

March 16, 2020

Nunavut Planning Commission  
PO Box 1797  
Iqaluit, NU X0A 0H0

**Re: Request for Conformity Determination – Agnico Eagle’s Saline Water Management –  
Meliadine NIRB Project Certificate No. 006**

Dear Ms. Ehaloak and Mr. Scholz:

Agnico Eagle Mines Limited (**Agnico Eagle**) currently operates the Meliadine Gold Mine in accordance with Nunavut Impact Review Board (**NIRB**) Project Certificate No. 006 and Nunavut Water Board (**NWB**) Type A Water Licence 2AM-MEL1631. The mine and associated facilities (including the All Weather Access Road (**AWAR**) (together, the **Project**) have previously been the subject of positive conformity determinations by the Nunavut Planning Commission (**NPC**) and referral to the NIRB in June 2011 (Meliadine Mine proposal) and January 2018 (saline discharge proposal). Accordingly, associated activities were previously reviewed by the NIRB and NWB. The Project conforms to the Keewatin Regional Land Use Plan (**KRLUP**).

As set out in the enclosed materials, Agnico Eagle is proposing certain water management modifications for the purpose of accommodating saline groundwater volumes that will be encountered during mining. Specifically, Agnico Eagle proposes the following changes to the current saline effluent discharge components:

- convey underground mine water from the mine site to Melvin Bay using a waterline to be installed along the existing right-of-way of the existing AWAR and bypass roads, rather than the current trucking method (noting this was an option identified in the Project Final Environmental Impact Statement 2014 (**FEIS**)), and;
- replace and update current discharge line and engineered diffuser (running from Itivia into Melvin Bay for marine discharge) using directional drilling method to reduce impacts of tides and ice on pipe, reduce visual impact, reduce erosion, and extend discharge season duration. (together, the “**Proposed Modification**”).

Agnico Eagle has completed a self-assessment of the Proposed Modification following the “*NIRB Guidance on Process for Seeking Approval for Modifications to Previously-Approved Projects*” (April 2018; NIRB Guidance). The Proposed Modification is not considered significant, as it includes components or activities that were part of the original or amended proposal. The Proposed Modification will be located entirely within the original Project area and the key components will remain substantially similar to the Project as described in previous assessments and conformity determinations. Agnico Eagle has not identified any amendments that would be required to any existing approvals in order to proceed, but will be updating relevant management plans (such as the Road Management and the Groundwater Management Plans) in order to reflect the updated components. Potential environmental effects and suitable mitigation measures have been considered, in accordance with the NPC application requirements, and are presented at Appendix A.

In order to support best practice water management at site, Agnico Eagle is requesting to commence discharge to the marine environment via the modified infrastructure by May 2021. Agnico Eagle is requesting therefore requesting that the NPC issue a positive conformity determination for the Proposed Modification as soon as possible, pursuant to section 77(1) of the *Nunavut Planning and Project Assessment Act* (**NuPPAA**).

What follows provides further details of the Proposed Modification.

## **1. Proposed Modification Background**

The option of managing salt water encountered during mining via discharge to the ocean (either conveyed by a water line or hauled by truck) was first considered as part of the Project Description and alternatives assessment in the FEIS originally reviewed by NIRB and approved with the issuance of Project Certificate No. 006. As toxicity testing for marine species under the *Metal Mining Effluent Regulations* (as they were then known) was not referenced in the legislation until 2018, Agnico Eagle implemented interim methods for management of salt water at the Project.

In December 2017, Agnico Eagle submitted a proposal to NPC to manage saline water through trucking of salt water via the AWAR and discharge into Melvin Bay. On the basis of the change in location for the discharge of saline effluent and the revised method of treatment, NPC determined the proposal was a significant modification and referred the proposal to NIRB for screening. The NIRB determined the proposal was a significant modification requiring reconsideration of Project Certificate No. 006. On October 31, 2018, the NIRB recommended to the Minister that Project Certificate No. 006 be amended. In January 2019, the Minister accepted NIRB's recommendation. Agnico Eagle began discharging saline water into Melvin Bay from Itivia in August 2019.

## **2. Scope of Proposed Modification**

Based on three years (2017 to 2019) of mining experience at Meliadine and discharge in Meliadine Lake, Agnico Eagle has identified that adaptive management strategies are necessary to ensure best management practices are implemented at site. These groundwater management strategies are part of the approved Groundwater Management Plan and will be enhanced for this submission on the short, mid and long term strategies.

