AGNICO EAGLE

December 9th, 2016

Sophia Granchinho
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Nunavut Impact Review Board
29 Mitik St, P.O. Box 1360
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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,

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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.

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.

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.

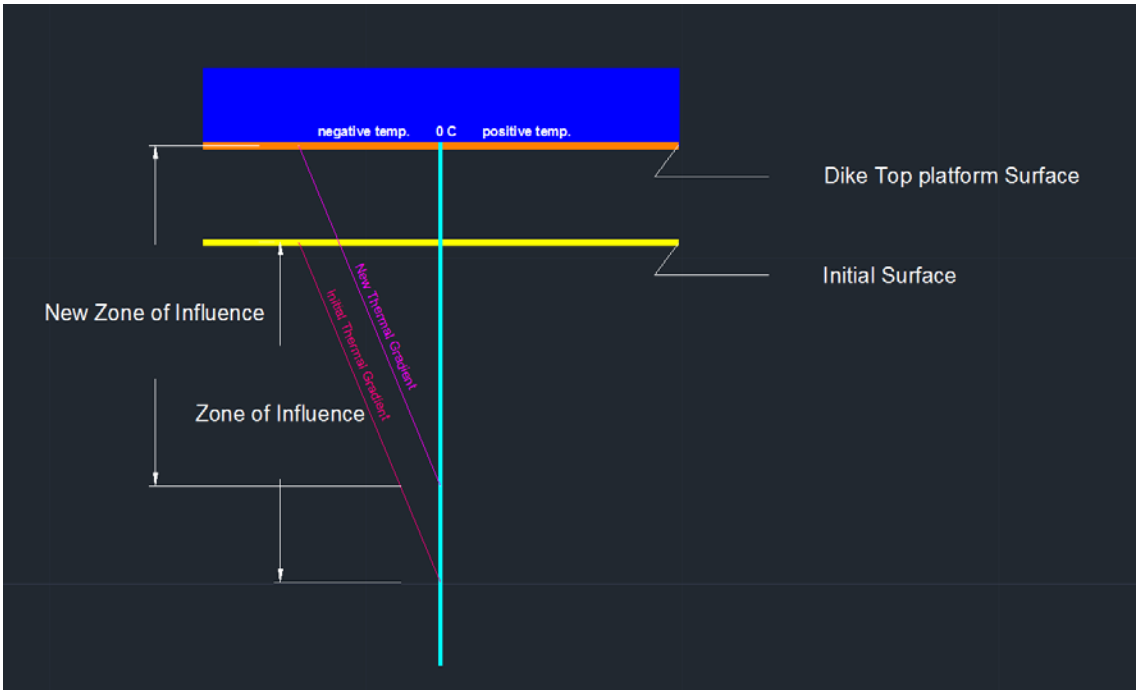
Agnico Eagle's Response:
The thermistor SD1-T1 has been installed on November 22, 2009.

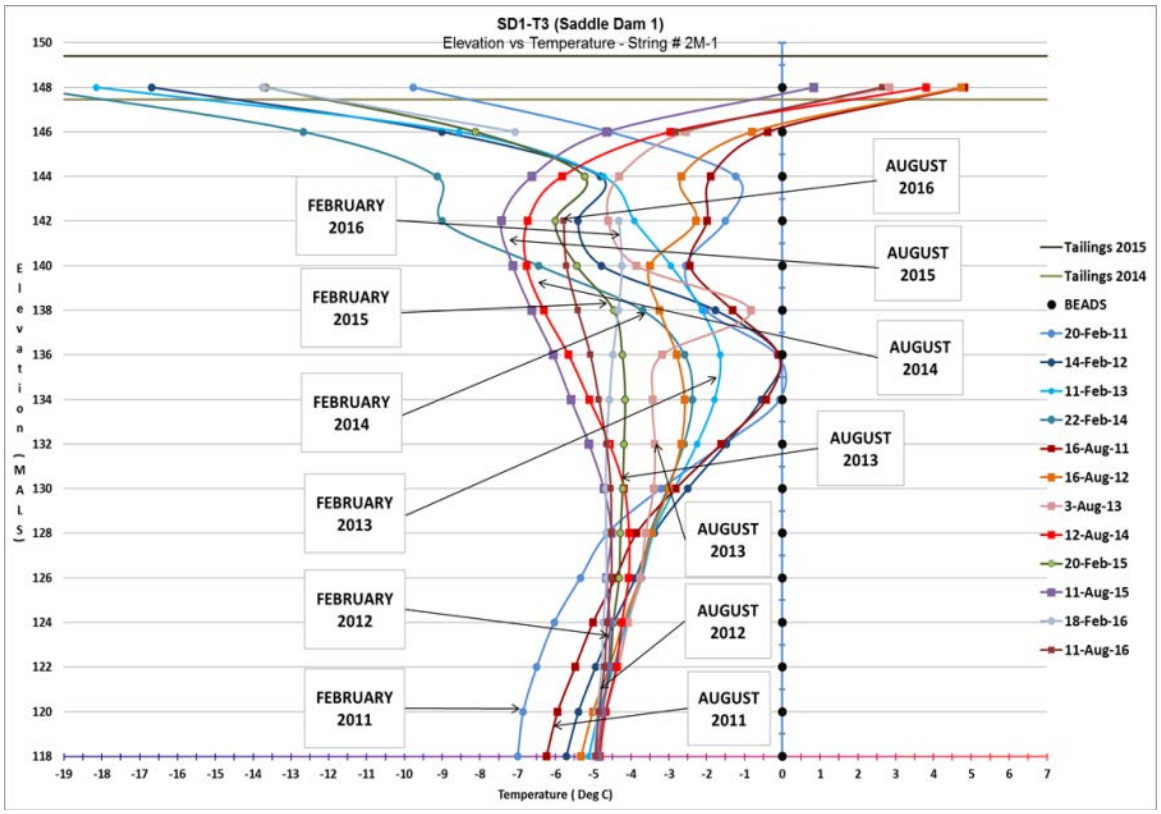
Concern: AEM reports that the dike foundation of Saddle Dam 1 remains frozen year-round, but that the temperature of the foundation material (soil and bedrock) has increased by an average of 4-5°C since 2010, depending on location within the dike. No subsequent discussion or interpretation of this temperature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

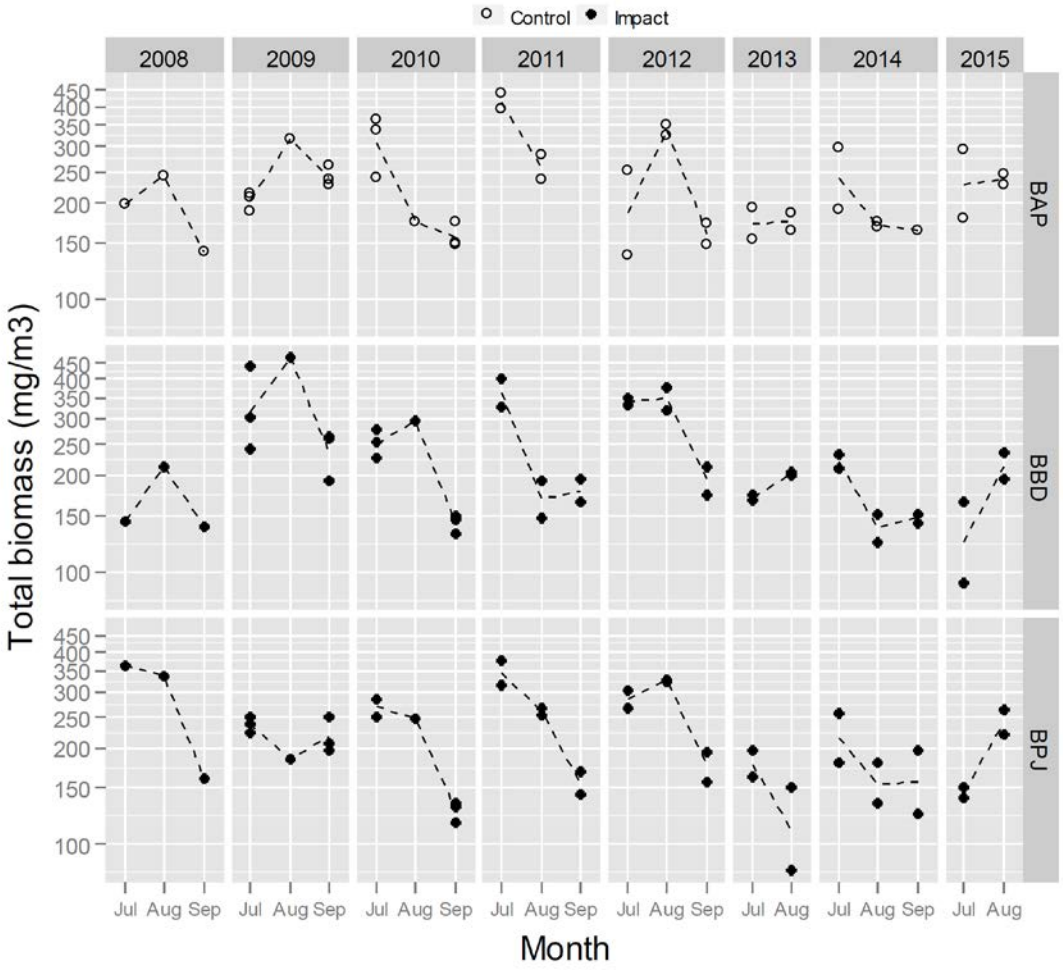
Recommendation 34: Information on the background natural variability in phytoplankton biomass in Baker Lake is needed in order to conclude that observed changes are just part of this natural variability. Please provide evidence that this is in fact the case by comparing the 2015 result with findings 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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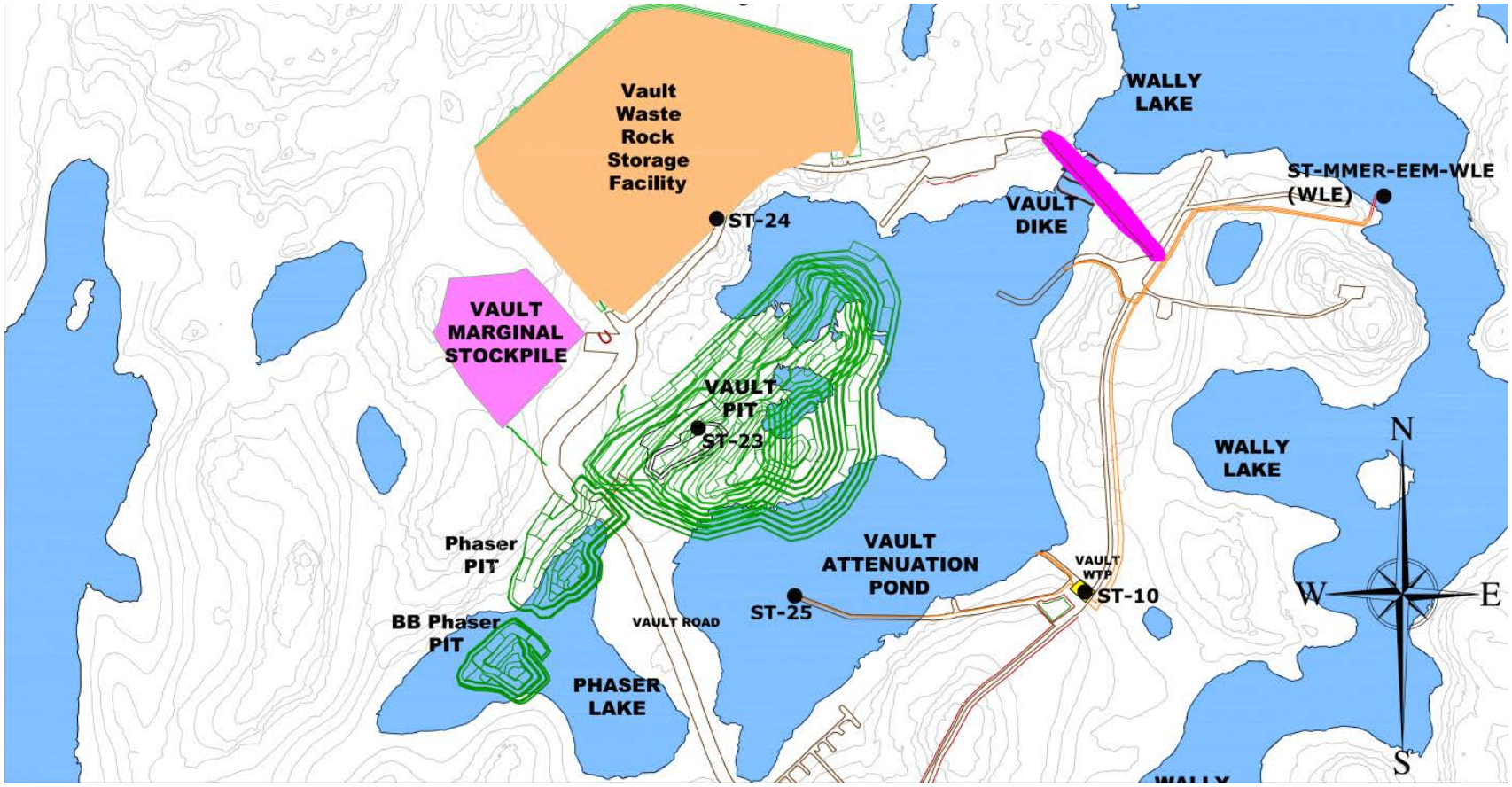
APPENDIX A
Vault Area Sampling Location


