Environmental Protection Operations Division Prairie & Northern Region 5019 52nd Street, 4th Floor P.O. Box 2310 Yellowknife, NT X1A 2P7



ECCC Files: 6100 000 008/019 /015 /017 NWB Files: 2AM-MEA1526, 2AM-WTP1826 & 2BB-MEA1828

January 23, 2019

via email at: licensing@nwb-oen.ca

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

Dear Richard Dwyer:

RE: Type A and B Water Licence Amendments 2AM-WTP1826, 2AM-MEA1526, 2BB-MEA1828 – Agnico Eagle Mines Ltd. – Whale Tail Pit Expansion Project – Final Written Submission

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to Nunavut Water Board (NWB) regarding the above-mentioned water licence application. Please find our Final Written Submission attached.

ECCC's specialist advice is based on our mandate pursuant to the *Canadian Environmental Protection Act* and the pollution prevention provisions of the *Fisheries Act*.

If you need more information, please contact Eva Walker at (867) 669-4744 or eva.walker@canada.ca.

Sincerely,

Andrea McLandress Regional Director

a Mc Landress

Attachment: Environment and Climate Change Canada's Final Written Submission to the Nunavut Water Board.

cc: John Olyslager, Acting Head, Environmental Assessment North (NT and NU)

Eva Walker, Senior Environmental Assessment Coordinator







ENVIRONMENT AND CLIMATE CHANGE CANADA'S FINAL WRITTEN SUBMISSION TO THE NUNAVUT WATER BOARD

RESPECTING THE TYPE A AND B WATER LICENCE AMENDMENTS (2AM-WTP1826, 2AM-MEA1526, 2BB-MEA1828)
APPLICATION FOR THE WHALE TAIL PIT EXPANSION PROJECT PROPOSED BY AGNICO EAGLE MINES LTD.

January 23, 2020



Executive Summary

Agnico Eagle Mines Ltd. (the proponent) has applied for amendments to the existing Type A Water Licences (WL) for the Whale Tail Pit (approved project). The proponent has also applied to transfer activities under Type B WL 2BB-MEA1828 for exploration at the Whale Tail Site under the Type B Water Licence for the Meadowbank Mine, to the Whale Tail Project WL. This amendment has been submitted as the Whale Tail Pit Expansion (the proposed expansion project) to the Nunavut Water Board (NWB or the Board).

The proposed project is located in the Kivalliq Region of Nunavut, 150 km north of the Hamlet of Baker Lake and 50 km northwest of Meadowbank Mine. The project is designed to operate as a satellite of the main Meadowbank Mine facilities, and will extend operation of the approved project by three to four years, until 2025, through the extraction of approximately 15.2 million tons of ore. The expansion includes: expanding the approved Whale Tail Pit; development of the new IVR Pit, an IVR waste rock storage facility and attenuation pond; underground mining operations; and widening of the existing haul road. Closure of the approved project and proposed expansion project will include flooding of the mined-out open pits and underground operations.

Environment and Climate Change Canada (ECCC) has participated in the WL application review process by providing specialist advice to the NWB on areas within our mandate including the pollution prevention provisions of the *Fisheries Act* (FA). ECCC's final written submission addresses our September 16, 2019 technical review comments, the proponent's October 7, 2019 technical review responses, as well as additional information submitted by the proponent on December 20, 2019 and during the October 29-30, 2019 technical meeting.

Our final written submission addresses the following:

- Closure objectives and criteria (include contingencies) for the flooded pit lake, attenuation ponds, waste rock storage facility, transportation routes, and water management facilities;
- The post-closure monitoring period defined by conditions;
- Management of potential excess flows during freshet (e.g. spring and fall high water flow conditions);
- Maintenance of receiving environment water quality;; and
- Revisions to the draft water licence.

Agnico Eagle Mines Ltd.'s Whale Tail Pit Expansion Project – Water Licence Amendments Application (2AM-WTP1826, 2AM-MEA1526, 2BB-MEA1828) Environment and Climate Change Canada

Final Written Submission to the Nunavut Water Board

Abbreviations

AEMP Aquatic Effects Monitoring Program

CCME Canadian Council of Ministers of the Environment

CEPA Canadian Environmental Protection Act

CWQG Canadian Water Quality Guidelines

ECCC Environment and Climate Change Canada

FA Fisheries Act

FEIS Final Environmental Impact Statement

FC Final Comment

GSPs Groundwater Storage Ponds

ICRP Interim Closure and Reclamation Plan

MBCA Migratory Birds Convention Act

MDMER Metal and Diamond Mining Effluent Regulations

NML Non-Metal Leaching

NPAG Non-Potentially Acid Generating

NWB Nunavut Water Board

O-WTP Operations Water Treatment Plant

PAG Potentially Acid Generating

S-WTP Saline Water Treatment Plant

SARA Species at Risk Act

SSWQO Site-Specific Water Quality Objective

TBD To be determined

TC Technical Comment

TDS Total Dissolved Solids

TSS Total Suspended Solids

WL Water Licence

WTP Water Treatment Plant

WRSF Waste Rock Storage Facility

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1.0 Introduction

Agnico Eagle Mines Ltd. (the proponent) has applied for amendments to the existing Type A Water Licences (WL) for the Whale Tail Pit (approved project). The Proponent has also applied to transfer activities under Type B WL 2BB-MEA1828 for exploration at the Whale Tail Site under the Meadowbank Mine to the Whale Tail Project WL. This amendment has been submitted as the Whale Tail Pit Expansion (the proposed expansion project), to the Nunavut Water Board (NWB or the Board).

