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

Your file - Votre référence
2AM-MEA1530/2AM-WTP1830
Our file - Notre référence
GCDocs#125578329

June 03, 2024

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 (CIRNAC's) Review of the 2023 Annual Report for Meadowbank and Whale Tail Gold Mine Projects, Type A Water Licence Nos. 2AM-MEA1530 and 2AM-WTP1830.

Dear Mr. Hunter,

Thank you for your April 09, 2024, invitation to review the 2023 Annual Report for the Meadowbank and Whale Tail Gold Mine Projects, submitted by Agnico Eagle Mines Limited, for Type A Water Licence Nos. 2AM-MEA1530 and 2AM-WTP1830 respectively.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the Report and its attachments 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 for the Nunavut Water Board's consideration.

If there are any questions or concerns, please contact me at Andrew Keim at (867) 975-4550 or Andrew.Keim@rcaanc-cirnac.gc.ca or Aminul.Haque@rcaanc-cirnac.gc.ca or (867) 975-4282 or

Sincerely,

Andrew Keim

Andrew Keim
Manager
Water Resources, Nunavut Regional Office
Crown-Indigenous Relations and Northern Affairs Canada

Technical Review Memorandum

Date: June 03, 2024

To: Robert Hunter, Licensing Administrator, Nunavut Water Board

From: Aminul Haque, Regional Water Management Coordinator, CIRNAC

Subject: **Crown-Indigenous Relations and Northern Affairs Canada's (CIRNAC's) Review of the 2023 Annual Report for Meadowbank and Whale Tail Gold Mine Projects, Type A Water Licence Nos. 2AM-MEA1530 and 2AM-WTP1830.**

Region: ☐ Kitikmeot ☒ Kivalliq ☐ Qikiqtani

A. BACKGROUND

Meadowbank Gold Mine Project

The Meadowbank Gold Mine is located approximately 110 kilometres by road north of Baker Lake in the Kivalliq region of Nunavut, Canada. The complex consists of the Meadowbank mine and mill and the Whale Tail (Amaruq) satellite deposit, which is located 50 kilometres northwest of the Meadowbank mine.

The Nunavut Water Board (NWB) first licensed the project in 2008, and the processing plant achieved commercial production in March 2010. The project involved the construction, operation, maintenance, reclamation, closure and monitoring of an open pit gold mine and milling facility. The original licence was subsequently renewed by the Board in August 2015 and was amended in July 2018 to reflect changes to the Project to allow for additional tailings deposition and associated ore processing at the Meadowbank mine site from Agnico Eagle Mines (Agnico Eagle) mining operations at the Whale Tail Pit site.

The Project is governed by the current Type A Water Licence No. 2AM-MEA1530 (the Licence) At present, the project components included in the scope of the Meadowbank Gold Mine include a Marshalling Facility at Baker Lake and a 110-kilometre All-Weather Access Road (AWAR) between Baker Lake and the Meadowbank Gold Mine site. There are also water retention dikes constructed from mined waste rock to allow for the mining of ore beneath shallow dewatered lakes and a tailings storage facility (Second Portage Lake's northwest dewatered arm), where tailings have been deposited sub-aerially as slurry and water from the ponds reclaimed during operation. No mining at Meadowbank occurred in 2023 since the mineral reserves were exhausted in 2019. Amaruq ore continued to be processed at the Meadowbank mill in 2023. As approved by the Water License, in-pit tailings disposal began in Goose Pit on 5 July 2019 and in Portage Pit E on 20 August 2020.

On 5 January 2023, a proposal was submitted to the Nunavut Planning Commission (NPC) for a Modification to the Meadowbank Mine, specifically requesting to add infrastructure at the Baker Lake Marshalling area to improve water management around the site. The modification was initiated based on CIRNAC's request to develop a long-term strategy to address the water management concerns around the Marshalling area. The NPC determined that the proposed Modification was exempt from screening by the NIRB, and the Modification was approved by the NWB on 24 March 2023.

Whale Tail Pit Project

In 2016, AEM proposed to develop the Whale Tail Pit Project to continue mine operations and milling at the Meadowbank mine. AEM initially requested that the Whale Tail Pit Project be regulated as an amendment to the Meadowbank Gold Mine Project. However, the NIRB determined that the proposed Whale Tail Pit project proposal had not been assessed as part of the original Meadowbank Gold Mine Project and, due to its location outside of the original Meadowbank Gold Mine Project footprint, the Project would require a separate screening assessment. Upon completing the screening assessment, the NIRB determined that the Project required further assessment best facilitated through a full environmental review. The environmental review concluded on 15 March 2018 with Project Certificate No. 008 issuance.

