



## SCREENING DECISION REPORT NIRB FILE No.: 16MN056

NPC File No.: 148297

August 18, 2016

Following the Nunavut Impact Review Board's (NIRB or Board) assessment of all materials provided, the NIRB has determined that, in accordance with Article 12, Section 12.4.4(b) of the Nunavut Land Claims Agreement (NLCA) and paragraph 89(1)(a)(i) and (ii) of the *Nunavut Planning and Project Assessment Act* (NuPPAA), that Agnico Eagle Mines Ltd.'s "Whale Tail Pit" project proposal requires a Review under Article 12, Part 5 or 6 of the NLCA and Part 3 of the NuPPAA.

The NIRB is of the view that the potential for significant adverse ecosystemic and socio-economic effects resulting from the proposed project supports the determination that **the proposed project requires further assessment best facilitated through a full environmental review.** The NIRB therefore provides this Screening Decision Report to the responsible Minister(s) for consideration pursuant to Section 92 of the NuPPAA.

### OUTLINE OF SCREENING DECISION REPORT

- 1) REGULATORY FRAMEWORK
- 2) PROJECT REFERRAL
- 3) PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS
- 4) ASSESSMENT OF THE PROJECT PROPOSAL IN ACCORDANCE WITH PART 3 OF NUPPAA
- 5) VIEWS OF THE BOARD
- 6) PARTICULAR ISSUES OF CONCERN TO NIRB
- 7) NIRB DETERMINATION
- 8) CONCLUSION

### REGULATORY FRAMEWORK

The primary objectives of the NIRB are set out in Section 12.2.5 of the NLCA as follows:

*"In carrying out its functions, the primary objectives of NIRB shall be at all times to protect and promote the existing and future well-being of the residents and communities of the Nunavut Settlement Area, and to protect the ecosystemic integrity of the Nunavut Settlement Area. NIRB shall take into account the well-being of the residents of Canada outside the Nunavut Settlement Area."*

These objectives are confirmed under Section 23 of the NuPPAA.

The purpose of screening is provided for under Section 88 of the NuPPAA:

*“The purpose of screening a project is to determine whether the project has the potential to result in significant ecosystemic or socio-economic impacts and, accordingly, whether it requires a review by the Board...”*

To determine whether a review of a project is required, the NIRB is guided by the considerations as set out under subsection 89(1) of NuPPAA:

*“89. (1) The Board must be guided by the following considerations when it is called on to determine, on the completion of a screening, whether a review of the project is required:*

- (a) a review is required if, in the Board’s opinion,*
  - i. the project may have significant adverse ecosystemic or socio-economic impacts or significant adverse impacts on wildlife habitat or Inuit harvest activities,*
  - ii. the project will cause significant public concern, or*
  - iii. the project involves technological innovations, the effects of which are unknown; and*
- (b) a review is not required if, in the Board’s opinion,*
  - i. the project is unlikely to cause significant public concern, and*
  - ii. its adverse ecosystemic and socioeconomic impacts are unlikely to be significant, or are highly predictable and can be adequately mitigated by known technologies.”*

It is noted that subsection 89(2) provides that the considerations set out in paragraph 89(1)(a) prevail over those set out in paragraph 89(1)(b).

As set out under subsection 92(1), upon conclusion of the screening process, the Board must provide its written report the Minister:

*92. (1) The Board must submit a written report to the responsible Minister containing a description of the project that specifies its scope and indicating that:*

- a) a review of the project is not required;*
- b) a review of the project is required; or*
- c) the project should be modified or abandoned.*

After completing a review of all the information received, taking into account the information the Proponent and parties have provided to date, and taking into account the Board’s determination of the significance of potential adverse ecosystemic or socio-economic impacts of the project<sup>1</sup>, it is the opinion of the NIRB that the project proposal **should undergo a full environmental review** as the proposed project may have significant adverse ecosystemic or socio-economic impacts, significant adverse impacts on wildlife habitat or Inuit harvest activities, will cause significant public concern, and involves technological innovations, the effects of which are unknown.

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<sup>1</sup>Significance was assessed by the Board with regard to the factors outlined in s. 90 of the NuPPAA.

## PROJECT REFERRAL

On June 17, 2016 the NIRB received a referral to screen Agnico Eagle Mines Ltd.'s (Agnico Eagle or the Proponent) "Whale Tail Pit" project proposal from the Nunavut Planning Commission (NPC), with an accompanying positive conformity determination under the Keewatin Regional Land Use Plan. Within its conformity determination the NPC noted that the proposal could be related to the Meadowbank Gold Mine Project (NIRB File No. 03MN107) and that the proposal also included a request from Agnico Eagle that the Whale Tail Pit proposal be assessed as a reconsideration of the terms and conditions of the existing Meadowbank Gold Mine Project Certificate No. 004. The NIRB subsequently circulated the reconsideration request for a period of public comment, inviting interested parties to provide feedback and advice to the Board with respect to the appropriateness of assessing the proposal as a reconsideration of the Meadowbank Gold Mine Project Certificate terms and conditions, or as a standalone screening assessment, and whether the provisions of the NuPPAA<sup>2</sup> were applicable to the proposal.

After considering submissions from parties and reviewing the project description, on July 21, 2016 the NIRB provided its determination that the proposed Whale Tail Pit proposal had not been assessed as part of the original Meadowbank Gold Mine Project, and due to its location outside of the original Meadowbank project footprint, would require a separate screening assessment under the NuPPAA.

Pursuant to Article 12, Section 12.4.4 of the Nunavut Land Claims Agreement (NLCA) and s. 86 of the NuPPAA, the NIRB commenced screening this project proposal and assigned it file number 16MN056.

## PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS

### 1. Project Description:

The proposed Whale Tail Pit project is located within the Kivalliq region, approximately 150 kilometres (km) north of the hamlet of Baker Lake and approximately 50 km northwest of Meadowbank Gold Mine Project. The Proponent intends to develop an open pit gold mine and associated facilities at the Amaruq property with ore to be hauled by truck to the existing infrastructure at the Meadowbank mine site for milling. Construction is proposed to begin in early 2018, operations expected to commence in late 2018 and continue for three (3) to four (4) years, followed by closure of the site from 2019 to 2022. Development of the pit is intended to allow for access to an estimated 8.3 million tonnes of ore.

### 2. Scoping

As required under s. 86(1) of the NuPPAA, the Board accepts the scope of the Whale Tail Pit project proposal as set out by Agnico Eagle in the Whale Tail Pit project proposal. The scope of the project proposal includes the following undertakings, works, or activities:

- Development of one open pit located within the Amaruq property.

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<sup>2</sup> *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14.

- Construction of the Whale Tail dike and Mammoth dike, followed by partial dewatering of Whale Tail Lake (north basin). Water to be discharged to Whale Tail Lake (south basin) or to Mammoth Lake.
- Fishout of Whale Tail Lake (north basin).
- Construction of supporting infrastructure (NOTE: this project infrastructure is separate from, and in addition to, infrastructure previously screened and approved by the NIRB for Agnico Eagle's exploration program at the Amaruq site, NIRB File No. 11EN010) specifically:
  - Accommodations for 210 personnel;
  - Power plant;
  - Helipad;
  - Maintenance shop;
  - Bulk fuel storage facility (approximately 500,000 litre capacity);
  - Waste rock storage facility;
  - Ore stockpiling facility;
  - Crushing facility; and
  - Laydown area.
- Construction of water management infrastructure including:
  - Contact water collection ponds;
  - Freshwater collection ponds;
  - Diversion channels, retention dikes, dams and culverts;
  - Water treatment plant for effluent;
  - Potable water treatment plant;
  - Sewage treatment plant; and
  - Discharge diffuser.
- Construction of the Whale Tail attenuation pond with discharge of treated sewage and site contact water to the attenuation pond with effluent from the pond to be discharged to Mammoth Lake.
- Potable water for the Whale Tail camp to be sourced from Nemo Lake and Whale Tail Lake (south basin).
- Non-contact water to be diverted from site through channels and dikes.
- Raising water level of Whale Tail Lake (south basin) to be discharge into Mammoth Lake through a southwest diversion channel.
- Extension and widening of the already approved Amaruq exploration access road to a haul road (6.5 metres to 9.5 metres width) to accommodate haul trucks and increased traffic. Current alignment to be used and the road would continue to be closed to public access.
- Use of the existing infrastructure at Meadowbank site including:
  - Mill and water supply for ore processing;
  - Tailings storage facility;
  - Baker Lake marshalling facility;
  - All-weather access road from Baker Lake;
  - Airstrip facilities; and
  - Camp facilities.

- Shipment of supplies including fuel, construction and operation equipment, materials and consumables via marine barging to the Baker Lake marshalling facility, and then along the existing all-weather access road to the site.
- Transportation of supplies and employees to the existing Meadowbank airstrip.
- Closure and remediation of the Whale Tail Pit infrastructure, including removal of site infrastructure and flooding of the mined-out open pit, as well as closure and remediation of milling and tailings facilities at the Meadowbank site.

In addition, Agnico Eagle requested that the proposal and associated water licence application be assessed by the Nunavut Impact Review Board and the Nunavut Water Board through a coordinated process.

### 3. Key Stages of the Screening Process

The following key stages were completed:

Date	Stage
June 17, 2016	Receipt of project proposal and positive conformity determination (Keewatin Regional Land Use Plan) from the NPC
June 17, 2016	Scoping pursuant to subsection 86(1) of the NuPPAA
June 20, 2016	Public engagement and comment request regarding reconsideration of the Meadowbank Gold Mine Project Certificate for the “Whale Tail Pit” project proposal
July 6, 2016	Receipt of public comments on assessment process
July 21, 2016	Board determination that screening of the “Whale Tail Pit” project proposal was required under s. 86 of the NuPPAA
July 26, 2016	Public engagement and comment request
July 29, 2016	Ministerial extension requested from the Minister of Indigenous and Northern Affairs
August 9, 2016	Receipt of public comments

### 4. Public Comments and Concerns

Notice regarding the NIRB’s screening of this project proposal was distributed on July 26, 2016 to community organizations in the Kivalliq region, specifically Arviat, Whale Cove, Rankin Inlet, Chesterfield Inlet, Coral Harbour, Repulse Bay, and Baker Lake, as well as to relevant federal and territorial government agencies, Inuit organizations and interested parties. The NIRB requested that interested parties review the proposal and provide the Board with any comments or concerns by August 9, 2016 regarding:

- Whether the project proposal is likely to arouse significant public concern; and if so, why;
- Whether the project proposal is likely to cause significant adverse eco-systemic or socio-economic effects; and if so, why;
- Whether the project is likely to cause significant adverse impacts on wildlife habitat or Inuit harvesting activities; if so, why;

- Whether the project is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (please provide any recommended mitigation measures); and
- Any matter of importance to the Party related to the project proposal.

