



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
918 Nunavut Drive
Iqaluit, NU, X0A 3H0

Your file - Votre référence
(Licence No. 2AM-MEL1631)
Our file - Notre référence
GCDocs#147538493

June 8, 2026

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's Review of the Applicant's responses to comments on the Design Report for Discovery Road Phase 1 at the Meliadine Mine project, Type A Water Licence No. 2AM-MEL1631

Dear Richard,

Thank you for the May 6, 2026, invitation to review applicant responses to comments on the referenced design report, submitted by Agnico Eagle Mines Limited under the existing Type A Water Licence No. 2AM-MEL1631.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the application pursuant to its mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*. **One CIRNAC comment remains unresolved.**

The applicant shall provide confirmation from the Nunavut Water Board that all outstanding water license fees have been paid in full prior to approval of this application.

If there are any questions or concerns, please contact Michelle Blade at michelle.blade@rcaanc-cirnac.gc.ca or Andrew Keim at (867) 975-4550 or Andrew.Keim@rcaanc-cirnac.gc.ca.

Sincerely,

Michelle Blade
Regulatory and Science Advisor



Technical Review Memorandum

Date: June 8, 2026

To: Richard Dwyer – Manager of Licensing, Nunavut Water Board

From: Michelle Blade – Regulatory and Science Advisor, CIRNAC

Subject: **Crown-Indigenous Relations and Northern Affairs Canada’s Review of the Applicant’s responses to comments on the Design Report for Discovery Road Phase 1 at the Meliadine Mine project, Type A Water Licence No. 2AM-MEL1631**

Region: Kitikmeot Kivalliq Qikiqtani

A. BACKGROUND

The Meliadine Mine project is a gold mining project run by Agnico Eagles Mining Limited (Applicant), with active operations ongoing since 2016. The mine site is located approximately 25 km north of Ranken Inlet and 80 km southwest of Chesterfield Inlet in the Kivalliq Region of Nunavut. The project exists between the latitudes of 62° 47' 52" N and 63° 2' 53" N and between the longitudes of 92° 3' 10" W and 92° 16' 19" W. The main camp is located at 63° 2' 24.180" N and 92° 13' 44.288" W.

The Applicant has submitted a design report for a the Discovery Road Phase 1. This project involves building a 4 km road connecting the existing All Weather Access Road (AWAR) to the Meliadine Lake boat launch. The Applicant also intends to build a parking lot, a turnaround area, and a road slanting into Meliadine Lake for direct boat access. The Applicant proposes a minimum fill thickness of 1.2 m to prevent the underlying ice-rich permafrost from thawing. Five culverts will be built to manage surface water, and the road will slant away from the center line to prevent pooling.

CIRNAC provides the following comments and recommendations pertaining to the application package. A summary of the subjects of recommendations can be found in Table 1. Documents reviewed as part of this submission can be found in Table 2 of Section B. Detailed technical review comments can be found in Section C.


Table 1: Summary of Recommendations

Recommendation Number	Subject	Status
R-01	Road Closure and Reclamation Plans	Resolved
R-02	Thaw Susceptibility	Unresolved
R-03	Sedimentation and Erosion Controls	Resolved
R-04	Stockpiling	Resolved
R-05	DRC02 Q100 Freeboard	Resolved
R-06	Construction Timing	Resolved

B. DOCUMENTS REVIEWED AND REFERENCED

The following table (Table 2) provides a list of the documents reviewed under the submission and reference during the review.

Table 2: Documents Reviewed and Referenced

Document Title	Author, File No., Rev., Date
260323 2AM-MEL1631 6537-117-230-REP-001_R3 - Discovery road Phase1 - Design Report-For use-IMLE	Tetra Tech, March 12 2026 and WSP Canada Inc., August 26, 2025.
241025 2AM-MEL1631 Amended Licence-OASE Final	Nunavut Water Board, October 25 2024
240126 2AM-MEL1631 Meliadine WL Amendment_AppF19-RoadMgmtPlan-v9_NWB-IMLE	Agnico Eagle Mines Limited, January 2024
250331-11MN034-2024 Annual Report-App 29-14 Sediment & Erosion Mgmt Plan-IMRE	Agnico Eagle Mines Limited, March 2025
130125-11MN034-Golder Rpt Bsln Model Calibration-App 7.3B-IA2E	Golder Associates, January 2013
260421 Crown-Indigenous Relations and Northern Affairs Canada's Review of the Design Report for Discovery Road Phase 1 at the Meliadine Mine project, Type A Water Licence No. 2AM-MEL1631	CIRNAC, April 2026
260505 Design Report for Discovery Road Phase 1 for water licence 2AM-MEL1631	Agnico Eagle Mines Limited, May 2026