Additional infrastructure to support the Whale Tail Pit Project was built at the Amaruq site (truck shop/warehouse, fuel storage and an additional camp facility), and the Amaruq satellite deposit was mined as an open pit with commercial production beginning in September 2019. Amaruq ore is transported using long haul off-road type trucks to the mill at the Meadowbank site for processing. All tailings generated from Amaruq ore are also deposited at the Meadowbank site.

The Amaruq Phase 2 expansion started in October 2018 with an application to the Nunavut Planning Commission (NPC). Following public hearings on the proposed expansion in August 2019, the NIRB concluded that the proposed Whale Tail Pit Project amendment could proceed to the Type A Water License amendment phase with the NWB. The Minister of Northern Affairs approved the amended Project Certificate Report from the NIRB (October 18th decision) on 20 January 2020, completing the NIRB process. The Project Certificate 008 amendment No. 1 was issued by NIRB on 19 February 2020 to reflect significant modifications to the Whale Tail Pit Project as proposed in the Whale Tail Pit Expansion Project (i.e., revisions to Terms and Conditions #1, 27, 28, 30, 46 and 51; new Terms and Conditions #65 to 68).

As existing gold processing and accommodations infrastructure at the Meadowbank Gold Mine site are required to support mining operations at the Whale Tail Pit, NIRB identified existing terms and conditions in the amended Project Certificate No. 004 that will continue to apply to the Whale Tail Pit project infrastructure associated with the Meadowbank Gold Mine site, even after the closure and reclamation of the developed pits at the Meadowbank Gold Mine site.

The NWB Water License amendment process for the Whale Tail Pit Expansion Project was completed on 12 May 2020, and the Water License Amendment No. 2AM-WTP1830 was issued. Commercial production under the Whale Tail Pit Expansion Project was achieved on 31 December 2020.

In 2021, AEM proposed a modification to the Whale Tail Pit Project, specifically, the IVR Pushback and Whale Tail Pushback. On 20 April 2021, the NPC determined that the proposed Modification was exempt from screening by the NIRB, as the Whale Tail and IVR Pushbacks did not change the general scope or previously amended activities. The NWB approved the Whale Tail and IVR Pushbacks modification on 3 August 2021, indicating the proposed modification is consistent with the scope of activities considered under Type A Water Licence 2AM-WTP1830.

There was a 2023 Modification for the Whale Tail Mine which consisted of: the continuation of the Whale Tail Pushback in the southwest portion of the Whale Tail Pit; continuation of the IVR Pushback in the south portion of the IVR Pit; and temporary storage of groundwater in the east lobe of the IVR Pit. The proposal was submitted to the NPC on 19 April 2023, and the NPC determined that the modification was exempt from screening by the NIRB. On 12 June 2023, AEM submitted a 60-day notice to the NWB for a Modification to Type A Water License 2AM-WTP1830, which included an updated Water Management Plan and Waste Rock Management Plan for the Whale Tail Mine. The NWB provided its approval for the Modification and the two management plans on 10 August 2023.

CIRNAC provides the following comments and recommendations pertaining to the 2023 Meadowbank and Whale Tail Gold Mine Projects' Annual Report. 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	Closure Planning
R-02	Reclamation Security Update & Annual meeting
R-03	Water Quality Prediction Methods
R-04	Updated Management Plans - Report Improvements

B. DOCUMENTS REVIEWED AND REFERENCED

The following table (Table 2) lists the documents reviewed under the submission and references during the review.