The following is a *summary* of the comments and concerns received by the NIRB – please note that the complete comment submissions have been included as **Appendix A** to this report:

**Kivalliq Inuit Association (KIA):**

- Support NIRB's decision to review the project separately, as impacts have been predicted by the Proponent to occur on portions of Inuit Owned Land, which were not assessed as part of the NIRB's assessment of the original project.
- Noted concerns related to water quality, air quality, wildlife and their habitat, birds and their habitat, fish and their habitat, traditional uses of land, Inuit harvesting activities, and human health issues.
- Proposal as submitted has the potential to impact valued ecosystem components.
- Noted that the predicted impacts for the proposal may arouse public concern as the potential impacts would occur outside the study area assessed for the Meadowbank Gold Mine Project Certificate and these impacts would occur in an area that has yet to be assessed.
- Noted the importance to demonstrate to the public that project components, which may cause public concern, have been adequately evaluated and appropriately mitigated. This can be achieved through a project specific environmental assessment as proposed by the NIRB.
- The proposal has the potential to cause significant eco-systemic effects across multiple valued ecosystem components such as terrain, permafrost and soils; air quality; surface water quantity; surface water quality; vegetation; terrestrial wildlife and wildlife habitat; fish and other aquatic organisms; and socioeconomic, but can be mitigated if correctly managed.
- Noted that the changes as described for surface water quality have the potential to result in significant adverse effects to the aquatic environment and must be evaluated to ensure that the effects are indeed reversible and the extent is acceptable.
- The tailings produced from the proposed milling of ore sourced at the Whale Tail site may differ from those sourced from the Meadowbank pits and the geochemical similarities and differences between the two (2) ore bodies must be evaluated.
- Potential concern that the mercury released by decomposing vegetation in the flooded portions of the Whale Tail Lake south basin may bio-accumulate in local fish, which may result in more restrictive safe fish consumption level advisories. It was further noted that the literature referenced by the Proponent suggest that concentrations of mercury may abate in the medium term, the applicability of this primary data to the project will need to be evaluated.
- Noted that as the proposal has been designed as a satellite operation to the Meadowbank mine, most socio-economic impacts (negative and positive) will not change significantly.
- Noted that the positive economic benefits from the Meadowbank mine will be extended with the development of the Whale Tail Pit. However, KIA indicated that a delayed positive decision could result in a gap in employment for those currently working at the

mine and a delay in economic benefits for the territory, while a negative decision on the project would result in the conclusion of economic benefits associated with the Meadowbank mine.

- Noted that predicted indirect habitat loss from noise and visual disturbances associated with the proposed Project would have a direct impact on terrestrial animals, including caribou throughout the regional study area.
- Indicated that direct fish habitat losses will occur as a result of the Mammoth and Whale Tail dikes, dewatering, and flooding.
- Noted that the overall impact of the project on both wildlife habitat and Inuit harvesting activities would require in-depth review.
- Noted that resource extraction and processing projects have been undertaken across Canada including in the zone of continuous permafrost and that those permitted to proceed have done so relying on proven and known mitigation techniques and technology to limit the adverse effects. Further noted that Agnico Eagle has demonstrated its ability to mitigate operations at the Meadowbank mine such that the project has not resulted in significant adverse effects.
- KIA noted that an in-depth review is required even though mining at the Whale Tail pit, continued processing at the existing Meadowbank facility, supporting infrastructure at Baker Lake and linear infrastructure between all the sites have the potential to result in significant and predictable adverse effects to the environment, and that Agnico Eagle has proposed to mitigate the pathways through which these significant adverse effects may occur.
- Provided a list of specific mitigation measures for consideration at this stage of review.
- Encourages the NIRB to weigh both positive and negative eventualities associated with the project in a timely manner in making its decisions throughout the regulatory process. Further encourages a coordinated process and that both the NIRB and Nunavut Water Board minimize delays in the review process while ensuring the risks and benefits associated with the proposal are adequately evaluated.

#### **Government of Nunavut (GN):**

- Noted that the scope of activities included within the proposal are such that the public will have a significant interest in having the project undergo a full environmental review. The review process would provide the most appropriate avenue to assess the projects likely significant adverse ecosystemic and socio-economic effects, and address any outstanding public concerns.
- Indicated that due to the nature of the proposed activities, the GN will likely be examining the potential impacts and associated management measures of terrestrial wildlife and habitat, birds of prey, vegetation, water quality, human health, heritage resources, traditional land use (including harvesting), and socio-economic components such as employment, investment, public service delivery, etc.
- Noted that Nunavut is a relatively new mining jurisdiction and its Arctic conditions make it difficult to predict any effects with a high certainty. Therefore, the selection of the most appropriate mitigation measures, whether a known technology or not, would best be accomplished through a review.
- Indicated that if the NIRB determined a review is required the GN fully endorses expediting the review process to the degree that it is reasonably possible to do so.

- Noted concerns regarding wildlife habitat, specifically with dens potentially existing in proximity to the approved tote road, which the Proponent proposes to extend and widen into a haul road.
- Recommended the Proponent undertake an updated den survey prior to the start of construction of the road with a list of items provided.
- Noted concerns that increased activity on the Amaruq exploration property including the use of above ground blasting to construct the open pit mine would contribute to noise which may have a negative impact on wildlife including caribou, birds and carnivores.
- Noted concerns regarding potential effects to the Back River and wildlife dependent on the Back River from the construction of a dike separating the north and south portions of Whale Tail Lake, which would potentially decrease flow to the Back River until the south portions increase to the spill elevation.
- Recommended the Proponent update the Wildlife Mitigation and Monitoring Plan with a list of items provided.
- Noted concern regarding the adequacy of the liner and the berms of the landfarm at Meadowbank and provided recommendations to prevent seepage of hydrocarbons and other contaminants from entering the environment.
- Recommended the Proponent update its Spill Response Plan to test for Total Petroleum Hydrocarbons as per the GN's Environmental Guideline for Industrial Waste Discharge.
- Noted concerns that disturbances from the proposal may have potential to impact sensitive life history stages for caribou.
- Noted the project may have negative effects on the migrations of the Lorillard and Wager Bay caribou herds, as well as other ungulate and predator wildlife.
- Recommended the construction of the proposed access road be required to take place outside critical time periods to avoid risks to migrating and rutting caribou and further recommended specific time frames for when project activities should occur.
- Noted that the Proponent intends to install motion sensing cameras in predetermined transects to monitor caribou which should enable the Proponent to detect whether caribou are being disturbed by the road before they are within sight of the road observer, and if so to take appropriate action and give appropriate notice.
- Noted concern regarding the potential for cumulative effects that were not addressed in the initial screening for the All-Weather Access Road (AWAR) that is now being proposed by the Proponent to be extended and widened to accommodate increase traffic.
- Noted that the cumulative effects appendix lacks sufficient detail to determine the extent of effects that the Whale Tail Pit development could have upon seasonal distributions such as migration routes onto and off of calving grounds. Further indicated that cumulatively the all-weather road from Baker Lake to the Mine and the addition of the Haul Road would span almost 180 kilometres across the landscape, and without proper mitigation practices in place this will essentially act as one giant barrier to caribou movements.
- Recommended that the cumulative effects appendix be updated to include details on the potential effects of the extension and expansion of the road, specifically with relation to migratory terrestrial wildlife.



### **Environment and Climate Change Canada (ECCC):**

- No comments on whether the project proposal is likely to arouse significant public concern.
- Noted that a Part 5 Review of the Whale Tail Project would ensure that material provided could be adequately reviewed.
- Indicated that the following items would require further technical review to reduce adverse eco-systemic impacts:
  - Potential negative impacts to air quality resulting from dust as well as greenhouse gas emissions from mining and vehicle operations;
  - Potential negative impacts to water quality resulting from metal leaching, acid rock drainage, and mercury methylation; and
  - Development of protective effluent quality criteria to ensure minimal impacts to the receiving environment. This includes ensuring that the lakes do not become eutrophic and experience winterkill of fish.
- Identified items which would require further technical review to reduce negative impacts on wildlife as follows:
  - Migratory Birds and Species at Risk; and
  - Development of mitigation measures to reduce effects on wildlife and their habitat, especially in regards to the planned fish-out.
- Noted that the potential effects may be similar to those associated with the Meadowbank Gold Mine Project and as such are expected to be predictable and mitigable with known technology. However, project design, monitoring, adaptive management, and closure planning will be key in limiting the duration and scale of impacts.
- Indicated that should this Project not proceed to a Part 5 Review, ECCC requested an opportunity to conduct a more in-depth review of the screening application and provide additional comments.

### **Fisheries and Oceans Canada (DFO):**

- Not aware of any significant public concern at this stage of review; however, recommended that consultation take place to ensure that public concern is heard and addressed via the NIRB environmental assessment process.
- Has identified several significant eco-systemic impacts associated with the Project proposal as follows:
  - Water level variations to Mammoth Lake, Whale Tail Lake, Nemo Lake, and surrounding waterbodies due to dewatering and diversion activities;
  - Dikes in Mammoth and Whale Tail Lakes;
  - Dewatering and fish-out in Mammoth and Whale Tail Lakes;
  - Construction of a mining pit in Whale Tail Lake basin;
  - Flooding of Whale Tail Lake; and
  - Alterations in water quality in fish habitat.
- Noted that the project will have a significant impact at a local scale.
- Indicated that if proponents are unable to completely avoid or mitigate *serious harm to fish*, its projects will normally require authorization under Subsection 35(2) of the *Fisheries Act* in order for the project to proceed without contravening the Act.
- Noted that DFO will work with the Proponent in the environmental assessment and regulatory review processes to identify appropriate mitigation measures.

- Indicated that DFO will be a responsible minister with respect to this project and recommended a Review proceed.
- In reviewing the terms and conditions of the Meadowbank Gold Mine Project Certificate No. 004 as it relates to DFO's mandate and expertise, DFO has have identified the terms and conditions related to fish and fish habitat impacts (11, 13, 49, 53). DFO indicated that these terms and conditions upon initial review would appear not to require reconsideration if similar conditions are created for an independent Whale Tail Project Certificate.

**Indigenous and Northern Affairs Canada (INAC):**

- Indicated that the potential for the proposed project to arouse significant public concern exists due to the scale and type of project being proposed while noting the following:
  - Magnitude of concern would be clarified through further opportunities for the public to provide comment on the proposed project.
  - Community information sessions conducted by the NIRB and continued consultations by the proponent are appropriate measures to assess the concern related to this project.
- Noted the proposed project has the potential to cause significant adverse eco-systemic or socio-economic effects.
- Noted that the potential adverse effects of the project would be most appropriately assessed through a full environmental review and the following components would merit more in-depth assessment:
  - Mine tailings and waste rock storage and management;
  - The potential for acid rock drainage (ARD) and the effectiveness of ARD containment and mitigation;
  - The potential impacts to surface water quality and quantity;
  - The anticipated impacts of construction, operation and closure activities on wildlife, water quality and quantity, vegetation, landforms, and permafrost features in the area;
  - The potential impacts of dyke construction at Mammoth Lake and Whale Tail Lake and the dewatering of Whale Tail Lake;
  - The potential impacts of upgrading the existing exploration road;
  - The impacts of potential accidents and malfunctions on site and during transportation;
  - The potential for cumulative ecosystemic and socio-economic impacts due to the increased mining and transportation activity in the Kivalliq region; and,
  - The potential socio-economic impacts on relevant communities, including those that may arise due to the employment of large numbers of people.
- Noted that a project of the scale proposed operating in the North is not the type where potential adverse effects are highly predictable and recommended mitigation measures could be provided following a more in-depth review.
- Provided a list of areas that INAC would expect to offer expertise as related to its jurisdictional responsibilities.
- Indicated that the development of the Whale Tail Pit project would be important in order to reduce the production gap between the end of the Meadowbank project and start of the proposed Meliadine Mine; however, INAC noted that the timelines of these operations

should not prevent the Whale Tail Pit project from undergoing the rigorous assessment that would be typical of a development project of this scale.