In the mid term, Agnico Eagle plans to continue using the existing infrastructure and trucking methods in accordance with existing approvals, including Project Certificate No. 006. Agnico Eagle has already updated the Roads Management Plan to reflect the mid term plan. The updated Roads Management Plan was approved through Board Motion No. 2019-A1-014 dated February 22, 2020 as required by Part B, Item 12 of the Licence.

Given the current and anticipated saline groundwater volumes, Agnico Eagle has determined that beginning in May/June 2021, increasing discharge volumes to the marine environment via the Proposed Modification would better support capacity for groundwater management at the mine site while remaining protective of the marine environment.

As part of the Proposed Modification, Agnico Eagle will modify the size of the discharge pipe and diffuser and using a directional drilling method to reduce impacts of tides and ice on the pipe. Instead of increasing truck traffic to haul the additional volumes, Agnico Eagle is planning to convey saline water along the AWAR and bypass road by water line. This is an option that was originally presented in the Meliadine Gold Mine Final Environmental Impact Statement (FEIS) SD-1, Project Alternatives, Section 5.10 (Agnico Eagle 2014).

Overall, the Proposed Modification will operate as per the existing requirements as noted below:

- all waters will continue to be conveyed in accordance with Kivalliq Inuit Association Lease KVRW11FO2;
- discharge to Melvin Bay and related water management activities will not change;
- methods of water treatment will not change - if required, water will continue to be treated using the current approved methods for Ammonia and Total Suspended Solids at site prior to transportation to Melvin Bay;
- existing saline water storage tank at the Itivia Fuel Storage Facility in Rankin Inlet will continue to be used;

- water will be discharged during the open water season (i.e. June to October, identified in consultation with the HTO);
- water will be discharged in a controlled manner through a diffuser to minimize impact on the marine environment;
- conveyance and discharge will be required to comply with the requirements of Project Certificate 006 within the Road Management and the Groundwater Management Plans;
- activities in the marine environment will be required to comply with the lease issued by Crown-Indigenous Relations and Northern Affairs Canada under the *Territorial Lands Act*; and
- any waters discharged to the marine environment will be required to meet the federal end-of-pipe discharge criteria and toxicity testing set by the *Metal and Diamond Mining Effluent Regulations (MDMER)* enacted under the *Fisheries Act*.

Equipment and materials are as described in the Project Description that will be submitted via the NPC on-line portal.

Community consultation events on the Proposed Modification were conducted in January and March 2020 and feedback will be incorporated into the final design.

### **3. Potential Environmental Effects**

Based on the outcome of the NuPPAA s. 90 factors self-assessment presented in Appendix A, Agnico Eagle considers that the nature, magnitude, complexity, probability, frequency and duration of the impacts for the Proposed Modifications are low to negligible changes as compared to the approved Project activities. Our conclusion is that this application would be a non-significant modification.

Potential environmental effects and suitable mitigation measures have been considered and are presented at Appendix B. The potential environmental effects associated with the proposed changes have been adequately assessed as part of the environmental assessment (Agnico Eagle 2014) and through the Project Certificate reconsideration for saline discharge to the marine environment (Agnico Eagle 2018). The inclusion of Terms and Conditions 128-131 (in addition to the other 127 Terms and Conditions) are robust and adequate to address the changes proposed; therefore, an assessment of the proposed modification as an independent project proposal and/or reconsideration of the Project Certificate are inappropriate.

The predicted residual effects presented for the physical, biological, and socio-economic environment in the (summarized in Volume 11; Agnico Eagle 2014) took into account Project activities for the Mine Site and AWAR. The geographic area for the land activities is within the Project footprint assessed in the FEIS, including wildlife habitats. Baseline data was collected in Melvin Bay as part of the assessment in 2014 and to support discharge in 2018 (Golder 2019). In the FEIS (Agnico Eagle 2014) Melvin Bay was considered an impacted area from shipping and spills.

In the FEIS Addendum (Agnico Eagle 2018), Melvin Bay was assessed from impacts for construction of a pipe and diffuser into Melvin Bay and for saline discharge and impacts were assessed as having a minor (i.e., negligible) effect on a number of VECs and VSECs, through environmental design features and the implementation of mitigation. Accidental release of groundwater effluent from an unknown location along the discharge pipe was assessed as having a direct adverse effect on marine water quality and associated indirect effects on marine wildlife. Key mitigations have been implementation to offset potential effects such as, secondary containment for the storage

tank within the Itivia Fuel Storage Facility, regular visual inspections of equipment, controlling discharge in the event there is a malfunction of the pipe or diffuser, and adherence to existing environmental and operational management plans in place for the Meliadine Mine.