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
N
W
E
S

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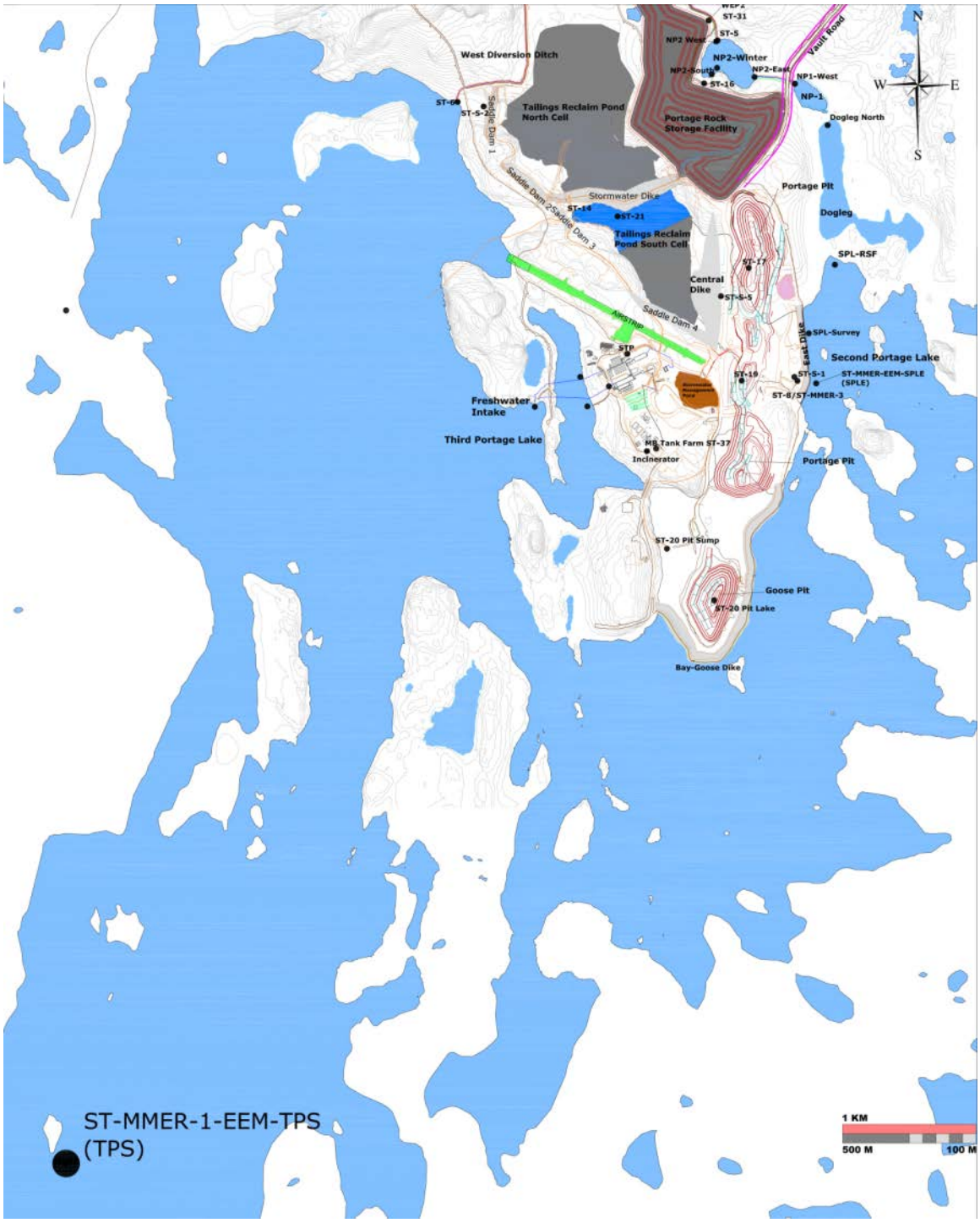
APPENDIX B
EEM Receiving Environment Sampling Location


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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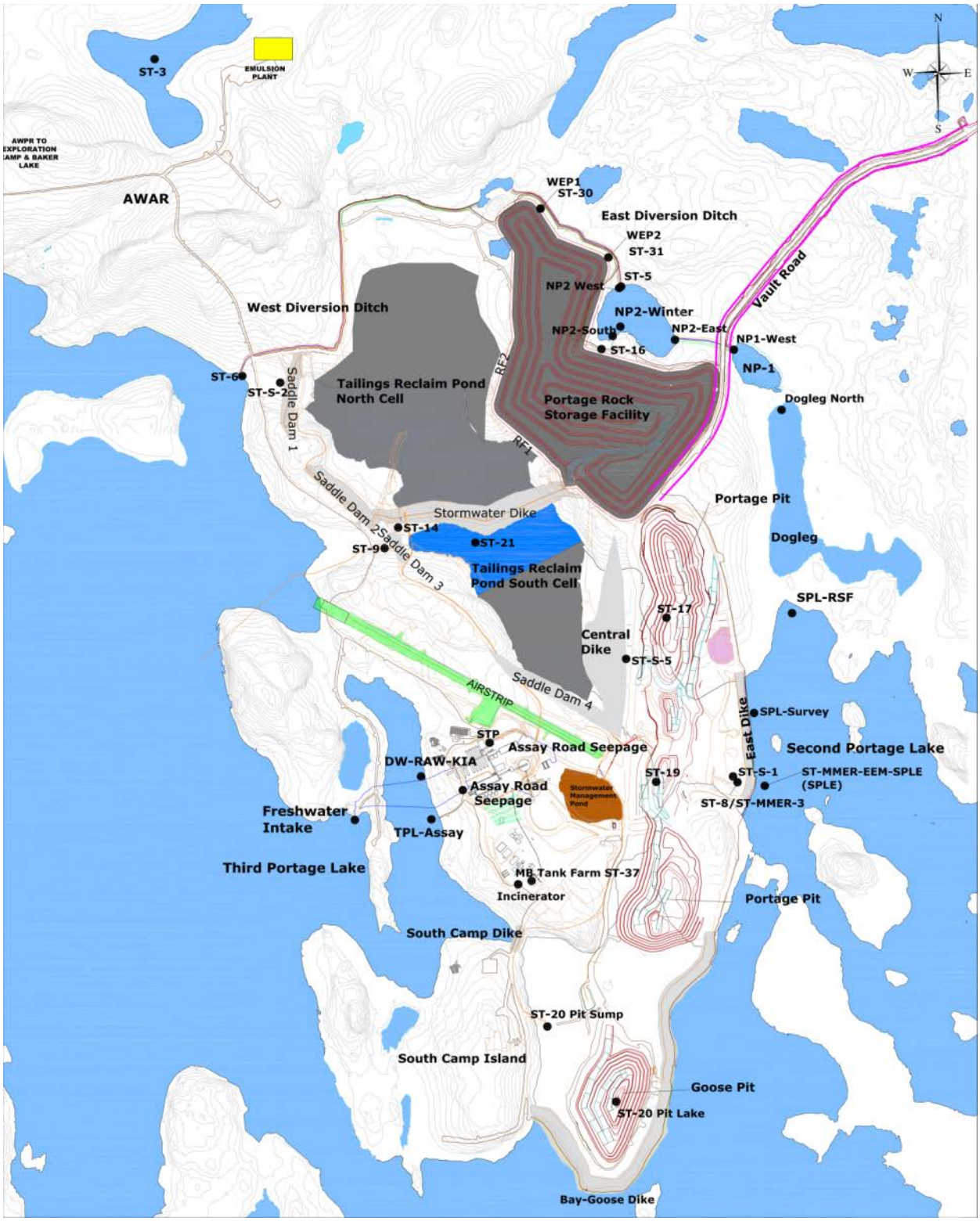
APPENDIX C
Meadowbank Sampling Location


