



**NIRB File No.: 03MN107**

NWB File No.: 2AM-MEA1525

KIA File No.: Right of Way KVRW06F04

DFO File No.: NU-03-190 AWAR; NU-03-191 Mine Site  
& NU-14-1046 Phaser Lake

ECCC File No.: 6100 000 008/002

INAC File No.: #1154227; 66A/8-71-2 (AWAR)  
& 66A/8-72-2 (AWAR Quarries)

NRCan File No.: NT-010

TC File No.: 7075-70-1-33

November 27, 2017

Mhaly Bois-Charlebois  
Environmental Compliance Counselor  
Agnico Eagle Mines Ltd.  
Meadowbank Division  
P.O. Box 549  
Baker Lake, NU X0C 0A0

Sent via email: [mhaly.charlebois@agnicoeagle.com](mailto:mhaly.charlebois@agnicoeagle.com)

**Re: The Nunavut Impact Review Board's 2016-2017 Annual Monitoring Report for the Meadowbank Gold Project and Board's Recommendations**

Dear Mhaly Bois-Charlebois:

The Nunavut Impact Review Board (NIRB or Board) is hereby releasing its *2016-2017 Annual Monitoring Report for Agnico Eagle Mines Ltd.'s Meadowbank Gold Project* (NIRB File No. 03MN107; the Monitoring Report) along with the 2017 Site Visit Report for the NIRB's monitoring of the Meadowbank Gold Project (Appendix I within the Monitoring Report) and the 2017 Public Information Meeting Summary Report (Appendix II within the Monitoring Report). The enclosed Monitoring Report is based on the NIRB's monitoring activities as set out within the Meadowbank Project Certificate [No. 004] and pursuant to Sections 12.7.1 and 12.7.2 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada* (Nunavut Agreement). This report provides findings that resulted from monitoring of this Project that took place from October 2016 to September 2017.

All materials pertaining to the NIRB's ongoing Monitoring program for the Meadowbank Gold Mine Project can be accessed online from the NIRB's online public registry at [www.nirb.ca](http://www.nirb.ca) by using any of the following search criteria:

- Project Name: Meadowbank Gold Project

- NIRB File No.: 03MN107
- Application No.: 124588

By way of a motion carried during its regular meeting held in November 2017, the Board has issued the following recommendations to assist Agnico Eagle Mines Ltd (Agnico Eagle or the Proponent) in achieving compliance with the Meadowbank Gold Mine Project Certificate. These recommendations ensure that the NIRB has all the information necessary to adequately discharge its mandate with respect to provisions within Section 12.7 of the Nunavut Agreement as they pertain to the Meadowbank Gold Mine Project.

#### Spill Management – Condition 26

In review of the annual report and similar to the concern expressed by the Kivalliq Inuit Association, it is noted that more spills were reported in 2016 than in any previous year from 2011-2015. It was also acknowledged by Agnico Eagle that there was a significant increase in reported spills and that it has begun a Spill Reduction Action Plan to address the problem. However, in review of The 2016 Annual Report, it is not clear how Agnico Eagle has addressed the frequency of spills in 2016 and for future years, as well as what training has been implemented for spill prevention.

**Recommendation 1:** The Board requests that Agnico Eagle provide a written submission explaining the conditions which contributed to increased spills being reported on site for 2016, and describe the measures and training implemented since to address spill prevention and the associated results.

#### Participation in Surveys – Conditions 51 and 54

In 2016, Agnico Eagle suspended the harvest data collection for both the Creel Surveys and the Hunter Harvest Study due to “participant fatigue”. Agnico Eagle has consulted with the Baker Lake Hunters and Trappers Organization (HTO) and the Government of Nunavut representatives in 2016 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 Baker Lake HTO, in future years of the study.

Based on the meetings that were held by Agnico Eagle, the general consensus of meeting participants was that there is a need to collect useful and meaningful data, as well as to ensure consistency with previously-collected data. Community involvement was also mentioned as being essential to making the program a success.

It is noted that Condition 51 requires the Proponent to develop, implement, and report on the creel surveys within waterbodies affected by the Project while Condition 54 requires the Proponent to conduct a hunter harvest survey to determine the effect on ungulate populations from increased access via the all-weather access road (AWAR). It is encouraging that Agnico Eagle conducted consultation with the community of Baker Lake and other organizations to explore innovative ways to improve HTO and hunter participation, and to develop the study into a more community-based initiative. However, no information was provided on the next steps for both programs save for an indication that the hunter harvest study would be implemented during the fall migration of 2017. Further, the Board is concerned that at the moment with both the creel and hunter harvest study surveys not being completed, the NIRB and other agencies are not seeing results and a gap in available knowledge is developing which needs to be addressed. This

is important as Agnico Eagle is proposing additional development in the region and plans to be in the region for the long term.