Table 2: Documents Reviewed and Referenced

Document Title	Author, File No., Rev., Date
AEM 2023 Annual Report & Appendices	
Meadowbank Complex - 2023 Annual Report	AEM, 30 March 2024
Appendix 1: Meadowbank Update on Implementation of Commitments	AEM, 30 March 2024
Appendix 2: Whale Tail Update on Implementation of Commitments	AEM, 30 March 2024
Appendix 3: NWB 2022 Annual Report Commitments	AEM, 30 March 2024
Appendix 4: NIRB 2022 Annual Report Commitments	AEM, 30 March 2024
Appendix 5: 2023 Annual Report NIRB 11EN010 (Addendum to Annual Report; Exploration Activities)	AEM, 7 March 2024
Appendix 6: Baker Lake 2023 Bathymetric Survey	AEM, 30 March 2024
Appendix 7: Meadowbank and Whale Tail 2023 Annual Geotechnical Inspection	WSP, 23 February 2024
Appendix 8: Meadowbank 2023 Annual Open Pit Geomechanical Inspection	Knight Piésold, 26 September 2023
Appendix 9: Whale Tail 2023 Annual Open Pit Geomechanical Inspection	Knight Piésold, 27 February 2024
Appendix 10: Meadowbank & Whale Tail 2023 Geotechnical Recommendation Implementation Plan	AEM, 30 March 2024
Appendix 11: Meadowbank 2023 Geomechanical Inspection Implementation Plan	AEM, 30 March 2024
Appendix 12: Whale Tail 2023 Geomechanical Inspection Implementation Plan	AEM, 30 March 2024
Appendix 13: Meadowbank Water Management Plan Version 12	AEM, March 2024
Appendix 14: Whale Tail Water Management Plan Version 12	AEM, March 2024
Appendix 15: Meadowbank and Whale Tail MDRB Report No 31	MDRB, 13 February 2024
Appendix 16: Meadowbank Predicted Water Quantity and Quality (2012-2023)	AEM, 30 March 2024
Appendix 17: Meadowbank Mine Waste Rock and Tailings Management Plan Version 14	AEM, February 2024
Appendix 18: Whale Tail Waste Rock Management Plan Version 12	AEM, February 2024
Appendix 19: Meadowbank Thermal Monitoring Report 2023	AEM, 23 February 2024
Appendix 20: Whale Tail Thermal Monitoring Report 2023	AEM, January 2024
Appendix 21: Meadowbank 2023 Hazardous and Non-Hazardous Waste Transport Manifest	AEM, 30 March 2024
Appendix 22: Meadowbank and Whale Tail Spill Contingency Plan Version 21	AEM, February 2024
Appendix 23: Meadowbank 2023 GN Spill Reports	AEM, 30 March 2024
Appendix 24: Whale Tail 2023 GN Spill Reports	AEM, 30 March 2024
Appendix 25: Meadowbank OPEP and OPPP Version 17	AEM, February 2024
Appendix 26: Meadowbank and Whale Tail 2023 CREMP Report	AZIMUTH, 19 March 2024
Appendix 27: Whale Tail 2023 Mercury Monitoring Program Report	AZIMUTH, 21 March 2024
Appendix 28: Meadowbank Dewatering Dikes OMS Version 11	AEM, January 2024
Appendix 29: Meadowbank Tailings Management OMS Version 12	AEM, January 2024
Appendix 30: Whale Tail Water Management Infrastructure OMS Version 4	AEM, January 2024

Document Title	Author, File No., Rev., Date
Appendix 31: Whale Tail 2022 Report on Implementation of Measures to Avoid & Mitigate Serious Harm to Fish	AEM, March 2024
Appendix 32: Meadowbank and Whale Tail 2023 Marine Mammal and Seabird Report	ERM, March 2024
Appendix 33: Meadowbank and Whale Tail Blast Monitoring Program Version 9_Rev1	AEM, March 2024
Appendix 34: Meadowbank and Whale Tail 2023 Blast Monitoring Report	AEM, 30 March 2024
Appendix 35: Meadowbank 2023 Groundwater Monitoring Report	WSP, 19 March 2024
Appendix 36: Whale Tail 2023 Groundwater Management Monitoring Report	WSP, 20 March 2024
Appendix 37: Whale Tail 2023 Fish Habitat Offsets Monitoring Report	AEM, March 2024
Appendix 38: Meadowbank 2023 Habitat Compensation Monitoring Report	AEM, March 2024
Appendix 39: Meadowbank and Whale Tail 2023 Wildlife Monitoring Summary Report	WSP, 28 March 2024
Appendix 40: Wildlife and HHRA Country Foods Screening Level Risk Assessment Plan Version 9	AEM, March 2024
Appendix 41: Meadowbank and Whale Tail 2023 Noise Monitoring Report	AEM, March 2024
Appendix 42: Meadowbank and Whale Tail 2023 Air Quality and Dustfall Monitoring Report	AEM, March 2024
Appendix 43: Whale Tail Incinerator and Composter Waste Management Plan Version 2	AEM, June 2023
Appendix 44: Meadowbank and Whale Tail Quality Assurance-Quality Control (QAQC) Plan Version 9	AEM, February 2024
Appendix 45: Meadowbank and Whale Tail 2023 QAQC Results	AEM, 30 March 2024
Appendix 46: Meadowbank and Whale Tail Emergency Response Plan Version 18	AEM, 30 August 2023
Appendix 47: Agnico Eagle Kivalliq Projects 2023 Socio-Economic Monitoring Program Report	Aglu & ERM, March 2024
Appendix 48: Meadowbank & Whale Tail 2022 Public Consultations	AEM, 30 March 2024
Appendix 49: Agnico Eagles's Training Management System & Learning Management System Reports	AEM, 30 March 2024
Appendix 50: Agnico Eagle 2023 Newsletter	AEM, Fall 2023
Appendix 51: Agnico Eagle 2023 Inuit Workforce Barriers Study	ERM, Aglu & PHC, 15 December 2023
Appendix 52: Agnico Eagle Kivalliq Elders Advisory Committee 2023 Summary Report	AEM, February 2024
Appendix 53: Meadowbank Landfarm Design and Management Plan Version 5	AEM, 20 March 2024
Appendix 54: Whale Tail Landfarm Design and Management Plan Version 3	AEM, March 2024
Appendix 55: Meadowbank Landfill Design and Management Plan Version 6	AEM, 6 March 2024
Appendix 56: Whale Tail Landfill Design and Management Plan Version 5	AEM, March 2024
Appendix 57: Meadowbank and Whale Tail Executive Summary Translation	AEM, 30 March 2024
Other Reports	
CIRNAC Letter to NWB Re: CIRNAC's Review of the 2022 Annual Report for Meadowbank and Whale Tail Gold Mine Projects, Type A Water Licence Nos. 2AM-MEA1530 and 2AM-WTP1830	CIRNAC, 05 July 2023
NWB Letter to AEM Re: Licences No: 2AM-MEA1530 Meadowbank Gold Mine Project; 2AM-WTP1830, Whale Tail Pit Project; Agnico Eagle Mines Limited; 2022 Annual Report Review	NWB, 31 October 2023
AEM Letter to NWB Re: Agnico Eagle's Response to Meadowbank and Whale Tail 2022 Annual Report Comments	AEM, 28 February 2024