The proposed project is located in the Kivalliq Region of Nunavut, 150 km north of the Hamlet of Baker Lake and 50 km northwest of Meadowbank Mine. The project is designed to operate as a satellite of the main Meadowbank Mine facilities, and will extend operation of the approved project by three to four years, until 2025, through the extraction of approximately 15.2 million tons of ore. The expansion includes: expanding the approved Whale Tail Pit; development of the new IVR Pit, an IVR waste rock storage facility and attenuation pond; underground mining operations; and widening of the existing approved haul road. Closure of the approved project and proposed expansion project will include flooding of the mined-out open pits and underground operations.

Environment and Climate Change Canada (ECCC) has participated in the WL application review process by providing specialist advice to the NWB on areas within our mandate including the pollution prevention provisions of the Fisheries Act (FA). ECCC's final written submission addresses our September 16, 2019 technical review comments, the proponent's October 7, 2019 technical review responses, as well as additional information submitted by the proponent on December 20, 2019 and during the October 29-30, 2019 technical meeting.

Our final written submission addresses the following:

- Closure objectives and criteria (include contingencies) for the flooded pit lake, attenuation ponds, waste rock storage facility, transportation routes, and water management facilities;
- The post-closure monitoring period defined by conditions;
- Management of potential excess flows during freshet (e.g. spring and fall high water flow conditions);
- Maintenance of receiving environment water quality; and
- Revisions to the draft water licence.

2.0 Environment and Climate Change Canada's mandate, roles and responsibilities

ECCC's mandate determined by the statutes and regulations under the responsibility of the Minister of Environment and Climate Change, covers matters such as the preservation and enhancement of the quality of the natural environment (including water, air and soil quality, and the coordination of the relevant policies and programs of the Government of Canada), renewable resources (including migratory birds and other non-domestic flora and fauna), meteorology and the enforcement of rules and regulations. ECCC's specialist advice is provided in the context of the Canadian Environmental Protection Act (CEPA) 1999, the pollution prevention provisions of the Fisheries Act (FA), Species at Risk Act (SARA) and the Migratory Birds Convention Act (MBCA).

ECCC administers the pollution prevention provisions of the FA, which prohibits the deposit of a deleterious substance into fish-bearing waters. ECCC also participates in the regulation of toxic chemicals and the development and implementation of environmental quality guidelines pursuant to CEPA 1999.

ECCC is responsible for protecting and conserving migratory bird populations and individuals under the MBCA. ECCC also administers SARA in cooperation with Fisheries and Oceans Canada and the Parks Canada Agency to prevent wildlife species from becoming extirpated or extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity, and to manage species of special concern to prevent them from becoming threatened, endangered or extirpated.

Additional information on ECCC's mandate can be found at: https://www.canada.ca/en/environment-climate-change/corporate/mandate.html.

3.0 Environment and Climate Change Canada's Technical Review Comments

This final written submission summarizes the results of ECCC's technical review of information provided to date, and includes:

- ECCC Technical Review Submission September 16, 2019
- Agnico Eagle Mines Ltd. Technical Comment Responses October 7, 2019
- Technical Meeting, Yellowknife October 28 & 29, 2019
- ECCC meetings with Agnico Eagle Mines site specific water quality objectives (SSWQO) -December 9, 2019, and January 9, 2020
- Updated Documents from Commitment List Submitted on December 20, 2019
- Meeting with Agnico Eagle Mines Ltd, Kivalliq Inuit Association and Crown-Indigenous and Northern Affairs Canada, Adaptive Management Plan – December 3, 2019 and January 8, 2020

The following table outlines the current status of ECCC's technical review comments provided on September 16, 2019 and identifies the issues that have been resolved, issues which ECCC deems resolved pending further actions committed to by the proponent and issues that remain outstanding.

Reference	Status	
ECCC-TC1: Flooded Pit Reconnection	Recommendation ECCC recommends that:	Partially Resolved – see ECCC-FC1 below
ECCC-TC2: Closure of the Groundwater Storage Ponds (GSPs)	 Clarify the options for closure of the GSPs. Identify what would constitute appropriate water quality to change from backfilling the GSPs to leaving them as ponds. Identify impacts to post-closure pond water quality if the GSPs are not covered. 	Resolved with commitment (Technical Meeting Commitment #5)