C. RESULTS OF REVIEW

1. Road Closure and Reclamation Plans

Comment:

Section 11 of the Road Management Plan indicates that upon mine closure, road surfaces will be rehabilitated to promote natural re-vegetation, remove water crossings, and re-established natural drainages. Agnico emphasizes that they are obligated to fully decommission all roads unless directed otherwise by the landowners and regulatory agencies.

Section 3.3 of the Tetra Tech Design Report frames the boat launch as long-term infrastructure, indicating that “The construction of the Discovery Road is considered a good opportunity to enhance boat launch access to Meliadine Lake for the local community”

CIRNAC is seeking clarification on the long-term plans for the road, since the goal of long-term increased access for community members is at odds with the Applicant’s decommissioning obligations.

Recommendation:

R-01) CIRNAC recommends that the Applicant indicate their long-term closure or hand-off plans for the road and boat launch following the mine’s closure. If the boat launch is intended for long-term community use, CIRNAC recommends indicating who will take responsibility for the road post-closure.

AEM Response:

As stated in the Interim Closure and Reclamation Plan (NIRB Public Registry Identification No. 354025 & 354027), the AWAR, the Bypass road embankment, and road to Discovery will be reclaimed at post-closure, and the natural drainage and terrain will be restored as much as possible. The culverts and the bridges all along the AWAR, the Bypass road and the road to Discovery will be dismantled. Upon local interest and regulatory approval, the AWAR, the Bypass road and road to Discovery could be transferred to the local community.

For a third party to take over the road(s), that third party would have to complete its own arrangements with the landowners (the KivIA and the Rankin Inlet Hamlet) and then complete its own environmental assessment and permitting process covering future use. Agnico Eagle does not own the land on which the roads are constructed and, thus, cannot transfer future ownership or use privileges to any third party. Agnico Eagle must complete its obligation to decommission and reclaim all roads unless directed otherwise by a combination of the landowners and other regulatory agencies who issued permits/authorizations for the roads.

CIRNAC Response:

CIRNAC acknowledges AEM’s response that Discovery Road will be fully decommissioned as per Section 11 of the Road Management Plan.

CIRNAC considers comment 1 **resolved**.



2. Thaw Susceptibility

Comment:

Section 2.2 of the Design Report indicates that the project site is underlain by ice-rich and thaw-susceptible permafrost with an active layer varying between 1.0 and 3.0 m.

Section 3.2 of the Design Report proposes a minimum fill thickness of 1.2 m in order to prevent thaw settlement, with increased thickness over culverts. However, Section 5 of the Road Management Plan indicates that “a minimum road fill thickness of at least 1.3 m is required above ice rich subgrade soils” in order to prevent permafrost thaw. The report does not indicate how the Applicant arrived at a value of 1.2 m, and does not justify how this will be sufficient to prevent thaw settlement.

The design report also does not discuss climate projections for the project site, or the implications this has for road design. The mine is projected to enter closure in 2032. However, the road may persist beyond this, depending on the Applicant’s response to R-01.

The concern is that there is insufficient information for CIRNAC to evaluate whether the road is designed to withstand thaw settlement over its lifetime. Permafrost thaw and subsequent settlement can affect surface water regimes, and may negate the effectiveness of the planned surface water management strategies.

Recommendation:

R-02a) CIRNAC recommends that the Applicant describe how it arrived at a minimum fill thickness value of 1.2 m, and explain how this will sufficiently prevent thaw settlement.