C. RESULTS OF REVIEW

1. Closure Planning [with Appendix A]

Comment:

Section 9 of the 2022 Annual Report provides high-level discussions of the closure planning and implementation process. For example, the section describes the state of the closure planning process, ongoing studies, information gaps and progressive reclamation. While CIRNAC appreciates receiving these descriptions, the Department has a wide range of questions and comments regarding the closure planning process for the Meadowbank and Whale Tail sites. As summarized in Appendix A, many of these questions and comments have been submitted in prior annual report reviews conducted by CIRNAC.

While these questions and comments could be deferred until the submission of formal closure planning documents (e.g., periodic updated ICRPs and security estimates), CIRNAC is of the view that a more active dialogue on closure planning is justified. This is particularly important for the Meadowbank and Whale Tail Projects, given that they are currently scheduled to begin active closure in less than three years (i.e., by 2026). Taking into consideration the relatively limited time remaining before the implementation of closure, additional and regular dialogue between Agnico Eagle, regulators, and interested parties would be beneficial. This would help to facilitate reaching timely and technically sound closure and reclamation decisions, as well as approval and implementation of an appropriate site closure strategy..

Recommendation:

(R-01) CIRNAC recommends that Agnico Eagle convene a workshop with regulators and interested parties within the next 90 days to discuss and work toward resolution on the Ongoing Closure and Reclamation Comments requested by Regulators and as detailed in Annex A. CIRNAC also recommends that this workshop be convened on an annual basis going forward. These meetings would support the closure planning status for the Meadowbank and Whale Tail Mines in a proactive and transparent manner.

The overall goal of the workshops would be to;

a) ensure that all organizations (including Agnico Eagle) are fully informed of closure requirements,

b) To assess the adequacy of any progressive reclamation activities undertaken by Agnico Eagle, and

c) to proactively identify key issues to be resolved on a priority basis to reduce the level of uncertainty related to closure activities and long term monitoring following closure.

2. Reclamation Security Update

Comment:

Based on the recent need for inflationary adjustments to the 2023 update of the Doris Hope Bay Mine security estimate; CIRNAC anticipates that similar adjustments will need to be made for the Meadowbank and Whale Tail Projects. Furthermore, as indicated in Annex A, a high Level of uncertainty currently exists in relation to unresolved and unaddressed closure issues for the Meadowbank and Whale Tail Projects by the proponent.

As a consequence, there is a potential that the scope of remediation requirements for the sites will increase beyond the limits established within the existing security estimates.

CIRNAC has previously submitted recommendations to the proponent during its Annual Report Reviews that remain un-actioned or unanswered and is therefore concerned that the closure security costs for the Meadowbank and Whale Tail Projects have the potential to be significantly underfunded.