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

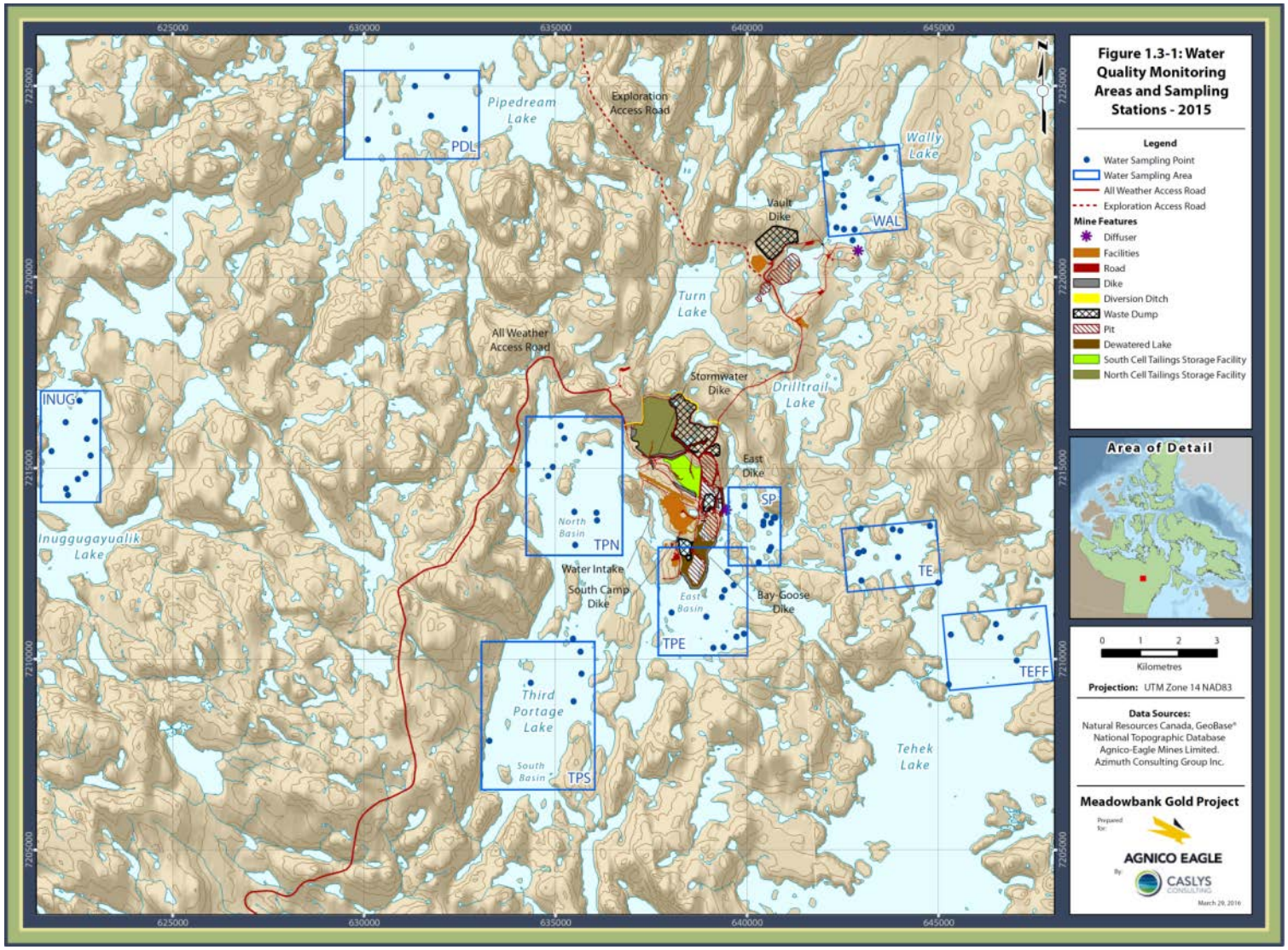


Figure 1.3-1: Water Quality Monitoring Areas and Sampling Stations - 2015
Legend
Water Sampling Point
Water Sampling Area
All Weather Access Road
Exploration Access Road
Mine Features
Diffuser
Facilities
Road
Dike
Diversion Ditch
Waste Dump
Pit
Dewatered Lake
South Cell Tailings Storage Facility
North 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

