



July 20, 2018

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

**Re: Crown - Indigenous Relations and Northern Affairs Canada's (CIRNAC) Review of  
Agnico Eagle Mines Limited's Design Report for CP3, CP4, CP Berms, Berm 2,  
Channel 3 and Channel 4, Meliadine Project - Water Licence 2AM-MEL1631 -  
Meliadine Gold Project**

Dear Richard Dwyer,

Provided is Agnico Eagle's response to the comments and recommendations received by Crown - Indigenous Relations and Northern Affairs Canada's (CIRNAC) regarding their review of the Meliadine Project's submission of the Design Report for CP3, CP4, CP Berms, Berm 2, Channel 3 and Channel 4.

Should you have any questions or require further information, please do not hesitate to contact me.

Regards,

A handwritten signature in blue ink that reads "J Huza". The signature is written in a cursive, flowing style.

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General Supervisor Environment

## A) Results of Review

### 1) Berms

**Comment:** In section 4.1 of the Design Plan, Tetrattech states “The berm is designed to preserve permafrost in the original ground below the center of the berm, which will reduce the potential seepage through its foundation into the downstream receiving environment (i.e. Lake B7). Likewise in Section 4.2 of the design plan, Tetrattech states that “The berms for the CPs are water retaining structures with a low water head. The berms are considered to have a “Low” consequence of failure based on the CDA 2007.

In combining these two statements CIRNAC would like clarification on how seepage to the outside environment is considered of low consequence.

**Recommendation:** CIRNAC recommends that Agnico Eagle Mines Ltd. (AEM) monitor these berms closely to ensure no seepage is allowed to the outside receiving environment.

#### **Agnico Eagle’s Response:**

*Section 4.1 and 4.2 of the report presents the design objectives collection ponds and thermal protection berms. The ponds will be excavated into ground, and thermal protection berms are constructed downstream of the ponds to maintain the permafrost. The original groundwater level downstream of the ponds was similar to the ground surface which is approximately 65.0 m. The intent is that the ponds will be operated with the water level near the base of the pond (56.0 m for CP3 and CP4). During the design spring freshet (1:100 year) the water level in the pond could rise to elevation 63.0 m,. This is approximately 2 m below the original ground elevation downstream of the pond. It is a similar elevation to Lake B7 (62.7 m) approximately 180 m and 250 m from CP3 and CP4 respectively. Moreover, the water in CP3 and CP4 will be kept at 63.0 m for a short period (7 days), then the water level in the CPs will be dropped down to 56.0 m due to the active pumping of freshet water to CP1. Given that the water level in CP3 and CP4 will generally be lower than receiving environment there is a larger risk higher potential of seepage into the pond rather than out of the pond. There is very low risk of seepage out the ponds to the receiving environment given the seepage gradients and the permafrost conditions downstream of the ponds. The seepage from CP3 and CP4 will be monitored via visual inspection daily during freshet and weekly during other operation period.*

### 2) Seepage and Deformation Evaluation

**Comment:** In Sections 4.8 tetra tech states that “...the volume of the seepage water into the pond during the construction period is expected to be insignificant” and “seepage from the CPs to downstream through the frozen berm foundation is not expected.” As well, section 3.4 of the groundwater management plan (GWMP) currently being reviewed for approval states it is for the short and long term strategy identified in the GWMP. This is contradicted in section 3.4.1, where AEM states “These short-term storage and treatment options are being

*implemented at the Mine pending regulatory approvals for the long-term groundwater management option.”*

Moreover, the 2AM-MEL1631 Water License states:

*“The Licensee shall submit a Groundwater Management Plan to the Board for approval in writing, at least six (6) months prior to the discharge of any Groundwater. The Plan shall take into consideration all comments raised and commitments made with respect to submissions received during the technical review of the Application as well as final submissions and issues raised during the Public Hearing Process, where applicable.”*

CIRNAC is of the opinion that this plan has not yet been approved and therefore what is stated in the plan should not be implemented until such time that approval for this plan is granted.

**Recommendation:** AEM should confirm to the water board exactly what is being implemented at this time at site and whether or not it is allowed under the current licence.

