iron	mg/L	0.05	0.2	0.03	0.9	2.4	0.05	0.05	0.02	0.01	0.02	0.03	0.36
Mercury	mg/L	0.00038	0.00061	0.00077	0.00058	0.00057	0.00037	0.00031	0.00015	0.00009	0.00007	0.00024	0.00028
Manganese	mg/L	0.02	0.003	0.025	0.014	0.0084	0.057	0.18	0.68	1.02	1.25	0.98	0.17
Molybdenum	mg/L	0.18	0.28	0.33	0.39	0.41	0.39	0.30	0.25	0.02	0.30	0.31	0.32
Nickel	mg/L	0.115	0.057	0.183	0.026	0.030	0.029	0.085	0.083	0.058	0.096	0.141	0.018
Lead	mg/L	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	0.0005	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Selenium	mg/L	0.049	0.084	0.104	0.102	0.079	0.075	0.046	0.049	0.039	0.045	0.048	0.072
Silver	mg/L	0.0194	< 0.0001	< 0.0001	0.0043	0.0043	0.008	0.001	0.0034	0.0001	< 0.0005	< 0.0001	0.0003
Thallium	mg/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Zinc	mg/L	0.001	< 0.001	0.002	0.004	< 0.001	0.003	< 0.001	0.005	< 0.001	< 0.001	0.001	0.007

Footnotes:
The dotted line illustrates the point in time where the list of parameters to be analysed was updated to reflect changes in the renewed water licence 2AM-MEA1525.

Table 8.29: 2015 Central Dike Seepage Water Quality Monitoring (ST-S-5)

Date	Units	9-Feb-15	10-Mar-15	13-Apr-15	5-May-15	1-Jun-15	6-Jul-15	4-Aug-15	8-Sep-15	5-Oct-15	2-Nov-15	1-Dec-15
Field Parameters												
pH		7.04	7.08	7.21	6.21	7.71	6.83	6.53	7.78	7.76	7.56	7.72
Turbidity	NTU	35.1	2.28	10.7	0.46	7.6	15.4	32	7.35	3.95	1.89	4.89
Conventionnal Parameters												
Alkalinity	mg CaCO3/L	202	365	255	170	132	130	164	157	146	151	160
Hardness	mg CaCO3/L	1019	1396	1509	1077	972	787	1062	1116	1163	1264	1538
TDS	mg/L									1949	2212	2558
TSS	mg/L									14	3	2
Major Ions												
Chloride	mg/L	499	770	832	629	462	235	501	506	527	540	539
Fluoride	mg/L	0.34	3.2	0.43	1.7	0.03	0.05	0.41	0.69	0.42	0.43	0.45
Sulphate	mg SO4/L	1300	2042	1754	1306	1178	842	1235	1407	1479	1652	1786
Nutrients and Biological Indicators												
Ammonia (NH3)	mg N/L	0.17	0.24	0.22	0.36	0.26	0.20	0.05	0.16	0.30	0.29	0.79
Ammonia nitrogen (NH3-NH4)	mg N/L	12	21.7	20.5	19.3	23	8.94	4.17	20.6	23.3	27.5	25.3
Nitrate	mg N/L	4.1	14.4	10.4	3.8	4.3	6.9	3.2	0.3	1.6	0.4	0.02
Nitrite	mg N/L									0.08	0.09	0.02
Cyanide												
Total cyanide	mg/L	0.50	1.23	0.51	1.12		0.19		0.24	0.19	0.22	0.29
Cyanide WAD	mg/L										0.15	0.21
Total Metals												
Aluminium	mg/L	2.62	0.025	0.14	0.018	0.093	0.14	0.83	0.087	0.056	0.037	0.033
Arsenic	mg/L	0.109	0.023	0.020	0.0009	0.0054	< 0.0005	0.013	< 0.0005	0.034	0.051	0.03
Barium	mg/L	0.41	0.043	0.037	0.023	0.027	0.031	0.04	0.035	0.04	0.032	0.029
Cadmium	mg/L	0.00018	0.00029	0.00036	0.00006	0.00039	< 0.00002	< 0.00002	0.00032	0.00009	0.00068	0.00064
Chromium	mg/L	0.016	0.0011	0.0031	< 0.0006	< 0.0006	< 0.0006	0.0067	< 0.0006	< 0.0006	0.0034	0.0096
Copper	mg/L	0.055	0.088	0.03	0.38	0.94	0.11	< 0.0005	0.0064	0.0076	0.012	0.0086
Iron	mg/L	10.3	0.28	0.54	0.79	0.98	0.46	6.13	0.86	0.63	1.18	1.31
Lead	mg/L	0.0041	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	0.0033
Manganese	mg/L	4.78	4.76	3.87	3.99	3.31	1.44	2.23	2.87	2.58	2.59	3.13
Mercury	mg/L	< 0.00001	0.00002	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	0.00013	0.00005
Molybdenum	mg/L	0.067	0.15	0.14	0.11	0.12	0.097	0.18	0.19	0.19	0.21	0.23
Nickel	mg/L	0.19	0.41	0.24	0.25	0.34	0.093	0.059	0.031	0.063	0.052	0.065
Selenium	mg/L	0.007	0.026	0.021	0.021	0.029	0.012	0.034	0.026	0.013	0.018	0.038
Silver	mg/L	< 0.0001	0.0001	< 0.0001	< 0.0001	< 0.0001	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Thallium	mg/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Zinc	mg/L	0.011	0.005	0.003	< 0.001	0.002	< 0.001	< 0.001	< 0.001	0.001	0.003	< 0.001
Dissolved Metals												
Aluminum	mg/L										< 0.006	< 0.006
Silver	mg/L										< 0.0001	< 0.000
Arsenic	mg/L										0.015	0.030
Cadmium	mg/L										0.0004	0.0006
Chromium	mg/L										0.0013	0.0015
Copper	mg/L										0.0058	0.0054
Iron	mg/L										0.04	0.07
Manganese	mg/L										2.38	2.72
Mercury	mg/L										0.00001	0.0001
Molybdenum	mg/L										0.2	0.22
Nickel	mg/L										0.048	0.05
Lead	mg/L										< 0.003	0.0009
Selenium	mg/L										0.023	0.032
Thallium	mg/L										< 0.005	< 0.005
Zinc	mg/L										0.001	< 0.001