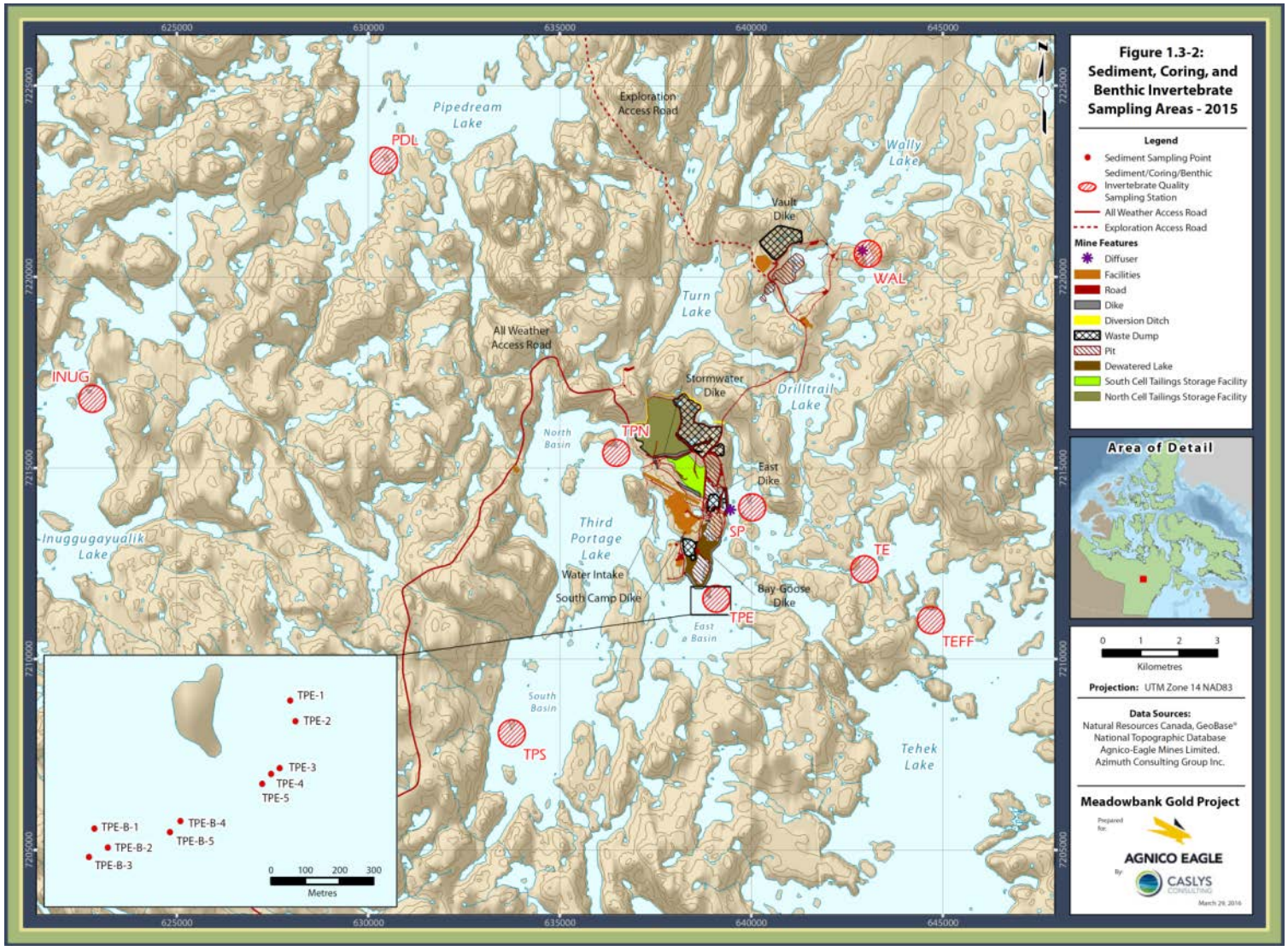
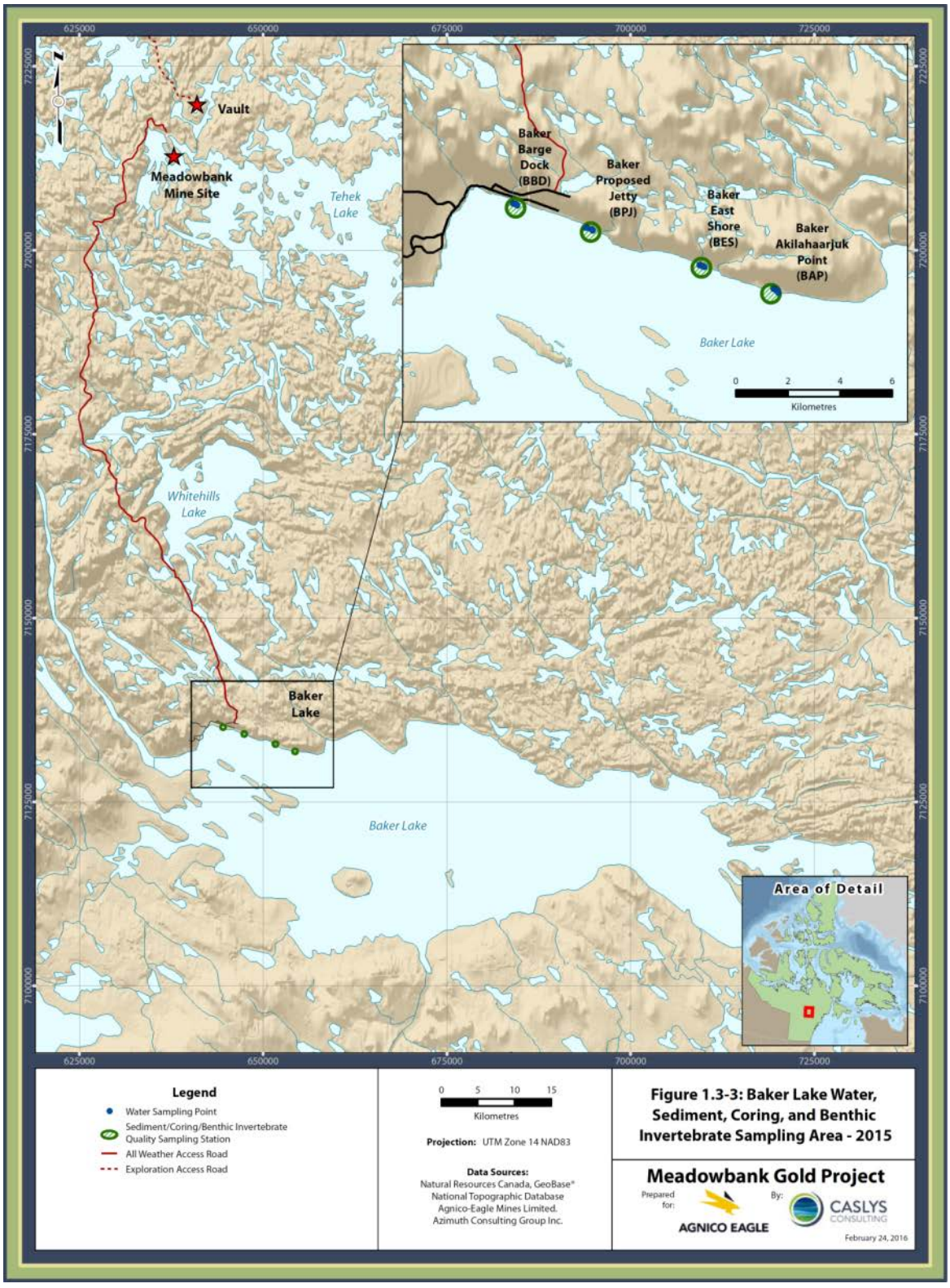
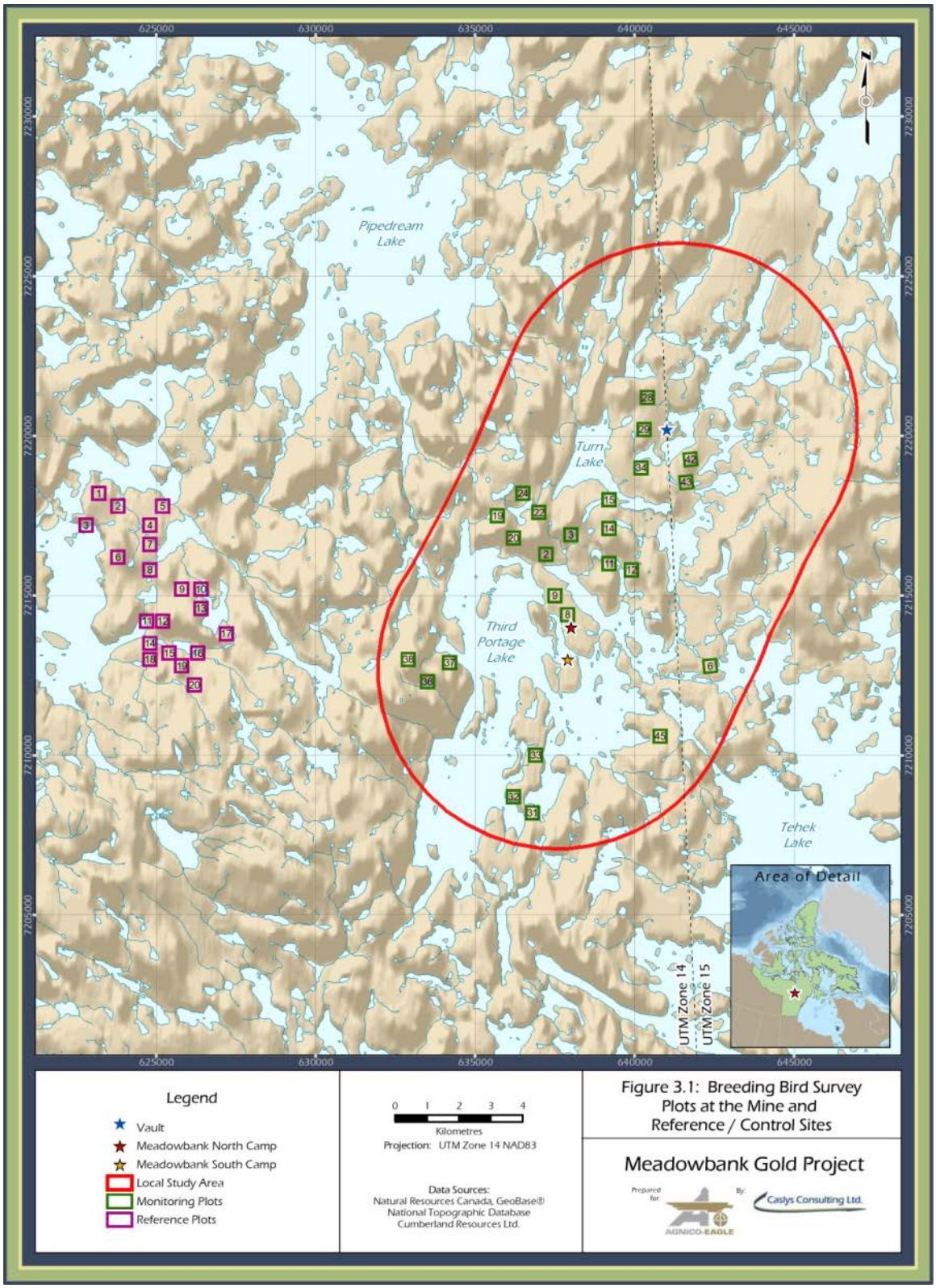


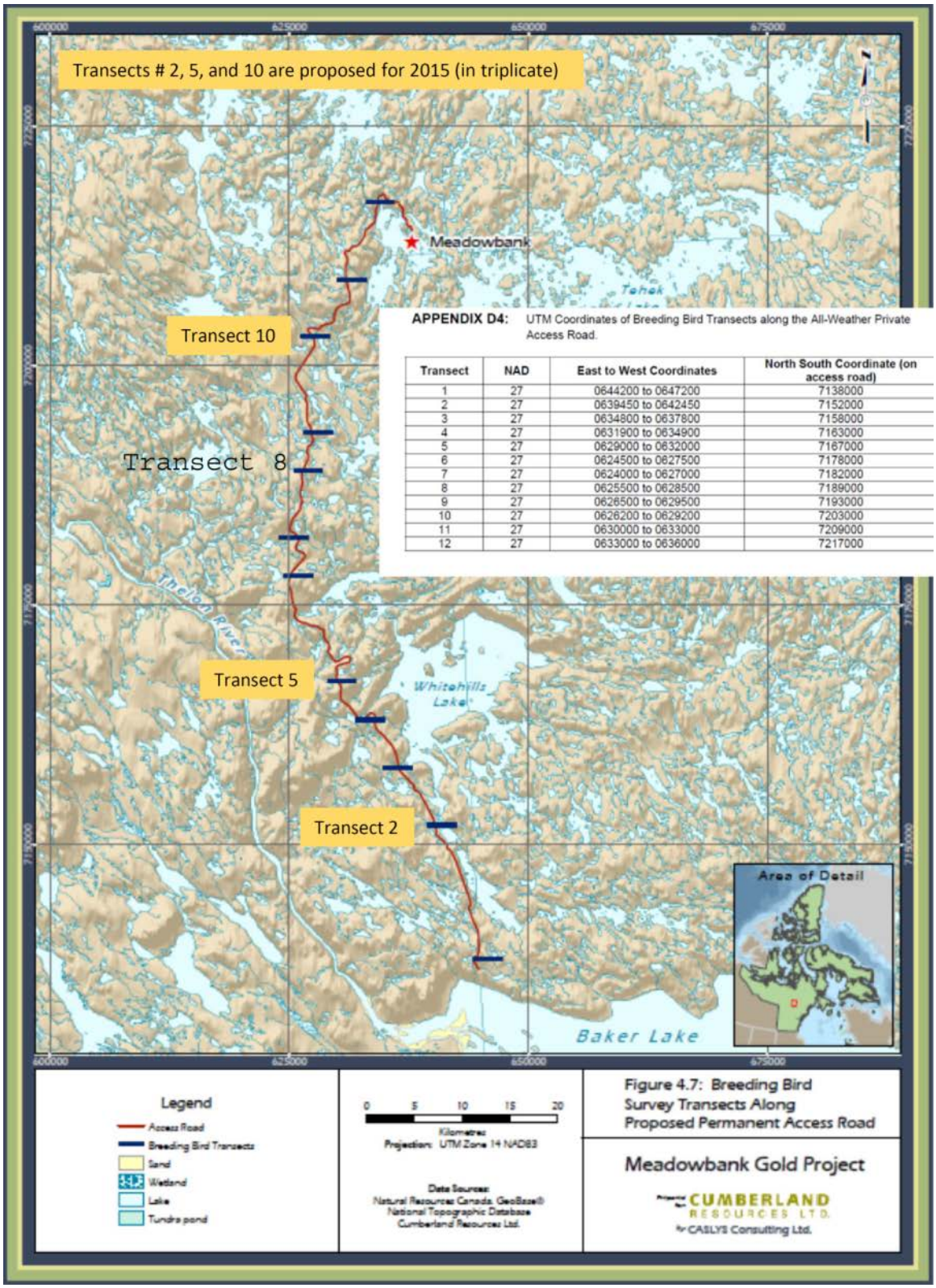
Figure 1.3-2:
Sediment, Coring, and Benthic Invertebrate Sampling Areas - 2015
Legend
Sediment Sampling Point
Sediment/Coring/Benthic Invertebrate Quality Sampling Station
All Weather Access Road
Exploration Access Road
Mine Features
Diffuser
Facilities
Road
Dike
Diversion Ditch
Waste Dump
Pit
Dewatered 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
640000
645000
7230000
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.

