Kivalliq Inuit Association
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To: Robert Hunter
Licensing Administrator
Nunavut Water 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; Water Licence 2AM-MEL1631

1. Introduction

The Kivalliq Inuit Association (KivIA) have conducted a review of the Agnico Eagle Mines Ltd. (Agnico Eagle) 2022 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 NWB water licence 2AM-MEL1631

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

- 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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2. Technical Review

2.2 Aquatic Environment Technical Comments

Comment No. KivIA 8: Water Quality in Meliadine Lake
Reference: Appendix 19- AEMP
Comment: 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. 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.
Recommendation: 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. 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.
Comment No. KivIA 9: Operational Capacity of the Dual Waterline

Reference: Annual Report, S 3.2.2.2
Comment: 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^3 per day. Does this 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

Comment No. KivIA 10: Tailings Storage Facility
Reference: 2022 Annual Report, Section 4.4.2, page 45, Tailings Freeze-back
Comment: This section states *"No field trails to determine effective capping thickness to the TSF were undertaken in 2022".*
Recommendation: Does the proponent plan to complete any field trails to determine effective capping thickness to the TSF in 2023 or 2024.
Comment No. KivIA 11: Acid Rock Drainage
Reference: Appendix 10, section 4.3.1, ARD Potential, page 14.
Comment: This section states: 1) *"While tailings may be classified as uncertain, they still contain enough carbonate to neutralize the acidity produced until many decades after operations have ended."* 2) **"***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."*

Recommendation:

1) Can the proponent be more specific on the number of years after operations have ended that the carbonate will neutralize the acidity.
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.

Comment No. KivIA 12: Source(s) of Water Used for Dust Suppression at the Meliadine site in 2022

Reference: 2022 Annual Report, Table 2, page 8; Appendix 25, page 37 and Appendix A, Table 1, pages 2 to 5.

Comment:

1) It states on page 37 of Appendix 25 that "*over the year, a total application of 8738 m*^{3} *of water was recorded for dust suppression at the Meliadine site.*" However the total amount in Appendix A, Table 1 is 8,609.30 m^{3,}, a difference of 118.70 m^3. Further, in S 3.1.9 it is stated that 6253 m^3 of reclaim water is used for dust suppression, but no withdrawal from other sources for dust suppression is noted in S 3.2.1.
2) The two entries on the m^3 of water used on 6/15/22 in Appendix 25, Appendix A, Table 1 are incomplete.
3) The entry for 8/8/22 in Appendix 25, Appendix A, Table 1 lists water used for dust suppression on the AWAR.
4) The water sources(s) for the water used for dust suppression in 2022 are not listed in the table.
5) It is not clear if the total m^3 of water used for dust suppression in 2022 is included in the annual volume of water (463,484 m^3) withdrawn from Meliadine Lake

Recommendation:

Can the proponent provide the following information:

1) The total m3 of water used for dust suppression in 2022?

2) The correct volumes for the two entries on 6/15/22?

3) If reclaim water is used for dust suppression on the AWAR, runoff is recaptured to the contact water management facilities?

4) The source(s) of the water used for dust suppression in 2022? And,

5) if the total m^3 of water used for dust suppression in 2022 is included in the annual volume of water (463,484 m^3) withdrawn from Meliadine Lake?

3. Closing

KivIA appreciates the opportunity to provide comments on the 2022 Annual Report for the Meliadine Gold Project. Please contact Luis Manzo, Director of Lands, should you require more information.

Regards,

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