Footnotes

The dotted line illustrates the point in time where the list of parameters to be analysed was updated to reflect changes in the renewed water licence 2AM-MEA1525.

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APPENDIX I
MBK-HSS-EMR-PRO Missing person

Missing Person @ MBK

PROCEDURE NUMBER:	MBK-HSS-EMR-PRO Missing person

People concerned	Affected persons: • Security Services • ERT Team • Department Supervisors • H & S Officers • Front Desk	**Prepared by**	**Andre Rouleau / Vic Couture**
		Approved by	**Norman Ladouceur H&S Superintendent**
Issuing date : January 27, 2015 **Revision date: August 18, 2016**		***"Safety First, Safety Last … Safety Always!"*** ***"No Repeats" – Our Stepping Stone to ZERO HARM***	
This procedure corresponds to the required minimum standard. Each and everyone also have to comply with the rules and regulations of the Nunavut Government in terms of health and safety at work.			

Objective: This procedure is intended to maximize efficiency of interveners in the event of a missing person in Meadowbank camp.

Concerned departments:

ERT SECURITY MEDICS H&S

I.T CAMP

Required equipment:

- Main lobby H&S T.V. screen
- Camp / Rooms Master keys
- Vehicles
- Handheld radios
- Flashlights
- GPS
- Occupants list

Risks /Impacts legend

Health & Safety

Missing Person @ MBK

Procedure	Risks/ Impacts
1. Purpose and Scope: The purpose of this procedure is to ensure a safe and complete search in the event that a worker or a visitor goes missing at Meadowbank Mine Site. This procedure applies to all Meadowbank personnel and visitors.	Injuries could occur if a person is lost outdoor during adverse weather conditions, indoor in a contaminated or high risk area, or for medical reasons.
2. Procedure for supervisors: 2.1 As soon as a worker is missing from his regular work (at beginning of shift or during the day) the supervisor will ensure that the worker's room, workplace, and public areas have been searched, in addition to checking with the Medical Clinic personnel. 2.2 After this primary search, if the worker is still missing, the Meadowbank Security Officer (SO) must be advised. If the Security office is closed, the Front desk Officer will be advised. 2.3 If nobody can be reached at the Camp front entrance offices, then, the Medical Clinic personnel should be notified. The nurse will take charge and follow up with the searches by getting in touch with the Security Officer and/or the ERT Incident Commander (IC).	
3. Following Steps: 3.1 The SO or IC will obtain from room neighbors, colleagues or friends the last area the missing person was seen. 3.2 First, the SO or IC will verify if missing person has a cell phone and then try to call this number. 3.3 The Front Desk Office will be designated as the Command Center for this operation. 3.4 If further searches are required, the SO or IC will advise the H&S Superintendent and a Search and Rescue (SAR) operation will be initiated. 3.5 The IC will then inform the Acting Manager of the ongoing situation and a decision will be taken to activate or not the	In case of bad weather, time is an important factor If ever a missing person is found, the Front Desk will be notified FIRST.