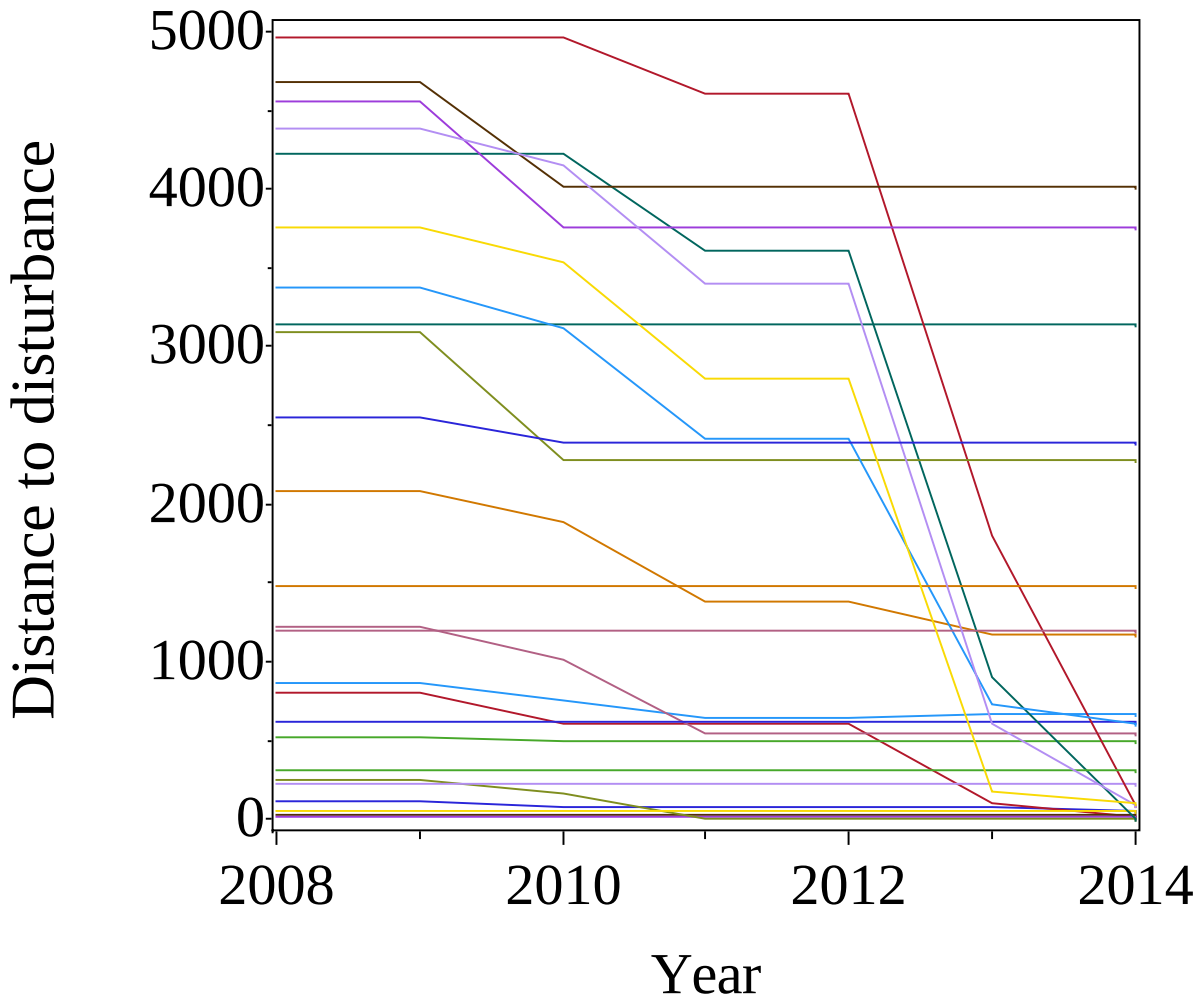

Figure 1: Change in the distance from disturbance for the mine plots. Each line indicates the change in distance of disturbance from an individual mine plot.

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

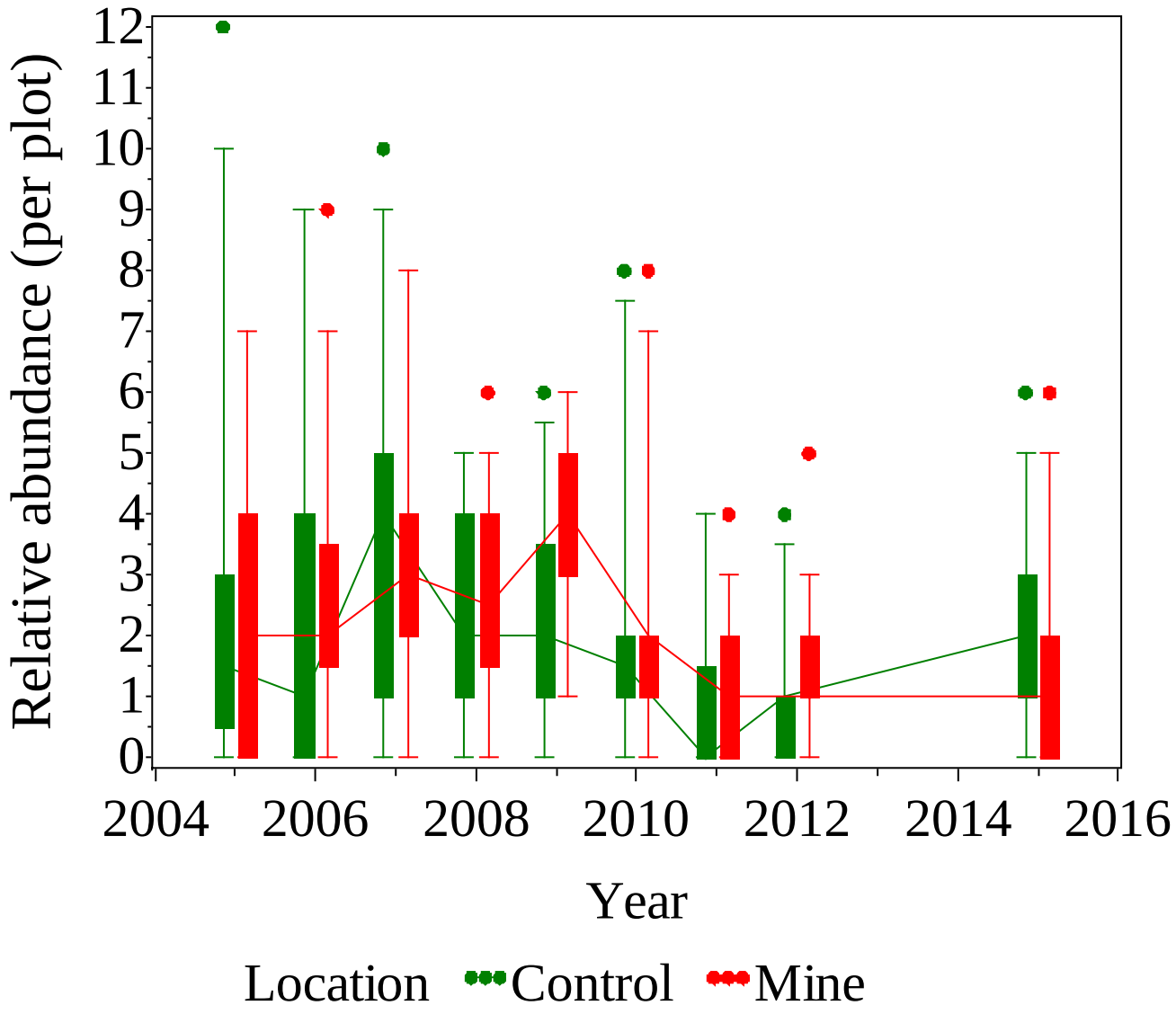

Figure 2: Temporal trends in relative abundance of the Horned Lark as a function of mine and control areas. Mine areas were potentially impacted by mine site development in 2008 and years after (**Figure 1**). Box plots connect median counts for each year. The width of the box delineates the 25th and 75th percentiles. The whiskers denote the 5th and 95th percentiles. Outlier observations are denoted by individual data points.

