Crown-Indigenous Relations and Northern Affairs Canada
Relations Couronne-Autochtones et Affaires du Nord Canada

Water Resources Division
Resource Management Directorate
Nunavut Regional Office
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Your file - Votre référence
2AM-MRY1325
Our file - Notre référence
CIDM#1272958

January 17, 2020

Richard Dwyer
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0
E-mail: licensing@nwb-oen.ca

Re: Crown-Indigenous Relations and Northern Affairs Canada Comments on the Interim Closure and Reclamation Plan for Agnico Eagle Mines Meliadine Gold Project, Water Licence 2AM-MEL1631.

Dear Mr. Dwyer,

Thank you for the December 13, 2019, invitation for Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) to comment on the Interim Closure and Reclamation Plan (ICRP) for Agnico Eagle Mines (AEM) Meliadine Gold Project, Water Licence 2AM-MEL1631. The ICRP has been provided to meet the requirement under the water licence to submit an ICRP to the Nunavut Water Board for approval within six (6) months of Commercial Operation. This requirement includes having AEM submit a revised closure cost estimate. CIRNAC reviewed the ICRP and provides the following comments pursuant to CIRNAC's mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*.

1. **Review of Updated Security Estimate**

The submission of the Interim Closure and Reclamation Plan included an updated closure cost estimate. Currently, the licence requires $49,555,000 to be furnished for reclamation security, as was established in 2015 (50% is held by the Minister of CIRNAC and 50% is held by the Kivalliq Inuit Association). The revised estimate provided by AEM as part of the ICRP submission proposes an increase of $12,065,380 to a new total of $ 59,514,717. CIRNAC would like further opportunity to review the cost estimate following this submission, as CIRNAC suggests changes below to be incorporated into the ICRP which may affect reclamation security estimates.

Recommendation:
CIRNAC recommends that further opportunity to review the cost estimate be provided by the Nunavut Water Board following its approval of the ICRP.

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2. Closure Schedule

The current schedule for closure proposes a period of 3 years for interim care and maintenance and 10 years for post closure monitoring. AEM predicts that no arsenic leaching will occur, however that it could be a possibility at containment pond 3 (CP3) which is intended to collect runoff water from the Tailings Storage Facility (TSF). CIRNAC suggests the timeframe of post-closure monitoring be extended to 25 years, and the timeframe of interim care and maintenance be extended to 5 years, until operational data can be obtained that validates AEM's prediction and allow for a reduced monitoring period.

Recommendation:
CIRNAC recommends the timeframe of post-closure monitoring be extended to 25 years, and the timeframe of interim care and maintenance be extended to 5 years, until AEM's predictions can be demonstrated through operational data.

3. Parameters and Schedules for Post Closure Monitoring

Part J, Item 1. H. of licence 2AM-MEL1631 requires the licensee to include "Monitoring programs to assess reclamation performance and environmental conditions including monitoring locations for surface Water and groundwater, parameters, schedules and overall timeframes" in the ICRP. Locations for water monitoring stations have been provided in the plan. The parameters, schedules and overall timeframes have been provided in the closure estimate, but have not been provided in the plan.

Recommendation:
CIRNAC recommends that AEM provide the parameters, schedules and overall timeframes for post closure monitoring, as is required in the licence.

4. Arsenic Treatment

According to AEM (ICRP, page 40), "While the tailings may have a potential to leach arsenic, especially during initial flushing or wet weather, long-term arsenic leaching from tailings is predicted to be low and below MMER based on the humidity cell test results." Further, AEM states on page 95 of the ICRP:

> As mentioned in the Water Management Plan (AEM, 2019c), according to the water quality model predictions, during operation, CP3 arsenic concentration may exceed MDMER on occasion if precipitation events or the freshet flows generate drainage from the TSF (Golder, 2012). The main source of arsenic in CP3 is predicted to be from residual process water that is assumed to be present in the filtered tailings. Arsenic transfer from process water to CP3 water will be minimized by effective dewatering of the tailings prior to placement into the TSF, and from freezing of the tailings in the TSF. Water from CP3 will be pumped to CP1 and dissolved arsenic concentration in CP1 is predicted to meet the MDMER monthly average maximum concentration. Long-term, post-closure arsenic concentrations in CP3 could slightly exceed the SSWQO post-closure, a criterion that is conservatively protective of the receiving aquatic environment (Golder, 2013). Concentrations that exceed predictions are minor, much less than the mixing capacity in the receiving environment.

These arsenic concentrations (Golder, 2013) are within the tolerance levels that have been deemed non deleterious by Environment Canada for the Mine.

Arsenic is classified by the Metal and Diamond Mining Effluent Regulations as a deleterious substance. Although AEM predicts that no arsenic leaching will occur, AEM should be prepared to deal with arsenic leaching if the water flow predictions are found to be inaccurate. CIRNAC understands that if arsenic is found in the runoff water in CP3, AEM plans to move the arsenic-containing water to CP1 for treatment. CIRNAC also understands the treatment plant at CP1 is an effluent water treatment plant (EWTP) designed to remove suspended solids (TSS). What is not clear is whether the EWTP has the ability to reduce suspended and dissolved forms of arsenic to achieve a total arsenic concentration which meets the level required under the Site-Specific Water Quality Objectives (SSWQO) and/or the Metal and Diamond Mining Effluent Regulations (MDMER).

Recommendation:
CIRNAC recommends that AEM provide clarification regarding how arsenic, if detected, will be removed from runoff water on site during all phases of the project, and how the arsenic impacted sludge will be stored and disposed. If the EWTP does not currently provide sufficient arsenic removal, an increased cost for water treatment/arsenic removal should be reflected in the closure cost estimate.

5. Applicable Regulatory Guidelines

AEM lists the applicable regulatory guidelines for the Meliadine Project in Section 2.5.1 of the ICRP. This list includes the Acts and Regulations applicable to the project, but does not include the Metal and Diamond Mining Effluent Regulations (MDMER).

If there are any questions or concerns, please contact me at (867) 975-4282 or bridget.campbell@canada.ca.

Sincerely,

Bridget Campbell,
Water Resources Coordinator