**Agnico Eagle’s Response:**

*All current activities implemented at this time are permitted under the current licence. Agnico Eagle requests NWB approval of the Groundwater Management Plan on or before August 15, 2018 so that Agnico Eagle can proceed with the activities outlined in the plan.*

*The reference above (“The plan will take into consideration all comments raised and commitments made...”) was related to the original water license hearing. The submission of the GWMP to the Nunavut Water Board was on February 15, 2018.*

*Currently on site, the surface water ponds (CP1 and CP5) are managing surface contact water. Waste rock brought to surface contains a small percentage of water that will generally drain over time and report mainly to the P-area and CP5. CP5 water is treated by an RO prior to transferring the treated water to CP1. An effluent water treatment plant (EWTP) treats the water contained in CP1 for TSS removal prior to environmental discharge.*

*The P-area contains surface runoff from both natural sources and from waste rock. Additionally, excess underground water is transferred to the P-area for evaporation. The P-area is fully contained within the contact water footprint. The contact water footprint is managed by CP5 and CP1. No water from the underground mine is being sent to CP1 (nor CP5) for environmental discharge and therefore Agnico Eagle is compliant with the clause from the 2AM-MEL1631 being:*

*“The Licensee shall submit a Groundwater Management Plan to the Board for approval in writing, at least six (6) months prior to the discharge of any Groundwater.”*

### 3) Additional Comments

**Comment:** Two different Water Management Plans (2015a and 2017) are referenced in the GWMP. CIRNAC was not able to confirm which of these WMP are actually approved. As the NWB explained: plans that are submitted with the initial application should be considered the approved plan and as changes in operation or improvements in technology occur a revised version may be provided with the Annual Report. Plans that contain significant changes (e.g.: WMP that incorporates infrastructure and processes which have never been discussed in the application process) must be approved before implementation.

**Recommendation:** Confirm and or clarify which plan is approved.

**Agnico Eagle's Response:**

*Both plans have been approved as per NWB regulatory process and the most recent is the 2017 WMP. We note there is also a 2018 WMP that has been submitted to the NWB but is not yet approved. Agnico Eagle requests approval of the 2018 WMP by August 15 2018.*

**Comment:** The P-Area was identified in a document titled "AEM Meliadine- Elevated TDS Levels in CP1 April 16 2018" as a structure which has been seeping into CP1, causing elevated TDS levels. Due to these elevated levels of TDS, the release of effluent from the CP1 into Meliadine Lake was stopped during the fall of 2017, subsequently causing AEM to carry water over the winter until a proper treatment method could be found. During the winter of 2017/2018 AEM brought in a Reverse Osmosis water treatment plant unit (RO unit). This plant will be used to treat the contaminated water in CP1 and CP5 prior to release. The by-product of the RO unit is a brine water solution. AEM has proposed to deposit this brine water into the P-area.

**Recommendation:** Again, it looks as if two licences are being used interchangeably here. CIRNAC would like clarification on which licence this undertaking falls under. We believe that if AEM wishes to incorporate infrastructure from the 2BB-MEL licence into the 2AM Water Management plan then an application for amendment should be submitted so that proper review of all activities may take place.

**Agnico Eagle's Response:**

*Again, all activities are licenced and have been subject to NWB review.*

*The final control structures are DCP1 and DCP5. All other structures including culverts direct flow or contain water to ensure we do not impact the environment outside of our control structure for contact water.*

*Should the need to keep the P-area operational long-term be determined, Agnico Eagle will give consideration to this comment as part of the upcoming 2AM-MEL1631 license amendment planned for 2022.*

#### **4) Monitoring**

**Comment:** In Section 7 of the design report, Tetrattech describes and explains the monitoring to be undertaken by AEM. The monitoring of the infrastructure is valued, needed and integral to the working capabilities of the design plan. However, CIRNAC would like to know the triggers for any improvements to the design plan (i.e. how much seepage is acceptable before improvements are recommended, or how much deformation/slumping is acceptable before improvements are recommended?). These examples are only two of several possible areas that would need to be further explained as to the triggers for improvements.

**Recommendation:** CIRNAC requires that AEM provide further details on the monitoring and the triggers that would set off the need for improvements in the design plan for these infrastructures.

**Agnico Eagle's Response:**

*Section 7 of the design report details the recommended monitoring for the water retaining structures. Monitoring will include thermal monitoring, visual monitoring settlement/movement monitoring, seepage monitoring, pond water level and water quality monitoring if required.*

*Some slumping into the ponds is anticipated, especially in the early years of operation. The slumps should be evaluated by a geotechnical engineer who will assess their severity and will make a profession judgement if the slumps can be tolerated or whether they can remain.*

*The seepage into the CPs is also anticipated. The seepage will be greater during the first spring of operation. The water will be pumped out of the ponds along with surface inflows to CP1. A geotechnical engineer will observe the seepage and make a professional judgement whether the seeps need to be remediated to reduce their magnitude or reduce the effects of piping etc.*