Effects at Rankin Inlet assessed in the FEIS and FEIS Addendum were associated with material receipt, storage, and transfer to the Project. The FEIS predicted residual effects will remain unchanged as a result of the modified Project activities, which will be primarily focused at Itivia Harbour to capacitate the discharge of saline effluent to the ocean at Melvin Bay. Consistent with the original FEIS (Agnico Eagle 2014), the local study area at Itivia Harbour and Melvin Bay does not support critical habitat for benthic invertebrates, fish, birds, or marine mammals. Mitigation measures described in the FEIS and FEIS Addendum will continue to be applied, including for activities at Itivia Harbour, as appropriate.

Further, the Proposed Modification will reduce environmental impacts identified in the environmental assessment for the FEIS Addendum, Section 8.1.3 (Agnico Eagle 2018) from traffic, noise, air quality and dust along the AWAR. As part of Project Certificate No. 006, Term and Condition 9, a Greenhouse Gas Reduction Plan is required to provide a description of mitigative, and adaptive strategies planned. Moving to a waterline from truck traffic will significantly reduce greenhouse gases and fuel consumption from road traffic. In addition, the waterline will also reduce impacts to caribou and other wildlife from reduced truck traffic on the road.

### **3. Conclusion**

It is Agnico Eagle's view that the Proposed Modification should be permitted to proceed in a timely way in order to support adaptive management of water at the Meliadine Mine.

Accordingly, Agnico Eagle requests that the NPC issue a positive conformity determination for the Proposed Modification as soon as possible. For all of the reasons above, Agnico Eagle is of the view that the Proposed Modification is not a significant modification. As noted above, Agnico Eagle will be engaging further with NIRB following the NPC's conformity determination, to confirm any related NIRB processes that may be required to proceed.

If you require any further information in relation to NPC's consideration of this request, please contact the undersigned via email or telephone.

Regards,



Jamie Quesnel

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Regional Manager - Permitting & Regulatory Affairs

copy to: Nunavut Impact Review Board

## **References**

- Agnico Eagle (Agnico Eagle Mines Limited). 2014. Final Environmental Impact Statement (FEIS) – Meliadine Gold Project, Nunavut. April 2014.
- Agnico Eagle. 2018. Meliadine Gold Mine – Final Environmental Impact Statement Addendum, Environmental Assessment of Treated Groundwater Effluent Discharge into Marine Environment, Rankin Inlet. June 2018.
- Agnico Eagle. 2019. Meliadine Gold Mine, Groundwater Management Plan. Version 4. March 2019.
- BC MOE (British Columbia Ministry of the Environment). 2017a. Approved Water Quality Guidelines: Aquatic Life, Wildlife & Agriculture.
- Golder (Golder Associates Ltd.) 2019. Meliadine Gold Mine Ocean Discharge Monitoring Plan – Marine Reconnaissance and Baseline Programs, 2018 Marine Reconnaissance Survey Data Report. Ref No. Doc707-18103567. Prepared for Agnico Eagle Mines Limited. February 2019.
- NIRB (Nunavut Impact Review Board). 2019. RE: Agnico Eagle Mines Ltd.’s Modified Design for the pipeline related to its “Saline Effluent Discharge to the Marine Environment” for the Meliadine Gold Mine Project. May 7, 2019. Ref No. 11MN037

**Appendix A**  
**Summary of Self-Assessment Per NIRB Guidance**

The following analysis follows the NIRB Guidance, in which NIRB sets out its recommended process for proponents proposing a modification to a previously approved project, to determine whether the modifications are to be considered "significant modifications".

Section 90 of NuPPAA states, in determining the significance of potential impacts, the NIRB must take into account the factors outlined in Table A-1. In accordance with the NIRB Guidance, Agnico Eagle has considered the Proposed Modification in relation to s. 90 of NuPPAA, using the self-assessment steps outlined by the NIRB and as summarized in Table A-1 below.

In consideration of the modifications compared to the Project as assessed by NIRB for the original project (Agnico Eagle 2014) and for the amendment Project in 2018 (Agnico Eagle 2018), Agnico Eagle is of the view that the proposed changes are a non-significant amendment and no screening is required, however it will engage further with NIRB in order to confirm this view. Should NIRB determine that additional assessment is required, Agnico Eagle is of the view that the NIRB will ultimately determine that the proposed changes will not cause any significant adverse effects and will in fact reduce impacts from trucks and associated effects.