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MEADOWBANK

Missing Person @ MBK

Emergency Response Plan. 3.6 The IC will require from the Human Resources Department a picture of the missing person and post it on the T.V. screen at the front entrance with the mention : ''MISSING'', requesting people to report immediately to the Front Desk if the missing person is found.	
4. <u>Searches Inside Main and Nova Camps:</u> 4.1 If searches are required in the Main Camp wings, the IC or SO will initiate an 'All Call' (401) on the pager system in order to have all ERT members report to the Fire Hall. 4.2 IC or SO will assign SAR teams search areas after providing them with master keys. 4.3 Each team will be equipped with a radio (on a pre-determined channel) and a flashlight. 4.4 Master keys for Main Camp rooms and Nova Camp rooms are available at the Fire Hall. 4.5 IC or SO will keep track of the master keys. All keys should be brought back after searches. 4.6 Upon finding the missing person: 4.7 is found, First Aid must be given by a team member if needed, and the IC or SO will be notified immediately. At all times, the victim will be brought to the Medical Clinic for medical evaluation.	Search in rooms must be executed by ERT or designate with a 2 person team system.
5. <u>Outdoor searches:</u> 5.1 If outdoor searches are required, IC or SO will initiate a 'All Call' (401) on the pager system in order for ERT members to report to the Fire Hall. 5.2 A Search and Rescue (SAR) Plan will be initiated depending on alleged location, weather conditions and any other situation affecting the plan. 5.3 Every SAR plan will be directed by IC whom will report directly to the Acting Manager. 5.4 The Acting Manager may requisition, as per the Emergency Response Plan, any manpower, vehicle, machinery, tool, or access required outside help. SAR Operations must initially be conducted with maximum discretion in order to minimize regular operations' disruption. If there is no success with a small search party, the Acting Manager may decide to ask every worker to participate.	

Indigenous and Northern Affairs Canada | Affaires autochtones et du Nord Canada

WATER LICENCE INSPECTION FORM

☒ Original
☐ Follow-Up Report

Licensee	Licensee Representative
Agnico Eagle Gold Mines Ltd.	Erika Voyer, Robin Allard
Licence No. / Expiry	**Representative's Title**
2AM-MEA1525/ July 22nd, 2025	Environment Department
Land Authorizations	**Other**
66A/8-71-2, AWPAR Lease	66A/8-72-2 Quarrying lease
Date of Inspection	**Inspector**
November 28-30th, 2016	WRO Wilson and WRO Shouldice

Activities Inspected

☒ Camp ☐ Drilling ☒ Mining ☒ Construction ☒ Reclamation ☐ Fuel Storage
☒ Roads/Hauling ☒ Other: Water Discharge ☐ Other:

Conditions: **A - Acceptable** **C - Concern** **U - Unacceptable** **NA – Not Applicable** **NI – Not Inspected**

Water Use	Condition	Comment	Site Conditions	Condition	Comment	Haz/Spills/ Seeps	Condition	Comment
Intake/Screen	A	1	Water Management Structures	A	19	Seepage	C	22, 23
Flow Measure Device	A	2, 4	Culverts / Bridges	A	24	Spills	A	32
Source: 3rd Portage	A	1, 4, 6	Drainage	NI	--	Spill Plan	A	33
Recirculation (y /n)	N	3	Mitigation Measures	A	30	**Administrative**		
Waste Disposal			Compliance points	A	22	Plans	A	29, 34
Waste Water	A	8-15	**Monitoring**			**Other**		
Waste Water Treatment	A	14	Sample Collection / Analysis	A	24-29	Notification	A	35

**The number in the comments field will correspond with specific comments provided below.*

Samples taken by Inspector:	Location(s): No samples collect due to freezing conditions
☐ Yes ☒ No	

SECTION 1 ☒ **Comments** (s.__) ☐ **Non-Compliance with Act or Licence** (s.__) ☐ **Action Required** (s.__)

Agnico Eagle Mines Limited (AEML)'s Meadowbank Gold Project was issued a renewed water licence on July 23rd, 2015 by the Nunavut Water Board for the term of ten (10) years.