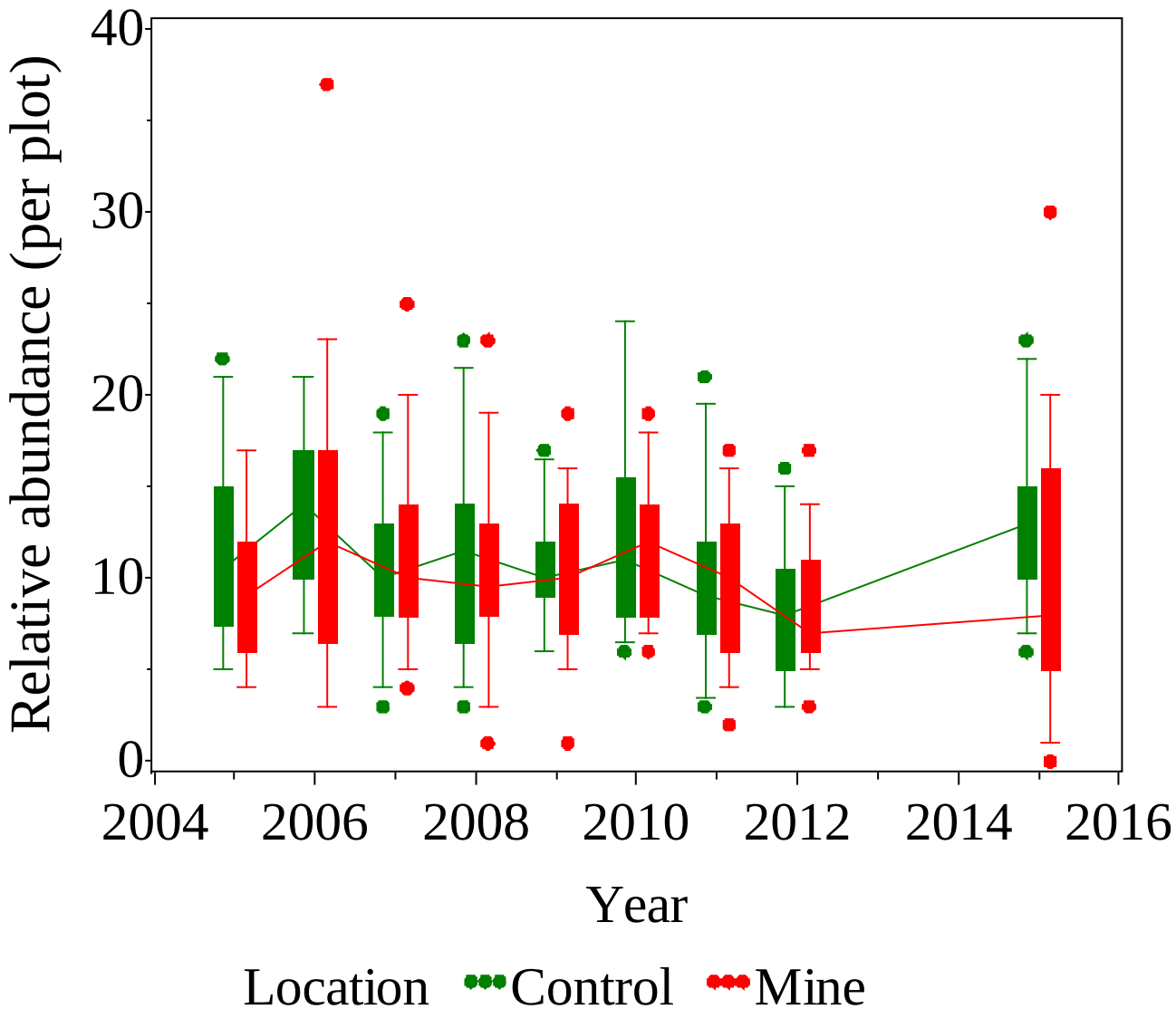

Figure 3: Temporal trends in relative abundance of the Lapland Longspur as a function of mine and control areas. Mine areas were potentially impacted by mine site development in 2008 and years after. Error bars are 95% confidence intervals of mean estimates.

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

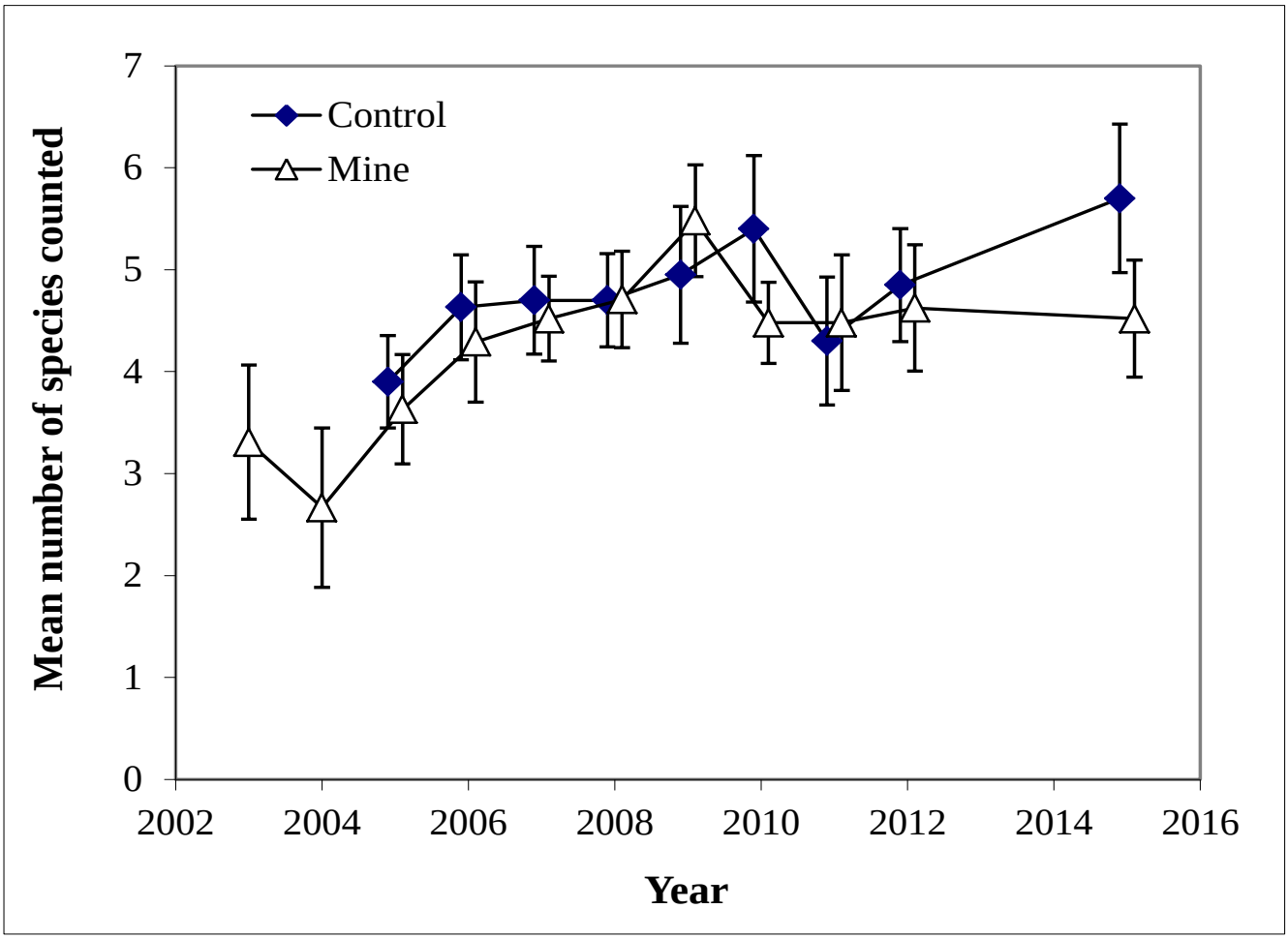

Figure 4: Species richness (mean number of species counted) as a function of year of survey and plot location. Mine areas were potentially impacted by mine site development in 2008.

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.

