Environmental Protection Operations Directorate
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ECCC File: 6100 000 012/015
NWB File: 2AM-MEL1631

December 16, 2025

via email at: richard.dwyer@nwb-oen.ca

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

Dear Richard Dwyer:

RE: 2AM-MEL1631 – Agnico Eagle Mines Ltd. – Meliadine Gold Mine – Design Report for CP8, CP8 Thermal Berm, Channel13, Channel14, B7North Thermal Berm, and B7West Thermal Berm, Meliadine Gold Mine, Nunavut

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Water Board (NWB) by Agnico Eagle Mines Ltd. ("the Proponent") regarding the above-mentioned Design Report.

ECCC provides expert information and knowledge to project assessments on subjects within the department's mandate, including climate change, air quality, water quality, biodiversity, environmental emergencies preparedness and responses. This work includes reviewing proponent characterization of environmental effects and proposed mitigation measures. We provide advice to decision-makers regarding a proponent's characterization of environmental effects, the efficacy of their proposed mitigation activities, and may suggest additional mitigation measures. Any comments received from ECCC in this context does not relieve the proponent of its obligations to respect all applicable federal legislation

The following comments are provided:

1. Excess ice in boreholes

Reference:

Design Report for CP8, CP8 Thermal Berm, Channel13, Channel14, B7North Thermal Berm, and B7West Thermal Berm, Meliadine Gold Mine, Nunavut (Tetra Tech Canada Inc.; November 14, 2025)

- Section 2.6 General Subsurface Conditions
- Section 3.5 Geotechnical Conditions within Channel13 and Channel14 Footprints
    - Table 2: Geotechnical Ground Conditions around Channel13 and Channel14
- Section 3.6 Geotechnical Conditions in CP8 and CP8 Thermal Berm Areas
    - Table 3: Geotechnical Ground Conditions around CP8 and CP8 Thermal Berm
- Section 3.7 Geotechnical Conditions in the B7North Thermal Berm Footprint
    - Table 4: Geotechnical Ground Conditions around B7North Thermal Berm
- Section 3.8 Geotechnical Conditions in B7West Thermal Berm Footprint
    - Table 5: Geotechnical Ground Conditions around B7West Thermal Berm

Comment:

In Section 2.6 of the Design Report, the Proponent states that "*A layer of ice-rich overburden (silt or sand) has been observed in some of the boreholes drilled. Overburden soils with excess ice (Vs, Vx, and Vr) were observed in the non-destructive boreholes. The estimated percentage (by volume) of the excess visible ice ranged from 2% to 20% in the overburden soils.*"

In all the sections and tables referenced above, the Proponent indicated the presence of excess ice in several boreholes. In some cases the percentage of excess ice in the overburden soils was greater than 25%; however, the report did not include mitigation measures should the presence of excess ice become a problem after construction.

ECCC Recommendation:

ECCC recommends the Proponent consider including monitoring programs and mitigation measures should the presence of excess ice in overburden soils become a problem after construction.

2. CP8 collection pond

References:

Design Report for CP8, CP8 Thermal Berm, Channel13, Channel14, B7North Thermal Berm, and B7West Thermal Berm, Meliadine Gold Mine, Nunavut (Tetra Tech Canada Inc.; November 14, 2025)

- Figure 2. Water Management Infrastructure Layout (CP8, CP8 Thermal Berm, Channel13 and Channel14, B7North and B7West Thermal Berm)

Water Management Plan Version 15B (Agnico Eagle Meliadine Gold Mine; March 2025)

- Table 2. Water Management Control Structures to be Constructed
- Figure 2. General Mine Site Plan Layout

Meliadine Mine Water Balance and Water Quality Model – Technical Report (Lorax Environmental Services; January 25, 2024)

- Section 5.2.1 Collection Pond CP8

Comment:

As proposed in the Design Report, the CP8 collection pond would be located between Lake B7 and the proposed Tailings Storage Facility (TSF) Expansion, with an adjacent thermal berm and a storage capacity of 69,823 m^3. However, the Water Management Plan (v.15B) and Meliadine Mine Water Balance and Water Quality Model (2024 Technical Report) refer to a different CP8 collection pond, located in the footprint of Lake B4, with four associated dikes and a storage capacity of up to 1.1 million m^3. This larger version of CP8 appears to be an important element in the water management strategy proposed for the site. The smaller CP8 pond described in the Design Report did not appear to be included in maps provided in the Water Management Plan.

