



September 27th, 2018

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

Re: Agnico Eagle Mines – Meadowbank Division Responses to Waste Rock Storage Facility Dike Design Report Comments

Dear Mr. Dwyer,

As requested, the following information and comments are intended to address the questions/ comments made in the below letter:

- CIRNAC – September 14, 2018, *Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) Technical Review Comments of the Design Report Waste Rock Storage Facility Dike – Whale Tail Project under Agnico Eagle Mines Limited's Type "A" Water Licence No. 2AM-WTP1826.*

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

Best regards,

Manon Turmel
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Environmental Compliance Counselor

1) Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

Comment 1: Snow management strategy

Section 4.1 Design basis refers to the snow management strategy, and the importance to remove snow above the thermal cover of the Fine Filter Amended with Bentonite (FFAB) component of the seepage barrier along the upstream toe of the dike. The details of the snow management strategy were not provided.

Recommendation 1 (R1):

CIRNAC recommends the snow management strategy for the Waste Rock Storage Facility (WRSF) pond address where the snow within the WRSF pond will be removed to. Proactive measures to reduce snow deposition in the WRSF pond should also be identified in the snow management strategy such as deployment of snow fencing.

Agnico Eagle Mines response:

Section 4.1 refers solely to snow management strategies regarding the Fine Filter Amended with Bentonite (FFAB) component. To ensure optimal performance, the FFAB should remain under frozen condition all year long. To do so, it is recommended to promote the aggradation of the permafrost by removing snow that will be in direct contact with the upstream slope of the Waste Rock Storage Facility (WRSF) dike. If not removed, the snow could potentially act as a thermal insulator and prevent the cold winter air to cool the FFAB. Therefore, Agnico Eagle plans to remove snow that is directly in contact with the upstream slope of the dike. It will be disposed of in the WRSF pond.

As for snow management within the WRSF pond, it will be left in place. No snow will be removed from the WRSF pond. Melted snow will be pumped during freshet to the Whale Tail Attenuation Pond. This amount of water has been included in the water balance calculations.

Comment 2: Water Management Strategy

Section 4.1 Design basis refers to the water management strategy. The WRSF pond water will be emptied at the end of each summer to promote frost penetration. Water is expected to accumulate in the downstream side of the dike ditch. The details of the water management strategy were not provided.

Recommendation 2 (R2):

CIRNAC recommends the water management strategy address how water from the watershed will be managed prior to and during construction, and the water erosion control measures that will be in place during construction. The water management strategy should also indicate where the dike ditch and pond water will be transferred to.

Agnico Eagle Mines response:

Prior to the construction: A temporary sump will be constructed to collect runoff water from the sub-watershed in the north east section of the WRSF footprint. The waste material will only be placed in this sub-watershed. This water will be pumped to Quarry 1.

During construction: If water is encountered, it will be collected within the excavation footprint or adjacent sumps and pumped to the temporary sump in the north east of the WRSF. Minimal water flow is expected during construction but nonetheless silt fences will be installed downstream of the working area to prevent erosion of the surrounding tundra and/or sediment transport.

During operations: Agnico Eagle will perform routine inspection as per CDA 2013 guidelines and construction of the downstream ditch and sump will be initiated should unexpected seepage be observed. However, this is unlikely as the dike has been designed to remain frozen. Should seepage be observed, water will be pumped to the WRSF pond and then to the Whale Tail Attenuation Pond.

Comment 3: Fine Filter Amended with Bentonite (FFAB)

Section 4.2 FFAB construction states two compacted lifts of 30 and 50 centimetres (cm) each will be placed in the key trench. The purpose of the bentonite is to restrict water movement out of the pond area.

Recommendation 3 (R3):

CIRNAC recommends the height of the water column an 80 cm thick FFAB layer would restrict water flow be provided, and that the value be compared to the maximum anticipated pond water column height.

Agnico Eagle Mines response:

The FFAB layer of 80 cm is only used to tie-in the Bituminous Geomembrane (BGM) to the foundation, regardless of the water head. The main impermeable component of the dike is the BGM itself and this geomembrane will be raised to the elevation mentioned in design criteria for the specific design flood (Section 4.2 of design report).

Comment 4: Water Management During Construction

Section 4.4 water management during construction states “a detailed written procedure of water management during construction shall be submitted to Agnico Eagle’s Geotechnical Coordinator for approval prior the beginning of the Work”.

Recommendation 4 (R4):

CIRNAC recommends the detailed written procedure of water management during construction is also submitted to the Nunavut Water Board.

Agnico Eagle Mines response:

Agnico Eagle understands CIRNAC’s interest for this procedure. However, please note that our water management strategy during construction of the WRSF dike has been presented in the dike design report and in our response to Recommendation 2. The internal procedure will not contain additional relevant information for external parties and will be designed for internal purposes.