R-02b) CIRNAC recommends that the Applicant describe the climate change projections for the project site, and describe how the road is designed to withstand the effects of climate change induced thaw over the road’s intended lifetime.

AEM Response:

Main roads thickness in the Meliadine area range from approximately 0.3 m to more than 2.0 m, depending on construction year, design criteria, anticipated traffic loads, ground conditions, materials, and other site-specific factors. The 2025 Annual Geotechnical Inspection (Appendix 6 of the Annual Report) identified no permafrost degradation along these roads, all of which are performing well and remain in good geotechnical condition. Based on the demonstrated performance of these historical roads, a minimum thickness of 1.2 m is considered sufficient to prevent permafrost degradation. Thickness of the road will follow the design engineer's recommendations. Section 5 of the Roads Management Plan will be updated accordingly in the next revision.

CIRNAC Response:

A description to substantiate the minimum fill thickness value changing from 1.3 m to 1.2 m was not provided, nor a projection of climate-change induced thaw depth over the road’s intended lifetime.

CIRNAC considers comments 2a and 2b **unresolved**.



3. Sedimentation and Erosion Controls

Comment:

Part D-2e of Water License 2AM-MEL1631 states that detailed reports submitted prior to Construction shall include “Technical specifications for sedimentation, erosion control and bank stabilization measures, including proposed materials, location and extent, place methods and quantities required”.

Section 3.3 of Tetra Tech’s design report states that “precautions will be taken so that no material will be entered into water” during construction of the boat launch access road, parking lot, and turnaround.

Section 7.4 of Tetra Tech’s design report states that “During the installation of the culverts, if required, erosion and sediment control measures will be used in the work area to prevent sedimentation to downstream water bodies. Work will be monitored in accordance with the Sediment and Erosion Management Plan.”

Finally, section 3.1 of the WSP design report states that “the work areas shall be monitored for erosion and sediment transport as required during construction. Any required mitigation measures will be put in place as per the sediment and erosion management plan”.

No other information on erosion and sediment release control was provided. The Sedimentation and Erosion Plan provides a list of mitigation measures that could be implemented, but the Applicant has not indicated which of these measures it intends to take during this construction project. The concern is that without listing the technical specifications, proposed materials, location, extent, methods, and quantities, CIRNAC is unable to evaluate whether construction activities are likely to result in erosion and sedimentation into nearby freshwater bodies.

Recommendation:

R-03) CIRNAC recommends that the Applicant specify what measures will be taken during road and culvert construction to prevent sedimentation and erosion, including the proposed materials, location and extent, place methods and quantities required. CIRNAC requests particular details around sedimentation and erosion controls during construction within 31 m of Meliadine Lake.

AEM Response:

Construction will be conducted in accordance with the approved Sediment and Erosion Management Plan (NIRB Public Registry Identification No. 354039). Appropriate erosion and sediment control measures, such as turbidity barriers, silt curtains, and straw booms, will be implemented as needed to minimize erosion and sedimentation risks. In the case that turbidity is observed despite the use of sediment and erosion mitigation, activities will cease until water quality meets the limits specified in the Water Licence. Water quality and turbidity monitoring will be carried out in accordance with the Type A Water Licence.

CIRNAC Response:

CIRNAC considers comment 3 **resolved**.



4. Stockpiling

Comment:

Section 1.3 of the design report indicates that the Applicant intends to begin by farming and stockpiling esker material in June 2026. The Applicant does not indicate where it intends to farm material from, or where it intends to stockpile the material.

The concern is that the farming and stockpiling activities could result in sedimentation and erosion depending on their location

Recommendation:

R-04) CIRNAC recommends that the Applicant indicate where it intends to farm esker materials from, and where it intends to stockpile the materials. CIRNAC also recommends that the Applicant clarify whether farming or stockpiling activities will occur within 31m of the high water mark of any water body.

AEM Response:

Material will be sourced from esker deposits located on or near the road alignment. The B10 and B10 Extension eskers are partially developed and were previously used as material sources for waterline construction. Additional eskers along the proposed Discovery Road may also be utilized, subject to authorization from KivIA.

