



NIRB File No.: 03MN107
NIRB File No.: 16MN056

October 25, 2019

Marie-Pier Marcil
Senior Compliance Technician
Agnico Eagle Mines Ltd.
Meadowbank Division
P.O. Box 549
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Sent via email: marie-pier.marcil@agnicoeagle.com

Re: The Nunavut Impact Review Board's 2018-2019 Annual Monitoring Report for the Meadowbank Gold Project and the Whale Tail Pit Project with Board's Recommendations

Dear Marie-Pier Marcil:

The Nunavut Impact Review Board (NIRB or Board) is hereby releasing its *2018-2019 Annual Monitoring Report for Agnico Eagle Mines Ltd.'s Meadowbank Gold Project (NIRB File No. 03MN107) and the Whale Tail Pit Project (NIRB File No. 16MN056)* [Monitoring Report] and the NIRB's Assessment of Compliance Status with the Meadowbank and Whale Tail Pit Project Certificates No. 004 and No. 008, respectively (Appendix I and Appendix II). The NIRB is responsible for post environmental assessment monitoring of projects in accordance with Part 7 of Article 12 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and s. 135 of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*) and the associated Project Certificates.

This report provides findings that resulted from monitoring of the Meadowbank Gold Mine Project and the Whale Tail Pit Project from October 2018 to September 2019.

By way of a motion carried during its regular meeting held in October 2019, 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 No. 004, Amendment 003 and the Whale Tail Pit Project Certificate No. 008. 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* and s. 135 of the *NuPPAA* as they pertain to both the Meadowbank Gold Mine Project and the Whale Tail Pit Project.

RECOMMENDATIONS FOR THE MEADOWBANK GOLD MINE PROJECT

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/project/124588.

Managing attraction of carnivores and/or raptors to reduce or eliminate attraction at all landfills and waste storage areas – Condition 25

Condition 25 requires the Proponent to manage and control waste in a manner that reduces or eliminates the attraction of carnivores and/or raptors to the site. In addition, the Proponent is required to employ legal deterrents to carnivores and/or raptors at all landfill and waste storage areas. During the 2019 site visit, NIRB staff did not observe wildlife deterrents for the Meadowbank project (landfill, waste storage areas, or fuel tank farm at Baker Lake). Since 2017, raptors (Peregrine Falcon) have nested at various Meadowbank sites including quarry sites along the all-weather access road including quarry 22 which was used as temporary storage for contaminated hydrocarbon soil from 2009 to 2012 until the first contaminated soil storage/pilot remediation site (later converted to a landfarm) landfarm was developed in 2013. Plans are in place to remediate this quarry site and the NIRB has discussed annually regarding reclamation of quarry 22 but delays have occurred due to an active Peregrine Falcon nest at this quarry site since 2017. Further, deterrents were not observed at the Baker Lake Marshalling Area which has attracted other types of nesting birds in the past (ravens and songbirds). Lack of wildlife deterrence at this site and other areas at the Meadowbank site does not fully meet the requirements of Term and Condition 25 of the amended Project Certificate No. 004.

Recommendation 1: The Board requests that Agnico Eagle Mines Ltd. provide an explanation why deterrents were not put in place around the fuel tank farm at Baker Lake or quarry 22 in 2018 where birds have nested and has necessitated the removal of a nest or delay of work. In addition, a proposed timeline of activities for the remediation of quarry 22 and any other quarry sites along the all-weather access road that has been used by raptors should be included.

The requested information should be provided to the Board within *30 days* following the issuance of this recommendation.

Placement of local area marine monitors – Term and Condition 36

Term and Condition 36 for Project Certificate No. 004, Amendment 003 requires that Agnico Eagle place/hire local area marine mammal monitors onboard all vessels transporting fuel or materials for the Project through Chesterfield Inlet. Even though approximately 56 ships with fuel and goods ingress/egress at Baker Lake from Chesterfield Inlet in 2018, only one (1) marine mammal monitor was hired for a period between August 6 to August 23, 2018. Agnico Eagle did not provide a reason on why marine mammal monitors were not hired for the other ships that were travelling through Chesterfield Inlet. This concern was brought up last year by the Board and in response Agnico Eagle indicated that it is committing to hiring monitors for the entire shipping season to fulfill the term and condition. The Board stresses the importance of meeting this condition.