It is not clear if the CP8 pond described in the Design Report is meant to replace the CP8 pond described in the Water Management Plan, or how it will change the site water management strategy, as described in the Water Management Plan and Mine Water Balance and Water Quality Model (2024 Technical Report).

ECCC Recommendation:

ECCC recommends the Proponent:

a. clarify whether the CP8 pond in the Design Report replaces or is supplemental to the CP8 pond referred to in the Water Management Plan and Mine Water Balance and Water Quality Model (2024 Technical Report);
b. describe how water management will be changed on site; and
c. update the Water Management Plan and the Water Balance and Water Quality Model to integrate the newly proposed water management infrastructure and incorporate changes to previously proposed infrastructure.

3. Design criteria for collection ponds

Reference:

Design Report for CP8, CP8 Thermal Berm, Channel13, Channel14, B7North Thermal Berm, and B7West Thermal Berm, Meliadine Gold Mine, Nunavut (Tetra Tech Canada Inc.; November 14, 2025)

- Section 5.3 Inflow Design Flood and Earthquake Levels

Water Management Plan Version 15B (Agnico Eagle Meliadine Gold Mine; March 2025)

- Section 3.2 Water Management Structures Design Criteria

Comment:

As described in the Design Report, the proposed storage capacity for the CP8 collection pond "*meets the most critical of the following cases:*

- *3/7 of the equivalent unit runoff during spring freshet for a 1 in 100 return wet year; or*
- *One 1 in 100 return 24-hour extreme rainfall event.*"

By comparison, the Water Management Plan, which sets out the design criteria for water management structures, refers to storage capacities of similar-sized collection ponds (CP2, CP3, CP4, CP5, CP6) as "*able to manage the surface contact water from their respective catchment area for 3/7 of a 1:100 wet year spring freshet or a 1:1000 return 24-hour extreme rainfall.*"

It is unclear why a 1:100 return 24-hour extreme rainfall is adequate for CP8, while a 1:1000 return 24-hour extreme rainfall was considered appropriate for similar-sized collection ponds on site. An undersized pond could result in uncontrolled discharge in extreme conditions.

ECCC Recommendation:

ECCC recommends the Proponent explain why the design criteria for the storage capacity of the CP8 collection pond, as described in the Design Report, differ from the criteria specified for similar-sized collection ponds in the Water Management Plan.

4. Decommissioning of the CP8 collection pond

Reference:

Design Report for CP8, CP8 Thermal Berm, Channel13, Channel14, B7North Thermal Berm, and B7West Thermal Berm, Meliadine Gold Mine, Nunavut (Tetra Tech Canada Inc.; November 14, 2025)

Interim Closure and Reclamation Plan – Update 2024 (Agnico Eagle Meliadine Gold Mine; March 2025)

ECCC comment:

The Interim Closure and Reclamation Plan does not discuss decommissioning of a pond at the location described for CP8 in the Design Report. If CP8 continues to hold water in closure and post-closure, surface water quality may be degraded as the pond would primarily collect runoff from the adjacent TSF. Planning for how CP8 will be decommissioned will help to ensure that closure objectives for surface water quality are met at the pond location.

ECCC recommendation:

ECCC recommends the Proponent describe how they plan to decommission the CP8 collection pond, as described in the Design Report. If the pond will continue to hold water in closure and post-closure, they should discuss predicted surface water quality and how the pond will be connected with other surface water flow paths in post-closure.

If you need more information, please contact Erik Allen at Erik.Allen@ec.gc.ca.

Sincerely,

Allen, Erik

Digitally signed by: Allen, Erik
DN: CN = Allen, Erik C = CA
O = GC OU = EC-EC
Date: 2025.12.16 13:21:32 -05'00'

Erik Allen
Senior Environmental Assessment Officer

cc: Eva Walker, Head, Environmental Assessment North (NT and NU)