This represents a potential financial risk to the Crown that should be addressed on a priority basis. Notably, the following clause from the Meadowbank and Whale Tail Water Licences provides the NWB with the authority to initiate the amendment of security estimates on an as-needed basis:

> *If the Board determines it to be necessary, or upon the request by Licensee, the Minister and/or the Kivalliq Inuit Association, the Board may issue further directions under this Part with respect to the process for amending the amount of security to be furnished and maintained under the Licence.*
>
> *(Part C, Item 10 of 2AM-MEA1530 and 2AM-WTP1830)*

Consistent with this authority, CIRNAC is of the opinion that AEM should immediately work toward providing answers to the questions contained in Annex A and provide their findings at the workshop referenced in Recommendation #01. Alternatively, AEM should proactively initiate an update of the security estimates for the Meadowbank and Whale Tail Projects. This enables all parties to confirm that adequate reclamation security has been posted and is up to date.

Recommendation:

(R-02) CIRNAC recommends, in accordance with both of the Type A Licenses, Part C Item 10, that AEM proactively initiate an update of the security estimates for the Meadowbank and Whale Tail Projects. The update should address: a) inflationary increases since the last security estimates; and b) all potential changes to the scope of the required closure works.

The security estimate updates should be submitted to the NWB for review no later than 90 days from submission of this review.

3. Water Quality Prediction Methods

Comment:

CIRNAC's review of the 2022 Annual Report contained comment #8 (R-08), which provided a number of recommendations related to the water quality predictions for the Meadowbank and Whale Tail projects. The specific request was as follows:

"CIRNAC recommends that Agnico Eagle revisit the water quality modelling assumptions and approaches used for both Meadowbank and Whale Tail within the next 120 days to ensure all future project decisions (particularly closure) are informed by sufficiently accurate predictions. At a minimum, factors to consider when revisiting the assumptions and approaches include the following:

a) using monthly (or smaller) time steps for all model inputs instead of the current one-year time step;
b) performing hydrodynamic modelling of receivers instead of assuming fully mixed conditions;
c) performing sensitivity analyses to accurately capture the range of uncertainty associated with water quality predictions;
d) expanding efforts to characterize loadings from pit walls".

CIRNAC reviewed AEM's response to the above-noted recommendations as well as the updated water quality predictions for the Meadowbank and Whale Tail sites, as presented in Appendices 13 and 14 of the 2023 Annual Report. Based on that review, CIRNAC concludes that the status of the recommendations are as follows:

a) **Unresolved**—Based on its review of the updated water quality predictions, CIRNAC understands that this recommendation has not yet been acted on.
b) **Unresolved** – The updated water quality predictions do not include hydrodynamic modelling of water quality concentrations. The updated water quality prediction reports include statements such as: "The present mass balance model cannot simulate the treated effluent plume discharged in Kangislulik Lake or Whale Tail South Lake. A hydrodynamic model is required to simulate the discharge of treated effluent in these lakes, which is beyond the scope of this study."
c) **Partially Resolved**—The updated water quality predictions include sensitivity analyses to address the implications of dry years. However, the predictions do not address the uncertainty within a broad range of other model inputs (e.g., contaminant source terms).

d) **Partially Resolved** – The updated water quality predictions have incorporated recent monitoring data from pit sumps. However, there continues to be uncertainty regarding loadings from pit wall seeps.

The following recommendation reiterates CIRNAC's request to address the unresolved and partially resolved items noted above. For additional details on the rationale for the request, please refer to CIRNAC Comment #8 (R-08) on the 2022 Annual Report.

Recommendation:

(R-03) CIRNAC recommends that AEM revisit the water quality modelling assumptions and approaches used for both Meadowbank and Whale Tail within the next 120 days to ensure that all future project decisions (particularly closure) are informed by sufficiently accurate predictions. At a minimum, factors to consider when revisiting the assumptions and approaches include the following:

a) using monthly (or smaller) time steps for all model inputs instead of the current one-year time step;
b) performing hydrodynamic modelling of receivers instead of assuming fully mixed conditions;
c) performing sensitivity analyses to accurately capture the range of uncertainty associated with water quality predictions; and
d) expanding efforts to characterize loadings from pit walls.

4. Updated Management Plans - Report Improvements

Comment:

CIRNAC has carried out a high-level review of these plans as submitted in Section 10 of the 2023 Annual Report. Based on this review, it is CIRNAC's opinion that the plans generally appear to be appropriate for the nature and scale of the operations within the context of the local and regional setting and the stage of the mine life cycle operation of each of the respective operations.

However, CIRNAC notes that the document control descriptions of revisions range from non-existent or inadequate to excellent, providing either no meaningful guidance for reviewing changes , , , or allowing for the effective understanding of revisions that have been made.