- Noted that the proponent submitted a detailed environmental impact assessment and supports the NIRB's approach to expedite the associated assessment process if the submission is deemed sufficient to allow for a review.
- Noted that if the NIRB determines that a full environmental review is not required, INAC requested additional opportunity to provide more in-depth comments and request additional information from the Proponent, if necessary.

#### **Natural Resources Canada (NRCan):**

- No specific comments at this stage on whether the project is likely to arouse significant public concern.
- The proposed project does have the potential to cause significant adverse eco-systemic effects as the main elements of the Whale Tail Project are located beyond the physical footprint of the approved Meadowbank mine and would be new to this environmental setting.
- No specific comments with regard to whether the project is likely to cause significant adverse impacts on wildlife habitat or Inuit harvest activities.
- The potential adverse environmental effects resulting from the proposed project may be predictable and adequately mitigated through known technologies but NRCan noted that this cannot be determined without the opportunity for the rigorous technical scrutiny that would be afforded by a full environmental review.
- Noted that as currently described in the project proposal, the operation of an Emulsion Storage Facility located close to the Whale Tail site will likely require a licence for the manufacturing of bulk explosives issued under the *Explosives Act* by NRCan.

#### **Transport Canada (TC)**

- TC identified an interest in various project components and activities that would pertain to its mandate and areas of expertise from its department.
- Noted that the proposed project has the potential to cause significant adverse effects on the ecosystem and may be a cause of significant public concern.
- Noted that the proposed Whale Tail project is not the type where the potential adverse effects are highly predictable and recommended that mitigation measures could be provided following a more in-depth review.
- Noted that an application under the *Navigation Protection Act* (NPA) may be required for the proposed dike construction and dewatering of Mammoth Lake and Whale Tail Lake.
- Noted that dewatering of a navigable waterway is prohibited under Section 24 of the NPA, unless exempted by the Governor in Council.
- Suggested the Proponent submit information to TC to determine the navigability of Mammoth Lake and Whale Tail Lake.
- Recommended Agnico Eagle review the Order Amending the Minor Works and Waters Order and self-assess to determine if the proposed works may be considered a Minor Work which does not require notice or Approval by TC.
- Noted that persons that handle, offer for transport, transport or import dangerous goods must comply with the Transportation of Dangerous Goods Regulations and further noted that certain dangerous goods would require an Emergency Response Assistance Plan.

- Noted that TC will need to assess whether it has a duty to consult with groups whose Aboriginal or treaty rights may be adversely impacted by the project and/or by the department's decision to issue such approvals as are required under its mandate.

## **5. Comments and Concerns with respect to Inuit Qaujimaningit, traditional and community knowledge**

The following is a summary of the comments and concerns received with respect to Inuit Qaujimaningit<sup>3</sup>, traditional and community knowledge:

### **Kivalliq Inuit Association (KIA):**

- The proposal has the potential to impact valued ecosystem components, which may alter Nunavummiut's capacity to engage in traditional and non-traditional land uses. KIA provided examples of issues of public concern that are predicted to occur, noting that many of the topics that as summarized have been raised during community roundtables at the NIRB's hearings for the Kivalliq region projects.
- Important to note that the project area has been used as a travel corridor between Baker Lake and Back River.
- Noted that dust deposition to the water quality is reported by the community to change the taste and colour of waters, and dust deposition will likely continue to be an issue of significant community concern.
- Noted that fish populations of interest by Inuit harvesters will be affected due to the project.
- The construction of the AWAR between Baker Lake and Meadowbank has made it easier for hunters to engage in harvesting activities along the road which may extend the typical hunting range further north.

### **Government of Nunavut (GN):**

- Noted concerns regarding potential effects to the Back River and to Inuit harvesting activities along the downstream portions of the Back River from the construction of a dike separating the north and south portions of Whale Tail Lake. Further noted that the Back River exits into the ocean at the south end of the Rasmussen Basin and this area comprises of core calving ground and post calving grounds for the Wager Bay and Ahlak caribou herds, and is utilized by hunters and fishers from Gjoa Haven, Taloyoak, and Kugaaruk for commercial and subsistence purposes.
- Recommended the Proponent conduct consultations with the hunters and fishers of the other communities that utilize the Back River.
- Noted that the delineation for the core caribou habitat incorporated scientific research (including telemetry and monitoring) and *Inuit Qaujimajatuqangit*, with both showing that barren ground caribou use the core calving and post-calving habitat annually. These habitats are known to offer spatial and temporal segregation from factors that may decrease caribou survival.

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<sup>3</sup> Inuit Qaujimaningit encompasses Inuit traditional knowledge (and variations thereof) as well as Inuit epistemology as it relates to Inuit Societal Values and Inuit Knowledge (both contemporary and traditional).

- Indicated that *Inuit Qaujimajatuqangit* and the scientific monitoring of patterns of habitat use by caribou have supported the importance of critical calving, post-calving areas and migration routes to the long-term survival of caribou.
- Noted that caribou play a key role in the maintenance of Inuit traditional lifestyles, including subsistence harvesting.

#### **Fisheries and Oceans Canada (DFO):**

- Noted the Project will likely result in serious harm to fish and fish habitat, thus impacting Inuit harvesting activity in the affected waterbodies.

### **6. Proponent's Commitments**

The NIRB notes that the Proponent has committed to the following within the various documents that comprise this project proposal:

- Complying with the Code of Good Conduct for Land Users and DIAND Caribou Protection Measures (Keewatin Regional Land Use Plan).
- Adhering to the Spill Contingency Plan which includes storage measures, spill response measures, equipment requirements, and overall handling procedures for the management of fuel and chemicals.
- Protecting the environment, public health and safety, and natural resources by conducting operations in an environmentally sound manner, while pursuing continuous improvement to environmental performance (Sustainable Development Policy provided).
- Proper incineration of wastes as detailed in the existing Incineration Waste Management Plan.
- Proper storage and treatment of petroleum hydrocarbon contaminated soil as described within the existing Landfarm Design and Management Plan.
- Proper management of waste with the addition of a landfill within the Whale Tail waste rock storage facility with the inclusion of an addendum to the Landfill Design and Management Plan.
- Undertaking general water management strategies, water transfers, pit reflooding operations, water quality modelling, and seepage water management as described within an addendum to the approved Mine Water Management Plan and Report.
- Adhering to the Water Quality and Flow Monitoring Plan to ensure compliance for both regulated water discharge and non-regulated discharge.
- Adhering to the Whale Tail Haul Road Management Plan, which includes a summary of construction, operations, and closure of the exploration access road.
- Properly storing bulk fuel at the Whale Tail Pit as detailed in the addendum to the Meadowbank Bulk Fuel Storage Facility Environment Performance Monitoring Plan.
- Ensure preparedness for a potential operations-related emergency, accident, or malfunction by adhering to an addendum to the approved Emergency Response Plan.
- Properly managing hazardous materials as detailed within the addendum to the Hazardous Material Management Plan, which includes the mining of Whale Tail Pit and associated activities.
- Adhering to the Shipping Management Plan, which includes measures, monitoring, and reporting as it relates to interactions with marine wildlife.

- Inclusion of a series of complementary documents to provide a full understanding of the technical and scientific aspects of the Whale Tail Pit and Haul Road Project. Documents included monitoring and mitigation plans.

#### ASSESSMENT OF THE PROJECT PROPOSAL IN ACCORDANCE WITH PART 3 OF NuPPAA

In determining whether a review of the project is required, the Board considered whether the project proposal had potential to result in significant ecosystemic or socio-economic impacts.

Accordingly, the assessment of impact significance was based on the analysis of those factors that are set out under section 90 of the NuPPAA. The Board took particular care to take into account Inuit Qaujimaningit, traditional and community knowledge in carrying out its assessment and determination of the significance of impacts.

The following is a summary of the Board's assessment of the factors that are relevant to the determination of significant impacts with respect of this project proposal:

1. *The size of the geographic area, including the size of wildlife habitats, likely to be affected by the impacts.*

The proposed mine pit development would occur within a geographic area of approximately 77 square kilometres (km<sup>2</sup>) for the Whale Tail Pit area and approximately 31 km<sup>2</sup> for the haul road area. The proposed Whale Tail Pit and associated infrastructure would be located within the Amaruq property that is located on Inuit Owned Lands. The proposed project would partially dewater the Whale Tail Lake to develop an open pit, establish a permanent operations camp, fuel storage facility, waste rock storage facility, and would extend and widen the already approved Amaruq exploration single lane access road to a haul road. The proposed project would not establish an ore processing facility, tailings storage facility, airstrip or marshalling facility as the Proponent is proposing to use these components of the existing infrastructure at the Meadowbank Mine Site. In addition to these areas, the geographic area likely affected by impacts would also include zones of influence around the project activities and components, as well as within a regional setting. The proposed activities may take place within habitats for many local far-ranging wildlife species such as Lorillard, Qamanirjuaq, Beverly and Wager Bay caribou herds, muskox, wolves, migratory birds and nesting grounds, fish and fish habitat, and Species at Risk as identified by the Proponent and mapping sources, and may potentially affect animal migratory patterns.

2. *The ecosystemic sensitivity of that area.*

The proposed project would occur in an area with no formal designation for wildlife protection or particular identified ecosystemic sensitivity. However, the KIA and the GN noted that important wildlife occur within the spatial and temporal boundaries of the proposed project with core caribou habitat (calving and post-calving grounds) delineated and shown to be used annually by barren ground caribou. Important wildlife habitats identified within, or adjacent to, the proposed project area have been identified for:

- Caribou habitats and migration routes (summer and winter ranges);
- Muskox;

- Grizzly bears;
- Wolves; and
- Migratory birds.

3. *The historical, cultural and archaeological significance of that area.*

The Proponent indicated that there are known sites of historical, cultural and archaeological significance associated with the project area that are likely to be affected by the Project, with seven (7) sites located within 100 metres of the haul road/borrow sources, six (6) sites are located greater than 200 metres from haul road/borrow source boundaries, and two (2) sites located greater than 500 metres from the proposed project components associated with the Whale Tail Pit.

During the commenting period, the KIA noted that project area has been used as a travel corridor between Baker Lake and Back River, and the GN noted the importance of the Back River for traditional activities.

This area has also been identified as having value and priority to the local community for:

- Caribou;
- Muskox;
- Grizzly bears;
- Wolves;
- Migratory birds;
- Fish and fish habitat;
- Important cultural and spiritual areas (trails, camps, cabins, caches and graves); and
- Traditional camp areas and hunting grounds.

4. *The size of the human and the animal populations likely to be affected by the impacts.*

The proposed project would occur approximately 150 km north of the hamlet of Baker Lake, the nearest community and approximately 50 km northwest of the Meadowbank Gold Mine. Caribou habitats, wildlife habitats, fish habitats, and bird nesting grounds identified within, and adjacent to, the project area may be impacted by the proposed mining activities. The operations of an open pit mine could also contribute to increased wildlife noise disturbances in the area. Impacts to the valued ecosystemic components noted above have been identified as having potential to also affect traditional land use activities, Inuit harvesting, and the cultural identity of the region.

5. *The nature, magnitude and complexity of the impacts; the probability of the impacts occurring; the frequency and duration of the impacts; and the reversibility or irreversibility of the impacts.*

As the proposed “Whale Tail Pit” project is a mine development project, the nature of potential impacts are considered to be known with the potential to result in significant and predictable adverse effects to the environment. The probability for the impacts to occur is

considered to be high, while the frequency of impacts is considered to be intermittent and/or continuous and limited to operational periods; while residual effects from the proposal would be considered to be long-term. With due care, impacts to the biophysical environment could be reversible and mitigable if correctly managed.

