



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
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Your file - Votre référence
2AM-DOH1335
Our file - Notre référence
GCDOCS# 116297063

August 18, 2023

Robert Hunter
Licensing Administrator
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
Licence Updated Security Review Estimate for the Hope Bay Project, Type A
Water Licence No. 2AM-DOH1335**

Dear Robert,

Thank you for the May 1, 2023 invitation to review the referenced licence updated security review estimate, submitted by Agnico Eagle Mines Limited (AEM), 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*. Please find CIRNAC comments and recommendations in the attached Technical Memorandum.

If there are any questions or concerns, please contact me Joyce Demers at (867) 975-3877 or joyce.demers@rcaanc-cirnac.gc.ca Andrew Keim at (867) 975-4550 or andrew.keim@rcaanc-cirnac.gc.ca

Sincerely,

Joyce Demers
Industrial Coordinator



Technical Review Memorandum

Date: August 18, 2023

To: Robert Hunter – Licensing Administrator, Nunavut Water Board

From: Joyce Demers, Industrial Coordinator, CIRNAC

Subject: **Crown-Indigenous Relations and Northern Affairs Canada's Review of the Licence Updated Security Review Estimate for the Hope Bay Project, Type A Water Licence No. 2AM-DOH1335**

Region: ☒ Kitikmeot ☐ Kivalliq ☐ Qikiqtani

A. INTRODUCTION

As required under Part J item 6 of Type A Water Licence No. 2AM-DOH1335, "The Licensee shall, should the [Hope Bay] Project remain or be in Care and Maintenance, submit an updated estimate of total mine closure restoration liability, within twelve (12) months of entering Care and Maintenance and every three (3) years thereafter".

It has been 1 years since the Hope Bay project (the project) went into Care and Maintenance, and 5 years since the last updated estimate of total mine closure restoration liability was completed.

Crown-Indigenous Relations and Northern Affairs Canada's (CIRNAC) review of Agnico Eagle Mines Limited's (Agnico Eagle, AEM) April 2023 revised security estimate, is based on the following actions and activities:

1. Incorporating closure concepts and planning details described in the Interim Closure and Reclamation Plan for the project, submitted by TMAC in 2017;
2. Completing a joint two-day Closure Workshop with representatives of Agnico Eagle and the Kitikmeot Inuit Association March 13-14, 2023, and follow up discussions in April 2023;
3. Use of the RECLAIM 7.0 spreadsheet model and User Manual (Mining Version);
4. Updating current and future site conditions to reflect changes in the Hope Bay Belt Project (Doris-Madrid) Life of Mine (LOM) Plan and construction to date, as outlined in the February 2023 Doris-Madrid Interim Closure and Reclamation Plan Comparison (SRK February 2023);
5. Review and update (where required) of all RECLAIM 7.0-unit rates by a Reclamation Security Expert, with consideration of in-house unit cost data and market escalation; and
6. Compilation of RECLAIM 7.0 security estimates for the Current Scope of Work conditions LOM Plan condition.



B. BACKGROUND

On December 20, 2017, TMAC Resources Inc. submitted applications seeking authorization for the use of water and deposit of waste associated with gold mining operations within the boundaries of the Hope Bay Greenstone Belt. The project is described in TMAC's Phase 2 Hope Bay Belt Project Proposal (Phase 2 Project; the Applications).

The project consists of two locations. One, the Doris North Mine site is located approximately 150 kilometres (km) southwest of Cambridge Bay, and the other, Boston camp, 75 km northeast of Omingmaktok (Bay Chimo). Both are within the Kitikmeot Region of Nunavut. As these proposed mining undertakings were assessed together within the scope of the Phase 2 Project, the Applications were also considered together by the NWB in a single process that was coordinated with the Nunavut Impact Review Board's assessment of the Phase 2 Project.