**Recommendation 2:** The Board requests that Agnico Eagle provide a plan on how Agnico Eagle will meet the objectives of both Conditions 51 and 54 moving forward. The plan shall include a clear indication of timelines, next steps in development of the Creel Surveys and the Hunter Harvest Study, measures for success and contingency planning. Limitations on the effectiveness of the current studies employed at the Meadowbank Project as well as the feasibility of alternative studies to ensure that a gap in available knowledge is not developing should be clearly highlighted within the submission.

#### Suppression of surface dust – Condition 74

Condition 74 directs the Proponent to employ environmentally protective techniques to suppress any surface road dust. During the 2017 site visit, it was observed that Agnico Eagle dust suppression techniques have been limited to haul roads at the mine site, between the Meadowbank gatehouse (at the airstrip) and Exploration Camp site, between the Baker Lake marshalling facility and the Baker Lake gatehouse, and the airstrip. Dust suppression measures employed by Agnico Eagle in these areas were noted to include the use of calcium chloride between the Meadowbank gatehouse (at the airstrip) and Exploration Camp site, and between the Baker Lake marshalling facility and the Baker Lake gatehouse, while water is applied to the mine site haul roads (including the Vault road) and the airstrip. However, during the site visit, NIRB staff noted that the use of water as a dust suppressant within the pits and along the haul roads did not appear to be effective.

It is noted that the Agnico Eagle initiated a dust sampling program along the road in 2012 to monitor dust deposition on vegetation along the road. However, the Board has concern with respect to the quality of the dust sampling equipment used by Agnico Eagle for the dust sampling program as the equipment used is not similar to what is currently being used by other mining companies in Nunavut (e.g., NIRB File No. 08MN053 and NIRB File No.: 11MN034) and there is concern with respect to quality assurance and quality control protocols.

Agnico Eagle also has implemented a dust assessment pilot program in 2016 along the AWAR to determine the most effective dust suppressant techniques [use of TETRA flakes (calcium chloride), use of Dust Stop (organic polymer), or reduction of speed from 50 km to 20 km]. The program was conducted on two (2) km sections at three (3) locations on the AWAR identified by the community as areas of concern during the driest season with the highest traffic. During the 2017 site visit, Agnico Eagle noted that it has decided to treat the three (3) selected areas of the AWAR that was used in the dust assessment pilot program with TETRA Flakes indefinitely, starting the first dust suppression in August of 2017.

In its response to the Board's 2016 recommendations Agnico Eagle maintained that it is meeting Condition 74 and based its assertion on several factors, including the necessity of undertaking the addition of chemical dust suppressants as a mitigation measure, and on whether there has been an impact to the surrounding areas because of dust caused by road traffic. Agnico Eagle noted in response to the recommendations that it would continue to apply dust suppression in key areas around Whitehills, near Baker Lake, and in highest traffic areas along the road and therefore believes it is using "environmental protective techniques" to suppress dust along the AWAR which should address the NIRB's concern.

The NIRB acknowledges 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 that are ongoing since 2016. However, the Monitoring Officers believes that it may be necessary to remind Agnico Eagle of commitments made during the environmental assessment process and highlight the requirements of Condition 74, which requires the application of dust suppression measures along all project roads including the AWAR [emphasis added]. 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 with the exception of the three (3) areas as identified by the community to be of importance. Further, it appears from the amount of traffic around site and on the mine haul roads (including the mine pit roads) that the application of water as a dust suppressant has not been effective.

**Recommendation 3:** The Board reminds Agnico Eagle that Condition 74 applies to the suppression of dust on all surface roads including the all-weather access road (AWAR). As such, Agnico Eagle shall provide a plan of action on how it will meet the objectives of Condition 74 along the AWAR. This plan shall include a clear indication of timelines, next steps and adaptive management measures/contingency planning should Agnico Eagle not meet this condition.

**Recommendation 4:** The Board requests that Agnico Eagle provide a submission to the NIRB, which describes its assessment of the effectiveness of dust suppression efforts using water to date and demonstrates its consideration for the use of alternative dust suppressants (e.g., TETRA flakes, Dust Stop®, EnviroKleen®) and more frequent application. Limitations on the effectiveness of current dust suppression employed for the Meadowbank Project as well as the feasibility of alternative dust suppression compounds should be clearly highlighted.