**Table A-1: Agnico Eagle NuPPAA Section 90 Self-Assessment**

<b>NuPPAA Section 90 Factors</b>	<b>Results of Agnico Eagle Self-Assessment</b>
(a) the size of the geographic area, including the size of wildlife habitats, likely to be affected by the impacts	<p>The geographic area for the land activities is within the Project footprint assessed in the Final Environmental Impact Statement (FEIS; Agnico Eagle 2014), including wildlife habitats. Baseline data was collected in Melvin Bay as part of the assessment and Melvin Bay was considered as an area that could be potentially impacted from shipping and spills.</p> <p>The proposed changes are expected to result in negligible to minor changes to terrestrial valued components. The modification is expected to result in detectable changes to water quality in Melvin Bay, but non-significant given the requirements of Environment and Climate and Change Canada and the Department of Fisheries Ocean, and Agnico Eagle’s commitment to treatment and replace and update current discharge line and engineered diffuser.</p>
(b) the ecosystemic sensitivity of that area	<p>There is no change to the terrestrial footprint, which was previously assessed as part of the FEIS (Agnico Eagle 2014). Melvin Bay was assessed as part of the assessment for shipping and spills. The local study area at Itivia Harbour and Melvin Bay does not support critical habitat for aquatic, bird and wildlife species, and as such, no areas of sensitivity are expected to be impacted by the Project.</p>
(c) the historical, cultural and archaeological significance of that area	<p>The proposed changes will result in a negligible change in impacts to an area of historical, cultural, or archaeological significance. The waterline is to be located along the AWAR and bypass road and so is within the Project footprint included in previous project proposals and assessed in the FEIS (Agnico Eagle 2014).</p>
(d) the size of the human and the animal populations likely to be affected by the impacts	<p>The proposed changes is not expected to result in changes to impacts on human and animal populations.</p>
(e) the nature, magnitude and	<p>The nature, magnitude, and complexity of the impacts are within those</p>

<b>NuPPAA Section 90 Factors</b>	<b>Results of Agnico Eagle Self-Assessment</b>
complexity of the impacts	assessed in the FEIS for terrestrial activities and does not change the nature, magnitude, and complexity of terrestrial impacts. Marine impacts were assessed for shipping and impacts from spills, the nature, magnitude and complexity of these impacts do not change. In 2018, marine impacts were assessed for a discharge pipe and diffuser into Melvin Bay and the magnitude and complexity of these impacts do not change.
(f) the probability of the impacts occurring	The probability of the impacts occurring are within those assessed in the FEIS and proposed changes do not change the probability of these impacts. Marine impacts were assessed for shipping and impacts from spills, the probability of these impacts do not change. In 2018, marine impacts were assessed for a discharge pipe and diffuser into Melvin Bay and the probability of these impacts do not change.
(g) the frequency and duration of the impacts	The frequency and duration of the impacts are within those assessed in the FEIS for terrestrial activities and the modification does not change the frequency and duration of these impacts. Marine impacts were assessed for shipping and impacts from spills, frequency, and duration of these impact do not change. In 2018, marine impacts were assessed for a discharge pipe and diffuser into Melvin Bay and the frequency and duration of these impacts do not change.
(h) the reversibility or irreversibility of the impacts	The reversibility or irreversibility of the impacts are within those assessed in the FEIS for terrestrial activities and proposed changes do not change the nature, reversibility or irreversibility of these impacts. Marine impacts were assessed for shipping and impacts from spills, the reversibility or irreversibility of these impacts do not change. In 2018, marine impacts were assessed for a discharge pipe and diffuser into Melvin Bay and the reversibility or irreversibility of these impacts do not change.
(i) the cumulative impacts that could result from the impacts of the project combined with those of any other project that has been carried out, is being carried out or is likely to be carried out	The proposed changes will result in negligible change to the cumulative impacts.
(j) any other factor that the Board considers relevant to the assessment of the significance of impacts	None identified to date.