The Applications requested:

1. Issuance of a new Type "A" Water Licence for the uses of water and deposit of waste associated with gold mining activities at the site of the Boston deposit (Water Licence No: 2AM-BOS1835); and
2. Consequential amendments to the terms and conditions of the existing Type "A" Water Licence No: 2AM-DOH1323 to allow for additional gold mining at the nearby Madrid North and Madrid South deposits (amended and renumbered Water Licence No: 2AM-DOH1335).

The Phase 2 Project was approved to proceed to licensing by the Minister of Crown-Indigenous Relations and the Minister of Intergovernmental Affairs, Northern Affairs and Internal Trade on October 12, 2018. It was during this process that the last estimate of \$65.8 Million LOM security was completed.

During the development of both Water Licences and the respective securities estimates considerable discussions resolved that reclamation security for the projects would be provided in phases to reflect the increase in reclamation liability that would occur over time as key project infrastructure associated with the undertakings are constructed. Each license came to define the specific definitions for each phase of infrastructure development linked to individual totals that were then included in Schedule A of each Water Licence.

These schedules also reflect the agreement negotiated at the time by TMAC, the Kitikmeot Inuit Association (KIA) and Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) during the Phase two amendment process concerning the split of securities.

This agreement was further detailed in Part C of each water license, including how the global amount of security posted for each phase under each Licence is to be held under the Licence by the Minister and by the KIA.



- Amended Water Licence No: 2AM-DOH1335, consisting of Doris North, Madrid North and Madrid South sites, the has a reclamation security amount of \$62,058,577.00, and;
- Water Licence No: 2AM-BOS1835, consisting of the Boston site, has a reclamation security amount of \$37,458,491.00

This is included here as the issue of security for this License may also require review under a sperate process.

On January 14th, 2019 the Minister of Northern Affairs wrote to the Nunavut Water Board (NWB) accepting their recommendation and approving the new Type A water License 2AM-BOS1835 and the Amended Type A 2AM-DOH1335 (Amendment 2) for TMAC Resources inc.

On February 2, 2021 TMAC was purchased by Agnico Eagle and became a wholly owned subsidiary of Agnico Eagle. Effective as of January 1st, 2022, Agnico Eagle and TMAC have amalgamated and now continue under the Agnico Eagle name.

No further securities estimate has been completed since the 2018 / 2019 process was approved and completed and following the transition of ownership the project maintained commercial operations for most of 2021. According to the 2021 Annual Report produced by AEM the mill processed 262,466 tonnes (t) of ore and poured 64,583 ounces of gold. Madrid underground and surface operations, were suspended in February 2021.

On March 30, 2022 AEM provided the NWB written notice that the Hope Bay Project was to be placed into Care and Maintenance. As required by Part J, Item 5 of the Type A Water Licence (2AM-DOH1335), AEM provided the Doris-Madrid Care and Maintenance Plan. The plan detailed on-going site activities and provided for maintenance of mine site facilities, management and monitoring measures, and procedures to be implemented in accordance with regulatory requirements.

On April 30, 2023 on behalf of AEM, and KIA, Nunami Stantec Ltd. provided to the NWB an updated Closure Security Estimate, in compliance with Part J, Item 6 of the 2AM-DOH1335 water license. This estimate updated the pervious version, provided in 2017 by TMAC Resources Inc.

AEM notes in this submission that they have adopted the terms of the original framework agreement with the KIA that states;

“Reclamation Security addresses security for reclamation obligations under the Land Use Licence and closure and reclamation plans under the Land Tenure Agreements. The purpose of the reclamation security is to ensure that KIA shall have sufficient funds available to it to complete the activities set out in reclamation plans under the Land Use Licence and closure and reclamation plans under the Land Tenures Agreements to fulfill the reclamation obligations. Section 12.2 of this Framework Agreement states that the quantum of reclamation security shall be determined by an independent Reclamation



Security Expert in the area of reclamation security for Exploration Work and Mining Activities. The KIA and Agnico Eagle jointly appointed Nunami-Stantec as the Reclamation Security Expert to prepare this Updated Closure Security Estimate.”