**Recommendation 5:** The Board requests that Agnico Eagle report on the quality assurance and quality control protocols used to ensure data reliability and proper functioning of the dust monitoring equipment used for the dust sampling program along the all-weather access road.

#### Appendix D, the Annual Report and the PEAMP

The NIRB notes that Agnico Eagle's 2016 Annual Report provided a detailed analysis of results from its 2016 monitoring program and that it compared observed impacts noted in 2016 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 recognizes Agnico Eagle 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.

In reviewing the Annual Report and as noted by regulatory parties, there was an increase in a number of water quality parameters that are exceeding predictions from the year to year since 2012. In response, Agnico Eagle noted that the Core Receiving Environment Monitoring Program (CREMP) continues to detect changes in some general water quality parameters that appear to be related to mining activity. This information should be provided within the PEAMP as a comparison to the originally predicted values and year over year comparison which would provide a robust analysis and would also assist 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 2016 was helpful, rationale for why these were different was not always clearly presented.

**Recommendation 6:** The Board requires that Agnico Eagle provide a full discussion and summary on the post-environmental assessment monitoring program for the Project. This must include a discussion that references the baseline and previous years' monitoring data and further indicates whether any trends have been observed at the mine site for each Valued Ecosystem Component where an impact has been observed. The discussion should include whether any identified trends of effects over time are indicating the potential for impacts from or associated with the Meadowbank Project.

#### Aquatic Environment

Agnico Eagle stated within the 2016 Annual Report that the CREMP determined that there were some apparent mine-related changes in conventional parameters relative to baseline/reference conditions at one 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. The NIRB observed that for the 2014 and 2015 Annual Reports, Agnico Eagle reported similar apparent mine-related changes and highlighted that follow-up studies were recommended and would be conducted in 2015 as well as for 2016. The 2016 Annual Report and the PEAMP section did not indicate whether these follow-up studies occurred or whether the potential source of the apparent mine-related changes was identified. Further analysis and information regarding these mine-related changes is required.

In review of the 2016 Annual Report and as noted by regulatory parties, there was an increase in a number of parameters that are exceeding predictions from the year to year since 2012. In response, Agnico Eagle noted that the CREMP continues to detect changes in some general water quality parameters that appear to be related to mining activity. However, Agnico Eagle indicated that the FEIS predicted the magnitude of potential effect on water quality in each of the lakes as "low" and that even though certain parameters were elevated and above the Canadian Council of Ministers of the Environment (CCME) limits, the values were not above the water licence criteria or the Metal Mining Effluent Regulations criteria. The Proponent stated that monitoring would be ongoing through 2018 and longer term trends in the different parameter concentrations would be assessed in relation to CCME guidelines, as appropriate.

The PEAMP section of the 2016 Annual Report did not provide any discussions on the CREMP or Agnico Eagle programs, nor 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 have provided 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 7:** The Board requires Agnico Eagle to provide a full trend analyses and discussion on the observed project effects on the aquatic environment based on the data collected to date under the Core Receiving Environment Monitoring Program. Further, a clear indication regarding whether any impacts are being observed from the proposal and whether the analyses meet or exceed the predictions made within the Final Environmental Impact Statement must be included. This is required under Appendix D for the post-environmental assessment monitoring program.

**Recommendation 8:** 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 intends to establish other near-field stations that could be used for baseline/reference conditions.

**Recommendation 9:** The Board requests that Agnico Eagle provide a discussion and additional evidence to support its contention that the parameters measured at Meadowbank which have been observed to be above the CCME guideline levels are not a serious concern for aquatic life.

The Board respectfully requests that for all the items requiring follow-up action by Agnico Eagle that a response be provided by December 18, 2017.

If you have any questions or require further clarification regarding these recommendations in particular or relating to the NIRB's monitoring program for the Meadowbank project, please contact the undersigned directly at (867) 857-4829 or [sgranchinho@nirb.ca](mailto:sgranchinho@nirb.ca).

Sincerely,



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Nunavut Impact Review Board

cc: Ryan Vanengen, Agnico Eagle Mines Ltd.  
Jamie Quesnel, Agnico Eagle Mines Ltd.  
Erika Voyer, Agnico Eagle Mines Ltd.

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Meadowbank Distribution List

Enclosure (1): The Nunavut Impact Review Board's *2016-2017 Annual Monitoring Report for the Meadowbank Gold Project*