Comment 5: Seepage Performance

The design report extrapolates one thermal profile at Whale Tail Pit to the WSRF dike. Three other thermal profiles are available at the Whale Tail Pit project, but the thermal profiles were not provided. The design report indicated thermistor strings will be installed, but not the depths nor locations thermal monitoring will be most pertinent.

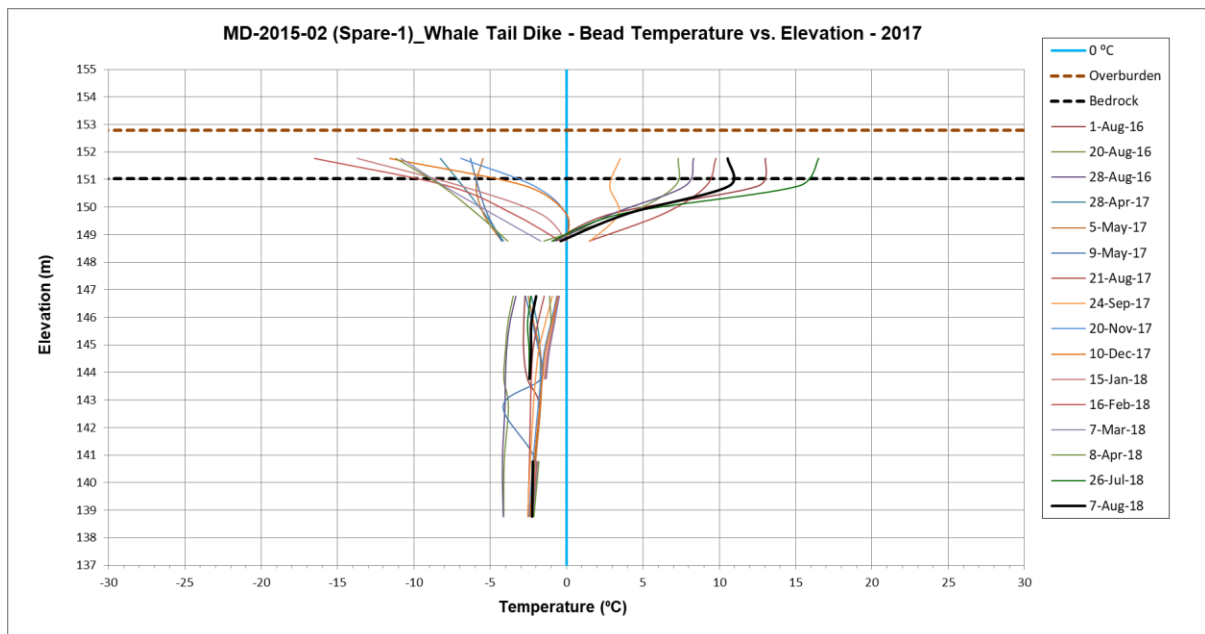
Recommendation 5 (R5):

CIRNAC recommends the thermal profiles from MD-02-2015, AMQ15-452 and AMQ17-1277A (with depths adjusted to a vertical profile) are also provided in the design report, along with a prediction on where thermal monitoring will be most critical in the dike design.

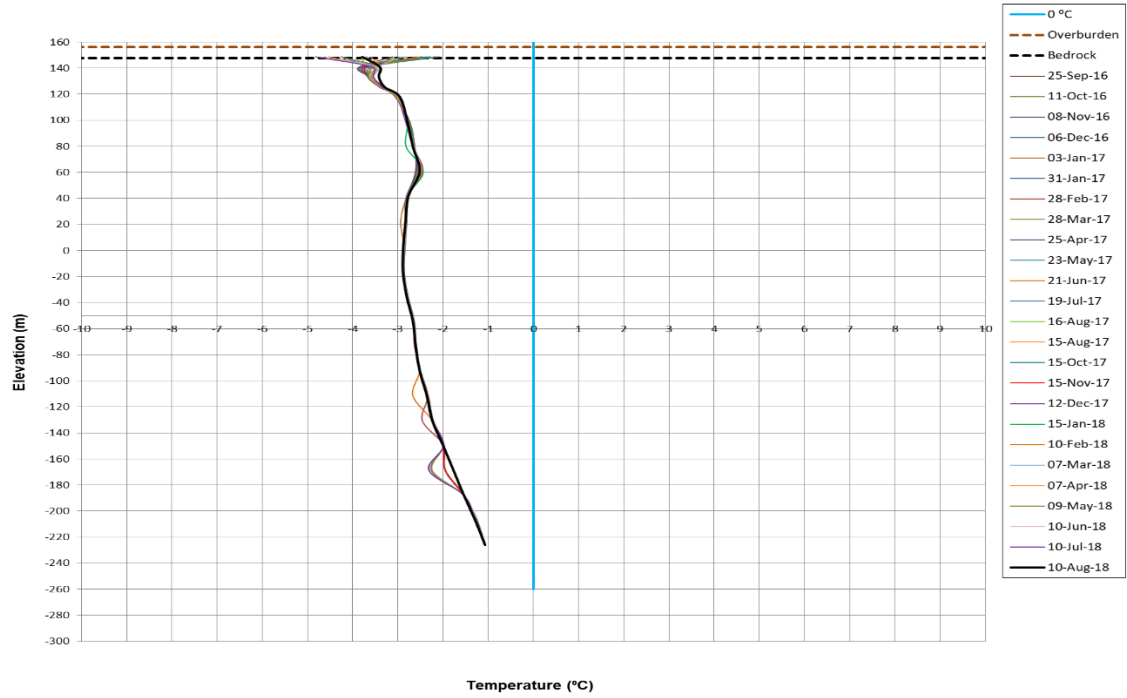
Agnico Eagle Mines response:

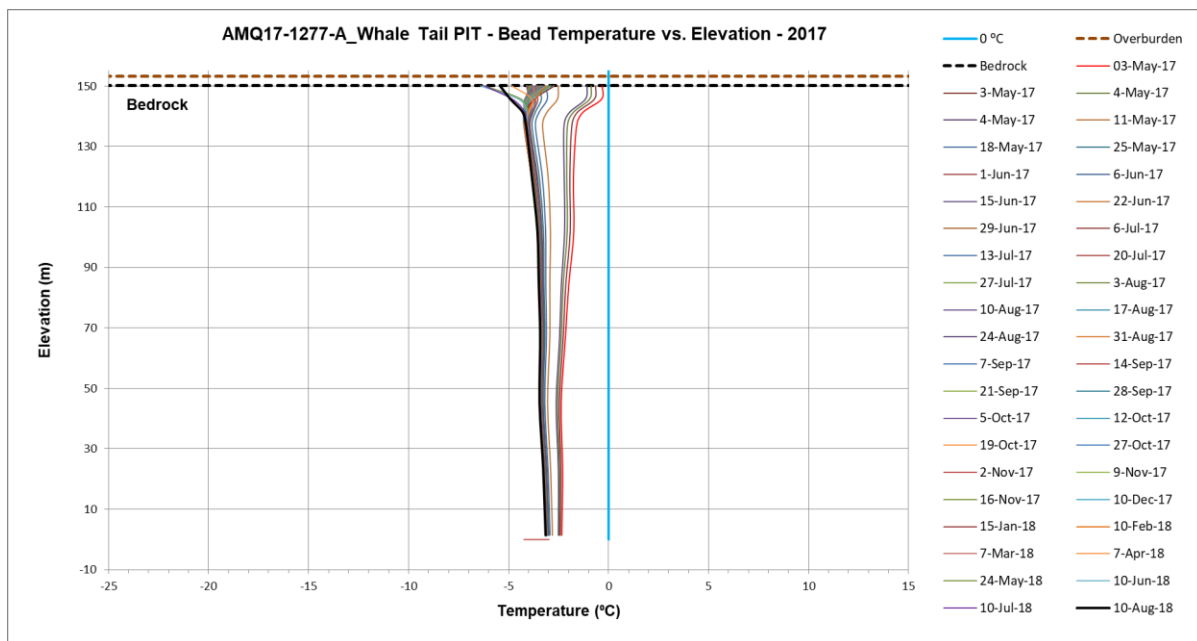
Below are the three (3) requested thermal profiles.

Agnico Eagle understands the importance of thermal monitoring relatively to dike performance and is committed to install, monitor and maintain those instruments until the decommissioning of the dike. Exact locations for thermal monitoring will be selected following excavation of the overburden. Overall, the objective is to install instruments in areas where the dike is the deepest (highest water head on FFAB).



AMQ15-452 _ WT Pit - Bead Temperature vs. Elevation - 2017





Comment 6: Stability Performance

It is unclear in section 6.4 how AEM will undertake the restoration of local toe slumps on ice-rich till.

Recommendation 6 (R6):

CIRNAC recommends AEM specify the remediation approach anticipated as corrective action for of local toe slumps on ice-rich till.

Agnico Eagle Mines response:

Due to the limited height of the dike, local toe remediation would be performed using an excavator. However, it would not require downstream access (i.e. no excavator would be placed on the tundra). Nevertheless, silt fence would be installed prior to performing works to prevent sediment transport further downstream.