It is CIRNAC's opinion that the plans listed below fall short of the NWB requirements for document control revision updates.

Revised Management Plans Applicable to Meadowbank and Whale Tail

- Emergency Response Plan, V18 (Appendix 46) - the document has no cover sheet and has no formal "Issued Date". It has a "printed date of 30-08-2023," but as noted

in the document, “it is an uncontrolled document if printed”. There is no document control section or version history.
- Blast Monitoring Program, V9-Rev1 (Appendix 33) dated March 2024 - the document control states “all sections,” update to lake names and monitoring stations.

Revised Management Plans Applicable to Meadowbank Operations

- Dewatering Dikes Operation, Maintenance and Surveillance Manual, V11 (Appendix 28) dated January 2024 – the document control states “All – Annual Update”.
- Tailings Storage Facility OMS, March 2023 V14 (Appendix 29) dated January 2024 - the document control states “All – Annual Update”.

Revised Management Plans Applicable to Whale Tail Operations

- Whale Tail Water Management Infrastructure Operation, Maintenance and Surveillance Manual, V4 (Appendix 30) dated January 2024 - the document control states “All – Annual Update”.
- Whale Tail Water Management Plan, V12 (Appendix 14) dated March 2024 - the document control indicates that all pages were updated to reflect current operations/water management and to comply with commitments and requests.

2024 Modification Request for 2AM-WTP1830

On May 06, 2024, NWB received a modification request from Agnico Eagle regarding the updated plans:

- Water Management Plan Version 13
- Waste Rock Management Plan Version 13

The board requested to take into account Version 13 of the plans when submitting comments for the 2023 annual report. This was in addition to Version 12 of these management plans that were already reviewed. Given the lateness of the request with respect to the submission timeline for the Annual Report review, CIRNAC attempted to conduct a high-level review to identify the main updates to the Plans. The thoroughness of CIRNAC’s review was entirely dependent upon adequate guidance provided by within the revisions in the Document Control of each management plan. This would facilitate the review and help identify changes made specific to the Modification. However, the guidance in every case was very vague, citing updates to the entire plan to include the 2024 Modification and water quality forecast (Water Management Plan) and updates throughout to align with the mining extension to 2028 (Waste Rock Management Plan).

Given the constraints mentioned above, at this time, CIRNAC has unable to review Version 13 of the Waste Rock and Water Management Plans. As a result, CIRNAC suggests Agnico

Eagle resubmit version 13 of these plans with proper document control highlighting the changes compared to version 11 of these plans (submitted on June 2023). At a minimum, any modification to the plans should mention the updated sections and page numbers in the document control section and updates flagged, such as an arrow within the body of the report.

Recommendation:

(R-04) CIRNAC recommends that Agnico Eagle:

a) Review its overall approach in recording revision updates for Management Plans to ensure that document revision updates are meaningful and in keeping with the NWB requirements, i.e., are as precise as possible with respect to the specific nature of the revision and where the revisions were made,
b) Resubmit Version 13 of the Water Management Plan and Waste Rock Management Plan with proper document control highlighting the changes compared to version 11 of these plans submitted in June 2023.
c) List the updated sections and page numbers in the document control section for any updates/revisions of a plan. Also, use an arrow within the body of the plan/report and appendices to facilitate the identification of changes in referenced sections of the document.

Appendix A: Ongoing Closure and Reclamation Comments to be Addressed During Future Closure Planning Processes.

