



To: Emily Koide and Leah Klaassen  
Monitoring Officers  
Nunavut Impact Review Board

From: Luis Manzo, Director of Lands, Kivalliq Inuit Association

Date: June 30, 2023

**Re: Review of Agnico Eagle Mines Limited’s Meliadine Gold Mine Project 2022 Annual Report;  
NIRB File No.: 11MN034**

## 1. Introduction

The Kivalliq Inuit Association (KivIA) have conducted a review of the Agnico Eagle Mines Ltd. (Agnico Eagle) 2021 Annual Report for the Meliadine Gold Project. Agnico Eagle’s submission consisted of the Meliadine Gold Mine 2022 Annual Report (April 2023) supported by 43 appendices (listed in Appendix 1). These documents were submitted by Agnico Eagle to address requirements within the following authorizations:

- NIRB Project Certificate No. 006 (Amendment No.002);
- KivIA Permit KVCA07Q08;
- KivIA Permit KVCA11Q01;
- KivIA Production Lease KVPL11D01; and
- The Meliadine Inuit Impact and Benefit Agreement (IIBA).

KivIA has completed this review with the support of the following consultants:

- Aurora Wildlife Research (AWR; Anne Gunn), terrestrial specialist;
- Prairie Scientific Inc. (PSI; Matt McDougall), aquatic environment specialist; and
- GeoVector Management Inc. (GeoVector; Alan Sexton), geoscience specialist.

Full comments and recommendations are provided in Section 2 of this technical memorandum.

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Arviat

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Baker Lake

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Chesterfield  
Inlet

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Coral  
Harbour

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Nauyasat

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Rankin Inlet

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Whale Cove









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| <b>Comment No. KivIA 4: Harvest</b>  |
| <b>Reference:</b> 13.0 Hunter Harvest Survey   |
| <p>The 2021-2022 concluded that <i>“These very preliminary numbers suggest that the presence of the AWAR and the Meliadine Mine has not dramatically increased hunting in the area”</i> (S.13.2.: pg. 52). This preliminary conclusion was based on similar annual levels of harvest in the Regional Study Area and within 5 km of the AWAR between 1996-2001 and 2021 and 2022.</p> <p>The KivIA suggests that after only 2 years even a preliminary conclusion is premature, especially as the harvest increased 10-fold within the LSA (S.13.2.: Table 20). The threshold levels for monitoring the effects of the Meliadine mine on caribou harvest distribution will not be established until after 3 years of hunter harvest (App. 27; App. M; S.8). The effect of the AWAR on June-July harvesting is not reported. Caribou were harvested within 5 km of the AWAR only during May to October (App. 27; App. M; Fig. 6.5) which raises a question of how the AWAR is related to any changes in use of ATVs for hunting.</p> <p>The 2022 HHS did not report on monitoring the extent of hunting relative to the 1 km no-shooting zone on either side of the AWAR (App.27; S. 13.0; App. M) or community comments about if and how AWAR has impacted harvesting. NIRB Project Certificate No. 006 (Amendment 002) Terms and Condition # 46 requires that the Harvest Study address <i>“The potential effects on caribou populations and on caribou behaviour resulting from increased human access caused by the all-weather access road and associated roads and trails;”</i>.</p> <p>The behavior monitoring lists ATVs as one of the types of disturbance (App. 27; App. J; App. B). The importance of how the AWAR is used for hunting is whether ATV-based hunting impacts the responses of caribou to other vehicles.</p> |
| <b>Recommendation 23-04:</b>   |
| <p>Agnico Eagle should:</p> <ol style="list-style-type: none"> <li>1. Delay conclusions about the impact of Meliadine mine site and AWAR on caribou harvesting until at least 3 years harvest study data are available.</li> <li>2. Provide more information and the extent of monitoring for caribou harvests relative to ATV use within 1 km of the AWAR relative to the presence of caribou post-calving aggregations.</li> </ol>   |
| <b>Comment No. KivIA 5: Remote camera program</b>  |
| <b>Reference:</b> S. 8.0 Remote camera program   |
| <b>Comment:</b>  |
| <p>The KivIA is concerned about how Agnico Eagle has summarized the 3-year remote camera program. Firstly, the statement that <i>“the highest number of caribou detections events recorded during the three years of this study was recorded in 2022 (150 detections), suggesting no pattern of learned avoidance of the AWAR year to year.”</i> (App. 27; App. K; S.7) is not based on analyses that considered annual variations in the relative numbers of caribou. Secondly, the statement <i>“Caribou were observed crossing the AWAR in different group sizes, ranging</i></p>   |





guidance. The number killed (37) exceeds 20 foxes specified as the impact threshold for Arctic fox (App. 27; S. 9.7; Table 15).

**Recommendation 23-06:**

Agnico Eagle should:

1. Provide details of the mitigation undertaken in 2022 for fox dens at the mine site.
2. Work with GN to explain specifically how the monitoring and mitigation can be improved to prevent attractants and resulting Arctic fox deaths.
3. Provide options for a TAG discussion on how wildlife sightings from the different types of monitoring can be integrated to describe an indicator during the year to trigger when adaptive mitigation will be required to reduce the probability of wildlife incidents.

**Comment No. KivIA 7: Muskoxen**

**Reference:** S. 11.0 Muskoxen

**Comment:**

Similar to the 2021 Annual Report, Agnico Eagle reported that GN had not requested in-kind contributions to muskox surveys, but Agnico Eagle did not report any information on a habitat assessment for muskoxen (NIRB Project Certificate No. 006 (Amendment 002) Terms and Condition # 52).