6. *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.*

Three (3) current mineral developments or exploration projects are located within a 100 kilometre radius of the proposed “Whale Tail Pit” project. Of the three (3) current projects identified in the area, two (2) projects (Agnico Eagle’s “Amaruq Exploration Project”, NIRB File No. 11EN010 and Agnico Eagle’s “Amaruq, Meadowbank and Whitehills” project, NIRB File No. 15EN050) are currently undertaking multi-year exploration activities and one (1) project (Agnico Eagle’s “Meadowbank Gold Mine Project, NIRB File No. 03MN107) is currently in operations as approved under NIRB Project Certificate No. 004 (and recently amended to reflect the Vault Pit Expansion Project). The potential for cumulative impacts to caribou habitats, fish habitats, general wildlife, traditional land use activities, Inuit harvesting, and overall environmental integrity resulting from exploration activities (noise and presence of people and equipment), and the transportation of equipment, fuel, and personnel to the proposed project area has been identified and considered in the development of the NIRB’s recommendations.

Further, it has also been identified that this project proposal could potentially induce additional exploration activities and/or mineral development in adjacent areas.

7. *Any other factor that the Board considers relevant to the assessment of the significance of impacts.*

No other specific factors have been identified as relevant to the assessment of this project proposal.

#### Views of the Board

In considering the factors as set out above in the screening of this project proposal, the NIRB has identified a number of issues below and respectfully provide the following views regarding whether or not the proposed project has the potential to result in significant impacts.

#### **Ecosystem, wildlife habitat and Inuit harvesting activities:**

**Issue 1:** Potential adverse impacts to caribou and caribou habitats (Qamanirjuaq and Lorillard herds) from open pit mine development, associated infrastructure development, expansion of the single lane road, and transportation of personnel and equipment to the site via airplane or along the haul road.

**Board views:** As discussed above in the assessment of factors relevant to this project proposal, the potential for impacts is applicable to a 108 km<sup>2</sup> open pit mine development area, use



of the expanded haul road, in addition to zones of influence surrounding areas of project activities and components. The proposed timing of the potential impacts is considered to be intermittent during periods of construction and closure while considered to be continuous during periods of operation. GN caribou data identified that the project spatially and temporally overlaps the range of both the Lorillard and Wager Bay caribou herds which incorporated monitoring data and *Inuit Qaujimajatuqangit*. Further, annual reports from as recently as 2015 (Agnico Eagle's "Meadowbank Gold Mine Project," NIRB File No. 03MN107 and Agnico Eagle's "Amaruq Exploration Project", NIRB File No. 11EN010) identified the presence of caribou in the area during monitoring activities. The harvesting of caribou was identified as a valued traditional land use activity, and impacts to caribou and caribou habitats could in turn impact the cultural identity of the area.

The Proponent also notes that collared caribou from the Ahiak, Beverly, Lorillard, Qamanirjuaq and Wager Bay have used the regional study area and that the data indicates that the Ahiak, Lorillard, and Wager Bay herds have the greatest likelihood of interacting with the Project. The Proponent further notes that direct loss and fragmentation of wildlife habitat due to the Project footprint are expected to have a measurable effect on caribou. Indirect habitat loss due to sensory disturbance (such as noise and movement) is expected to extend beyond the footprint and have adverse effects at the regional level. The impact of indirect habitat loss from sensory disturbance to caribou is considered moderate by the Proponent.

In addition, as previously discussed, the proposed activities may have the potential to contribute cumulatively to impacts on caribou and caribou habitats with other projects that have taken place and are taking place, and the project could induce additional exploration and mineral development activities in the region.

Noted Inuit Qaujimaningit, traditional or community knowledge: The GN has indicated that caribou use this area to migrate through to core calving and post-calving habitat and further noted the cultural importance of caribou on Inuit traditional lifestyles including subsistence harvesting. The KIA indicated that the haul road in particular could present a barrier to caribou migration at a regional scale, which in turn could impact traditional activities.

The Proponent has noted in its submission that Elders have stated that there are no caribou calving grounds identified near the Project area with the nearest calving ground to the Project being over 100 km away. Further, local Elders have reported that caribou were hunted throughout the Project regional study area during both present and historic times, with most reported hunting trips focussing around the Baker Lake and in the Whitehills Lake areas.

Board Recommendation: As the impacts that have been predicted for this proposal were not assessed as part of the original Meadowbank Project, it is recommended that an in-depth review be required to fully assess the impacts of the Whale Tail Pit project on caribou, caribou habitat, and Inuit harvesting activities.

**Issue 2:** Potential adverse impacts to wildlife, wildlife habitat and migratory birds and their habitat from open pit mine development, associated infrastructure development, expansion of the single lane road and transportation of personnel and equipment to the site via airplane or along the haul road.

**Board views:** As discussed above, in the assessment of factors relevant to this project proposal, the potential for impacts is applicable to a 108 km<sup>2</sup> open pit mine development area, use of the expanded haul road, in addition to zones of influence surrounding areas of project activities and components. The proposed timing of the potential impacts is considered to be intermittent during periods of construction and closure while considered to be continuous during periods of operation. The primary effects of the proposed project on wildlife and migratory birds would result from the loss of habitat from flooding and disturbance. Some bird nesting habitat will be lost near the shoreline of Whale Tail Lake (south basin) due to flooding, while denning sites may be lost due to the use of eskers to build the road. In addition, dust deposition from construction and operation activities may increase the footprint of the disturbed or avoided area(s).

The KIA has noted that the project would have direct impacts on terrestrial wildlife and the overall impact of the proposed project on wildlife habitat would require an in-depth review. The GN noted that wildlife dens may potentially exist in proximity to the approved single-lane road which may be disturbed or abandoned upon widening of the road. The ECCC indicated that the potential for effects on migratory birds and Species at Risk potentially encountered in the project area would require further technical review to reduce the negative impacts.

In its submission, the Proponent noted that the area contained muskox, wolves and denning sites, raptors (Short-eared Owl, snowy owl, rough-legged hawk, Peregrine Falcon and gyrfalcon), water birds, upland breeding birds, associated nesting grounds for migratory birds and raptors, and small mammals (Arctic hare, Arctic ground squirrel and northern collared lemming).

The Proponent has noted in its submission that direct loss and fragmentation of wildlife habitat due to the Project footprint are expected to have a measurable effects on upland birds. The habitat loss is also anticipated to have a moderate effect on wildlife populations. The Proponent also noted that indirect habitat loss due to sensory disturbance (such as noise and movement) is expected to extend beyond the footprint and have negative effects at the regional level to wildlife. The Proponent considers the impact of indirect habitat loss from sensory disturbance to upland birds moderate.

In addition, as previously discussed, residual impacts, and cumulative impacts, from the proposed project on wildlife, wildlife, migratory and their respective habitats, could in-turn impact traditional land use activities, Inuit harvesting, and the overall environmental integrity of the area.

**Noted Inuit Qaujimaningit, traditional or community knowledge:** The Proponent has noted in its submission that during Inuit Qaujimajatuqangit workshops, participants noted that

traditional denning habitat and movement corridors are known within the study areas for arctic wolves. It was further noted by local Elders that there have been an increase in the numbers of grizzly bears, wolverine and raptors within the regional study area.

Board Recommendation: As the impacts that have been predicted for this proposal were not assessed as part of the original Meadowbank Project, it is recommended that an in-depth review be required to fully assess the impacts of the Whale Tail Pit project on wildlife, wildlife habitat and migratory birds.

**Issue 3:** Potential adverse impacts to the aquatic environment including surface water quality and quantity, fish, fish habitat and other aquatic organisms as a result of the Mammoth and Whale Tail dikes, dewatering and flooding for the development of open pit, storage and use of fuel, chemicals and explosives, the expansion and widening of the single lane road between Amaruq property and the Meadowbank property, the operations of the open pit mine and associated infrastructure, and transportation activities.

Board views: As discussed above, in the assessment of factors relevant to this project proposal, the potential for impacts is applicable to a 108 km<sup>2</sup> open pit mine development area, use of the expanded haul road, in addition to zones of influence surrounding areas of project activities and components. The timing of the proposed activities and their associated potential impacts is considered to be intermittent during periods of construction and closure, while continuous during periods of operation. The primary effects of the proposed project on the aquatic environment would be from the loss of the north basin of Whale Tail Lake and flooding during construction of the south basin of Whale Tail Lake. Water quality would be reduced in Whale Tail Lake due to decomposition of vegetation from flooding activities, and increase in mercury in the water. Mammoth Lake water quality would be reduced due to discharge of wastewater during operations. There is the potential for changes to fish habitat with the development of the open pit and removal of fish habitat in the north basin of Whale Tail Lake. In parties' comments submissions, it has also noted that potential impacts to the aquatic environment including fish and fish habitat, surface quality and quantity would result from the proposed project development.

The Proponent has indicated in its submission that six species were identified in lakes and streams in the regional study area near the proposed Whale Tail Pit including lake trout, Arctic char, round whitefish, burbot, slimy sculpin, and ninespine stickleback. In addition, potential Arctic grayling spawning habitat have been identified but no Arctic grayling were observed or collected.

The Proponent further noted that infrastructure development, dewatering, and diversion activities will result in effects on discharges, water levels, and channel/bank stability in watersheds of the surface water quantity local study area only. The Proponent went on to note that the management of water in the Whale Tail Pit area and discharge of effluent to the downstream environment has the potential to change water quality through disturbance of lakes and release of toxic substances with potential of changes to Mammoth Lake and the downstream receiving environment. The Proponent noted that

the open pit in Whale Tail Lake would permanently reduce fish habitat. Lower water levels are expected in Mammoth Lake and other lakes downstream during construction and closure, reducing available area for fish to eat and for young fish to live. The proposal would reduce the amount of suitable habitat for Arctic char, lake trout, and round whitefish spawning and for their young fish to live during operations and closure phases. The Proponent has noted that it would create a plan that offsets habitat loss with the goal of maintaining or improving the fishery in the area.

In addition, as previously discussed, residual impacts, and cumulative impacts, from the proposed project on fish and fish habitat, could in-turn impact traditional land use activities, Inuit harvesting, and the overall environmental integrity of the area.

Noted Inuit Qaujimaningit, traditional or community knowledge: The GN noted that the Back River, which may be impacted from the construction of a dike separating the north and south portions of Whale Tail Lake, is utilized by hunters and fishers from several communities for commercial and subsistence purposes.

Board Recommendation: It is recommended that a full environmental review and in-depth assessment of the potential impacts of the proposed project be required to determine the potential adverse effects on surface water quality and quantity, fish and fish habitat and other aquatic organisms.

**Issue 4:** Potential adverse impacts to vegetation, soil and terrain due to the development of the open pit, development of the camp facilities and associated infrastructure, storage and use of fuel, chemicals and explosives, the expansion and widening of the single lane road, and operations of the open pit.

Board views: The potential for impacts is applicable to the spatial boundaries of proposed mine development area, camp facility, storage areas (~ 77 km<sup>2</sup>) and the transportation route (~ 31 km<sup>2</sup>). The primary effects of the proposed project on vegetation, soil and terrain would be from flooding activities, the construction of the Whale Tail Pit and the haul road. Loss of vegetation is considered permanent in nature, while impacts to soil are considered moderate due to erosion potentially occurring during the construction phase only. Further, the potential for impacts to contribute cumulatively to possible existing soil and water contamination in the area from the ongoing exploration activities is considered to be high. In addition, dust deposition from construction and operation activities may increase the footprint of the impacted area(s).