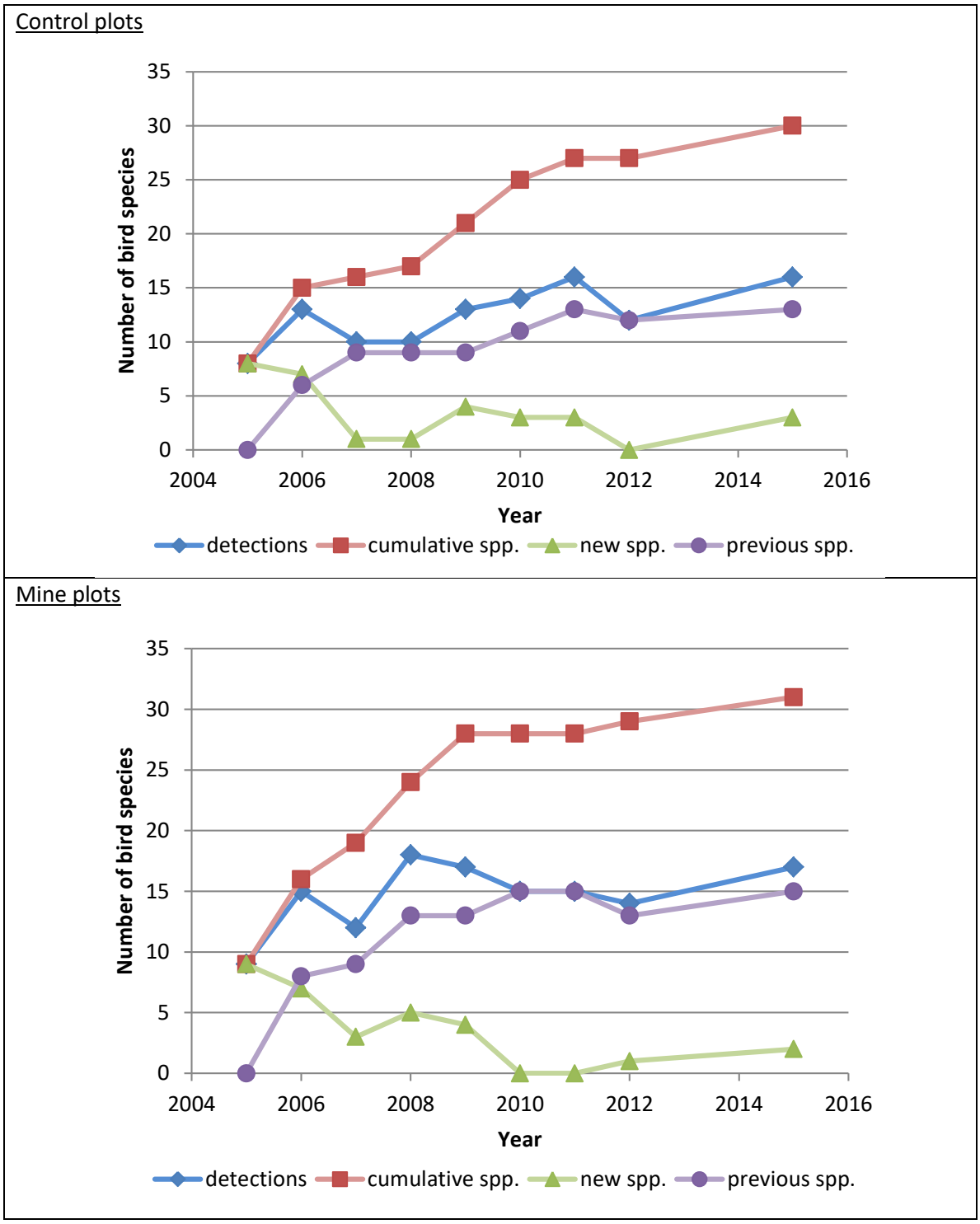

Figure 5: Summary of species richness trends for mine and control plots.

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

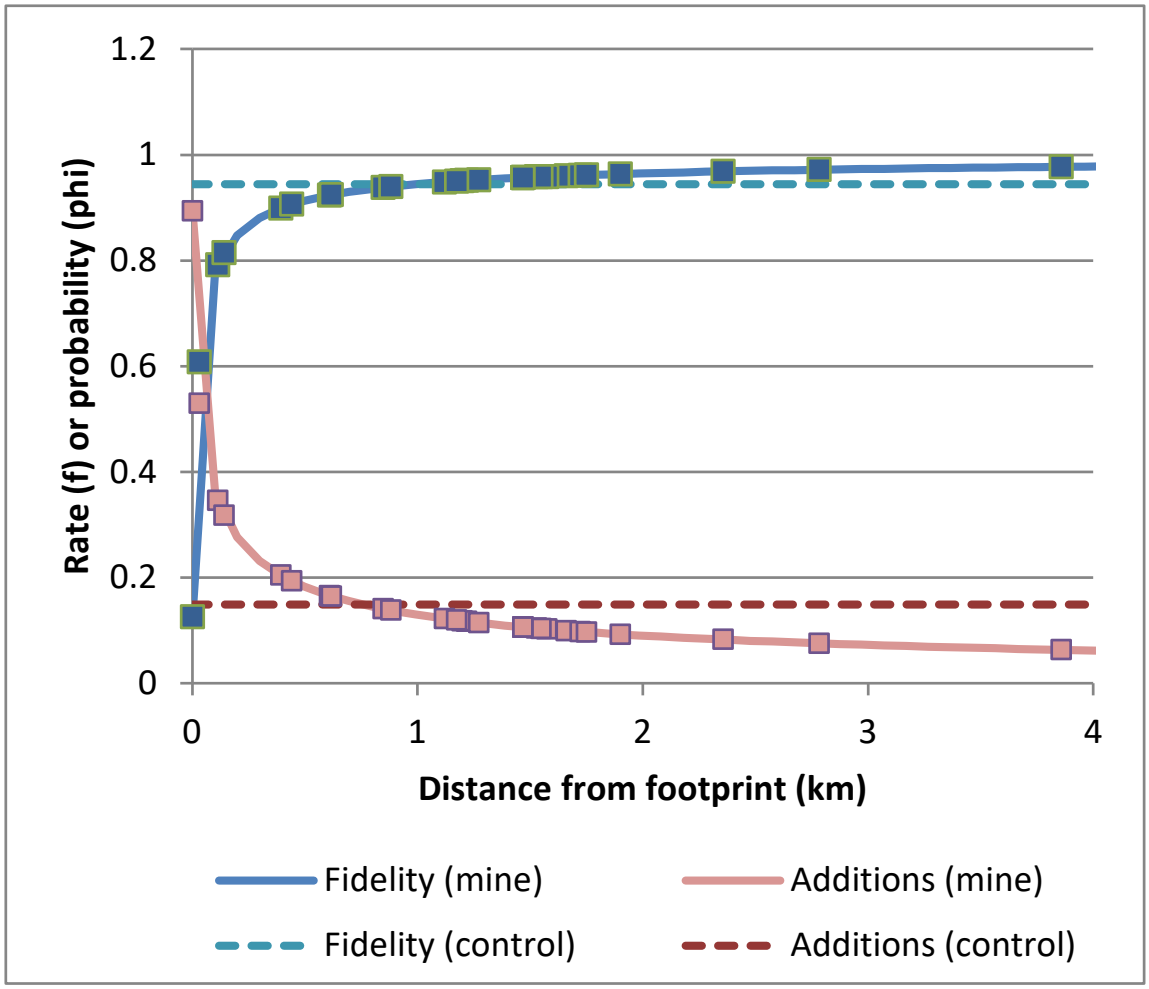

Figure 6: Rates of addition (f) and fidelity (ϕ) as a function of mean distance from mine footprint for the mine PRISM plots (**Table 3**, Model 1). Estimates of rates of addition and fidelity were constant for control plots at 0.15 and 0.94 as indicated by dashed lines in the plot. Individual data points for each species are also shown.

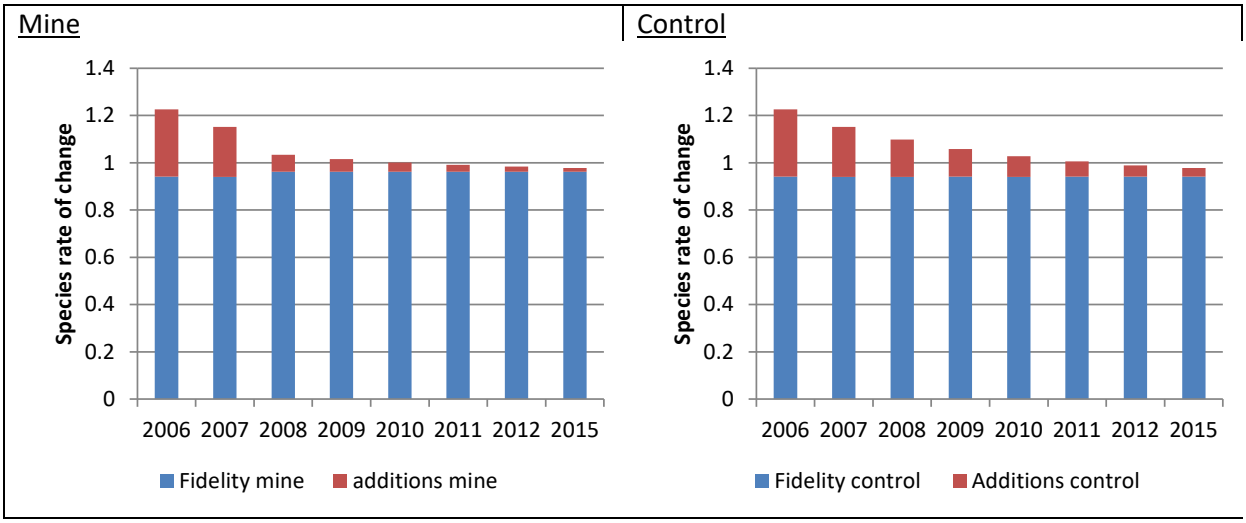

Figure 7: Model averaged estimates of rates of fidelity and addition (which add up to species rate of change) for mine and control sites

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.