Esker farming and stockpiling will follow the best management practices laid out in the Borrow Pits and Quarries Management Plan, including promoting positive drainage, preventing permafrost degradation and preventing erosion and sedimentation through appropriate control measures. No farming or stockpiling will occur within 31 m of the high water mark of any water body.

CIRNAC Response:

CIRNAC considers comment 4 **resolved**.

5. DRC02 Q100 Freeboard

Comment:

Section 7.1 of the design report indicates that the available freeboard to the Culvert Inlet Crown for culvert DRC02 during a 1-in-100 year flood event is -0.04m. The Applicant notes that “this water level was determined to be acceptable due to the high return period of the design event and due to riprap protection design for 0.3 m above the culvert inlet crown. As well, the peak flow is only sustained for a short duration.”

1-in-100 year flood events were calculated using the Water Balance Model developed by Golder in 2009, and updated by WSP in 2024 to include data from 1981-2023. CIRNAC was unable to locate the 2024 updated model report. However, based on the initial model detailed in “130125-11MN034-Golder Rpt Bsln Model Calibration-App 7.3B-IA2E”, the model does not appear to account for changes in precipitation due to climate change.

Section 7.2 of the Road Management Plan indicates that culvert capacity should be adequate to ensure that the culvert(s) pass the water under all hydraulic conditions.



The concern is that the proposed culvert design does not fully accommodate the projected 1-in-100 year flood event, and does not leave any margin for error if precipitation events are higher than estimated by the Water Balance Model.

Recommendation:

R-05a) CIRNAC recommends that the Applicant provide information on how the Water Balance Model was updated in 2024, including whether the updated model accounts for the effects of climate change on precipitation.

R-05b) CIRNAC recommends that the Applicant reconsider the design for culvert DRC02 to, at minimum, fully accommodate the projected 1-in-100 year flood event.

AEM Response:

a) The Water Balance Model was updated to include climate data up to the end of 2023. The peaking factor of 1.5 was also added to the daily mean flows over the modelled period. The model was also updated to use the SSP2-4.5 climate scenarios in its future projections.

b) The indication of a 1-in-100 year flow being 4 cm above the culvert crown does not indicate an inability to convey the flows under all hydraulic conditions during a 100-year event. In fact, the culvert is conveying the 100-year event safely with the inlet water level 4 cm above the culvert crown, which is acceptable and is not anticipated to cause any erosion as riprap extends above the culvert crown by 0.3 m. The culvert, as designed, meets the design intent and requirement to fully convey the projected 1-in-100 year flood event, even when considering predicted climate change effects.

CIRNAC Response:

CIRNAC considers comment 5 **resolved**.

6. Construction Timing

Comment:

Section 5 of The Road Management Plan states that road construction should be conducted in winter to the greatest extent possible in order to prevent insulation of thawed subgrade soils. The Plan indicates that winter activities should include laying down the base of the roads, installing culverts, and building up the base of the road.

Section 1.3 of the design report indicates that “The first year of construction, 2026, will start in June and focus on farming and stockpiling of esker material and beginning road placement.”

The concern is that construction will be conducted during peak thaw season, potentially insulating thawed subgrade soils and leading to permafrost thaw.

Recommendation:

R-05a) CIRNAC recommends that the Applicant clarify what construction activities will be conducted in each season.



R-05b) CIRNAC recommends that the Applicant explain how the proposed schedule will prevent permafrost degradation, and how it will align with the measures listed in section 5 of the Road Management Plan.

AEM Response:

All roads at the Meliadine site constructed using esker material, including the Itivia Bypass Road, AWAR, and the Exploration Camp Road, were built during the summer and fall seasons. Annual geotechnical inspections have identified no evidence of permafrost thaw attributable to this construction.

Esker material generally contains a higher proportion of fines (silt- and clay-sized particles) and higher moisture content than blast rock or pit run waste. This material cannot be effectively excavated during winter without blasting, and stockpiles will freeze solid. Placement of frozen esker material during winter conditions can result in reduced road stability due to inadequate compaction and post-thaw settlement. Section 5 of the Roads Management Plan will be updated in the next revision to reflect this precision.

CIRNAC Response:

CIRNAC considers comment 6 **resolved**.