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September 24, 2014

Our file Notre référence

03-HCAA-CA7-00191 and 00109

Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

Dear Ms. Beaulieu:

**Subject: Completeness Review and Initial Technical Assessment of the Nunavut Water Board
Application for a Type “A” Water License**

Fisheries and Oceans Canada’s (DFO) – Fisheries Protection Program would like to thank the Nunavut Water Board (NWB) for the opportunity to provide comments on the completeness of the Type “A” water license renewal application and supporting documents, submitted by Agnico-Eagle Mines Ltd (Agnico-Eagle) for the Meadowbank Gold Mine Project. As outlined in your letter dated August 29, 2014, the intent of the review is to determine the completeness of the application and an initial technical assessment to determine if all of the necessary information and studies to evaluate quantitative and qualitative effects of the project have been provided.

DFO has conducted a *preliminary assessment* of Agnico-Eagle’s Type “A” water license renewal application and supporting documents **only** in relation to the department’s mandate. The mandate of the Fisheries Protection Program is to maintain the sustainability and ongoing productivity of commercial, recreational and Aboriginal fisheries.

In general, DFO has found minor deficiencies in the descriptions relating to the Water Quality Monitoring and Management Plan for Dike Construction and Dewatering the Interim Closure and Reclamation Plan, and the 2013 Water Management Report and Plan. We have provided the following comments to assist the NWB in their completeness and initial technical review.

Appendix B1: Aquatic Effect Management Program (AEMP), Version 2, December 2012

No initial review comments.



Appendix B2: Core Receiving Environment Monitoring Program (CREMP), Design Document, Version 1, December 2012

No initial review comments.

Appendix B3: Water Quality Monitoring and Management Plan for Dike Construction and Dewatering (WQMMPDCD), Version 4, April 2010

5.2: Lake Level monitoring during Dewatering Activities

“Third Portage Lake and Second Portage Lake water levels will be surveyed at a location of sufficient distance from the outlets to limit potential lake level drawdown effects. Lake water levels will be monitored weekly during the freshet and ice-free period, and weekly during the ice-up period, dependent of the ice conditions and worker safety.”

- DFO requests that Agnico-Eagle clarify whether a similar schedule and plan will be used during re-watering (re-flooding). If not, DFO requests that the schedule and plans be provided. What are the specific threshold criteria that will be used to determine unacceptable low water lake levels?

Appendix B6: Water Quality Flow and Monitoring Plan (WQFMP), Version 3 (July 2014)

No initial review comments.

Appendix B14: Interim Closure and Reclamation Plan (ICRP), Version 2 (January 2014)

1.1 Interim Closure and Reclamation Plan Objectives

“This ICRP document is an update to the closure and reclamation plan for the development phase of the Project (AEM 2008). ... This document does not include detailed engineering closure designs, or specific post-closure monitoring programs as these will be developed in the future.”

- DFO requests that Agnico-Eagle provide a date for the final Closure and Reclamation Plan with detailed engineering closure designs, prior to the first re-flooding event beginning in 2015.
- Re-flooding of the Main Mining and Vault Areas constitutes habitat gains for offsetting, under the No Net Loss Plan (2012), yet the executive summary of the ICRP does not mention obligations to adhere to Fisheries Act Authorizations 03-HCAA-CA7-00191.3 and 03-HCAA-CA7-00191.4, with respect to the lakes providing the source waters for re-watering (re-flooding) activities (Third Portage Lake, Wally Lake). (Specifically: Impacts to fish and fish habitat other than that



specifically identified within those Authorizations are not permitted.). DFO requests that these obligations be added to the list beneath the “purpose of the ICRP.”

- DFO also notes that the draft No Net Loss Plan (NNLP) Implementation Cost Estimate and Construction Schedule (May 2013) has been replaced by Version 2, November 2013. Please revise this reference.

2.3 Permits and Authorizations

- DFO notes that the Letter (Avoid and Mitigate) for NU-10-0049 is not an Authorization. Please correct this reference.
- DFO would also like to note that Environment Canada is now the Responsible Authority for MMER Schedule 2 TIA, which falls under Fisheries Act Subsections 36(3 to 6), according to a Designation Order issued February 28, 2014. DFO requests that Agnico-Eagle note this in the table.

2.4.2.5 Permafrost

“Rock and soil-related terrain instability is a minor concern ... The exception is the wetlands occupying lowlands adjacent to lakes and ponds where excess ground ice is present and thaw instability is foreseeable. These impacts can be mitigated using currently-accepted permafrost engineering practices as part of dike construction, drawdown and re-watering of lakes...”

- DFO requests that Agnico-Eagle provide details regarding engineering practices to be used to mitigate permafrost-related terrain instability during re-watering of lakes, with respect to the stability of shorelines (and avoidance or mitigation of associated erosion and slumping).

2.5.7 Water Management Facilities

“Pit flooding has been scheduled assuming the annual water volume withdrawn from Third Portage and Wally Lakes for re-flooding purposes will be lower than the spring freshet volumes, resulting in no reduction to the lake water level (SNC 2013). The rate of transfer from source lakes will be controlled through pumps or engineered structures. Where possible, the water for flooding will be taken from deep areas of the source lakes to avoid the removal of oxygenated surface waters. Water intakes will be properly screened.”