On November 28-30th, 2016 a regularly scheduled compliance inspection was completed by Indigenous and Northern Affair Canada's (INAC), Water Resource Officer (WRO), Christine Wilson. This was the first inspection for 2016 due to a failed attempt in July. The inspection was conducted with the assistance of INAC's Atuat Shouldice and AEML's Erika Voyer and Robin Allard.

The following report was produced with the findings from that inspection.

Water Use

1. Fresh water is drawn for domestic/industrial uses from the Third Portage Lake's intake water barge. Water is metered at the source.
2. Water is then metered again at the mill and twice at the camp to confirm no water loss from source.
3. The water is drawn continuously through a heat traced line, no water is recirculated.
4. Fresh water is also drawn from an unnamed Lake for use at the emulsion plant. The water is metered inside the plant on an impeller style meter.
5. Other water use needs around site (e.g.: Vault refugee, haul truck bathrooms and Meadowbank exploration) are brought via water truck and metered using 'per truck loads' method.
6. Other water uses include road watering for dust suppression and drilling. A water truck fill station was observed at Vault's attenuation pond; AEML explained that contact water from Vault pit is sent to attenuation pond D, water is then drawn and used for this purpose. The inspector noted some concern with this practice regarding road watering as this water may be contaminated. Verification should be made to the quality of the water before each use for purposes outside of containment.
7. Total water use for the Meadowbank Mine Site as of October 31st, 2016 is 508,673m^3

Waste Water

8. Water was discharged from Vault attenuation pond to Wally Lake through the Wally Lake diffuser from the month of July to October. The water treatment plant, though commission, has not yet been used, as the water has met criteria for discharge at sampling station ST-10, pursuant to PART F item 4.
9. Contact water from the Vault waste rock storage facility (VWRSF) and pit is collected in Vault pit sump at sampling station ST-23. This water is metered and pumped on demand to Vault attenuation pond 'D'. This water is sampled monthly in accordance with Schedule I, table 2.
10. AEML indicated that they have had no concerns with ammonia contamination in the pit sumps since the implementation of the Ammonia Management Plan.
11. Waste extension pond (WEP) 1 and WEP 2 are contact water management structures establish on the north east side of the Portage waste rock storage facility (PWRSF) NPAG extension. These structures collect water that has contacted the PWRSF.
12. The WEP 1 and 2 is pumped back to the sampling station ST-16 sump and eventually into the tailings facility. A permanent pumping system has been established at these locations.
13. WEP 1 is a natural depression, while WEP 2 is a constructed sump.
14. Waste water that is produced at Vault refugee, haul truck bathrooms, emulsion plant, Meadowbank exploration is trucked

to the sewage treatment plant for disposal.

15. All treated sewage is sent to the Stormwater management pond and eventually to the south cell of the tailings facility.

Site Conditions

16. In fall 2014 a seep was identified at central dyke, the quality of the seepage indicates connectivity with the tailings facility.
17. On the downstream side of central dyke a natural depression is collecting this seepage. The structure is referred to as 'central dyke downstream pond'. A permanent pumping system is used to pump back the seepage into south cell of the tailing facility.
18. The as-built for this pumping system were submitted with the 2015 annual report. The design took into account findings of a studies completed by AEML and recommendation made by the Meadowbank Dyke Review Board (MDRB).
19. The central dyke downstream pond is located between the central dyke and the west haul road. In 2014 the MDRB made recommendation to AEML as to the operation of this pond. One key recommendation was to maintain water levels in the pond at a maximum of 115masl. This elevation will prevent the pond from contacting the west haul road.
20. Currently the tailing deposition is focused on the upstream slope of central dyke to establish a robust beaching on it's face.
21. The central dyke seepage is continuous, with the pond kept open year around using recirculation.
22. The central dyke seepage compliance point is established in accordance Part I item 6 under the sampling station ST-S-5. At this time no seepage has entered the environment but similar elevated parameters have been found in a sump in Pit B at sampling station ST-17. Pit B sump is located downstream of central dyke, and central dyke downstream pond but located inside the containment of the mine.
23. AEML is currently investigating the source of the contamination in Pit B sump sampling station ST-17.