INAC has noted that an in-depth assessment is required to review the anticipated impacts of construction, operation and closure activities on, vegetation, landforms, and permafrost features in the area.

The Proponent has noted that vegetation surveys identified 138 vascular plants in the Project area with the physical loss of the vegetation anticipated to be considered long-term and continuous until functional habitat is reclaimed during the closure period. The Proponent further noted that potential for permafrost degradation associated with

proposed infrastructure will have an effect on Project design. However, the Proponent noted that the combined evidence concerning vegetation quantity and quality in the local study area and regional study area indicated that vegetation would remain self-sustaining and ecologically effective during construction and operations and would continue to function as wildlife habitat.

Noted Inuit Qaujimaningit, traditional or community knowledge: The Proponent noted in its submission that Elders during interviews indicated that plants were no longer used for traditional medicines but reported that berries continued to be harvested for food or to make jam.

Board Recommendation: It is recommended that a full environmental review and in-depth assessment of the potential impacts of the proposed project be required to determine the potential adverse effects on vegetation, soil and terrain.

**Issue 5:** Potential adverse impacts to hunting areas and traditional land use areas due to project activities such as the development of open pit and expansion of the single lane road to a haul road.

Board Views: The project areas identified for mine development and for the haul road were noted by the KIA and GN to be known as a travel corridor between Baker Lake and Back River for traditional land use activities. The Amaruq area has also been identified by community members (see NIRB File Nos. 03MN107 and 11EN010) as an area of significant cultural importance, traditional land use activities and containing historical sites. Due to close distances to special wildlife locations, it is likely that wildlife may temporarily change the distribution of harvested wildlife species through avoidance and may in turn affect personal enjoyment of the land, and the social and cultural activities practiced in the region.

The Proponent provided several plans which detail measures to be taken for the protection of wildlife, soil and water within the proposed area.

Noted Inuit Qaujimaningit, traditional or community knowledge: As previously discussed, the GN has indicated that caribou use this area to migrate through to core calving and post-calving habitat and further noted the cultural importance of caribou on Inuit traditional lifestyles including subsistence harvesting. Further, the GN noted that the Back River, which may be impacted from the construction of a dike separating the north and south portions of Whale Tail Lake, is utilized by hunters and fishers from several communities for commercial and subsistence purposes. The KIA indicated that the haul road in particular could present a barrier to caribou migration at a regional scale, which in turn could impact traditional activities.

Board Recommendation: The proposed project may alter the capacity of Nunavummiut to engage in traditional and non-traditional land uses and it will be important that the Proponent demonstrate to the public that the project components that may cause public concern have been adequately evaluated and appropriately mitigated. It is

recommended that a full environmental review and in-depth assessment of the potential impacts of the proposed project be required.

**Socio-economic effects on northerners:**

**Issue 6:** Potential adverse impacts to historical, cultural and archaeological sites in the project area and due to project activities.

**Board Views:** The Proponent is proposing to work in areas of known historical and cultural significance. The Amaruq area has been identified as a transitory corridor, and the potential for the presence of undocumented archaeological sites is high.

The Proponent has noted that four (4) sites are located within the haul road or borrow source boundaries and potential Project effects are considered adverse. These sites have been considered in Project planning, and appropriate mitigation measures will be implemented prior to construction of the proposed haul road and Whale Tail Pit. With the implementation of appropriate mitigation measures, the Proponent anticipates that there will be no or minimal Project effects to archaeological sites relative to baseline conditions. The Proponent has provided an Archaeological Management Plan (June 30, 2016) that summarizes the archaeological sites that have been identified in the Whale Tail Area, including the Whale Tail Pit and associated infrastructure, and the haul road (and associated borrow sources) between the Meadowbank Mine and the Whale Tail Pit. The plan provides a summary of the sites found and an assessment of the areas with moderate to high potential. For each archaeological site, a general description, the perceived interpretive value, and the proposed mitigation measures have been included. The mitigation measures include avoidance (i.e., the grave site), temporary fencing, and/or detailed site investigation. The Proponent would require approval from the Government of Nunavut – Department of Culture and Heritage prior to initiation of any activities.

**Noted Inuit Qaujimaningit, traditional or local knowledge:** Community concerns identified the historical and cultural significance of the Amaruq area during NIRB consultation (NIRB File Nos. 03MN107 and 11EN010).

**Board Recommendation:** The proposed project may alter archaeological sites for which avoidance is not feasible and the Proponent would be required to determine the extent of potential adverse effects on historical, cultural and archaeological sites. It is recommended that a full environmental review and in-depth assessment of the potential impacts of the proposed project be required.

**Issue 7:** Potential positive socio-economic impacts as the positive economic benefits from the Meadowbank mine would be extended with the development of the Whale Tail Pit.

**Board Views:** The proposed Project would serve to extend the employment opportunities by three (3) to four (4) years for the existing Meadowbank Mine workforce, and to create additional employment opportunities for Nunavummiut. The Project is expected to continue to provide the education and training opportunities currently provided by the

Meadowbank Mine to both the Mine workforce specifically, and Kivalliq Region communities more generally. The Proponent also noted that the Project's procurement of goods and services would be substantial during both construction and operations. However, as noted by KIA a delayed positive decision could result in a gap in employment for those currently working at the mine and a delay in economic benefits for the territory, while a negative decision on the Project would result in the conclusion of economic benefits associated with mine.

**Board Recommendation:** It is recognized that this proposed major development project may offer opportunities for significant economic benefits to accrue to the Kivalliq region generally and the community of Baker Lake specifically. It is recommended that a full environmental review and in-depth assessment of the potential impacts of the proposed project be required.

**Significant public concern:**

**Issue 8:** The project proposal is likely to arouse significant public concern.

**Board Views:** The proposed project would occur outside the study area assessed for the Meadowbank Gold Mine Project Certificate No. 004 and these potential impacts would occur in an area that has yet to be assessed. It will be important for the Proponent to demonstrate to the public that project components, which may cause public concern, have been adequately evaluated and appropriately mitigated.

**Board Recommendation:** The proposed project has the potential to cause significant adverse effects on the ecosystem and may be a cause of significant public concern. It is recommended that the magnitude of concern be clarified and addressed through further opportunities for the public to provide comment on the proposed project during a full environmental review process.

**Technological innovations for which the effects are unknown:**

**Issue 9:** While the proposed project would utilize technologies which have been demonstrated to be effective in an arctic environment, mining proposals in the North can require customized techniques, procedures and technologies to address variable climatic conditions and unique operating environments.

**Board Views:** The proposed Whale Tail Project is a proposed satellite operation to the Meadowbank Gold Mine that includes an open pit mine and transportation of ore. Mine development remains a relatively new industry in Nunavut and rapidly changing Arctic conditions may make it difficult to predict effects with a high degree of certainty.

**Board Recommendation:** It is recommended that a full environmental review and in-depth assessment be required to ensure mitigation techniques and technology are appropriately applied to limit the potential adverse effects from the proposed Project should it be approved to proceed. In the Board's opinion, an in-depth assessment is required to ensure that proposed mitigation measures and technology reflect the experience gained during the operation of the Meadowbank Mine, recent data from project and regional

monitoring programs and the most up to date knowledge of the effects of existing mitigation measures and cumulative effects.

#### PARTICULAR ISSUES OR CONCERNS IDENTIFIED BY NIRB

Given the type of project development (i.e., mining development), as set out in Article 12, Section 12.4.4(b) of the NLCA and s. 92(2)(b) of the NuPPAA the NIRB has identified additional particular issues or concerns that should be considered through a public review process to ensure that the concerns of those who might be directly impacted are better known and could be effectively mitigated should the project be approved to proceed.

### **1. Potential Cumulative Effects of Increasing Mineral Development in the Kivalliq Region**

In the Board's view the potential for the project to result in adverse ecosystemic and socio-economic effects through the cumulative effects of the project and increasing levels of mineral development in the Kivalliq Region requires further analysis and should also be considered during the review of the project proposal as described below.

The Whale Tail Pit is a new mining development proposed for the Kivalliq Region and, if approved to proceed, would occur in addition to the currently operating mining and milling developments at the Meadowbank Gold Mine Project (NIRB File No. 03MN107) and the Meliadine Gold Mine Project (NIRB File No. 11MN034). The NIRB is aware of a growing number of additional mineral exploration and development projects within the Kivalliq Region which have operated in the past, are currently operating, or are proposed to operate in the future. A search of the Board's online public registry at [www.nirb.ca](http://www.nirb.ca) yields more than 100 such projects which have occurred, are occurring, or are proposed to occur in the future.

The majority of the currently operating exploration programs in the Kivalliq Region may provide some employment and/or business opportunities to residents of the region and include activities such as transportation by air, road or winter trails, helicopter-assisted surveying and diamond drilling, water withdrawal, bulk fuel storage, and operation of camps and other supporting infrastructure. The NIRB recognizes that the analysis of potential impacts from a new proposed development such as the Whale Tail Pit Project must thoroughly consider the potential for cumulative effects to occur from project effects acting in concert with effects from other past, present and reasonably foreseeable projects.

Given the relatively small combined population<sup>4</sup> of the seven (7) Kivalliq communities, the large number of mineral exploration projects in the region, the importance of wildlife habitat (e.g., caribou calving and post-calving habitat) and Inuit harvesting in the region, and the continued encroachment of development into previously undisturbed areas throughout the region, it is the view of the NIRB that the potential for adverse cumulative ecosystemic and socio-economic effects must factor prominently into the assessment of the Whale Tail Pit Project. Agnico Eagle's intention to utilize the Whale Tail Pit to further extend the mine life for the Meadowbank Gold Mine may also alter the impact predictions and subsequent monitoring requirements for

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<sup>4</sup>The 2010 population estimate for the Kivalliq region was 9,479 people (Nunavut Bureau of Statistics)



this approved gold mine; diligence in assessing the potential additive and cumulative effects of these two (2) development projects will be necessary.

The Board also notes that during the public commenting period for this file, the following specific comments were provided by parties in relation to cumulative impacts:

The Proponent proposes to extend the length of the All Weather Access Road (AWAR) and widen the length of it to accommodate increase traffic from the mining of the Whale Tail Pit and the Amaruq exploration portal. This leads the Government of Nunavut to have concerns regarding the potential for cumulative effects not addressed in the initial screening for the AWAR. The project may have negative effects on the migrations of the Lorillard and Wager Bay caribou herds, as well as other ungulate and predator wildlife. (*Government of Nunavut*)

INAC conducted a preliminary assessment of the Whale Tail Pit project proposal and has identified the following components of the project that have the potential to cause significant effects and merit more in-depth assessment:

...The potential for cumulative ecosystemic and socio-economic impacts due to the increased mining and transportation activity in the Kivalliq region;... (*Indigenous and Northern Affairs Canada*)

## **2. Requests for NIRB/NWB Coordinated Process and Expedited Assessment Timelines**

As described above, in its submission of the Whale Tail Pit project proposal, Agnico Eagle would also seek an amendment to its Meadowbank Mine Type A Water Licence (No. 2AM-MEA1525) from the NWB to include mining of Whale Tail Pit and construction and operation of associated infrastructure, therefore Agnico Eagle requested a “fully coordinated NIRB/NWB regulatory process, with harmonized timelines in respect of technical review periods, technical meetings and prehearing conference meetings, and public hearings.” On July 6, 2016 the NIRB received an Environmental Impact Statement from Agnico Eagle, indicating that the submission was being submitted as a Final Environmental Impact Statement Addendum which was constructed to satisfy the NIRB’s *Environmental Impact Statement (EIS) Guidelines for the Meadowbank Project* (February 2004) to ensure a timely and fulsome assessment. Agnico Eagle also noted that the submission included a Type A Water Licence amendment prepared in accordance with the regulatory framework provided in the Nunavut Land Claims Agreement (NLCA) and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSTRA or Act), Nunavut Water Regulations (Regulation) and NWB established guidelines.