**Appendix B**  
**Potential Environmental Impacts and Mitigations for Proposed Modification**

**Table B-1: Potential Environmental Impacts and Mitigations for Proposed Modification**

Project Activity	Potentially Impacted Valued Components	Effects Pathways	Environmental Design Features and Mitigation	Pathway Analysis as per 2018 Submission	Pathway Analysis as per this current application (2020)
<b>Marine Environment</b>					
Installation and presence of discharge pipe	Benthic Invertebrates	Change in health and survivorship of marine benthic invertebrate's due to in-water works and presence of pipe.	Placement of water line will avoid sensitive natural habitats.	Minor	No change, consistent with the conclusions of the 2018 FEIS Addendum
	Marine Fish and Fish Habitat	Change in fish habitat quality due to in-water works and presence of pipe.	<p>Placement of water line will avoid sensitive natural habitats.</p> <p>Construction and installation of the discharge line will adhere to the site-specific Erosion and Sediment Control Plan and DFO guidance practices of "Measures to Avoid Causing Harm to Fish and Fish Habitat."<sup>(a)</sup></p> <p>Best management practices for erosion and sedimentation control will be used to control sediment releases during construction and installation of the discharge line and associated structures (e.g., silt curtains, runoff management).</p> <p>Line will be constructed using horizontal diamond drilling method to protect from ice and tides avoiding the need to remove and install the line twice a year.</p> <p>Discharge line placement and installation will follow DFO's Hierarchy of Measures for Fisheries Protection.</p> <p><b>Discharge line and engineered using directional drilling method will reduce risk of sea bed erosion compare to current discharge line as the line will be installed once and removed once at closure.</b></p>	Minor	No change, consistent with the conclusions of the 2018 FEIS Addendum
	Marine Fish and Fish Habitat	Change in health and survivorship of marine fish due to in-water works and presence of pipe.	<p>Discharge line placement and installation will follow DFO's Hierarchy of Measures for Fisheries Protection.</p> <p>Placement of line will avoid sensitive natural habitats.</p> <p>Construction and installation of the discharge line will adhere to the site-specific Erosion and Sediment Control Plan and DFO guidance practices of "Measures to Avoid Causing Harm to Fish and Fish Habitat."</p> <p>Best management practices for erosion and sedimentation control will be used to control sediment releases during construction and installation of the discharge line and associated structures (e.g., silt curtains, runoff management).</p>	Minor	No change, consistent with the conclusions of the 2018 FEIS Addendum

Project Activity	Potentially Impacted Valued Components	Effects Pathways	Environmental Design Features and Mitigation	Pathway Analysis as per 2018 Submission	Pathway Analysis as per this current application (2020)
	Marine birds and marine mammals	Change in marine habitat quality due to in-water works and presence of pipe.	<p>Placement of line will avoid sensitive natural habitats.</p> <p>Best management practices identified in the site-specific Erosion and Sediment Control Plan will be used to control sediment releases during construction and installation of the discharge line and associated structures (e.g., silt curtains, runoff management).</p> <p>Discharge line using directional drilling method will reduce impacts of tides and ice on pipe, reduce visual impact, reduce erosion, and extend discharge season duration. The line will be installed once and removed as per closure requirements.</p>	No linkage	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>
	Marine birds	Sensory disturbance from structural lighting may result in changes in health and mortality risk in marine birds due to collisions with infrastructure.	<p>Where feasible, lights on infrastructure will be shielded and/or angled to minimize direct illumination and reflection of the sea surface.</p> <p>Activities will be scheduled during daylight hours whenever practical to minimize the need for staging lights. Work will occur during summer when daylight is extended, minimizing the need for site lighting.</p>	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>
	Marine birds	Sensory disturbance from structural lighting and in-air noise from nearshore human activities may alter marine bird behavior.	<p>Where feasible, lights on infrastructure will continue to be shielded and/or angled to minimize direct illumination and reflection of the sea surface.</p> <p>Activities will be scheduled during daylight hours whenever practical to minimize the need for staging lights. Work will occur during summer when daylight is extended, minimizing the need for site lighting.</p>	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>
	Sediment quality and water quality	Disturbance material from in-water construction will impact both sediment and water quality.	<p>Installation of temporary diffuser (e.g., same method as existing diffuser) to allow discharge increase from the start of 2021 while construction of permeant steel sleeve.</p> <p>Installation of the discharge line will comply with the site-specific Erosion and Sediment Control Plan.</p> <p>A crew of divers will install the submerged portion of the waterline to connect, bolt, and torque the flanges together and that the diffuser is sitting flat at the right depth.</p> <p>Discharge line and engineered using directional drilling method will reduce risk of sea bed erosion compare to current discharge line as the line will be installed once and removed once at closure.</p> <p>As currently, installation of a diffuser to encourage mixing.</p>	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>