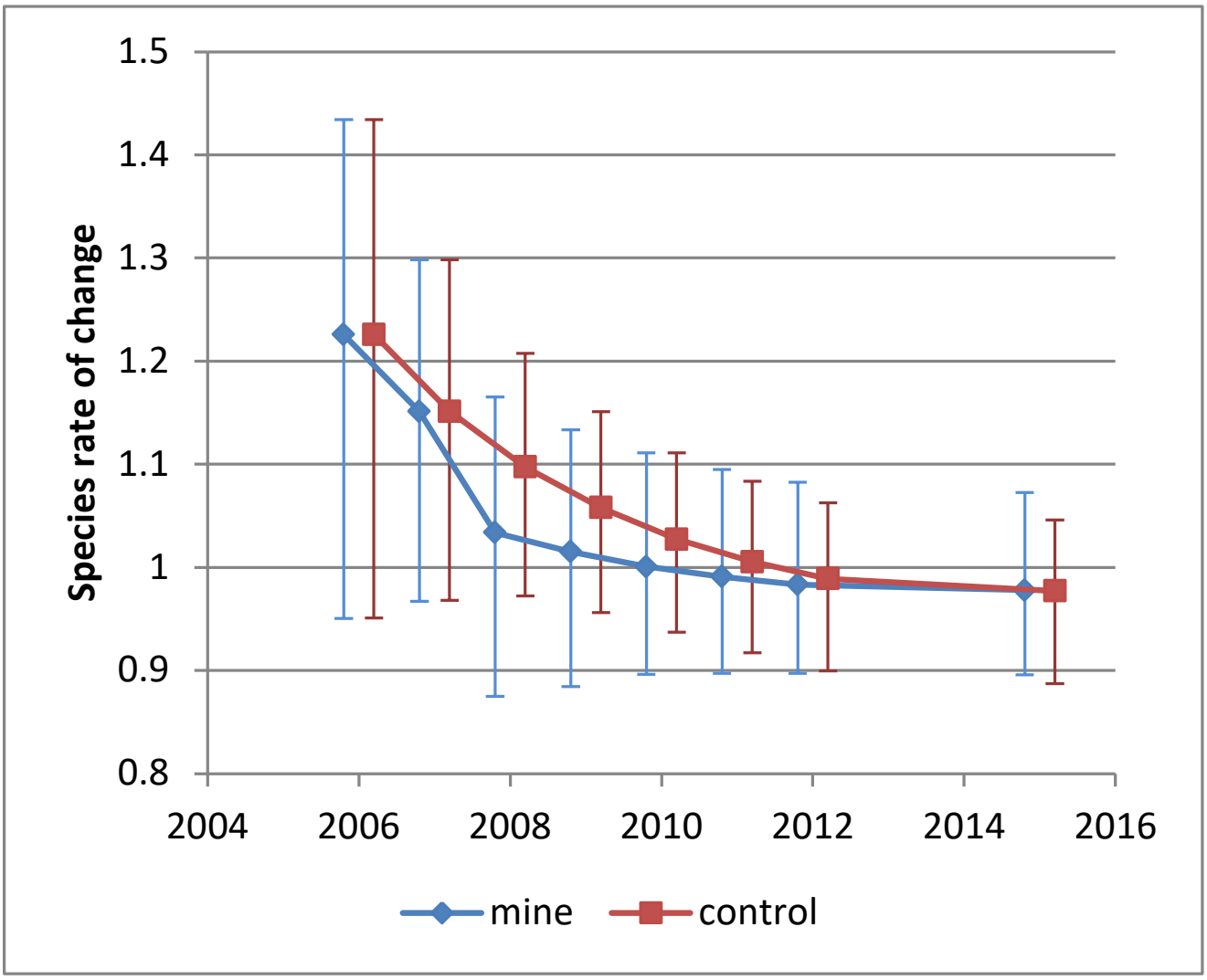

Figure 8: Model averaged estimates of rates of fidelity and addition (which add up to species rate of change) for mine and control sites

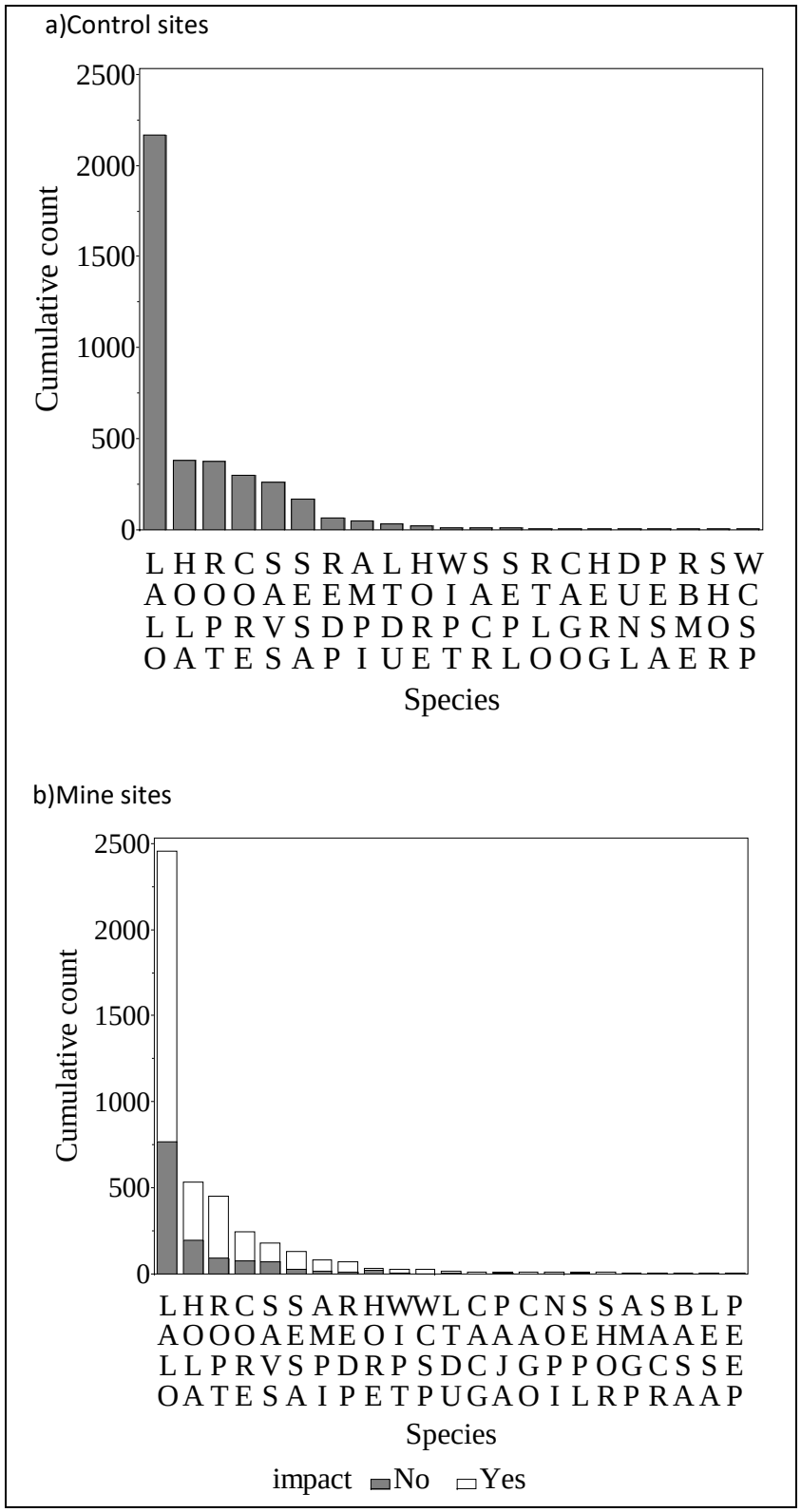

Figure 9: Cumulative counts of species for control (a) and mine (b) sites for pre-impact surveys conducted in 2005 to 2011. Only species that were observed more than twice for the entire duration of surveys are shown.

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**).

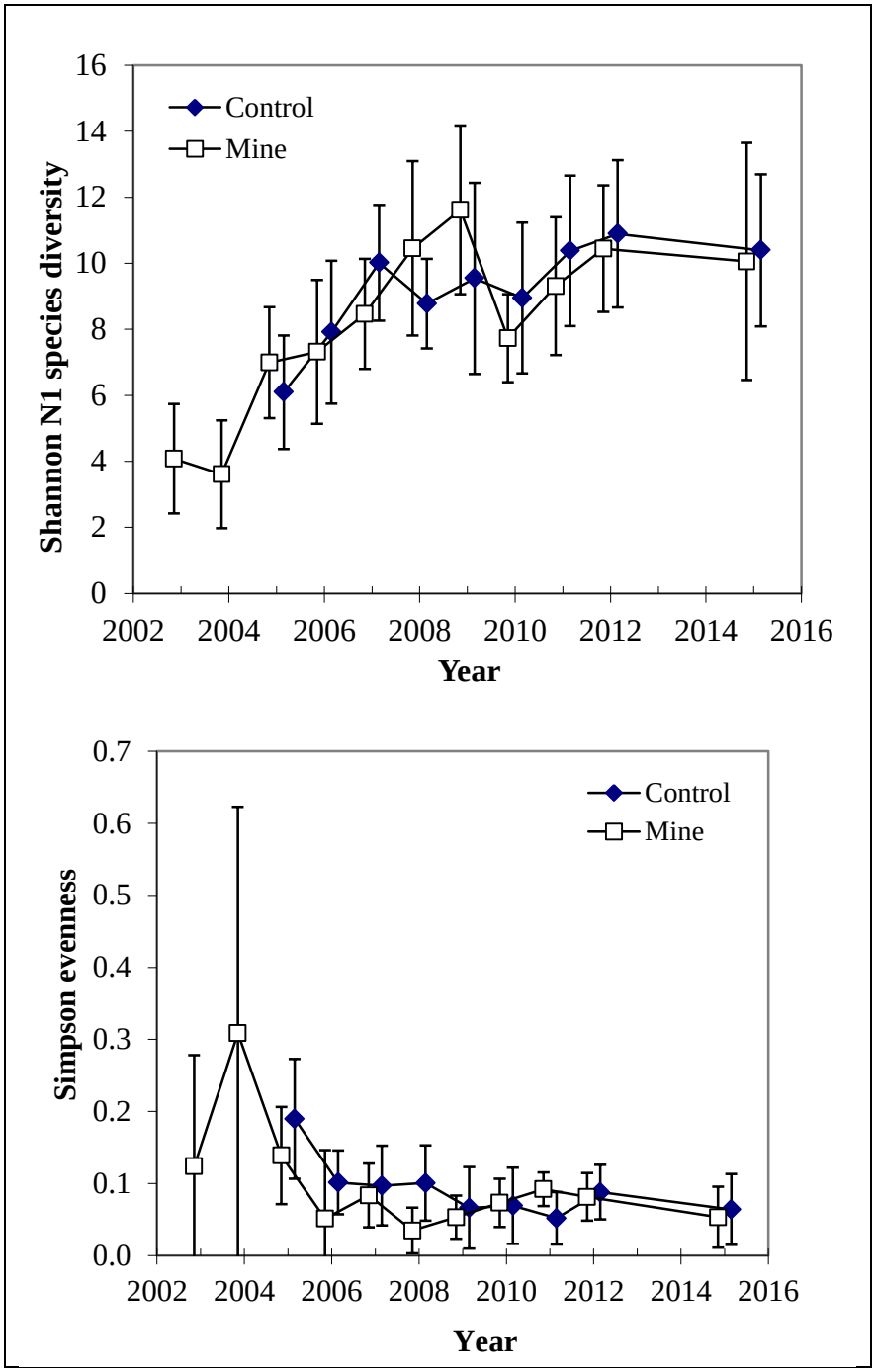

Figure 10: Species diversity and evenness scores for mine and control sites as a function of year surveyed. The Shannon-Weiner N1 value represents the number of equally common species that would produce a similar species diversity score.

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AGNICO EAGLE

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.	