Monitoring

24. Sampling station ST-24 (VWRSF sump) is not in use due to low levels of water in this location. AEML verified that the current design of the VWRSF and the Vault pit does not allow for long term water accumulating in ST-24 but rather in ST-23 (Vault pit sump). The inspector has no issues with the current practice and will review the location in the summer of 2017 with AEML.
25. A ground water sampling station GW-16-01 has been established at N65° 1' 28.29", W96° 03' 15.62". This well is to replace the damaged well GW-14-01.
26. GW-16-01 has been drilled to the depth of 111m and is located on the downstream side of central dyke.
27. GW-16-01 has been sampled twice since establishment for the month of November.
28. Two thermisters (monitoring station CD-US-1 and CD-US-2) have been established on the up streamside of the central dyke to monitoring the freeze back on the tailing beach.
29. Instrumentation has been installed on the saddle dam 3 and 4 in accordance with the thermal monitoring plan.
30. Sampling stations have been established at WEP 1 (ST-30) and WEP 2 (ST-31).

Hazardous Materials/ Spills/ Unplanned Releases

31. AEML has improved the water crossing culvert from NP2- NP1 on the vault haul road following an issue with elevated TSS in NP-1. As part of the Freshet Action Plan the snow is removed from the non-contact water diversion ditches in the early spring, sediment barriers are installed and regular inspection are completed of the area. With these mitigative efforts AEML respected the effluent quality limits found in Part F item 6.
32. AEML continues to monitor the seep at the mill. The sumps located inside the mill have been improved in 2015 through a grouting program. Some areas of wear or damage to the top layers of the rubberized membrane were noted by the inspector. The mill operators are responsible for identifying area requiring maintenance.
33. An incident occurred on the All Weather Road on the morning on the 28th. The environmental staff responded and in turn reported a spill to the NU-NT 24 Spill Reporting line. The spill is recorded as Spill no. 16-412. This spill has completed reclamation, a letter of closure will be prepared by the inspector following this inspection.
34. The current Emergency Response Plan and Spill Contingency Plan are available on each desktop and in the crisis rooms (a room which management meets) of the mine complex.

Administrative

35. AEML continues to implement the Snow Management Plan found in the Freshet Action Plan. The program uses the adaptive management principals and was implemented with great success last year.
36. The inspector received notification of planned discharges for 2016 in compliance with Part F item 12.

SECTION 2 ☐ **Comments** (s.__) ☒ **Non-Compliance with Act or Licence** (s.2) ☐ **Action Required** (s.__)

No non-compliance with the Act or Licence was noted at the time of the inspection.

The Licensee is reminded, pursuant to PART I item 13 characterization of seepage must including precise location; discharge rates and volumes; respective hazard(s) and consequences and prescribed mitigative measures.

SECTION 3 ☐ **Comments** (s.__) ☐ **Non-Compliance with Act or Licence,** (s.__) ☒ **Action Required** (s.3)

- In accordance with Part F item 10 the inspector request a copy of the inspection logs for the culvert crossing from NP-2 to NP-1 for the July 2016. (Received 30/11/2016)
- The inspector requested copies of the analytical report for sampling station ST-S-5 and ST-17 for November 08th, 2016. (Received 30/11/2016)
- The inspector requested copies of the most recent analytical report for ST-30 and ST-31. (Received 30/11/2016)
- The Licensee will submit to the inspector PART I item 13 for the central dyke seepage (ST-S-5) in the central dyke downstream pond and in Pit B sump (ST-17) by March 31st, 2017.
- The Licensee is reminded that in accordance with Schedule B item 19, an updated estimate of the current restoration liability shall be included with the annual report.

Closing Remarks

The AEML department was cooperative and accommodating while working with inspector. The next inspection is planned for the spring of 2017.

Licensee or Representative	Inspector's Name
	WRO C Wilson
Signature	**Signature**
Date	**Date**
	November 30th, 2016

Office Use Only: Follow-up report to be issued by Inspector ☐ Yes ☒ No

cc. Erik Allain, Manager Field Operations, AANDC
Environment Department, AEML
Manager, Licensing, Nunavut Water Board