- DFO requests that Agnico-Eagle clarify the data, modeling or other factors they have used to determine that lake water levels will not be affected. DFO also notes that SNC 2013 (Meadowbank Gold Project Water Management Plan 2012) is cited in several locations in the ICRP with respect to re-flooding. Please append this document to the ICMP for ease of reference, or provide the relevant information supporting, in the context of avoiding or mitigating serious harm to fish in source lakes during re-watering. Appendix B17 (2013 Water Management Report and Plan, Version 1, March 2014), which DFO understands to be an update to SNC 2013, does not include sufficient detail as described below.

3.3.3.3 All-Weather Private Access Road (AWPAR) Planned Reclamation Approach and Activities

“Decommissioning of the AWPAR will involve restoring, to the extent possible, the pre-development drainage patterns along the route. Natural drainage courses will be restored by removing the culverts and bridges ... and removing in-stream works down to the original channel bed ... Where affected water courses are fish bearing, channel beds will be reconstructed similar to baseline conditions. Work at these sites will consider appropriate timing for in-stream works and will be completed in accordance with DFO operational statements. Details on the channel bed reclamation will be included in the detailed engineering for closure.”

- DFO requests the detailed plans for channel bed reclamation.

3.3.4.3 Dikes and Saddle Dams Planned Reclamation Approach and Activities:

“The location of breaching on the Bay-Goose Dike will be selected based on a desired attenuation period in which surface water runoff will mix with the pit lake water before discharge to Third Portage Lake. Currently, it is estimated that a total of about 200 m of the dike will be breached in two sections. The dike will be breached to 3 m below the average water level in Third Portage Lake (134.1 m elevation) to provide all-season access across the dike. Sides of the breached sections will be pulled back for long-term stability. Erosion control measures will be considered before breaching the dike...”

- DFO requests that Agnico-Eagle clarify how fish passage needs have been taken into account when considering possible locations for dike breaches, given that fish habitat use and therefore location within the lake will vary seasonally.

3.3.4.4 Uncertainties and Assessing Information Gaps

“Although detailed design of the dike breaches is not currently available, this will be completed during the later stages of operations prior to closure.”



- DFO requests the detailed designs of the dike breaches.

3.3.5.3 Open Pits Planned Reclamation Approach and Activities

“To minimize impacts to aquatic habitat in the surrounding lakes, it is anticipated that transfers from Third Portage and Wally Lakes will be done during periods of higher water in the spring and summer months. Maximum fill rates will depend on acceptable draw down levels in each source lake.”

- DFO requests that Agnico-Eagle clarify what the acceptable draw down levels in each source lake are, and how they were determined.

Appendix B17: 2013 Water Management Report and Plan (March 2014)

3.3 Pit Reflooding Operation

- Regarding this entire section and the associated Appendix A, DFO requests that Agnico-Eagle clarify how they selected their withdrawal volumes from Third Portage Lake (2016-2024) and Wally Lake (2018-2024) for the purposes of pit re-flooding. DFO requests that Agnico-Eagle focus their answer specifically on how they determined that these selected volumes would not affect lake levels and littoral habitat. Lower lake levels would lead to the risk of exposure for littoral fish habitat that would normally be submerged due to spring freshet.

“In 2016, additional reflooding efforts [for Goose pit] will be added for the summer period to accelerate the flooding operation via the utilization of pumps or siphons from 2PL.”

- DFO requests that Agnico-Eagle clarify whether Second Portage or Third Portage Lake is the intended source of water, as Second Portage Lake (2PL) is cited here for both Goose and Portage Pit, but the Appendix A – Water Balance (sections concerning years 2016-2025) mention Third Portage Lake.

“The Vault area will follow a similar reflooding process, with an incoming flow rate from Wally Lake, equivalent to that of the spring freshet (4, 182, 604 m³) through pump stations or syphons.”

- DFO requests that Agnico-Eagle clarify how this volume was calculated (i.e., from what data, and how were those data collected and/or modeled). How much does the volume of spring freshet vary from year to year? How much do lake levels rise during the spring freshet, and what quantity of the littoral zone is submerged?



8 Recommendations

“Include the Phaser deposit in the application to renew the Type A Water License which is due to be submitted in June 2014, one year in advance of expiration of the current License. Also include this updated Plan in the application.”

- DFO notes that this recommendation has not been fulfilled. Earlier in this Plan (2.2.3 Vault Pit Area), Agnico-Eagle states that “the Phaser Pit ... is conceptual and is not currently in the water management plan....should AEM decide to mine this area approval from NIRB and amendments to the NWB will be required.” In addition, in the ‘Nunavut Water Board (NWB 2AM MEA0815) Type A Water License Renewal Application – Main Supporting Document,’ section 2.4 (Future Plans), Agnico-Eagle states that “Vault Pit Expansion is not included in the License Renewal” even though “AEM has begun discussions regarding the Vault Pit expansion with the Baker Lake HTO, KIA and DFO.” DFO requests that Agnico-Eagle clarify why the dewatering of Phaser Lake, as well as the subsequent re-flooding, has been excluded from the entire License Renewal Application.

Appendix C: Core Receiving Environment Monitoring Program 2013 (March 2014)

No initial review comments

In terms of the type of Technical Meeting Pre-Hearing Conference to be held, DFO would prefer either teleconference or in person meetings, although will participate in any format the NWB chooses for this meeting.

We look forward to working with the NWB on the water license renewal of the Meadowbank Gold Mine Project. If you have any questions concerning the above, please contact our office directly by telephone at (867) 669-4934 or by email at Julie.Marentette@dfo-mpo.gc.ca.

Yours sincerely,

Stu Niven
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Mines, Oil and Gas North