The Kivalliq Inuit Association noted in its comments on the Project that the positive economic benefits from the Meadowbank mine will be extended with the development of the Whale Tail Pit; however, a delayed positive decision could result in a gap in employment for those currently working at the mine and a delay in economic benefits for the territory, while a negative decision on the project would result in the conclusion of economic benefits associated with the Meadowbank mine. Therefore, the KIA encouraged the NIRB to weigh both positive and negative eventualities associated with the project in a timely manner in making its decisions

throughout the regulatory process, and noted its support of a coordinated process between the NIRB and Nunavut Water Board to minimize delays in the review process while ensuring the risks and benefits associated with the proposal are adequately evaluated.

The Government of Nunavut noted that if the NIRB determined that a review is required, the GN fully endorses expediting the review process to the degree that it is reasonably possible to do so.

Indigenous and Northern Affairs Canada noted that it considered that a rigorous assessment, typically required for a development project of this scale, should be undertaken; however it would also support an expedited process.

In recognizing the request from Agnico Eagle for the NIRB to conduct a coordinated assessment process with the Nunavut Water Board's licensing process, the NIRB expects that the requested coordination can be achieved without significantly expanding the Board's usual process timelines. The NIRB further acknowledges Agnico Eagle's submission of a detailed Environmental Impact Statement, as well as parties' support of a thorough but expedited process; should the proposal be referred to the NIRB for review, the Board would be prepared to expedite its process to the extent practicable while ensuring opportunities for public engagement remain optimized. Additionally, the NIRB also recognizes and respects the Minister's ability to propose priorities and reasonable timeframes for completion of reviews, as may be applicable should the proposal be referred to the NIRB for review.

### **3. Availability of Participant Funding**

It is the NIRB's opinion that given the range and scope of the potential impacts of the proposed project, and the capacity issues identified by community organizations at recent Hearings (NIRB's Final Hearings for the Kiggavik Project, NIRB File No. 09MN003) that participant funding would assist in promoting effective participation by potentially affected groups in the review of this proposal. The Board notes that there is a precedent for the awarding of this type of funding in previous Reviews conducted by the NIRB. However, the NIRB also recognizes that no established participant funding program is currently in place, and as such, these requests for support must be considered by the Minister on a case by case basis. The NIRB recommends that in this case, the Minister, in making her determination, consider the need for providing participant funding to support a review of this project proposal, and more generally the need to establish a permanent participant funding program to facilitate the desired level of meaningful public participation in NIRB Reviews moving forward.

## **NIRB DETERMINATION**

Collectively, the Board has carefully considered the factors set out in Article 12, Section 12.4.4 of the NLCA and s. 89(1)(a)(i) and (ii) of the NuPPAA, taking into account the information the Proponent and parties have provided to date, as well as providing its determination on the significance of potential adverse ecosystemic or socio-economic impacts of the project<sup>5</sup>. It is the Board's determination that, as set out in Article 12, Section 12.4.4 of the NLCA and s.

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<sup>5</sup>Significance was assessed by the Board with regard to the factors outlined in s. 90 of the NuPPAA.

89(1)(a)(i) and (ii) of the NuPPAA, the Whale Tail Pit project proposal requires a Review under Article 12, Part 5 or Part 6 of the NLCA and Part 3 of the NuPPAA.

As noted above, the NIRB has also identified several particular issues or concerns which the Board believes should also be addressed through a review of this project proposal.

#### CONCLUSION

The foregoing constitutes the Board's screening decision with respect to Agnico Eagle Mines Ltd.'s "Whale Tail Pit" project proposal. The NIRB remains available for consultation with the Minister regarding this report as necessary.

Dated August 18, 2016 at Arviat, NU.



---

Elizabeth Copland, Chairperson

Attachments: Appendix A: Comment Submissions (NIRB File No. 16MN056)

**Appendix A**  
Comment Submissions (NIRB File No. 16MN056)



Whale Tail Pit Screening Review  
NIRB File No: 16MN056

Prepared by: **THE KIVALLIQ INUIT ASSOCIATION**

With support from:  **Hutchinson**  
Environmental Sciences Ltd.

 GeoVector Management Inc.

Prepared For: **NUNAVUT IMPACT REVIEW BOARD**  
August 9, 2016



**Kivalliq Inuit Association**

P.O. Box 340, Rankin Inlet, Nunavut, X0C 0G0  
Tel: (867) 645-2800, Fax: (867) 645-3855

August 9, 2016

Sophia Granchinho  
Manager, Impact Assessment  
Nunavut Impact Review Board  
29 Mitik Street  
P.O. Box 1360  
Cambridge Bay, NU, X0B 0C0  
Canada

Dear Ms. Granchinho:

**Re: Whale Tail Pit Screening Review – NIRB File No: 16MN056**

I am pleased to present you our screening level review of Agnico Eagle Mine's (AEM) Whale Tail Pit application on behalf of the Kivalliq Inuit Association (KIA). It is our understanding that the intent of the review is to inform the KIA's position and recommendations to NIRB on the appropriate level of review for the Whale Tail Project. To that end our screening level review has identified multiple pathways through which significant adverse effects are possible to the eco-systemic and socio-economic environments. We therefore support NIRB's decision to review the project separately, as impacts have been predicted by the proponent to occur on portions of Inuit Owned Land which were not assessed as part of the original Environmental Impact Statement as submitted by Cumberland Resources.

This review has been prepared by Hutchinson Environmental Sciences Ltd. (HESL) with support from GeoVector Management Inc., both of whom serve as technical consultants to the KIA. Should you have any questions, please do not hesitate to contact Richard Nesbitt of HESL.

Sincerely,  
per: Hutchinson Environmental Sciences Ltd.  
(On behalf of the Kivalliq Inuit Association)

Richard Nesbitt, M.Sc.  
[Richard.Nesbitt@environmentalsciences.ca](mailto:Richard.Nesbitt@environmentalsciences.ca)

CC:	Kivalliq Inuit Association	Luis Manzo, Director of Lands Maria Serra, GIS Coordinator and Acting Director of Lands
	GeoVector Management Inc.	Alan Sexton, Vice President, Projects; Geologist
	Hutchinson Environmental Sciences Ltd.	Neil Hutchinson, President and Principal Aquatic Scientist

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## Appendices

Appendix A. NIRB Comment Form

# 1. Introduction

The Kivalliq Inuit Association (KIA) has completed a screening level review of Agnico Eagle Mine's (AEM) "Whale Tail Pit" Project proposal as requested by the Nunavut Impact Review Board (NIRB) in their letter to AEM on July 26, 2016.

The KIA represents the Inuit beneficiaries of the Kivalliq Region at the territorial and regional levels, and supports sustainable economic development opportunities for Inuit beneficiaries. The KIA's mission is to represent, in a fair and democratic manner, Inuit of the Kivalliq Region in the development, protection, administration and advancement of their rights and benefits as aboriginal people; as well as to promote their economic, social, political and cultural well-being through succeeding generations.

The KIA works to fulfill its mission:

- To preserve Inuit heritage, culture and language.
- To manage Inuit owned lands in the region and provide information to and consult with land claims beneficiaries on land use.
- To protect arctic wildlife and the environment, thereby preserving traditional uses for current and future generations.

The review was completed by the KIA's technical consultants from Hutchinson Environmental Sciences Ltd. (HESL) with support from GeoVector Management Inc. (GeoVector). The goal of this review was address five questions put forward by the NIRB as part of their efforts to screen the project proposal. These five questions were provided to interested parties and municipalities potentially affected by the proposed Project. The five questions are as follows<sup>1</sup>:

1. Whether the project proposal is likely to arouse significant public concern; and if so, why;
2. Whether the project proposal is likely to cause significant adverse eco-systemic or socioeconomic effects; and if so, why;
3. Whether the project is likely to cause significant adverse impacts on wildlife habitat or Inuit harvesting activities; if so, why;
4. Whether the project is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (please provide any recommended mitigation measures); and
5. Any matter of importance to the Party related to the project proposal.

We have addressed each of these questions in its own section, and provided an overall recommendation regarding how review of the Project could proceed. We also note that AEM has requested that their Project proposal be reviewed by the NIRB as an amendment to the existing Meadowbank Project Certificate. As of this writing, the NIRB has determined that the Project proposal will be considered as a "*separate and distinct application*" from the Meadowbank Gold Mine Project<sup>1</sup>. As AEM intends to operate the Whale Tail Project as a satellite operation to Meadowbank, we will provide a summary evaluation of which components of AEM's application may be considered as an amendment to their existing Project certificate at the Meadowbank Mine, and which components are considered separate and distinct for this screening review and in any forthcoming detailed evaluations.

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<sup>1</sup> Nunavut Impact Review Board. July 26, 2016. Notice of Screening for Agnico Eagle Mines Ltd.'s "Whale Tail Pit" project Proposal.



## 2. NIRB Screening Review Questions

The NIRB's Comment Form has been included as Appendix A.

### 2.1 Whether the project proposal is likely to arouse significant public concern

The Project proposal put forward by AEM has indicated the potential to impact valued ecosystem components which may alter Nunavummiut capacity to engage in traditional and non-traditional land uses. This has resulted in public concern, specifically (as cited by AEM in their application):

1. Local Inuit have expressed concern that *"changes to air quality [and dust may] effect their traditional land use activities and resources"*. (Volume 4)
2. Concern has been raised by local Inuit regarding effects from the mine on caribou including the *"potential of caribou to ingest toxic chemicals"*, *"safely cross the ...haul road"*, *"changes in the taste of caribou meat"*, and local herd abundance (Volume 5).
3. These changes may also impact Inuit harvest – *"The Project will... change caribou movement patterns, potentially affecting opportunities for traditional harvesting of caribou."* (Volume 7)
4. Phosphorus enrichment of Mammoth Lake and the downstream waterbodies, and habitat alterations may affect the *"abundance and distribution of Arctic Char, Lake Trout and Round Whitefish"* (Volume 6).
5. Nutrient enrichment may also result in *"Possible shifts in overall community structure and dominant [plankton and benthic invertebrate] taxonomic groups... due to the meso-eutrophic trigger value being exceeded"* (Volume 6).
6. The *"planned diversion of Whale Tail Lake (South Basin) will result in flooding of tributary lakes which may result in increased concentrations of mercury in the water and biota"*. Increased mercury concentrations will persist for a yet undetermined period, which may result in fish consumption advisories for local Nunavummiut (Volume 6) and movement of methyl mercury into the food chain. Note that while literature referenced by AEM suggests that concentrations will abate in the medium term, the applicability of this primary data to the Project will need to be evaluated.