Recommendation 2: The Board requests that Agnico Eagle Mines Ltd. provide an explanation of why local marine mammal monitors were not used for all vessels transporting fuel or materials for the Meadowbank Project during the 2018 season. This explanation should also include a description of any alternative monitoring and mitigation employed by the Proponent and its effectiveness and/or confirmation of planned efforts. A proposed timeline to achieve full compliance with Term and Condition 36 of Project Certificate No. 004 amendment 003 must also be provided.

The requested information should be provided to the Board within *30 days* following the issuance of this recommendation.

Suppression of surface dust – Term and Condition 74

Term and Condition 74 of Project Certificate No. 004, Amendment 003 directs the Proponent to employ environmentally protective techniques to suppress surface road dust. As noted in previous NIRB annual reports and during site visits, Agnico Eagle has limited dust suppression to specific areas at Meadowbank: the haul roads at the mine site; a road between the Meadowbank gatehouse and Exploration Camp site; between the Baker Lake marshalling facility and the Baker Lake gatehouse; and the airstrip. Agnico Eagle uses calcium chloride on all the aforementioned roads except water is used on mine site haul roads and the airstrip. Along the all-weather access road (AWAR) between Baker Lake and Meadowbank dust suppression is only applied at five (5) areas identified by the community of Baker Lake, and monitoring results in 2018 indicated that rates of dustfall were effectively reduced in those specific locations and dust levels continued to be well within the range of historical values for those locations. In its response to the Board's 2018 recommendations, Agnico Eagle maintained that it is meeting Term and Condition 74 of Project Certificate No. 004, Amendment 002 and that the approach where chemical suppressants are used in an intermittent fashion along a long-distance roadway in priority areas only is similar to other project sites in Nunavut.

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 Agnico Eagle has conducted along the AWAR since 2012 and the additional studies that are ongoing since 2016. As noted in the previous Annual Reports by Agnico Eagle and in the 2018 Annual Report, monitoring results at areas along the AWAR with dust suppressants were still at times above the predictions and above the Alberta Dustfall and Government of Nunavut – Total Suspended Particulate guidelines (three [3] out of 75 samples exceeding the GN 24-hour standard of 120 microgram/cubic metre [$\mu\text{g}/\text{m}^3$]). The mine site dust predictions in the original Final Environmental Impact Statement (FEIS) for the Meadowbank project did not assume mitigations such as road watering or dust suppressants would be used. As such, it appears that the FEIS predictions have potentially underestimated the amount of dust that would be produced on the mine site.

Agnico Eagle's dust methodology with the installation of canisters at ground level and not on 1.5-2 metre poles, as is the common practice, has raised concerns from both the NIRB and regulatory authorities as the placement of canisters on the ground can have negative implications on data quality (e.g., downwash, ground dust or interference by wildlife). These limitations make it difficult to compare the dustfall data to other sites as well as any dustfall objective due to possible biases in the data collected. Further, the other four (4) other projects in Nunavut follow the ASTM

standard test method¹ for measurement of dustfall by deploying canisters on stands at heights of two (2) metres.

With the exception of continuing the dustfall monitoring along the AWAR and applying dust suppressants along the high priority areas, Agnico Eagle has not made any further commitment to applying dust suppressant to the whole AWAR in the near future. Term and Condition 74 requires the application of dust suppression measures along all project roads including the AWAR [emphasis added]. The Proponent has not fully met the requirements of Condition 74, as dust suppression was not conducted along the AWAR from Baker Lake to the mine site again in 2018. The NIRB stresses that Term and Condition 74 applies to all mine 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 with the exception of the five (5) areas since 2017 as identified by the community to be of importance.

Recommendation 3: The Board requests that Agnico Eagle Mines Ltd. provide a written submission on whether the predictions in the Final Environmental Impact Statement has potentially underestimated the amount of dust produced on the mine site including along the all-weather access road (AWAR) as the AWAR is considered a surface/project road by the NIRB. The submission must identify where original impact predictions can no longer be supported based on project experience to date and include an analysis of the effectiveness of management and mitigation strategies employed. The update must also provide a summary of lessons learned from the Project which can be used to improve future performance at this and other mining developments in Nunavut. Further, a justification for the validity of using these predictions as a comparison to the data currently being collected along the AWAR is to be provided.

The requested information should be provided to the Board within *30 days* following the issuance of this recommendation.