Project Activity	Potentially Impacted Valued Components	Effects Pathways	Environmental Design Features and Mitigation	Pathway Analysis as per 2018 Submission	Pathway Analysis as per this current application (2020)
Discharging saline water into marine environment	Marine fish and Fish Habitat	Change in fish habitat quality due to discharge of groundwater from the Meliadine Mine.	<p>Discharge of effluent will continue to meet regulatory requirements for both temperature and water quality guidelines, including Metal and Diamond Mining Effluent Regulations, Canadian Council of Ministers of the Environment and/or Site Specific Water Quality Objectives.</p> <p>As currently, if the saline water is not suitable for discharge, it will be stored at the Meliadine Mine and treated prior to discharge.</p> <p>As previously design, construct, and install a diffuser with the discharge line to aid in mixing.</p> <p>Established monitoring program will continue and adaptive management implemented if negative impacts are detected.</p>	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>
	Marine Fish and Fish Habitat	Change in health and survivorship due to the water quality of the saline discharge.	<p>Discharge of effluent will continue to meet regulatory requirements for both temperature and water quality guidelines, including Metal and Diamond Mining Effluent Regulations, Canadian Council of Ministers of the Environment and/or Site-Specific Water Quality Objectives.</p> <p>Toxicity testing will be continued to be completed on the saline discharge to confirm it meets all regulatory requirements and is non-acutely toxic.</p> <p>As currently, if the saline water is not suitable for discharge, it will be stored at the Meliadine Mine and treated prior to discharge.</p> <p>As previously, design, construct, and install a diffuser with the discharge pipe to aid in mixing.</p> <p>Established monitoring program will continue and adaptive management implemented if negative impacts are detected.</p>	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>
	Benthic Invertebrates	Change in habitat quality due to the water quality of the saline discharge.	<p>Discharge of effluent will continue to meet regulatory requirements for both temperature and water quality guidelines, including Metal and Diamond Mining Effluent Regulations, Canadian Council of Ministers of the Environment and/or Site Specific Water Quality Objectives.</p> <p>As currently, if the saline water is not suitable for discharge, it will be stored at the Meliadine Mine and treated prior to discharge.</p> <p>As previously, design, construct, and install a diffuser with the discharge pipe to aid in mixing.</p> <p>Monitoring program will be established</p>	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>

Project Activity	Potentially Impacted Valued Components	Effects Pathways	Environmental Design Features and Mitigation	Pathway Analysis as per 2018 Submission	Pathway Analysis as per this current application (2020)
	Benthic Invertebrates	Change in health and survivorship due to the water quality of the saline discharge.	<p>Discharge of effluent will continue to meet regulatory requirements for both temperature and water quality guidelines, including Metal Mining Effluent Regulations, Canadian Council of Ministers of the Environment and/or Site Specific Water Quality Objectives.</p> <p>Toxicity testing will continue to be completed on the saline discharge to confirm it meets all regulatory requirements for release and is non-acutely toxic.</p> <p>As currently, if the saline water is not suitable for discharge, it will be stored at the Meliadine Mine and treated prior to discharge.</p>	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>
	Marine Birds and Marine Mammals	Change in habitat quality the water quality of the saline discharge.	<p>Continued adherence to the Ocean Discharge Monitoring Plan.</p> <p>Discharge of effluent will continue to meet regulatory requirements for both temperature and water quality guidelines, including Metal and Diamond Mining Effluent Regulations, Canadian Council of Ministers of the Environment and/or Site Specific Water Quality Objectives.</p> <p>As currently, if the saline water is not suitable for discharge, it will be stored at the Meliadine Mine and treated prior to discharge.</p> <p>As previously, design, construct, and install a diffuser with the discharge pipe to aid in mixing.</p> <p>Monitoring program will be established and adaptive management implemented if negative impacts are detected.</p>	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>
	Marine Birds and Marine Mammals	Change in health and survivorship due to the water quality of the saline discharge.	<p>Adherence to the Ocean Discharge Monitoring Plan.</p> <p>Discharge of effluent will meet regulatory requirements for both temperature and water quality guidelines, including Metal Mining Effluent Regulations, Canadian Council of Ministers of the Environment and/or Site Specific Water Quality Objectives.</p> <p>If the saline water is not suitable for discharge, it will be stored at the Meliadine Mine and treated prior to discharge.</p> <p>Design, construct, and install a diffuser with the discharge pipe to aid in mixing.</p> <p>Monitoring program will be established and adaptive management implemented if negative impacts are detected.</p>	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>