 Climate Years – Water Water Management Plan	Reference	Recommendation	Status
Climate Years – Water Management Plan • Identify the type, extent, timing and duration of water management issues associated with wet climate years that could potentially be encountered for the combined Approved Project and the proposed Expansion Projects. • Clarify how the proposed mitigation measures would address the type, extent, timing and duration of potential water management issues associated with wet climate years for the combined Approved Project and proposed Expansion Projects. • Update the Water Management Plan to incorporate the information requested above. ECCC-TC5: Landfarm Management Plan • Clarify whether the quality of water from the landfarm is to be used as screening criteria for discharge to the IVR Attenuation Pond. • Include the discharge of landfarm contact water to	Removal of Seepage from Model Inputs	 Identify monitoring that will be done to ground-truth the prediction of negligible seepage from the waste rock storage facility (WRSF). Use monitoring results to inform ongoing water quality model and water balance updates. 	
 Clarify whether the quality of water from the landfarm is to be used as screening criteria for discharge to the IVR Attenuation Pond. Include the discharge of landfarm contact water to 	Climate Years – Water	 Identify the type, extent, timing and duration of water management issues associated with wet climate years that could potentially be encountered for the combined Approved Project and the proposed Expansion Projects. Clarify how the proposed mitigation measures would address the type, extent, timing and duration of potential water management issues associated with wet climate years for the combined Approved Project and proposed Expansion Projects. Update the Water Management Plan to incorporate 	
management schematic flowsheets (Appendix B of Appendix G.5: Whale Tail Pit – Water Management Plan, Version 4).	Landfarm	 Clarify whether the quality of water from the landfarm is to be used as screening criteria for discharge to the IVR Attenuation Pond. Include the discharge of landfarm contact water to the attenuation pond in the next update of the water management schematic flowsheets (Appendix B of Appendix G.5: Whale Tail Pit – Water Management 	Resolved
ECCC-TC6: Landfarm Acceptance Criteria ECCC recommends that the proponent: • follow soil restrictions to avoid microorganism toxicity, as outlined in the Federal Guidelines for Landfarming Petroleum Hydrocarbon Contaminated Soils.	Landfarm Acceptance	follow soil restrictions to avoid microorganism toxicity, as outlined in the Federal Guidelines for Landfarming Petroleum Hydrocarbon	Resolved
ECCC-TC7: Active Layer Depth • provide the actual depth of the active layer in the project area • compare the active layer depth to the regional active layer depth that was used in the modelling. • the proponent clarify why the regional active layer depth was used instead of the actual active layer depth, if differences are identified.	Layer Depth	 provide the actual depth of the active layer in the project area compare the active layer depth to the regional active layer depth that was used in the modelling. the proponent clarify why the regional active layer depth was used instead of the actual active layer depth, if differences are identified. 	
ECCC-TC8: Water Quality Monitoring ECCC recommends that: Resolved		ECCC recommends that:	Resolved

Reference	Status	
and Management Plan for Dike	 the proponent reference the MDMER in Section 2.2.1 (TSS), Table 2.1 (Existing Federal TSS 	
Construction and	Guidelines) and Section 5.1.2 (Standard Operating	
Dewatering	Procedure for Monitoring and Management During	
(Errata)	Dewatering) in the next plan update.	

ECCC received additional information/documents from the proponent with regards to the commitment list on December 20, 2019. Given the short time to review and discuss this updated information with the proponent, ECCC is providing its review comments in the next sections.

3.1 ECCC-FC1: Flooded Pit Reconnection

Reference(s):

- Agnico Eagle Mines. December 2019. Interim Closure and Reclamation Plan, Version 3
- Nunavut Water Board. November 2019. Pre-Hearing Conference Decision Report; Appendix D: List of Commitments generated during Technical Meeting (October 30, 2019); Agnico Eagle Commitment 4, ECCC-TC-1

Proponent's Conclusion(s):

The proponent made the following commitment at the Technical Meeting as documented in the Pre-Hearing Decision Report:

Identify water quality objectives for the pit waters and thresholds for implementing treatment prior to the end of operations (i.e., 2026), within the Final Closure Plan:

- Characterize pit lake water quality and limnological conditions (in profile) during and following the conclusion of flooding.
- Demonstrate that water quality in the flooded pits is stable and consistently meets water quality objectives prior to reconnecting the flooded pit lake to surface waters. Water quality monitoring conducted during and following pit flooding will be used to assess seasonal changes and water quality trends. Comparing actual site monitoring data to existing water quality predictions will demonstrate that there is no risk to aquatic life in reconnecting the flooded pits to the receiving environment.

The timeline for this was noted in the Pre-Hearing Conference Decision as:

Update the ICRP with the commitment 60 days following approval of the amended water licence within the Final Closure and Reclamation Plan

ECCC's Conclusion(s):

The commitment does not appear to have been incorporated in the December 2019 update of the Interim Closure and Reclamation Plan (ICRP).

It would be useful for the ICRP to include a description of connectivity to surface waters for the open pits and water management structures at closure, noting any areas where fish passage may be possible. ECCC notes that passage will not be the only way waterbodies are colonized by fish.

ECCC Recommendation(s):

ECCC recommends that future versions of the ICRP include commitments made by the proponent, such as:

- The ICRP specify closure water quality objectives that represent baseline conditions or national water quality objectives (Canadian Council of Ministers of the Environment [CCME]) or site-specific water quality objectives.
- The ICRP include a map showing post-closure drainage conditions, with connectivity between surface waters and water management structures identified including potential for fish passage.

3.2 ECCC-FC2: Flooded Pit Lake Closure Objective

Reference(s):

Agnico Eagle Mines. December 2019. Interim Closure and Reclamation Plan, Version 3; Table
 5.2-2: Closure Objectives and Criteria – Open Pits Workings

Proponent's Conclusion(s):

Table 5.2-2 sets out the closure objectives, criteria and actions/measurements for the open pit workings.

ECCC's Conclusion(s):

The closure objectives, and associated criteria and actions/measurements related to flooded pit water should include requirements to demonstrate stability and continuity in meeting water quality objectives.

ECCC Recommendation(s):

ECCC recommends the proponent revise the second water closure objective in Table 5.2-2: Closure Objectives and Criteria – Open Pits Workings, as follows (edits in bolded text):

01	0 : :	Α (* /
Closure Objectives	Closure Criteria	Actions/
		Measurements
Ensure outflow from	Following	Routine monitoring
the flooded area	completion of	and sampling;
consistently meets	flooding of the open	
water licence	pits, the water	Seasonal post-
criteria quality	quality of the	flooding water
objectives, and is	flooded pit lake (in	quality results
predicted to	profile) must	(including under
continuously meet	demonstrate	ice) must
water quality	stability and	demonstrate inter-
objectives over the	continuously meet	annual stability and
short to long-term	water quality	continuity in
future.	objectives, pPrior to	meeting water
	breaching the	quality objectives.
	Mammoth Dike and	quanty expectives.
	the Whale Tail Dike,	Update site and
	the water quality	receiving
	will be profiled to	environment water
	confirm it is	quality predictions,
	suitable for release	and ensure that
	Sultable for release.	
	Total Control	water quality is
	Treatment options	predicted to
	will be investigated, if	consistently meet
	necessary (e.g., in-	water quality
	situ treatment or	objectives over the
	through the O-WTP)	short, medium and
		long-term.
		In-situ or water
		treatment at the
		O-WTP if required