CIRNAC Closure and Reclamation Comment #	Topic	CIRNAC Recommendation (from prior Annual Report reviews)	Agnico Eagle Response/Action (to CIRNAC's prior Annual Report review comments)
1	Freeze back and Capping Thickness	CIRNAC recommended that Agnico Eagle include a meaningful discussion of the results from the thermal monitoring in the Annual Report. FEIS predictions should be compared with monitoring results and be clearly presented. AEM should present the updated modelling supporting their conclusions that the conceptual plans for thermal encapsulation of the Tailings Storage Facility (TSF) and the Waste Rock Storage Facility (WRSF) remain effective in preventing and controlling deleterious seepage over the long term. Finally, if results show discrepancies from the predicted values, Agnico Eagle should discuss the management actions that should be implemented to address the risk.	Agnico Eagle acknowledges CIRNAC's comment on thermal monitoring of the WRSF and will continue to report in the annual report the work and the data that are being gathered to assess the performance of the WRSF. These data will continue to be analysed to ensure they are aligned with closure prediction and the model will be revised periodically to ensure the goal of meeting closure objective. In 2020 instrumentation installation continued on both sites as per O'Kane recommendation. The data gathered at Meadowbank are aligned with the latest review of the thermal model performed in 2019. Agnico Eagle also acknowledges CIRNAC's comment on the progressive reclamation for the cover of the WRSF. Agnico Eagle will be submitting in due time the necessary documentation to support its claim of completion of the progressive reclamation work done on the WRSF.
2	Freeze back and Capping Thickness	CIRNAC recommended that Agnico Eagle provide more information on the nature and extent of research efforts, the research results, and a discussion of how these results have influenced the proposed cover design.	Refer to the response for 1
3	Progressive Reclamation – Mine Site	CIRNAC recommended that future updates to the ICRP include more details on progressive reclamation at Meadowbank, such as the areas of Tailings Storage Facility (TSF) and Waste Rock Storage Facility (WRSF) facilities covered in the prior year, the total areas covered to date, and the volumes associated with these areas.	In response to 2019-2020 NIRB recommendations, Agnico Eagle has committed to include more details on progressive closure in the 2020 Annual Report. Relevant information on progressive closure can be found in Section 9.1 of the 2020 Annual Report and will continue to be updated annually. Details related to work completed and schedules of progressive reclamation are also included in the closure schedule presented in Appendix P of the ICRP, which was updated in March 2020 and provided in the 2019 Annual Report in Appendix 55. Agnico is of the opinion that the last update, the March 2020 version, fulfills the current request. Agnico Eagle is nevertheless committed to providing more details on the progressive closure in the next iteration of the Meadowbank ICRP.
4	Results of Thermistor Measurements for Tailings and Waste	CIRNAC recommended that Agnico Eagle analyze the thermistor monitoring results against early thermal modelling predictions and update its Waste Rock and Tailings Management Plans if large discrepancies are observed between the	Agnico Eagle is monitoring freeze back in tailings and the waste rock and will continue to do so and expand the monitoring program as required. The data gathered will continue to be analyzed and compared to the FEIS prediction as more data becomes available to ensure that

CIRNAC Closure and Reclamation Comment #	Topic	CIRNAC Recommendation (from prior Annual Report reviews)	Agnico Eagle Response/Action (to CIRNAC's prior Annual Report review comments)
	Rock Storage Facilities	monitoring results and model predictions. While the 2020 Annual Report presents a high-level summary of the topic, the document contains insufficient detail to understand the status of thermal monitoring/modelling as it relates to final closure. CIRNAC expects that the next iteration of the Meadowbank ICRP will include a comprehensive analysis of all thermal monitoring data and modelling.	the closure strategy and concept still meet the closure prediction. Agnico Eagle acknowledges CIRNAC's comment and will evaluate this recommendation during the next updated of the Meadowbank ICRP.
5	Meadowbank Water Treatment Requirements	CIRNAC recommended that the next iteration of the Meadowbank ICRP identify and examine potential water treatment scenarios based on current and future water quality projections during the closure phase. Although final decisions are not required at this time, costs associated with implementing the most likely water treatment scenario should also be incorporated into security estimates.	Agnico Eagle acknowledges CIRNAC comments and intends to assess the requirement for treatment of the re-flooded pits within the next iteration of the ICRP.
6	Meadowbank WRSF Seepage Quality	CIRNAC recommended that Agnico Eagle confirm whether the long-term modelling of seepage from the Meadowbank Waste Rock Storage Facilities (WRSFs) is of sufficient duration to characterize seepage after breakthrough. If not, CIRNAC recommends that Agnico Eagle extend the temporal scope of its WRSF seepage modelling to ensure that potential seepage impacts after breakthrough are accurately characterized.	Long-term seepage from the Meadowbank WRSF was not identified as a concern during the FEIS and was not examined. For the next iteration of the Interim Closure & Reclamation Plan, Agnico Eagle will review if this mechanism can have an impact on the closure objectives and, if so, will do the necessary analysis to characterize this impact and develop mitigation measures as required. However, it must be noted that, as opposed to Whale Tail WRSF, there is no metal leaching material in the Meadowbank WRSF, and the pile is expected to remain in permafrost condition, which would suggest that water seeping from the Meadowbank WRSF beyond the NAG capping is unlikely and would have little bearing on the water quality objective at closure.
7	Meadowbank Post-Closure In-Pit Water Quality	CIRNAC recommended that Agnico Eagle: a) Conduct a modelling exercise to predict post-closure water quality in the re-flooded Goose and Portage mine pits at the Meadowbank Gold Mine site. b) Incorporate the findings of the modelling into the next iteration of the Meadowbank ICRP. c) Use the modelling results to inform the design of various other closure components, including but not limited to capping of the in-pit tailings and post-closure water management, water treatment facility designs, sludge generation and disposal, requirements as	a) Agnico Eagle acknowledges CIRNAC' comments. Agnico Eagle will integrate this recommendation during the next update of the Meadowbank ICRP. b) Agnico Eagle acknowledges CIRNAC's comment. Findings of the modelling will be taken into consideration in a future update of the Meadowbank ICRP. c) Agnico Eagle acknowledges CIRNAC's comments. Agnico Eagle will integrate this recommendation during the next update of the Meadowbank ICRP.