C. SCOPE OF CIRNAC’S REVIEW

Upon receipt of AEM’s submission to the NWB on April 28, 2023 of an Updated Closure Security Estimate, CIRNAC engaged ARCADIS to conduct a review of the submission as well as the submission completed in 2018. They were requested to provide technical recommendations to assist in the development of CIRNAC’s security estimate for 2023.

1. As a result of the project being in Care and Maintenance, CIRNAC provides the following review of AEM’s April 2023 security estimate detailing estimates for two scenarios. The difference between the two being the costs associated with the clean up of the project as it currently exists and the second, the Life of Mine estimate being that cost calculated based on all planned mining activities having already been undertaken. Mine site and related closure and reclamation works based on Current Conditions, and;
2. Mine site and related closure and reclamation works based on the expected end of Life of Mine (LOM) conditions.

Arcadis’ security review was solely for the Hope Bay Doris-Madrid sites. AEM holds a separate Water Licence for the Boston mine portion of the Hope Bay project which may require a separate review.

Arcadis used the latest version of the RECLAIM V7. model as provided by CIRNAC to prepare this security estimate. Arcadis’ initial review of AEM’s April estimate identified specific concerns with several items that appeared to be significantly underestimated. These concerns were raised with NS-AEM in June, to ensure that all aspects of the estimate were clearly understood and appropriately considered.

AEM’s response confirmed Arcadis’ findings. As a result AEM and the KIA engaged with their consultant and a revised estimate was submitted at the end of July 2023. The July submission came to the following estimates;

AEM/KIA Estimates

	Total	Distribution
•AEM Current Conditions Security	\$ 64,390,925	(Water \$26,309,452, Land \$38,081,474)
•AEM Life of Mine Security	\$ 88,187,107	(Water \$31,066,312, Land \$57,120,795)

Based on the review of the information subsequently provided by AEM in the July submission, CIRNAC recommends security be set at the following for each scenario;

**CIRNAC Estimates**

	Total	Distribution
•CIRNAC Current Conditions Security	\$75,141,299	(Water \$36,158,056, Land \$38,983,244)
•CIRNAC LOM Security	\$96,682,625	(Water \$45,553,273, Land \$51,129,352)

Below, in Table 1 and Table 2, there is a breakdown of NS-AEM security review cost estimates compared to CIRNAC-Arcadis security review cost estimates.

Table 1: Summary of Costs – Current Condition

Cost Items	NS-AEM Security	Arcadis RECLAIM
CAPITAL COSTS		
Open Pit	\$4,190,608	\$5,024,455
Underground Mine	\$3,344,311	\$5,690,090
Tailings Facility	\$12,561,086	\$12,727,075
Rock Pile	\$1,398,359	\$1,398,359
Building and Equipment	\$10,727,366	\$10,728,931
Chemicals and Contaminated Soil Management	\$1,625,661	\$1,972,356
Surface and Groundwater Management	\$1,126,649	\$1,141,649
Water Treatment ^(Note 1)	Not used	see below
Interim Care and Maintenance	\$7,111,287	\$10,741,931
SUB-TOTAL	\$42,085,327	\$49,424,846
INDIRECT COSTS		
Mobilization/Demobilization	\$8,455,000	\$9,229,000
Post-Closure Monitoring and Maintenance	\$1,225,000	\$1,660,000
Engineering (5%)	\$2,104,266	\$2,471,242
Project Management (5%)	\$2,104,266	\$2,471,242
Health and Safety Plans/Monitoring & QA/QC (1%)	\$0	\$0
Bonding/Insurance (1%)	\$0	\$0
Contingency (20%)	\$8,417,065	\$9,884,969
Market Price Factor Adjustment ^(Note 1)	\$0	\$0
SUB-TOTAL	\$22,305,598	\$25,716,454
TOTAL COSTS	\$64,390,925	\$75,141,300

Note 1 – Unit Rates from 2014 Version 7 RECLAIM have been indexed to 2023 Q1 rates so no market price factor adjustment is provided in AEM estimate.