3.3 ECCC-FC3: Containment of Water in Closed Underground Mine

Reference(s):

Agnico Eagle Mines. December 2019. Interim Closure and Reclamation Plan, Version 3; Section
 5.2.1 Underground Mine Workings

Proponent's Conclusion(s):

The portal, including the box cut leading to the portal, will be backfilled to eliminate access into the underground workings by people and animals during closure of the underground mine workings. The opening will be filled with non-potentially acid-generating (NPAG) waste rock material for at least 20 m into the adit. The underground workings will be actively flooded with a combination of natural runoff and contact water from the groundwater storage ponds (GSPs) and IVR attenuation pond, and water pumped from Whale Tail Lake (South Basin). Groundwater inflows will passively contribute to the flooding.

ECCC's Conclusion(s):

The ICRP does not indicate whether the water in the closed underground mine could potentially interact with surface waters.

ECCC Recommendation(s):

ECCC recommends that the proponent confirm that underground workings will be sealed off and that minewater will not daylight (e.g., come to surface from underground) and potentially reach surface waters. The ICRP should include a contingency plan and water quality monitoring if there could potentially be surface flows of groundwater.

3.4 ECCC-FC4: Closure Objective for Attenuation Ponds

Reference(s):

Agnico Eagle Mines. December 2019. Interim Closure and Reclamation Plan, Version 3; Table 5.2-2: Closure Objectives and Criteria – Open Pits Workings

Proponent's Conclusion(s):

Table 5.2-2 sets out the closure objectives, criteria and actions/measurements for the open pit workings.

ECCC's Conclusion(s):

The ICRP does not include closure objectives for the attenuation ponds. Closure objectives should be provided for the Whale Tail and IVR attenuation ponds because they will be used to manage contact water and because the flooded pit lake will encompass the site of the Whale Tail attenuation pond.

ECCC Recommendation(s):

ECCC recommends the proponent add the following new water closure objective to Table 5.2-2: Closure Objectives and Criteria – Open Pits Workings, as follows:

Closure Objectives	Closure Criteria	Actions/ Measurements
Ensure attenuation pond contents are managed appropriately	Ensure remaining attenuation pond contents will not compromise the water quality of the flooded pit lake or receiving environment.	Evaluate/characterize contents (including residual water and sediments) of attenuation ponds. Evaluate effect of residual attenuation pond contents on water quality of the flooded pit lake over the short to long-term. Determine appropriate management methods.

3.5 ECCC-FC5: Waste Rock Storage Facility Closure Criteria

Reference(s):

Agnico Eagle Mines. December 2019. Interim Closure and Reclamation Plan, Version 3; Table 5.2-3: Closure Objectives and Criteria – Waste Rock Storage Facility

Proponent's Conclusion(s):

Table 5.2-3 sets out the closure objectives, criteria and actions/measurements for the waste rock storage facility. The closure criteria for water seek to limit acid-generating reactions and migration of contaminants and to reduce water impacts.

ECCC's Conclusion(s):

Closure criteria should aim to prevent acid-generating reactions, migration of contaminants, and water impacts, rather than just reducing/limiting reactions or impacts.

ECCC Recommendation(s):

ECCC recommends the proponent include the following revisions to Table 5.2-3 Closure Objectives and Criteria – Waste Rock Storage Facility (edits in bolded text):

Closure Objectives	Closure Criteria	Actions/Measurements
Reduce Prevent water impacts	A thermal cover to limit prevent acid generating reactions and migration of contaminants	Place thermal cover of NPAG/NML rock on the Whale Tail and IVR WRSF surface during progressive reclamation and at closure. Install thermistors to verify the predicted performance of the cover.
Confirm runoff and seepage from the WRSFs meet water licence criteria	As above for runoff and seepage A thermal cover to prevent acid generating reactions and migration of contaminants	Routine monitoring and sampling of runoff and seepage to verify that water licence criteria are met.

3.6 ECCC-FC6: Waste Rock Storage Facilities - Contingencies

Reference(s):

• Agnico Eagle Mines. December 2019. *Interim Closure and Reclamation Plan*, Version 3; Section 5.2.3.9 Contingencies

Proponent's Conclusion(s):

The ICRP states that "On-going monitoring and treatment of seepage from the WRSFs will be the primary contingency until water quality meets criteria to direct discharge to the environment."

ECCC's Conclusion(s):

The proposed contingencies do not address the possibility that the waste rock storage facility (WRSF) cover(s) does not perform as expected.

ECCC Recommendation(s):

ECCC recommends that the proponent identify contingencies to address the possibility that the WRSF cover(s) does not perform as expected.

3.7 ECCC-FC7: Transportation Routes – Closure Objectives and Criteria

Reference(s):

- Agnico Eagle Mines. December 2019. Interim Closure and Reclamation Plan, Version 3; Table
 5.2-5: Closure Objectives and Criteria Transportation Routes
- Agnico Eagle Mines. December 2019. Interim Closure and Reclamation Plan, Version 3;
 Section 5.2.7.5 Engineering Work Associated with Selected Closure Activity

Proponent's Conclusion(s):

Table 5.2-5 describes the closure objectives and criteria related to closure of the transportation routes. The associated engineering work is provided in Section 5.2.7.5.