**Recommendation 23-07:**

Agnico Eagle should clarify the status of a muskox habitat assessment.



## 2.2 Aquatic Environment Technical Comments

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| <b>Comment No. KivIA 8: Water Quality in Meliadine Lake</b>  |
| <b>Reference:</b> Appendix 19- AEMP  |
| <p><b>Comment:</b></p> <p>The AEMP report highlights general increases through the Kivalliq in metals concentrations based on temporal trends in Pipedream Lake (PDL) and Inuggugayualik (INUG) by comparing increases from 2013 to 2022 (Table 3-4). Trends are often more useful than percent increase from an arbitrary start date for evaluating mine-related impacts vs. normal fluctuations. Uranium is used as an example of metals broadly increasing across the region, but Meliadine Lake does not show the same trend. Uranium in INUG decreased 11% over 2021-2022, PDL decreased 3%, while Meliadine increased 19% in the same time frame (site MEL1). Both arsenic and strontium show sharp concentration increases in 2019-2020, which is absent in PDL and INUG. Further, the magnitude of increase over historical data is much greater for Meliadine lake.</p> <p>Chlorophyll-a concentrations in Meliadine Lake also continue to rise year over year, and while the average Total Phosphorus concentrations have slightly decreased from 2021, several individual samples exceed the AEMP action level of 0.0075 mg/L, as shown in Fig 3-16. Near Field MEL1 concentrations remain significantly higher than at reference areas MEL4 and MEL 5.</p> |
| <p><b>Recommendation:</b></p> <ol style="list-style-type: none"> <li>1. Once the saline waterline is operational, the Proponent should adopt changes from the WBWQM update submitted to the Nunavut Water Board (Jan 2023) to prioritize discharge of contact water containing higher concentrations of nutrients and metals, such as waste rock runoff, tailings runoff, and camp waste, to Itivia Harbour. Until this time, if feasible, water from the STP, CP3, CP4, and CP5 should be redirected to TIR02 for storage.</li> <li>2. The Proponent should ensure that the capacity of the planned waterline is sufficient to allow the possibility of eliminating discharge to Meliadine Lake, alleviating mine-related impacts to this culturally sensitive area.</li> </ol>   |
| <b>Comment No. KivIA 9: Operational Capacity of the Dual Waterline</b>   |
| <b>Reference:</b> Annual Report, S 3.2.2.2   |
| <p><b>Comment:</b></p> <p>Operational capacity of the dual waterline is assumed to be 70% due to planned or unplanned shutdowns and required maintenance, decreasing the nominal capacity of the waterline to 14,000 m<sup>3</sup> per day. Does this</p>  |



assumption reflect the uptime of other water management-related infrastructure on site, or at other, similar, projects? A 30% decrease in modelled capacity would impact the ability of the Proponent to manage contact water through the waterline with the proposed extension.

**Recommendation:**

The Proponent should clarify the assumptions leading to a 70% uptime of the planned waterline. As the 70% is stated to be conservative, the Proponent should provide a realistic uptime for the planned waterline based on similar infrastructure on site.



### 2.3 Geoscience Technical Comments

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| <b>Comment No. KivIA 10: Tailings Storage Facility</b>   |
| <b>Reference:</b> 2022 Annual Report, Section 4.4.2, page 45, Tailings Freeze-back   |
| <b>Comment:</b><br>This section states <i>“No field trails to determine effective capping thickness to the TSF were undertaken in 2022”</i> .  |
| <b>Recommendation:</b><br>Does the proponent plan to complete any field trails to determine effective capping thickness to the TSF in 2023 or 2024.  |
| <b>Comment No. KivIA 11: Acid Rock Drainage</b>  |
| <b>Reference:</b> Appendix 10, section 4.3.1, ARD Potential, page 14.  |
| <b>Comment:</b><br>This section states:<br><ol style="list-style-type: none"> <li>1) <i>“While tailings may be classified as uncertain, they still contain enough carbonate to neutralize the acidity produced until many decades after operations have ended.”</i></li> <li>2) <i>“Furthermore, it is worth noting that the analytical laboratory completed an investigation showing that past carbonate analyses were biased low (section 3), meaning that there is more carbonate than previously shown, which would only extend the delay to consumption of carbonate.”</i></li> </ol> |
| <b>Recommendation:</b><br><ol style="list-style-type: none"> <li>1) Can the proponent be more specific on the number of years after operations have ended that the carbonate will neutralize the acidity.</li> <li>2) Can the proponent be more specific on the number of additional years after operations have ended that the additional carbonate will add for neutralizing the acidity.</li> </ol>   |
| <b>Comment No. KivIA 12: Source(s) of Water Used for Dust Suppression at the Meliadine site in 2022</b>  |
| <b>Reference:</b> 2022 Annual Report, Table 2, page 8; Appendix 25, page 37 and Appendix A, Table 1, pages 2 to 5.   |
| <b>Comment:</b><br><ol style="list-style-type: none"> <li>1) It states on page 37 of Appendix 25 that <i>“over the year, a total application of 8738 m<sup>3</sup> of water was recorded for dust suppression at the Meliadine site.”</i> However the total amount in Appendix A, Table 1 is 8,609.30 m<sup>3</sup>, a difference of 118.70 m<sup>3</sup>. Further, in S 3.1.9 it is stated that 6253 m<sup>3</sup> of</li> </ol>  |