Recommendations related to concerns with respect to applying dust suppressants along the mine roads for Meadowbank and with respect to the dust methodology are addressed under the Whale Tail Pit section of this Board memo.

Appendix D, the Annual Report and the PEAMP

The NIRB notes that Agnico Eagle's 2018 Annual Report provided a detailed analysis of results from its 2018 monitoring program and that it compared observed impacts observed in 2018 to predictions made within the 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

¹ ASTM International. Standard Test Method for Collection and Measurement of Dustfall (Settleable Particulate Matter) D1739-98. Reapproved 2017

values/observed impacts. However, this does not meet the requirements of Appendix D of the Meadowbank Project Certificate as the NIRB found that the discussion and analysis within the PEAMP should be expanded upon especially to include trends that may be observed over multiple years at the site. As such the NIRB requires Agnico Eagle provide this trend analysis as part of the summary report in its annual report.

Recommendation 4: The Board requires that Agnico Eagle Mines Ltd. (Agnico Eagle) begin implementation of the post-environmental assessment monitoring program for the Project within the next annual report due March 31, 2020. The program updates must include:

- 1) A discussion that references the baseline and all the years that monitoring data has been collected and identifies any trends for each valued ecosystem component where an effect has. Include this information in table and graphic format in order to clearly demonstrate what is being observed;
- 2) Identify of instances where original and/or amended impact predictions can no longer be supported based on project experience to date and include an analysis of the effectiveness of management and mitigation strategies currently employed; and
- 3) Include a summary of lessons learned from the Project to date which can be applied to both updating existing project plans and to any of Agnico Eagle's other planned or ongoing projects as applicable.

The summary report should be provided to the Board within *60 days* following the issuance of this recommendation and shall be included in future annual reports.

RECOMMENDATIONS FOR THE WHALE TAIL PIT PROJECT

All materials pertaining to the NIRB's ongoing Monitoring program for the Whale Tail Pit Project can be accessed online from the NIRB's online public registry at www.nirb.ca/project/124683.

Suppression of surface dust – Condition 2

Term and Condition 2 of Project Certificate No. 008 for Whale Tail Pit requires Agnico Eagle to verify commitments to the utilization of dust suppressants along not only the all-weather access road (AWAR), but the Whale Tail haul road (also referred to as the Amaruq Haul Road) and any other roads and trails associated with the Whale Tail Pit Project as well. This is similar to Term and condition 74 for Meadowbank and why the NIRB is considering them together. Agnico Eagle noted in the 2018 Annual Report that daily road watering and, if necessary, the application of chemical dust suppressants would be employed at the Whale Tail Pit Project to mitigate emissions of fugitive road dust during the frost-free summer season as per the Air Quality and Dustfall Monitoring Plan. The Plan also states that the use of chemical dust suppressants may only be used as a last resort for the Whale Tail haul road in accordance with the Environmental Guidance for Dust Suppression (published by the Government of Nunavut, Department of Environment, 2014). No information on the thresholds is provided within the Plan on when the dust mitigation measures would be triggered except to note that dust mitigation measures for the road would be employed when road visibility is impaired, or in areas where dust deposition is potentially impacting traditional land use, fish habitat and/or water quality. However, as observed during the 2019 site

visit and as stated in the 2018 Annual Report, Agnico Eagle did not employ dust suppressants along the whole AWAR, nor along the Whale Tail haul road, and the Whale Tail Pit site roads. Therefore, carrying forward the discussion for Meadowbank, the Proponent does not appear to have fully met the requirements of Condition 2 or Condition 74 of the Whale Tail Pit or Meadowbank Project certificates, as dust suppression techniques were not applied along the Project roads. The NIRB stresses that both of these conditions apply to all surface/project roads including the AWAR, the Haul Road, and roads at the mine sites.

Recommendation 1: The Board reminds Agnico Eagle Mines Ltd. (Agnico Eagle) that Term and Condition 2 of Project Certificate 008 and Term and Condition 74 of Project Certificate No. 004, Amendment 3 concerns the suppression of dust on all surface/project roads that are used by Agnico Eagle for the Meadowbank and Whale Tail Pit Projects. The surface roads for the two Projects include the all-weather access road, the Whale Tail haul road, and both the Meadowbank and the Whale Tail Pit sites roads. As such, Agnico Eagle must update its Air Quality and Dustfall Monitoring Plan to include the objectives of both these terms and conditions along with a clear indication of timelines and triggers for adaptive management. Should Agnico Eagle be unable to meet these conditions of the Project Certificates, Agnico Eagle must submit a proposed alternative management measures with discussions and/or justifications for the variance from the terms and conditions.