ECCC's Conclusion(s):

The water closure objectives/criteria do not address the potential for degradation of surface waters from from acidification, sedimentation or migration of contaminants, nor identify prevention methods.

ECCC Recommendation(s):

ECCC recommends the following additions to Table 5.2-5 Closure Objectives and Criteria – Transportation Routes:

- Add a closure objective to prevent degradation of surface waters including from acidification and sedimentation, as well as from the migration of contaminants;
- Identify appropriate closure criteria and actions/measurements to support the aboverecommended closure objective;
- Identify methods to prevent potentially acid generating (PAG) bedrock from becoming exposed along the corridor of the Project haul road; and,
- Identify erosion prevention methods.

In addition, ECCC recommends adding the following element to Section 5.2.7.5 (Engineering Work Associated with Selected Closure Activity):

- Erosion prevention with respect to any in-stream work

3.8 ECCC-FC8: Transportation Routes – Acid Rock Drainage Prevention

Reference(s):

- Agnico Eagle Mines. December 2019. Interim Closure and Reclamation Plan, Version 3;
 Section 5.2.7 Transportation Routes
- Agnico Eagle Mines. December 2019. *Interim Closure and Reclamation Plan*, Version 3; Section 5.2.7.9 Contingencies

Proponent's Conclusion(s):

Section 5.2.7.9 Contingencies states that if exposures on the Project haul road corridor result in acidification of surface water, then such impacts will be assessed, and an appropriate mitigation strategy will be put in place.

ECCC's Conclusion(s):

Section 5.2.7 (Transportation Routes), including Subsection 5.2.7.9 (Contingencies), does not provide details regarding monitoring, assessment or mitigation of potential road-related acidification.

ECCC Recommendation(s):

With respect to preventing potential road-related acidification, ECCC recommends that the ICRP provide the following additional information:

- identify how the haul road corridor and surface waters will be monitored;
- describe how impacts would be assessed; and
- Identify mitigation and contingency options.

3.9 ECCC-FC9: Water Management Facilities – Closure Objectives and Criteria

Reference(s):

Agnico Eagle Mines. December 2019. Interim Closure and Reclamation Plan, Version 3; Table
 5.2-7: Closure Objectives and Criteria – Water Management Facilities

Proponent's Conclusion(s):

Table 5.2-7 sets out the closure objectives, criteria and actions/measurements for the water management facilities.

ECCC's Conclusion(s):

The closure objectives and associated criteria and actions/measurements related to runoff and seepage should include requirements to demonstrate stability and continuity in meeting water licence criteria.

ECCC Recommendation(s):

ECCC recommends the following revision to Table 5.2-7 Closure Objectives and Criteria – Water Management Facilities (edits in bolded text):

Closure Objectives	Closure Criteria	Actions/ Measurements
Ensure collected runoff and seepage consistently meets	Collected runoff and seepage will be treated through the	Routine monitoring and sampling
water licence criteria, and is predicted to continuously meet water licence criteria over the short to long-term	O-WTP or S-WTP (brackish) until water quality consistently meets licence criteria for direct discharge, and is predicted to	Demonstrate runoff and seepage consistently meet licence criteria for direct discharge
future.	continue to do so.	Update water quality predictions, and ensure runoff and seepage is predicted to
		consistently meet water licence criteria over the short, medium and long-term.

3.10 ECCC-FC10: Water Management Facilities - Contingencies

Reference(s):

- Agnico Eagle Mines. December 2019. Interim Closure and Reclamation Plan, Version 3;
 Section 5.2.9 Water Management Facilities
- Agnico Eagle Mines. December 2019. Interim Closure and Reclamation Plan, Version 3;
 Section 5.2.9.9 Contingencies

Proponent's Conclusion(s):

Section 5.2.9.9 (Contingencies) of the ICRP states that if the results of water quality monitoring indicate that water in the flooded area is not suitable for direct discharge, then in-situ treatment would be considered.

ECCC's Conclusion(s):

The ICRP does not provide sufficient information with respect to contingency measures to manage water quality in the flooded pit lake, including details on in-situ treatment.

ECCC Recommendation(s):

ECCC recommends that the ICRP include a discussion of whether and how in-situ treatment of the flooded pit lake would be feasible, and how long in-situ treatment could be provided.

ECCC also recommends that the ICRP identify and describe any alternative water management contingency options in the event that water quality monitoring indicates water in the flooded area is not suitable for direct discharge/reconnection to surface waters. Include short, medium and long-term contingency options.

3.11 ECCC-FC11: Post-Closure Monitoring

Reference(s):

- Agnico Eagle Mines. December 2019. Interim Closure and Reclamation Plan, Version 3; Table 8.0-1: Proposed Closure and Post-Closure Main Activities Schedule
- Agnico Eagle Mines. December 2019. Interim Closure and Reclamation Plan, Version 3;
 Section 9.0: Post-Closure Site Assessment

Proponent's Conclusion(s):

Table 8.0-1 identifies the duration of pit flooding, which lasts through the closure stage until year 24 (2042). During this time, there will be monitoring of water quality and updating of model predictions. The post-closure monitoring stage is anticipated to be 3 years.

ECCC's Conclusion(s):

ECCC acknowledges that there will be a long period of pit water quality monitoring during flooding, and that the closure stage conditions should be fairly well understood at that time. However, three years of post-closure monitoring may not be sufficient if pit water conditions are not in a steady state.

ECCC Recommendation(s):

ECCC recommends that the post-closure monitoring period be open-ended, defined by conditions rather than a pre-set time period.