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		well-expected treatment duration, all of which should be included in the next iteration of the ICRP.	
8	Meadowbank In-Pit Tailings Covers	CIRNAC recommended that Agnico Eagle: a) Describe the strategy they will use to evaluate cover requirements and methods for the in-pit tailings (e.g., water covers, coarse/fine granular covers, construction/leave a submerged berm at the connection to the pit). b) Provide the strategy and an update on progress towards the selection of a preferred closure concept in the next update to the Meadowbank Interim Closure and Reclamation Plan (ICRP). CIRNAC requested that this information be provided to assist in satisfying the New Commentary of Project Certificate 004 (Amendment 003) Term and Condition 19.	a) Agnico Eagle will present a timeline for further study to determine the requirement of a cover and possible construction strategy during the next update of the ICRP. b) Agnico Eagle will present this information in the next update of the ICRP.
9	Thermal Performance of Meadowbank WRSF Covers	CIRNAC recommended that Agnico Eagle describe the technical rationale for using different WRSF cover thicknesses at the Meadowbank Gold Mine and Whale Tail Pit sites. Any notable differences in the design assumptions for the two sites should be provided in the rationale.	Waste rock covers are designed based on project specific attributes and will naturally have variables that differentiate between sites (i.e., the active layer depth in the region is variable). The freezing mechanism is impacted by the material characteristics, such as the grain size distribution. The attributes of the cover system at Whale Tail include low annual precipitation (less than 300 mm per year); high summer evapotranspiration; coarse-texture soil availability; high spring surface runoff; and creation of low permeability ice barriers. The development of the 4.7 m cover was based on an active layer depth in the WRSF of 4.2 m during operations and closure with an additional 0.5 m for contingency. The active layer was determined by preliminary 1D steady-state numerical modelling and further confirmed by O'Kane's 2D transient model. Both simulations considered predicted effects of climate change. Material properties for the cover system and waste rock materials were calibrated based on observed ground temperature measurements obtained from thermistors in Meadowbank's WRSFs. Numerical modelling considered the effect of slope angle, slope aspect, wind exposure on thermal conditions within the WRSF. Modelling of the WRSF cover system indicates a greater thaw depth in the WRSF than observed regional

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			data. Thus, the thaw depth simulated by numerical modelling, rather than the less conservative regional thaw depth, was used in support of the detailed design of the Whale Tail and IVR WRSF cover system. Agnico Eagle refers CIRNAC to the Whale Tail Project – Thermal Modelling of Whale Tail and IVR WRSFs (O'Kane 2019) report which was previously issued to address CIRNAC's comments under the Whale Tail Expansion Project.
10	Whale Tail Project Post-Closure Water Quality	CIRNAC recommended that Agnico Eagle address the following in the next iteration of the Whale Tail Interim Closure and Reclamation Plan (ICRP): a) Clearly indicate which modelling parameters have been adjusted since the last modelling run. In situations where the level of conservatism has reduced relative to FEIS predictions, appropriate justification should be provided. b) Future modelling results should explicitly and quantitatively report the range of predicted modelling outcomes based on Agnico Eagle's assumptions regarding model prediction accuracy (i.e., +/- one order of magnitude). Any required mitigations should be based on a reasonable worst-case scenario. For example, what actions would be required if post-closure arsenic concentrations in Mammoth Lake are at the upper end of the potential prediction range? c) Water quality predictions should clearly indicate the spatial extent of post-closure water quality exceedances within surface water receivers.	a) Agnico Eagle agrees with CIRNAC to indicate which modelling parameters were adjusted since the last modelling run and to explain situations where the level of conservatism has reduced relative to FEIS predictions. b) Agnico Eagle agrees with CIRNAC for the next iteration of the water quality forecast model to explicitly report the range of predicted modelling outcomes based on model prediction accuracy. c) Agnico Eagle acknowledges CIRNAC's recommendation for the next iteration water quality forecast model to clearly indicate the spatial extent of post-closure water quality exceedances within surface water receivers.