The updated Air Quality and Dustfall Monitoring Plan should be provided to the Board within *60 days* following the issuance of this recommendation.

As noted previously for the Meadowbank Project, Agnico Eagle's dust methodology with the installation of canisters at ground level along the Whale Tail haul road and not on 1.5-2 metre poles as is the common practice raises concern for the NIRB and other parties. In its response to 2018 Board Recommendations Environment and Climate Change Canada also noted that the installation of canisters at the ground level and not on poles is not a common practice and recommended that sampling methods be consistent with the standards and consistent across all sites. Placing canisters on the ground have limitations to data quality, making it difficult to compare the dustfall data to other sites as well as any dustfall objective such as the ASTM standard test method¹.

Recommendation 2: To improve the effectiveness of its dust sampling program and comparability with similar programs at other sites, the Board requires that Agnico Eagle Mines Ltd. install the current dust sampling canisters on stands (or equivalent) at a minimum height of two (2.0) metres above the ground at all dust sampling locations including along the all-weather access road and the Whale Tail haul road. Further, the Board requests that Agnico Eagle ensure that at least one (1) transect along the all-weather access road and one (1) along the Whale Tail haul road include a duplicate set of dust monitoring canisters placed on the ground to ensure comparability between the methodologies.

The stands should be in place before the start of next year's dust monitoring program with conformation of implementation of this recommendation provided to the Board within *30 days* following installation of the stands.

Safety barriers, berms and crossing with project infrastructure – Condition 32

Condition 32 requires Agnico Eagle to work with the Baker Lake Hunters and Trapper Organization (HTO) and other parties to ensure that safety barriers, berms, and designed crossings associated with project infrastructure, including the Whale Tail haul road, are constructed and operated as necessary to allow for the safe passage of caribou and other terrestrial wildlife. The Proponent has reported in the 2018 Annual Report that expansion of the haul road to 9.5 metres wide was completed in November 2018, and its mine work plan for the haul road indicates future work includes only road maintenance and operation. During the 2019 site visit it was noted that there were no specific caribou/wildlife crossings incorporated into the current Whale Tail haul road design or for other project infrastructure such as access roads and NIRB staff observed caribou hesitating to cross the road and the caribou searched for less steeply sloped areas to eventually cross. While the 2018 Annual Report notes engagement with the Baker Lake HTO regarding selection of traditional land use crossings to be used by members of the public for crossing the road, this does not meet the intent of the term and condition as it relates to wildlife specifically nor does it include any discussion of consultation with other parties regarding wildlife crossings. In addition, details of the selected crossings (if any) were not provided in the 2018 Annual Report. Therefore, the Board concludes the Proponent has not met the requirements of term and condition 32.

Recommendation 3: The Board requires that Agnico Eagle Mines Ltd. (Agnico Eagle) clarify whether engagement with the Baker Lake Hunters and Trappers Organization and any other parties in 2018 regarding construction of project infrastructure to allow for safe passage of terrestrial wildlife was completed. If so, include details regarding the selection of areas for proposed wildlife crossings. If this information is not available, justification as to why this has not been completed, and information on the timeline and proposed activities that Agnico Eagle is planning to conduct to meet this term and condition for all project infrastructure should be provided.

The action plan should be provided to the Board within *30 days* following the issuance of this recommendation.

If you have any questions or require further clarification regarding these recommendations in particular or relating to the NIRB's monitoring programs for the Meadowbank Gold Mine Project or the Whale Tail Pit Project, please contact the undersigned directly at (867) 857-4829 or sgranchinho@nirb.ca or Erin Reimer, Technical Advisor I, at (867) 857-4566 or ereimer@nirb.ca.

Sincerely,



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

cc: Manon Turmel, Agnico Eagle Mines Ltd.
Robin Allard, Agnico Eagle Mines Ltd.
Martin Archambault, Agnico Eagle Mines Ltd.
Jamie Quesnel, Agnico Eagle Mines Ltd.
Meadowbank Distribution List
Whale Tail Distribution List

Enclosure (1): The Nunavut Impact Review Board's *2018-2019 Annual Monitoring Report for the Meadowbank Gold Project [03MN107] & Whale Tail Pit Project [16MN056]*