3.12 ECCC-FC12: Potential Water Management Exceedance (Freshet June 2020)

Reference(s):

 Golder. December 17 2019. Technical Memorandum Effects of Wet Year Scenarios on Water Management, Section 2.3.2 Site Water Balance – Recent Record

Proponent's Conclusion(s):

As per the Technical Memorandum - Effects of Wet Year Scenarios on Water Management:

Under the 2019/2020 and 2025 wet year scenarios using the recent Baker Lake record, the peak monthly exceedances are presented in Table 5. The resulting monthly water quantity exceedances beyond the current permitted site capacity are summarized as follows:

- Exceedances are expected to occur in the freshet of 2020 (June) from the Whale Tail Attenuation Pond under 10-year and 100-year wet scenarios.
- There are no additional water quantity exceedances expected during operations under the 10year wet scenario.
- Under the 100-year wet scenario, exceedances are also expected to occur in the freshet of 2025 (June) from the IVR Attenuation Pond. Overflow from the IVR Attenuation Pond can be directed to the Whale Tail Attenuation Pond as a part of adaptive management; however, even

after this diversion, an excess of 17,500 m3 beyond the capacity of the site remains to be managed.

In June 2020, Quarry 1 will still be available and will have capacity that can be used to handle the potential excess flows, per Agnico Eagle's adaptive management plan. For the potential surplus occurring in 2025, these flows will be taken into consideration for the final design of the water management infrastructure for the Whale Tail Expansion Project.

ECCC's Conclusion(s):

ECCC notes that the results derived from the recent precipitation record predict a much larger water management exceedance under the 100-year wet scenario for the freshet of 2020 (June) than was predicted using the full record (i.e., 499,000 m³ versus 232,000 m³).

ECCC Recommendation(s):

ECCC recommends that the proponent provide details on managing potential excess flows at Quarry 1 during June 2020, and discuss whether Quarry 1 would provide sufficient retention time to allow storage of potential excess flows, pending treatment at the Water Treatment Plant (WTP).

3.13 ECCC-FC13: Mitigating Potential Water Quality Exceedances

Reference(s):

• Golder. December 17 2019. Technical Memorandum *Mixing zone boundaries in Mammoth Lake and Whale Tail Lake (South Basin);* Section 2.0 Response

Proponent's Conclusion(s):

The high-flow periods (i.e., when the two summer diffusers are operating) are identified as having the greatest potential to exceed Canadian water quality guidelines (CWQG) and/or site-specific water quality objectives (SSWQOs) in the near field at 100 m and 200 m from the diffusers.

To minimize the risk of potentially exceeding CWQG and/or SSWQO in June in Mammoth Lake and Whale Tail Lake (South Basin), the proponent proposes:

- Mixing zone boundaries of 200 m from each of the summer diffusers
- Investigating adaptive management strategies when there is a higher likelihood of potential for exceedances at the mixing zone boundary, including splitting the effluent discharge from the WTP between the two receivers, i.e. Mammoth Lake and Whale Tail Lake (South Basin).

ECCC's Conclusion(s):

The proponent's proposed approaches to minimize the risk of potentially exceeding CWQG and/or SSWQO should also consider opportunities to improve source control and options to improve the WTP effluent quality.

ECCC Recommendation(s):

ECCC recommends that the proponent identify and discuss: (1) opportunities to improve source control and (2) options to improve the WTP effluent quality, in order to minimize the risk of potentially exceeding CWQG and/or SSWQO in June in Mammoth Lake and Whale Tail Lake (South Basin).

ECCC recommends that the proponent increases water quality monitoring (e.g., frequency) in the receiver and downstream during months of high-flow discharge and in the month following the end of high-flow discharge (i.e., during June and July).

3.14 ECCC-FC14: Licence Term

Reference(s):

 Nunavut Water Board. December 23 2019. Whale Tail Pit Project Update: Water Licence No: 2AM-WTP1826

Proponent's Conclusion(s):

The proponent appears to be seeking a 23 year licence term for the Whale Tail Project. This would extend over the mine operations until 2026, through closure activities until 2042, then terminate at the beginning of the post-closure phase, which would extend for the monitoring period.

ECCC's Conclusion(s):

ECCC notes the proponent did not provide a rationale for the requested licence term.

ECCC Recommendation(s):

ECCC recommends that the proponent provide a rationale for this time frame, and discuss other milestones in the life of project which may be more appropriate timing for the licence renewal.

3.15 ECCC-FC15: Comments on Draft Water Licence

Section	Proponent Revisions	ECCC Comments/Recommendations
Part A.1a.6	Withdrawal and use of water from Whale	ECCC notes this section has two
	Tail Lake (South Basin) for camp operation	clauses.
	and re-flooding of open pit following pit	
	development during Closure and for	ECCC recommends that the section be
	withdrawal and use of water from water	separated into two bullets as follows:
	bodies proximal to the Haul Road for	
	dust suppression;	6. Withdrawal and use of water from
		Whale Tail Lake (South Basin) for camp
		operation and re-flooding of open pit
		following pit development during Closure;
		and for
		7. Withdrawal and use of water from
		water bodies proximal to the Haul Road
		for dust suppression;
Part	Operation of site water management	ECCC notes errata in the last two bullets
A.1.a.13	facilities, including but not limited to:	(i.e. Water).
	• Operation of a Sewage Treatment Plant,	
	Wastewater (STP);	ECCC recommends that the section be
	Operation of Operational Treatment	updated to address the errata as follows:
	Plant (O-WTP);	
	Operation of a Saline water Treatment	Operation of Operational <u>Water</u> Transfer of Plant (O. MTP):
	Plant and controlled	Treatment Plant (O-WTP);
	discharge(S-WTP);	Operation of a Saline <u>W</u> ater Treatment Plant (S. W.T.P.):
Part B.11	The Licenses shall for all Dlane submitted	Plant (S-WTP);
Fall D. 11	The Licensee shall, for all Plans submitted	ECCC notes that approval by default is not a desirable clause; there may be
	under this Licence, include a proposed timetable for implementation. Plans	practical constraints that would extend
	submitted cannot be undertaken without	response times for review and approval
	subsequent written Board approval and	of plans.
	direction. The Board may request that the	or plans.
	Licensee alter or modify a Plan if	ECCC recommends the clause:
	necessary to achieve the legislative	"Unless the Board otherwise advises,
	objectives and will notify the Licensee in	Plans and amendments thereto
	writing of acceptance, rejection or	submitted under this Licence shall be
	alteration of the Plan. Unless the Board	deemed to be approved by the Board
	otherwise advises, Plans and	within forty-five (45) days of
	amendments thereto submitted under	submission by the Licensee." not be
	this Licence shall be deemed to be	included in the amended licence.
	approved by the Board within forty-five	
	(45) days of submission by the	
	Licensee. For greater clarity, an	