Table 2: Summary of Costs – Life of Mine Condition

Cost Items	NS-AEM Security	Arcadis RECLAIM
CAPITAL COSTS		
Open Pit	\$10,432,759	\$11,806,922
Underground Mine	\$941,369	\$959,000
Tailings Facility	\$14,049,334	\$13,867,223
Rock Pile	\$1,470,056	\$1,470,056
Building and Equipment	\$19,994,766	\$20,543,242
Chemicals and Contaminated Soil Management	\$3,392,874	\$3,772,931
Surface and Groundwater Management	\$1,700,329	\$1,715,329
Water Treatment	Not used	Not used
Interim Care and Maintenance	\$7,111,287	\$10,741,931
SUB-TOTAL	\$59,092,775	\$64,876,634
INDIRECT COSTS		
Mobilization/Demobilization	\$10,141,500	\$10,683,000
Post-Closure Monitoring and Maintenance	\$1,225,000	\$1,660,000
Engineering (5%)	\$2,954,639	\$3,243,832
Project Management (5%)	\$2,954,639	\$3,243,832
Health and Safety Plans/Monitoring & QA/QC (1%)	\$0	\$0
Bonding/Insurance (1%)	\$0	\$0
Contingency (20%)	\$11,818,555	\$12,975,327
Market Price Factor Adjustment ^(Note 1)	\$0	\$0
SUB-TOTAL	\$29,094,332	\$31,805,990
TOTAL COSTS	\$88,187,107	\$96,682,624

Note 1 – Unit Rates from 2014 Version 7 RECLAIM have been indexed to 2023 Q1 rates so no market price factor adjustment provided in AEM estimate.

D. DOCUMENTS REVIEWED AND REFERENCED

The following table (Table 3) provides a list of the documents reviewed under the submission and reference during the review.

Table 3: Documents and Activities Reviewed and Referenced

Document Title	Author, File No., Rev., Date
Interim Closure and Reclamation Plan for the Project	TMAC, 2017
Joint two-day Closure Workshop with representatives of Agnico Eagle and KIA	AEM and KIA, March 13-14, 2023
follow up discussions on the joint two-day closure workshop	AEM and KIA, April 2023



RECLAIM 7.0 spreadsheet model and User Manual (Mining Version)

Doris-Madrid Interim Closure and Reclamation Plan
Comparison (SRK February 2023);

SRK, February 2023

230811 2AM-BOS1835 - updated of the Conceptual
Reclamation_ letter to NWB-ILAE

Agnico Eagle, August 11, 2023

E. REFERENCE TO BOSTON SITE

With respect to the submission provided by AEM's consultant Nunami Stantec, The estimate of securities provided is defined in the opening paragraphs under the Scope of the submission as reads;

"AEM is the Owner Operator of the Hope Bay Operation, and the Kitikmeot Inuit Association (KIA) is the landowner and thus, are both major stakeholders in the Reclamation and Closure Plan and associated security estimate. The Hope Bay Mine is comprised of three (3) distinct areas that host mineral resources: Doris, Madrid, and Boston. The focus of this estimate is Doris and Madrid; the Boston related operations are excluded."

Further, AEM submitted in writing to the NWB, on August 11, 2023, an update of the Conceptual Reclamation for Boston that stated that AEM does not believe a security review is needed for the Boston site under water licence number 2AM-BOS1835.

This is of concern to CIRNAC because it is our understanding that the whole of the Hope Bay Project went into Care and Maintenance at the same time. As such it is then unclear why part of the project would then need a security review while the other does not.

It is CIRNAC's opinion that even if no work has occurred at the Boston site that the Minister could then still be under secured based on rates of inflation and increases to unit rates and fuel across the board.

The inflationary cost increases are also referenced by AEM's consultant Nunami-Stantec with regard to the current security review for Doris and Madrid sites under water licence 2AM-DOH1335.

CIRNAC seeks further guidance on the Boston security review (2AM-BOS1835) from the NWB on whether they would require a complete security review of the Boston project is required at this time.