Crown-Indigenous Relations and Northern Affairs Canada
Relations Couronne-Autochtones et Affaires du Nord Canada

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

Your file - Votre référence
2AM-DOH1335
Our file - Notre référence
GCDocs#150030924

September 16, 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 Sump 4 and Sump 5 Design Report for the Hope Bay Project, Type A Water Licence No. 2AM-DOH1335.

Dear Richard,

Thank you for the September 9, 2026 invitation to review the referenced licence Design Report, submitted by Agnico Eagle Mines Limited, for Type A Water Licence No. 2AM-DOH1335.

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* and provides the following Technical Review Memorandum for the Board's consideration.

If there are any questions or concerns, please contact me at (873) 800-5240 or Pauline.Firmin@rcaanc-cirnac.gc.ca or Andrew Keim at (867) 975-4550 or Andrew.Keim@rcaanc-cirnac.gc.ca.

Sincerely,

Pauline Firmin

Pauline Firmin, M. Sc,
Regional Coordinator

Canada

Technical Review Memorandum

Date: September 16, 2026

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

From: Pauline Firmin – Regional Coordinator, CIRNAC

Subject: **Crown-Indigenous Relations and Northern Affairs Canada's Review of the Sump 4 and Sump 5 Design Report for the Hope Bay Project, Type A Water Licence No. 2AM-DOH1335.**

Region: ☒ Kitikmeot ☐ Kivalliq ☐ Qikiqtani

A. BACKGROUND

The Hope Bay Gold Mine Project, in the Kitikmeot Region of Nunavut, is approximately 685 km northeast of Yellowknife and 125 km southwest of Cambridge Bay. It encompasses the Hope Bay and Elu greenstone belts, including the Doris, Madrid, and Boston gold deposits. The project is operated by Agnico Eagle Mines Limited (Agnico Eagle), which acquired the Hope Bay property in February 2021. Existing infrastructure includes underground mine workings, a processing plant, airstrips, port facilities, and an all-weather road network.

The Design Reports, prepared by AtkinsRéalis Canada Inc. for Agnico Eagle, present the engineering design, construction methodology, and operational considerations for two temporary contact water collection sumps associated with the Madrid area of the mine development. Sump 4 is intended to collect and temporarily store contact water runoff from the saline overburden pad, while Sump 5 will collect runoff from the Madrid North Waste Rock Storage Facility (WRSF) and the adjacent ore stockpile pad. Water captured in both facilities will be pumped to Contact Water Pond 3 (CWP-3) for subsequent treatment, reuse, and/or discharge in accordance with the site water management system.

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
R-01	Freeboard Height
R-02	Locations Of The Proposed Sumps
R-03	Sump 4 Stream Proximity
R-04	Access Roads Design And Construction
R-05	Size and Storage Capacity Of Sump 5

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
Design Report: Sump 4	AtkinsRéalis, R0, June 10, 2026
Design Report: Sump 5	AtkinsRéalis, R0, June 10, 2026
Nunavut Water Board Amended Water Licence No: 2AM-DOH1335	TMAC Resources Inc., 2018

C. RESULTS OF REVIEW

1. Freeboard Height

Comment:

CIRNAC notes that the proposed freeboard for both Sump 4 and Sump 5 vary in the Design Reports. Section 3.1 of the design reports identifies a minimum freeboard of 0.5 m for both facilities; however, the associated drawings uses 1.0 m of freeboard height to estimate Sump 4 and 5 useful storage (Drawing No. 62-MAN-695-230-000-034 for Sump 4 and Drawing No. 62-MAN-695-230-000-018 for Sump 5).

It creates uncertainty regarding the final intended design storage capacity and the available contingency volume for managing contact water, which may not be sufficient if a 0.5 m freeboard height was used for the useful storage calculation. Given the role of these facilities in collecting and temporarily storing contact water, clarity regarding the freeboard height is important to evaluate the adequacy of water management and protection measures.

Recommendation:

(R-01) CIRNAC recommends that the Proponent provide a minimum freeboard of 1.0 m or more, to provide additional contingency capacity and greater assurance that the sumps can effectively manage contact water during operational, storm, and freshet conditions, thereby supporting water protection objectives.

2. Locations Of The Proposed Sumps

Comment:

CIRNAC notes that the Proponent states that slope stability and thermal analyses are not required because the facilities are “entirely located within competent rock formation” (Sump 4 Design Report, Section 3.4; Sump 5 Design Report, Section 3.4). However, the reports also indicate that Sump 4 is located predominantly on outcrop with a limited footprint extending over tundra (Sump 4 Design Report, Section 3.4) and that Sump 5 excavation is predominantly in rock (Sump 5 Design Report, Section 4.4).