Section	Proponent Revisions	ECCC Comments/Recommendations
	approved Plan remains in force until such time as it is replaced by a new approved Plan.	
Part B.12	Unless otherwise directed by the Board in writing, if a Plan is not acceptable to the Board, the Licensee shall provide a revised version to the Board for review within thirty (30) days of notification by the Board. The Board shall issue a final approval decision upon receipt of the revised version of the Plan.	ECCC notes this addition is not a practical condition. Further review time and revisions may be needed. If timing should be defined, ECCC recommends a reasonable period be specified.
Part B.14 and 15	14.c Whale Tail Pit Interim Closure and Reclamation Plan, Version WT3 (June 2016-December 2019) ⁴ ; 15.c Whale Tail Pit Interim Closure and Reclamation Plan, Version 3 (December 2019);	Section B 14 and 15 outline the timing for submission of plans, depending on whether they are already approved (B.14) or to be submitted for approval (B.15). ECCC notes the ICRP is listed under both Part B14 and 15, however it should only be in one of the lists. ECCC recommends that the ICRP is listed only under B.15, given the commitment by the proponent to update the ICRP with respect to pit water quality closure objectives.
Part B.17	The Licensee shall review the Plans or Manuals referred to in this Licence as required by changes in operation and/or technology and modify the Plans or Manuals accordingly. Revisions to the Plans or Manuals are to be submitted in the form of an Addendum to be included with the Annual Report required by Part B, Item 2, complete with a revisions list detailing where significant content changes are made or a replacement Plan or Plans when and as the need arises.	ECCC notes this clause proposes to decouple updates to management plans from the annual reporting cycle and notes this may be a practical approach. However, it would still be useful to retain the revisions list. ECCC recommends that the proponent retain the revisions list.
Part B.19	The expiry or cancellation of this Licence does not relieve the Licensee from any obligation imposed by the Licence, or any other regulatory requirement Act.	ECCC notes the proposed edits change the intent of the clause. In the event of a delayed renewal or unforeseen circumstance where the Licence is not in normal force, there would not be clarity in the extent of the obligations in simply stating "the Act."

Section	Proponent Revisions	ECCC Comments/Recommendations
		ECCC recommends this clause be
		retained in its original form.
Part C.12	The Board may modify to the Monitoring Program for all phases of mining as set out in Schedule I without amendment or a public hearing. Requests for changes to the Monitoring Program should be forwarded to the Board in writing and should include justification for the change. Such requests may take into consideration the Water Monitoring Reduction	ECCC notes that this clause is broader than closure security, and should be moved to Part B (General Conditions). The Water Monitoring Reduction Framework referenced was first proposed in September 2017, and does not appear to have been updated to address reviewer comments previously provided.
	Framework attached as Schedule C.	ECCC recommends that this clause be added to Part B. and that the proposed Schedule C Water Monitoring Reduction Framework should be provided as an unlocked PDF version, rather than a photocopy, to facilitate further review.
Part D.1 and 3	1. The Licensee shall submit to the Board for review, at least sixty-thirty (60-30) days prior to Construction, final design and Construction drawings accompanied, with a detailed report, for the following: 3. The Licensee shall submit to the Board for review, at least thirty-twenty (3020) days prior to Construction, final design and Construction drawings accompanied, with a detailed report, for the Whale Tail DikeWRSF water collection system, IVR WRSF water collection system, IVR attenuation pond infrastructure, IVR pit water management infrastructure, Dewatering A47, Dewatering A49, Dewatering A53, Dewatering A49, Dewatering A50, Dewatering A51, Dewatering A52, Whale Tail South Basin Diffuser, IVR Dike 1 & spillway, Pad H Extension. The detailed report shall include items referred to in Part D Item 2.	With these two clauses, ECCC notes that the proponent is proposing to shorten time frames for submission of construction plans and designs to the NWB for review. The proposed time frames may not allow sufficient review time. ECCC recommends that the submission periods not be shortened for any items which may require review.
Part D.7	Effluent from dewatering activities shall be monitored at Monitoring Program Stations	ECCC notes this clause includes dewatering discharge limits, and changes are proposed such that only