These are examples of issues of public concern that are predicted to occur; several of these topics have been raised during the community round tables at NIRB public hearings for Kivalliq region projects including the Meliadine project, the previously proposed Kiggavik uranium mine, and the Meadowbank Vault Pit expansion. It is important to note that these predicted Whale Tail Pit Project impacts that may arouse public concern will occur outside the study area assessed for the Meadowbank Project Certificate. That is, these potential impacts will occur in an area that has yet to be assessed by the NIRB. It is also important to note that the Project area has been used as a travel corridor between Baker Lake and the Back River.

AEM has proposed a variety of mitigation measures to limit the proposed Project's effects on these areas of concern and monitoring to validate their predictions and we note that these concerns are not unique to this project and have been successfully addressed in previous NIRB reviews. However, it will be important to demonstrate to the public that the project components that may cause public concern have been adequately evaluated and appropriately mitigated. This can be achieved through a Project specific environmental assessment as proposed by the NIRB.

## 2.2 Whether the project proposal is likely to cause significant adverse eco-systemic or socioeconomic effects

### 2.2.1 Ecosystemic

AEM's proposed Project has the potential to cause significant eco-systemic effects across multiple Valued Ecosystem Components (VECs). These effects have the potential to be adverse, but can be mitigated if correctly managed. Examples of potential significant adverse effects predicted to result from Project activities are as follows:

#### 2.2.1.1 VEC: Terrain, Permafrost and Soils

The Project has *"The potential for permafrost degradation associated with proposed infrastructure"*. Permafrost will also be created by Project activities – waste rock piles at the Whale Tail site will be designed such that permafrost aggrades and stabilizes then (Volume 2, Section 2.2.2.1). These physical changes to the landscape (eg: waste rock piles) will be permanent but not likely to create significant adverse effects if AEM successfully applies appropriate mitigation techniques such as the use of *"thaw-stable materials"* in construction and minimizes runoff and ponding associated with the waste rock piles and addresses the potential for changes in stability in a warming climate.

The Whale Tail project is not expected to require significant changes to this VEC at the Meadowbank project site.

#### 2.2.1.2 VEC: Air Quality

The haul road between Meadowbank and the Whale Tail project site as well as ongoing use of the All Weather Access Road (AWAR) between Baker Lake and Meadowbank will continue to generate fugitive dust. These project activities are unlikely to have a significant adverse effect on the environment as demonstrated through results from Meadowbank air quality and dust deposition monitoring. However, fugitive dust continues to be a salient issue of community concern (Volume 2, Section 2.2.2.2) and addition of a new haul road will create a new area in which dust deposition may disturb wildlife (caribou) habitat. Blasting, deposition of waste rock and overburden, and generation of power to operate infrastructure associated with the Whale Tail site are unlikely to have significant adverse effects on air quality.

The majority of impacts to Air Quality will continue to be associated with the Meadowbank site. For example, milling, processing, and camp facilities for most on site employees will continue to occur at Meadowbank as permitted under the current Project Certificate.

#### 2.2.1.3 VEC: Surface Water Quantity

The Project, specifically diking to provide access to the ore body, *will "physically alter watershed areas and drainage patterns, water levels, and channel/bank stability"*. This will in turn *"affect water quality, fish and fish habitat"*. AEM has predicted these effects on water quantity to be significant, confined to the Local Study Area (LSA), continuous while they occur and reversible after closure (Volume 2, Section 2.2.2.4). A Type A Water Licence will be required for proposed activities at the Whale Tail site. The water balance associated with Whale Tail project activities must therefore be reviewed in detail to validate AEM's predictions of effect significance.

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Yearly freshwater use and surface hydrology is not expected to change at the Meadowbank site as a result of Whale Tail Pit activities. However, it will extend the period both where the taking of freshwater will be required as well as the discharge of treated effluent to the local receiving environment.

**2.2.1.4 VEC: Surface Water Quality**

The KIA notes that dust deposition to water quality is reported by the community to change the taste and colour of waters. As noted in Section 2.2.1.2 VEC: Air Quality, while dust deposition is unlikely to have a significant adverse effect on local water quality, it has previously been and will likely continue to be an issue of significant community concern.

The mine plan indicates that dikes will be required to access the ore body. The use of these dikes will result in elevated water levels in the Whale Tail Lake south basin, flooding it beyond its current shoreline. Flooding will create the *“potential for erosion along new shorelines, with mobilization of total suspended solids, and increased concentrations of mercury in the water and biota, from decomposition of newly flooded vegetation”* (Volume 2, Section 2.2.2.5). The proponent has rated the significance of this alteration as moderate because changes are *“not to a level that could affect the sustainability of the ecosystem or the continued traditional and non-traditional uses.”*

Treated effluent from the waste rock storage facility, Whale Tail Pit sump and runoff from the catchment area will be discharged into the Mammoth Lake Watershed. These discharges are predicted to change water quality due to elevated phosphorus concentrations. The duration of the effect was rated long term and the geographic extent was rated regional because it will affect a large portion of the watershed. AEM further indicates that the *“increased phosphorus could affect sustainability of the ecosystem, in a select system of lakes, but may not affect aquatic health”* (Volume 2, Section 2.2.2.5).

These changes have the potential to result in significant adverse effects to the aquatic environment and must be evaluated to ensure that the effects are indeed reversible and their extent is acceptable. The proposed mitigation measures must also be reviewed to evaluate if they will be as effective as predicted and if further mitigation is necessary.

We note that tailings produced from milling ore sourced at the Whale Tale site may differ from those sourced from the Meadowbank pits. The geochemical similarities and differences between the two ore bodies must be evaluated to determine if the effluent limits and closure objectives associated with the current Meadowbank Project Certificate will still be feasible with the inclusion of tailings produced from the Whale Tail ore body. This can be achieved through an in depth review of supporting geochemical studies in AEM's application.

**2.2.1.5 VEC: Vegetation**

AEM has predicted that vegetation at the Whale Tail site will be effected through two primary pathways: construction and hydrology (flooding). The effect of both is considered reversible though plant communities will change as a result of recolonization; different plant species or a different community composition will replace those which were displaced. Due to slow growth rates of arctic plants, the impact will persist over the long term (Volume 2, Section 2.2.3.1).

#### 2.2.1.6 VEC: Terrestrial Wildlife and Wildlife Habitat

AEM has noted that the primary effects of Project activity on these VECs will result from a loss of habitat from flooding and disturbance (e.g. noise). The haul road is also expected to create a regional migratory barrier to caribou (Volume 2, Section 2.2.3.2) and dust deposition may increase the footprint of the disturbed or avoided area. These effects are all predicted to be significant but reversible in the medium term. The extent and the level to which the community will accept these effects must be evaluated in detail.

It is not expected that significant impacts to this VEC will result from ongoing activities at the Meadowbank site.

#### 2.2.1.7 VEC: Fish and Other Aquatic Organisms

AEM has indicated that the primary impact to fish populations at the Whale Tail site will result from habitat loss through reduced flow downstream of Project area and isolation of the Whale Tail pit via dikes. There will also be a period of three years during closure when the south basin of Whale Tail Lake will be isolated from downstream water bodies and watercourses creating a temporary migratory barrier.

Habitat loss will similarly affect phytoplankton, zooplankton and benthic invertebrates. These populations will also be impacted due to nutrient enrichment in Mammoth Lake and downstream portions of the watershed (Volume 2, Section 2.2.3.3). Population dynamics may shift and abundance will increase.

There is also potential concern that the mercury released by decomposing vegetation in flooded portions of the Whale Tail lake south basin may bioaccumulate in local fish, which may in turn result in more restrictive safe fish consumption levels advisories (Volume 6).

### 2.2.2 Socioeconomic

The Project has been designed as a satellite operation to the Meadowbank mine. As a result, most socio-economic impacts, both negative and positive, will not change significantly as a result of the Project. AEM has indicated that their operation of the Meadowbank Mine has resulted in positive effects in terms of employment in the Kivalliq, improvements in local education and training, and individual and community wellness. Negative impacts resulting from the socio-economic changes resulting from the Meadowbank Project include income disparities between community members; potential for increased substance abuse, theft and associated violence; changes in social dynamics and concerns managing finances.

The Meadowbank mine currently employs approximately 700 staff. AEM has predicted that the proposed Project will require a total workforce of 900, resulting in the creation of an additional 200 jobs. It can be reasonably expected that approximately one third of the new hires will be Nunavummiut and approximately one sixth will be Inuit, extrapolating from the proportions of Inuit and Nunavummiut in the Meadowbank workforce. The positive and negative impacts associated with the project will therefore be extended to an additional ~66 Nunavummiut. This is in addition to the 200 to 500 jobs that AEM has predicted will be created during construction.

It is important to note, as AEM has also discussed in their application, that the Meadowbank mine currently provides 10% of Nunavut's Gross Domestic Product (GDP), 4% of the territory's annual

**Whale Tail Pit Screening Review**

budgeted revenue and is one of the single largest employers in the Kivalliq. These positive economic benefits are projected to continue as long as the project is operating. If the Whale Tail Project is approved in a timely manner, full economic benefits are projected to persist continuously through to 2022 when the Operations phase concludes. Partial benefits will likely continue through to 2029 when the active Closure Phase concludes. A negative decision on the Whale Tail Project will result in the conclusion of full economic benefits associated with the Meadowbank Project in 2019. A delayed positive decision will result in a gap in employment for those currently working at the mine and in economic benefits for the territory.

### 2.3 Whether the project is likely to cause significant adverse impacts on wildlife habitat or Inuit harvesting activities

AEM has indicated that the project may result in significant adverse effects to wildlife habitat. *“Approximately 2% of the preferred habitat in the [Project] LSA will be directly disturbed by the Project”*. Indirect habitat loss from noise and visual disturbances (movement) associated with the project will *“have negative effects at the regional level”*. This will have a direct impact on terrestrial animals, including caribou throughout the regional study area. The haul road in particular, will present a barrier to caribou migration at a regional scale (Volume 2, Section 2.2.3.2).

Fish populations of interest by Inuit Harvesters will also be effected because of the Project. Direct habitat losses will occur as a result of the Mammoth and Whale Tail dikes, dewatering and flooding. The quality of the remaining habitat will also be negatively impacted by changes in water quality, water quantity and community dynamics of phytoplankton, zooplankton, benthic invertebrates and periphyton.

AEM has noted that harvesters predominantly limit hunting and fishing activities to locations proximal to Baker Lake; most hunting expeditions are focused within 10 km of the town with consulted hunters preferring to stay within 64 km of the town on longer journeys (Volume 2, Section 2.2.4.2). This may mitigate the extent to which Inuit harvesting activities are impacted by the Project; the Whale Tail site is located approximately 150 km north of the Hamlet of Baker Lake. However, construction of the AWAR between Baker Lake and Meadowbank has made it easier for hunters to engage in harvesting activities along the road. This may extend the typical hunting range further north.

The overall impact of the project on both wildlife habitat and Inuit harvesting activities requires in-depth review.

### 2.4 Whether the project is of a type where the potential adverse effects are highly predictable and mitigable with known technology

The Whale Tail Project is a proposed satellite operation to the Meadowbank Gold Mine. Resource extraction and processing projects have been undertaken across Canada including in the zone of continuous permafrost. These similar projects include a potential for significant adverse effects to the environment. Those permitted to proceed have done so relying on proven and known mitigation techniques and technology to limit their adverse effects. AEM has demonstrated their ability to mitigate operations at the Meadowbank mine such that the project has not resulted in significant adverse effects.

