



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
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Your file - Votre référence
2AM-MEL1631
Our file - Notre référence
GCdocs #99782891

December 21, 2021

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

**Re: Crown-Indigenous Relations and Northern Affairs Canada's (CIRNAC's)
Review of Meliadine Mine Design Reports submitted by Agnico Eagle Mines
(AEM) for Type "A" Water Licence No. 2AM-MEL1631**

Dear Mr. Dwyer,

Thank you for your November 25, 2021 invitation to review the Meliadine Mine Design Reports submitted by AEM for 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*. Please find CIRNAC comments and recommendations in the attached Technical Memorandum.

CIRNAC appreciates the opportunity to participate in this review. If there are any questions, please contact John Onita at john.onita@rcaanc-cirnac.gc.ca; or (867) 975-3876 or Andrew Keim at (867) 975-4550 or andrew.keim@rcaanc-cirnac.gc.ca

Sincerely,

John Onita
Regional Water Coordinator



Technical Review Memorandum

Date: December 21, 2021

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

From: John Onita, Regional Water Coordinator, CIRNAC

Subject: Crown-Indigenous Relations and Northern Affairs Canada's
(CIRNAC's) Review of Meliadine Mine Design Reports submitted by
Agnico Eagle Mines (AEM) for Type "A" Water Licence No. 2AM-
MEL1631

Region: ☐ Kitikmeot ☒ Kivalliq ☐ Qikiqtani

A. BACKGROUND

Agnico Eagle Mines Limited (AEM) Meliadine Gold Mine Project is located near the western shore of Hudson Bay in the Kivalliq Region of Nunavut, approximately 25 km north of Rankin Inlet, 80 km southwest of Chesterfield Inlet, and 290 km southeast of the Meadowbank mine. The Project site is situated on a peninsula amongst the east, south, and west basins of Meliadine Lake (63°1'23.8"N, 92°13'6.42"W), on Inuit owned land. The 111,358-hectare property covers an 80-km-long greenstone belt. A 24-km All-Weather Access Road (AWAR) (built in October 2013) links the Meliadine project site with Rankin Inlet. AEM was issued a water licence for this project by the Nunavut Water Board (NWB) on April 15, 2016. The mine commenced its commercial production on May 14, 2019. The project is anticipated to have a mine life of about 14 years with potential for extension to 25 years should more ore be identified.

On November 17, 2021, AEM provided a 60-Day Notice to NWB in accordance with Water License 2AM-MEL1631 (Part D, item 1) on Design Reports for CP2, CP2 Thermal Berm, Channel 9, Channel 10 and Waste Rock Storage Facility 3 (WRSF3) and Drawings (Version 2).

On November 25, 2021, the NWB invites parties to submit comments on the design reports submitted by AEM.

CIRNAC provides the following comments and recommendations pertaining to the Meliadine Mine Design Reports. 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
R-01	Signed and Stamped issued for construction (IFC)
R-02	Slope Stability Analyses of WRSF3
R-03	Design Report for CP2, CP2 Thermal Berm, Channel 9, and Channel 10

B. DOCUMENTS REVIEWED

The following table (Table 2) provides a summary of the documents reviewed under the submission.

Table 2: Documents Reviewed

Document Title	Author, File No., Rev., Date
Waste Rock Storage Facility 3 (WRSF3) Design Report and Drawings (Version 2) 6515-686-163-REP-002	Agnico Eagle Mines (AEM); November, 2021
Design Report for CP2, CP2 Thermal Berm, Channel 9, and Channel 10, Meliadine Project, Nunavut	Agnico Eagle Mines (AEM); October, 2021

C. RESULTS OF REVIEW

CIRNAC provides the following comments and recommendations for the Board's consideration:

1. Signed and Stamped Issued For Construction (IFC)

Comment

CIRNAC understands that the attached engineering drawings to AEM's Design Reports submitted to the NWB for Water Licence 2AM-MEL1631, was for review by the NWB and intervening parties.



Recommendation

(R-01) CIRNAC recommends that AEM should provide signed and stamped issued for construction (IFC) drawings by a registered engineer, for:

- a) Waste Rock Storage Facility 3 (WRSF3) Design Report and Drawings (Version 2) 6515-686-163-REP-002;
- b) Design Report for CP2, CP2 Thermal Berm, Channel 9, and Channel 10.

2. Slope Stability Analyses for WRSF3

Comment:

CIRNAC is concerned that only one section of the WRSF3 was analyzed to verify the global slope stability. Although this section is located where the consequences of failure are higher, it does not represent the critical conditions of the site. Indeed, the thickness of the overburden is much more important at other locations (or close by) and, furthermore, the natural ground sloping downward from the toe of WRSF3 should be considered. Also, information on how the slope stability of WRSF3 would mitigate against potential ground water contamination should be considered, particularly in the portion of the permafrost areas where groundwater may be partially or wholly unfrozen due to freezing point depression.

Recommendation:

(R-02) CIRNAC recommends that AEM should provide additional slope stability analyses to assure that the stability of WRSF3 is adequate everywhere.

3. Design Report for CP2, CP2 Thermal Berm, Channel 9 and Channel 10

Comment:

CIRNAC has no comment on this report.

CIRNAC is satisfied with the information provided in the design report for CP2, CP2 thermal berm, channel 9 and channel 10.



D. REFERENCES

Agnico Eagle Mines (AEM); Waste Rock Storage Facility 3 (WRSF3) Design Report and Drawings (Version 2) 6515-686-163-REP-002; November, 2021.

Agnico Eagle Mines (AEM); Design Report for CP2, CP2 Thermal Berm, Channel 9, and Channel 10, Meliadine Project, Nunavut; October, 2021.

Department of Crown-Indigenous Relations and Northern Affairs Act (2000)

Nunavut Waters and Nunavut Surface Rights Tribunal Acts (2016); *Nunavut Water Board*