Project Activity	Potentially Impacted Valued Components	Effects Pathways	Environmental Design Features and Mitigation	Pathway Analysis as per 2018 Submission	Pathway Analysis as per this current application (2020)
	Benthic Invertebrates  Marine Fish and Fish Habitat  Marine birds and Marine Mammals	Accidental release of saline water from an unknown location along the discharge pipe can have direct adverse effects on marine water quality and associated indirect effects on marine wildlife.	Adherence to the Ocean Discharge Monitoring Plan.  Implementation of secondary containment for the heated tank within the Itivia Fuel Storage Facility.  Implementation of a Risk Management and Emergency Response Plan specific to the potential release of saline water.  Operational activities will be engineered to use handling systems to minimize the risk of accidental spills into the marine environment.	Primary (the outcomes were that this was not significant adverse effect due to mitigations and controls that would be put in place)	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>
	Benthic Invertebrates  Marine Fish and Fish Habitat  Marine birds and Marine Mammals	Reduction in sea ice thickness and or timing of seasonal freeze-up could impact habitat quality.	Discharge water at a temperature as close to the natural discharge as practicable.  Discharge in the summer months only.  The engineering diffuser will prevent the discharge water plume to reach the surface and reduce in sea ice thickness and or timing of seasonal freeze-up.	No linkage	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>
<b>Terrestrial Environment</b>					
Conveyance of saline water to discharge location via waterline	Vegetation and Wildlife	Spills or accidental release of saline water from waterline along the AWAR can affect vegetation and wildlife.	Adherence to mitigation measures already in place for the AWAR.  Adherence to Spill Contingency Plan.  Adherence to Risk Management and Emergency Response Plan.  Ready access to an emergency spill clean-up kit for cleaning-up any spills.  Hazardous materials and fuel will be stored according to regulatory requirements to protect the environment and workers (i.e., Hazardous Materials Management Plan).  Trucking equipment will be regularly maintained.	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>

Project Activity	Potentially Impacted Valued Components	Effects Pathways	Environmental Design Features and Mitigation	Pathway Analysis as per 2018 Submission	Pathway Analysis as per this current application (2020)
	Wildlife	Contact with waterline causing injury or mortality to individual animals, which can affect population sizes	<p>Adherence to mitigation measures already in place for the AWAR.</p> <p>Adherence to Caribou Migration Procedure (Terrestrial Environment Management and Monitoring Plan).</p> <p>Follow mitigation and monitoring as outlined in the Wildlife Protection and Response Plan (Appendix III to the Terrestrial Environment Management and Monitoring Plan).</p> <p>Removal of physical hazards per the closure and reclamation plan.</p> <p>Engineering design: Supported at culverts to allow the water to flow freely, buried at access or road crossings and supported with brackets attached to the existing bridges to traverse rivers.</p> <p>Caribou Specific mitigation: Road surveillance monitoring to determine when caribou are near including height of land surveys.</p> <p>Site roads have been designed and constructed to use finer material size that facilitate caribou crossing (i.e., coarse boulders are not used).</p> <p>Minimize outside workforce when caribou herds (i.e., &gt;50 animals) move through the Project.</p> <p>Adhere to triggers and thresholds for operations for caribou monitoring and mitigation developed for the all-weather access road.</p>	Minor	Positive change as the saline water trucks will be removed so less interaction with wildlife.
installation of waterline and discharge pipe	Vegetation	Physical loss or alteration of vegetation from construction of the discharge pipe.	<p>These are substantially similar to issues considered by NIRB and other regulatory authorities during the assessment of the AWAR, and the following mitigations and terms and conditions would continue to apply to the Proposed Modification:</p> <p>Use existing roads.</p> <p>Minimize footprint of laydown area for discharge pipe and diffuser installation.</p>	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>
	Terrain and Permafrost	<p>Physical alteration of terrain, soils, and permafrost due to earthworks, construction, and ground disturbance.</p> <p>Physical removal of permafrost soils and rock where stripping is required.</p>	<p>These are substantially similar to issues considered by NIRB and other regulatory authorities during the assessment of the AWAR, and the following mitigations and terms and conditions would continue to apply to the Proposed Modification:</p> <p>Use of appropriate engineering design to promote permafrost growth.</p> <p>Minimize footprint areas of facilities and infrastructure.</p> <p>Minimize ground disturbance.</p>	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>