Section	Proponent Revisions			ECCC Comments/Recommendations
Occion	STDD-1 to ST-DD-TBD and not exceed the			total suspended solids (TSS) is
	following Effluent quality limits:			regulated. ECCC does not object to
	Parameter Maximum Short Term			removing turbidity as a regulated
		Monthly	Maximum	parameter, based on work done at
		Mean	Maximum	Meadowbank; however, ECCC
	Total	15.0 mg/L	22.530	recommends it still be retained as a
	Suspended	10.0 mg/L	mg/L	monitoring parameter with site-specific
	Solids		ilig/L	correlation to TSS determined, so
	(TSS)			turbidity can be used as a real-time
	Turbidity	15 NTU	30 NTU	surrogate. ECCC also recommends pH
	Tarbiaity	10 1110	50 N O	be retained as a regulated parameter,
	pH	6.0 to 9.0	6.0 to 9.0	and aluminum be retained as a
	Total	1.5 mg/L	3.0 mg/L	monitored rather than regulated
	Aluminium	1.5 Hig/L	3.0 mg/L	parameter (because aluminum is closely
	Aluminium			associated with suspended solids, and
				would be substantially controlled by the
				TSS criteria, depending on pH).
Part D.10	The Licensee	shall monitor t	he Whale Tail	ECCC notes this clause refers to effluent
r art D. ro	and IVR Atten			and not dewatering discharges, so it
				should be moved to Section F. The limits
			set out in Section D refer only to	
	Effluent from Whale Tail Attenuation Pond			dewatering. ECCC recommends that this
	may be discha			clause be moved to Section F.
	the Mammoth	•		
	discharge crite			
Part D.17			any chemicals,	The intent of the addition may be to
	petroleum pro			preclude any contradiction with the
	associated wit			authorized deposit of treated effluent to
	entering any V		•	water; however, ECCC notes that the
	accordance v			deposit of chemicals, petroleum
				products, fuels, or other contaminants
				into surface waters could not be
				authorized by the licence.
				ECCC recommends that this clause be
				reworded to remove wastes from the
				listed categories, but otherwise retain the
				original wording.
Part E.10	The Licensee	shall not bread	ch dikes until	ECCC notes that the reference to the
	the water qual	ity in the re-flo	oded area	Final Environmental Impact Statement
			Guidelines for	(FEIS) and Addendum is not specific,
	the Protection			and does not provide a clear standard as
	concentrations			the objectives in closure sections of the
	Impact Stater	ment and Add	endum	FEIS were narrative. If this is to be used

Section	Proponent Revisions	ECCC Comments/Recommendations
	predictions, or appropriate site-specific water quality objectives. Subject to the Board approval, if If water quality parameters are above CCME Guidelines, or Final Environmental Impact Statement and Addendum, unless otherwise approved by the Board a site-specific risk assessment must be conducted to identify specific water quality objectives Site Specific Water Quality Objectives for the site that are protective of the aquatic environment. Where they are required, Site Specific Water Quality Objectives shall be incorporated in the approved Final Reclamation and Closure Plan.	as a yardstick, then ECCC recommends including a reference to the data intended to be used for comparison. ECCC also recommends the reference to baseline concentrations be retained, as there may be parameters that merit evaluation which do not have guidelines or SSWQOs.
Part F.4	The Discharge of Effluent from the Whale Tail Attenuation Pond at Monitoring Program Station ST-WT-2 shall be directed to Mammoth Lake, at Monitoring Program Station ST-WT-26 for South Whale Tail Basin, and at Monitoring Station TBD for Lake D1 and Lake D5 through the Mammoth Lake Diffuser and approved diffusers and unless otherwise approved by the Board as part of a Plan shall not exceed the following Effluent quality limits: *includes table of effluent quality criteria with the total dissolved solids (TDS) row	ECCC notes this clause includes the effluent quality criteria for discharges from the Attenuation Ponds. The proponent proposes to remove TDS as a regulated criteria. If this is to be considered, then ECCC recommends rationale be presented for the removal of TDS which demonstrates it is not a parameter of concern. Alternatively, consideration could be given to regulating constituent ions of concern individually.
Part F.5	crossed out* The Discharge of Effluent from a Final Discharge Point at Monitoring Program Stations STWT- 2, at Monitoring Program Station ST-WT-26 for South Whale Tail Basin, and at Monitoring Station TBD for Lake D1 and Lake D5 shall be demonstrated to be Acutely non-Lethal under the following test and as stipulated in Schedule I of the Licence: a. Acute Lethality of Effluents to Rainbow Trout (as per Environment Canada's	ECCC notes this clause includes the requirement to be "Acutely Non-Lethal". ECCC recommends the wording be revised to "non-acutely lethal" for clarity. ECCC also recommends the test methods referenced should be retained, as they are stand-alone, rather than referencing other legislation that references these methods. ECCC notes that using the reference to the Metal and Diamond Mining Effluent

Section	Proponent Revisions	ECCC Comments/Recommendations
	Environmental Protection Series Biological Test Method EPS/1/RM/13 Second Edition December 2000 (with May 2007 amendments).in accordance with the MDMER.	Regulations (MDMER) methods would effectively bring in the Daphnia requirement (which is not currently included in the body of the licence) as of June 2021, as well as the Rainbow Trout test.
Schedule B, Item 13 (Monitoring)	The A summary of the results of monitoring related to the Aquatic Effects Monitoring Program (AEMP) including:	ECCC notes it is not clear when the full report would be submitted for the AEMP components. It is currently available in detail for review under the Annual Report, and this should be retained.
		ECCC recommends that the AEMP be retained for review in the Annual Report, or submission of the full AEMP Report for approval be specified elsewhere.

4.0 Acknowledgements

ECCC would like to thank the NWB for this opportunity to provide input to the review process for the Whale Tail Pit Expansion Project Type A and B Water Licence amendments application and looks forward to continuing its participation in this process.

ECCC's technical review comments and recommendations are not to be interpreted as any type of acknowledgement, compliance, permission, approval, authorization, or release of liability related to any requirements to comply with federal or territorial statutes and regulations.