This language, such as the use of predominantly instead of fully, creates uncertainty regarding whether portions of either sump will be located outside competent bedrock, such as in the tundra. As these facilities are intended to collect and store contact water, the extent to which tundra or potentially frost-susceptible soil may be present is relevant to evaluating seepage, stability, and potential effects on water quality and water protection objectives.

Recommendation:
(R-02) CIRNAC recommends that the Proponent provide additional information confirming the extent to which Sump 4 and Sump 5 will be contained within competent bedrock, including if any portions extend into the tundra or potentially frost-susceptible soil.

If any part of the facilities is located outside a competent rock formation, CIRNAC further requests the rationale supporting the conclusion that slope stability and thermal analyses are not required, and whether this could influence containment performance and contact water management.

3. Sump 4 Stream Proximity

Comment:
CIRNAC notes that Drawing No. 62-MAN-695-230-000-034 for Sump 4 identifies an existing stream in proximity to the proposed sump and crossing the proposed access road; however, the design report does not clearly indicate the distance between the stream, the proposed sump, and the proposed diversion berm(s).

While the construction sequence indicates that diversion berm(s) will be constructed to prevent water ingress during construction (Sump 4 Design Report, Section 4.4), the report provides no information regarding proximity to the stream and or address potential interactions with nearby freshwater (Section 4.5). Given the potential for sedimentation, erosion, and dust generation due to blasting during construction, it is important that adequate measures are in place to protect nearby watercourses, such as the identified stream, and support compliance with water management requirements. Water Licence No. 2AM-DOH1335 requires the implementation of measures to prevent sediment entry into water and to control bank erosion and dust deposition to water bodies (e.g. Part D, Items 6 and 8; Part E, Items 10 and 12).

Recommendation:
(R-03) CIRNAC recommends that the Proponent provide additional information on the proximity of Sump 4, the access road, and diversion berm(s) relative to the adjacent stream, and ensure all monitoring and mitigation measures be implemented during construction to minimize the potential for sedimentation, erosion, or dust deposition to nearby freshwater environments and align with all relevant Water Licence requirements.

4. Access Roads Design And Construction

Comment:

CIRNAC notes that the Sump 4 Design Report identifies a proposed access road southwest of the sump footprint that crosses an existing stream (Drawing No. 62-MAN-695-230-000-034). However, the report does not appear to provide design or construction details for the access road or stream crossing, including road design, drainage controls, erosion and sediment control measures, water crossing design, or considerations related to permafrost disturbance and ground subsidence.

Similarly, the Sump 5 Design Report indicates that an access road and culvert crossing will be constructed, but provides limited information beyond the proposed road surface materials (Section 4.4). Given the proximity of these works to a watercourse, additional information is necessary to assess potential effects on surface water quality and aquatic environments and to demonstrate that the proposed infrastructure will be adequately protective.

Water Licence No. 2AM-DOH1335 requires detailed design information for water management facilities and all-weather roads, including design rationale, construction methods, and specifications for erosion, sedimentation, and bank stabilization measures (Part D, Item 1; Schedule D, Item 1).

Recommendation:

(R-04) CIRNAC recommends that the Proponent provide additional information regarding the design and construction of the proposed access roads and stream crossings associated with Sump 4 and Sump 5, including drainage controls, culvert or crossing design, erosion and sediment control measures, and consideration of permafrost-related stability, to satisfy the information requirements of Water Licence No. 2AM-DOH1335 (Part D, Item 1; Schedule D, Item 1).

5. Size and Storage Capacity Of Sump 5

Comment:

CIRNAC notes that the Sump 5 Design Report identifies a minimum required live storage volume of approximately 31 000 m³ (Section 3.1). The design drawing indicates an estimated storage capacity of approximately 31 000 m³, assuming 1.0 m of freeboard and 0.5 m of dead storage (Drawing No. 62-MAN-695-230-000-018).

However, Section 3.2.1 states that the sump will have approximate dimensions of 60 m × 30 m × 10 m, which yields a simple geometric volume (18 000 m^3) substantially lower than the stated storage capacity. While CIRNAC recognizes that the sump geometry is irregular and that a simplified calculation may not reflect the actual design volume, the

apparent discrepancy creates uncertainty regarding the storage capacity available to manage contact water. Given the role of Sump 5 in containing contact water, confirmation of the available storage volume is important to assess the risk of overtopping and potential effects on downstream water quality.

Recommendation:

(R-05) CIRNAC recommends that the Proponent confirm the planned final dimensions and operational storage capacity of Sump 5, to confirm that the proposed design provides sufficient capacity to contain the predicted contact water volumes and prevent uncontrolled releases to the receiving environment