Project Activity	Potentially Impacted Valued Components	Effects Pathways	Environmental Design Features and Mitigation	Pathway Analysis as per 2018 Submission	Pathway Analysis as per this current application (2020)
<b>Heritage Record</b>					
Transport of saline water to discharge location via waterline	Heritage Record	Activities such as regarding embankments, shoulder stabilization or new borrow sources if required; and accidents or malfunction	<p>Adherence to mitigation measures already in place for the AWAR as this Project foot print has been assessed.</p> <p>Ongoing awareness training for recognizing heritage resources to all staff and contractors.</p> <p>Avoid previously recorded heritage resource sites.</p> <p>Complete more in-depth mitigation strategies if an avoidance mitigation strategy cannot be implemented.</p> <p>Monitor condition of known heritage resource sites near the Project footprint.</p>	No linkage	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>
Installation of discharge pipe	Heritage Record	Construction activity leading to ground alteration that affects physical heritage resources.	<p>Adherence to mitigation measures already in place for the Itivia laydown area as this Project foot print has been assessed.</p> <p>Ongoing awareness training for recognizing heritage resources to all staff and contractors.</p> <p>Continue to avoid previously recorded heritage resource sites.</p> <p>Consistent with best practice, complete more in-depth mitigation strategies if an avoidance mitigation strategy cannot be implemented.</p> <p>Monitor condition of known heritage resource sites near the Project footprint.</p>	No linkage	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>
<b>Socio-economics</b>					
Discharging saline water into marine environment	Employment	Diffuser and pipe construction could result in the use of local contractor and community members.	<p>Continue to hire local labour to support with diffuser, pipe and waterline installation.</p> <p>Continue to provide training applicable to diffuser, pipe and waterline installation.</p>	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>
		Potential impacts to traditional use if the diffuser impacts marine wildlife and fish.	<p>Continue to monitor impacts to marine biota using local labour, where possible.</p> <p>Discharge of effluent will continue to meet regulatory requirements for both temperature and water quality guidelines.</p> <p>Continue to consult with communities on potential impacts.</p> <p>Continue to communicate results of monitoring to communities and local users.</p>	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>

Project Activity	Potentially Impacted Valued Components	Effects Pathways	Environmental Design Features and Mitigation	Pathway Analysis as per 2018 Submission	Pathway Analysis as per this current application (2020)
		Potential perception issues that the water and fish are no longer safe for traditional use.	<p>Monitor impacts to marine biota using local labour, where possible.</p> <p>Discharge of effluent will continue to meet regulatory requirements for both temperature and water quality guidelines.</p> <p>Continue to consult with communities on potential impacts.</p> <p>Continue to communicate results of monitoring to communities and local users.</p>	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum</b>
Discharging saline water into marine environment	Traditional use	Location of the diffuser could impact traditional land use during the summer months. The diffuser is not expected to be operational in the winter months in ice-conditions.	<p>Place diffuser deep enough to avoid impacting travel in summer months.</p> <p>Discharge will continue to be evaluated during the summer to minimize likelihood of thinning ice, impacting traditional travel routes over the ice.</p> <p>Continue to confirm with local communities and traditional land users that the location of the diffuser and discharge does not interfere with the traditional land use. This is already required per Condition 131 of Project Certificate No. 6:</p> <p>"The Proponent shall ensure its Marine Environment Management Plan addresses a procedure for engagement with the Kangiqliniq Hunters and Trappers Organization (HTO) to confirm the commencement and ending of the open water season for marine effluent discharge each year. The Proponent shall also engage with the HTO and the community of Rankin Inlet when developing a program for monitoring saline effluent temperature going into the subsea pipeline, ice thickness on Melvin Bay in the vicinity of the discharge and determining appropriate communication and safety protocols applicable for travel by community members through Itivia and Melvin Bay."</p> <p>Information from consultation will continue to be taken into consideration for design and operation of the discharge</p>	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum.</b>
Ceasing transport of saline water to discharge location via truck	Employment	Waterline would result in a lower number of truck drivers required	<p>Decreased traffic is a positive environmental effect as this would reduce dust and noise emissions. The community has consistently identified that minimizing dust should be a priority.</p> <p>Continued adherence to mitigation measures and KIA Production Lease requirements already in place for the AWAR.</p> <p>Continue to hire local labour to support the waterline installation.</p>	Minor	<b>No change, consistent with the conclusions of the 2018 FEIS Addendum.</b>