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Mining at the Whale Tail pit, continued processing at the existing Meadowbank facility, supporting infrastructure at Baker Lake and linear infrastructure between all the sites have the potential to result in significant and predictable adverse effects to the environment. AEM has proposed to mitigate the pathways through which these significant adverse effects may occur. However, an in-depth review is required to ensure:

- ❖ All pathways have been considered,
- ❖ Assumptions made to predict Project effects are appropriate and realistic,
- ❖ Proposed mitigation measures are appropriate and effective, and
- ❖ Effects that will occur in spite of mitigation measures are acceptable both from an environmental perspective and to the Beneficiaries represented by the KIA.

It is important to consider that the effectiveness of mitigation measures and the evaluation of Project effects rely on a comprehensive understanding of the environmental conditions in which the Project will operate. Evaluation of the project will therefore also require a review of baseline studies produced for each VEC to ensure that the local and regional study area has been adequately characterized.

At this stage of review, we put forward the following specific mitigation measures for the NIRB's consideration:

1. The use of speed reduction and as necessary water to maximize "dust suppression" related to vehicle traffic on all site haul roads and the haul road between the proposed Whale tail Pit and the Meadowbank processing facilities.
2. The use of piezometers and thermistor arrays in the Whale Tail Lake area in order to better evaluate the possible impacts of water inflows when the talik is intersected. This information will allow for a better evaluation of the controls required to monitor and manage ground water inflows into the proposed open pit as this project moves forward.
3. Sufficient water sampling prior to and during construction and after closure in order to better evaluate the possible impacts of any saline water incursion into the pit from deep groundwater and the controls required to monitor and manage saline water prior to any potential release to the environment.
4. Detailed bathymetry in the area of the proposed open pit in order that the silt curtains used during any dike construction are sufficiently large enough to minimize the potential for escape of total suspended solids into Whale Tail Lake beyond the construction limits of the dikes.

## 2.5 Any matter of importance to the Party related to the project proposal

The KIA is the steward of the land as well as the representative of Beneficiaries in the Kivalliq. We note that this proposed project is 100% on Inuit Owned land (IOL). We recognize that there are potential negative impacts associated with the project as well as potential benefits. The KIA supports sustainable economic development opportunities for Inuit Beneficiaries. We encourage the NIRB to weigh both positive and negative eventualities associated with the Project in a timely manner as they make their decisions throughout the regulatory process.



### 3. Conclusions and Recommendations

AEM has indicated they would prefer the NIRB to assess the Whale Tail Project as an amendment to the Meadowbank Mine Project Certificate. We agree with the NIRB's decision to review the project separately as impacts have been predicted by the proponent to occur on portions of IOL which were not assessed as part of the original Environmental Impact Statement as submitted by Cumberland Resources.

In answering the NIRB's five questions posed as part of this screening level review, we have identified multiple pathways through which significant adverse effects are possible to the eco-systemic and socio-economic environments. Operation of the Meadowbank Project and NIRB's approval of the Meliadine Project show that gold mines have proceeded in the Kivalliq Region and AEM has demonstrated that environmental mitigation techniques are well understood. Nevertheless, construction of the haul road into undisturbed areas and plans to dike and drain areas of Whale Tail Lake to access the ore represent substantial additional disturbance. A full review is therefore recommended to ensure that existing environmental conditions have been accurately characterized and that potential adverse effects will be appropriately mitigated.

From the documents provided by AEM as part of their application and discussions with the proponent directly, we understand that delays in the permitting process have the potential to create a gap in operations at the Meadowbank Mine. While the KIA wishes to ensure the risks and benefits associated with AEM's application are adequately evaluated, we encourage a coordinated Water Licence and Project Certificate application to the Nunavut Water Board and NIRB. We also encourage both parties to minimize delays in the review process while still ensuring all parties have adequate time to review the material.

### 4. Closing

Should you have any questions, please contact Luis Manzo ([dirlands@kivalliqinuit.ca](mailto:dirlands@kivalliqinuit.ca)) of the Kivalliq Inuit Association or Richard Nesbitt of Hutchinson Environmental Sciences Ltd. who has reviewed AEM's application at a screening level on behalf of the KIA.

Sincerely,  
per: Hutchinson Environmental Sciences Ltd.  
(On behalf of the Kivalliq Inuit Association)



Richard Nesbitt, M.Sc.  
[Richard.Nesbitt@environmentalsciences.ca](mailto:Richard.Nesbitt@environmentalsciences.ca)


## Appendix A. NIRB Comment Form





### COMMENT FORM FOR NIRB SCREENINGS

The Nunavut Impact Review Board (NIRB) has a mandate to protect the integrity of the ecosystem for the existing and future residents of Nunavut. To assess the environmental and socio-economic impacts of the project proposal, NIRB would like to hear your concerns, comments and suggestions about the following project proposal application:

<b>Project Proposal Title:</b> Whale Tail Pit Project	
<b>Proponent:</b> Agnico Eagle Mines Ltd	
<b>Location:</b> Kivalliq Region	
<b>Comments Due By:</b> August 9, 2016 <b>NIRB #:</b> 16MN056	
<b>Indicate your concerns about the project proposal below:</b>	
<input type="checkbox"/> no concerns	<input checked="" type="checkbox"/> traditional uses of land
<input checked="" type="checkbox"/> water quality	<input checked="" type="checkbox"/> Inuit harvesting activities
<input type="checkbox"/> terrain	<input type="checkbox"/> community involvement and consultation
<input checked="" type="checkbox"/> air quality	<input type="checkbox"/> local development in the area
<input checked="" type="checkbox"/> wildlife and their habitat	<input type="checkbox"/> tourism in the area
<input type="checkbox"/> marine mammals and their habitat	<input checked="" type="checkbox"/> human health issues
<input checked="" type="checkbox"/> birds and their habitat	<input type="checkbox"/> other: _____
<input checked="" type="checkbox"/> fish and their habitat	_____
<input type="checkbox"/> heritage resources in area	_____
<b>Please describe the concerns indicated above:</b>	
See Section 2: NIRB Screening Review Questions of KIA Screening Report.	
<b>Do you have any suggestions or recommendations for this application?</b>	
See Section 2: NIRB Screening Review Questions of KIA Screening Report.	
<b>Do you support the project proposal? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Any additional comments?</b>	
See Section 2: NIRB Screening Review Questions and Section 3: Conclusions and Recommendations of KIA Screening Report.	
<b>Name of person commenting:</b> Richard A. Nesbitt	<b>of</b> Hutchinson Environmental Sciences Ltd.
<b>Position:</b> Aquatic Scientist	<b>Organization:</b> On behalf of the Kivalliq Inuit Association
<b>Signature:</b> 	<b>Date:</b> August 9, 2016.

August 9, 2016

Sophia Granchinho, M.Sc., EP  
Manager, Impact Assessment  
Nunavut Impact Review Board  
P.O Box 1360  
Cambridge Bay, NU X0B 0C0

**Sent VIA Email: [info@nirb.ca](mailto:info@nirb.ca)**

**RE: Comment Request on the Agnico Eagle Mine Ltd.'s "Whale Tail Pit" project proposal (NIRB File No. 16MN056)**

Dear Ms. Granchinho,

On behalf of the Government of Nunavut (GN), I would like to thank the Nunavut Impact Review Board (NIRB) for the opportunity to provide comments on Agnico Eagle Mine Ltd.'s "Whale Tail Pit" project proposal.

The GN believes the scope of activities included within Agnico Eagle Mines Ltd.'s (AEM) "Whale Tail Pit" proposal are such that the public will have a significant interest in having the project undergo a full environmental review by the Board. This will also provide the most appropriate avenue to assess the projects likely significant adverse eco-systemic and socio-economic effects, and in the process address any outstanding public concerns.

Given the nature of the proposed projects activities the GN will likely be examining the potential impacts (and associated management measures) to terrestrial wildlife and habitat, birds of prey, vegetation, water quality, human health, heritage resources, traditional land use (including harvesting), and a broad spectrum of socio-economic components (employment, investment, public service delivery, etc.). Additional comments have been attached as an Appendix to this letter for consideration.

Despite the fact that open pit mining and the transport of ore are fairly standard in the mining industry, Nunavut is a relatively new mining jurisdiction and its Arctic conditions make it difficult to predict any effects with a high certainty. Accordingly, the selection of the most appropriate mitigation measures, whether a known technology or not, is best accomplished through a full environmental review.

If the NIRB determines a full environmental review is required the GN fully endorses expediting the review process to the degree that it is reasonably possible to do so. Responsible development is a cornerstone of the Governments mandate and the GN appreciates the work carried out so far by the Proponent and the NIRB, and looks forward to continued participation in this review process.

Should you have any concerns with our comments, please contact me by phone at 867-975-7837 or by email at [tprice@gov.nu.ca](mailto:tprice@gov.nu.ca).

Qujannamiik,

[Original Signed By]

Tina Price  
Avatiliriniq Coordinator

**APPENDIX (6 Comments)**

<b>NIRB SCREENING COMMENTS # 1 (1 of 6)</b>	
<b>Department</b>	Environment
<b>Organization</b>	Government of Nunavut
<b>Subject/Topic</b>	Den Surveys
<b>References</b>	160525 Project Description
<b>CONCERNS</b>	
<p>The Proponent Plans to extend and widen the already approved Amaruq tote road as part of this project proposal. Wildlife habitat including dens may exist in proximity to this tote road construction. Road construction could result in stress to wildlife and possible nest/den abandonment.</p> <p>In the original screening for the construction of the tote road the Government of Nunavut recommended that the Proponent undertake a den survey prior to the start of construction. Surveys of this nature illicit the best results when conducted within the weeks prior to the start of construction.</p>	
<b>SUGGESTIONS AND RECOMMENDATIONS</b>	
<p>The Government of Nunavut recommends that the Proponent undertake an updated den survey prior to beginning the expansion of the tote road. Pre-construction surveys should be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance.</p> <p>Should the survey reveal an active den, the GN recommends that the Proponent be required to refrain from approaching closer than 300m during the critical breeding period (fox &amp; wolf: June 15 - July 30 / grizzly bear &amp; wolverine Jan 01 - April 15). Denning females are susceptible to increased stressors during this time and may abandon the den if perceived to be at risk. Avoiding denning wildlife during this timeframe minimizes the risk of significant disturbance and reduces the likelihood of contraventions under the <i>Wildlife Act</i>:</p> <p>Significant disturbance:</p> <p>73(1) No person shall, unless authorized by a license,</p> <p>(a) engage in any activity, other than harvesting, that is likely to result in a significant disturbance to a substantial number of wildlife; or</p> <p>(b) break into, destroy or damage any abode of a bear, fox, beaver, muskrat, weasel, wolf or wolverine outside any municipality or prescribed area.</p>	

ADDITIONAL COMMENTS
N/A

NIRB SCREENING COMMENTS # 2 (2 of 6)	
<b>Department</b>	Environment
<b>Organization</b>	Government of Nunavut
<b>Subject/Topic</b>	Nosie and Blasting
<b>References</b>	160525 Project Description
<b>CONCERNS</b>	
<p>The proposal set forward by the Proponent will significantly increase activity on the Amaruq exploration property. In addition to the noise produced by heavy equipment operation, part of the proposed project involves the use of blasting material in order to construct the open pit mine. Above ground blasting is a major contributor to noise which may have a negative impact on wildlife in the vicinity of the project area including caribou, birds, and carnivores.</p>	
<b>SUGGESTIONS AND RECOMMENDATIONS</b>	
<p>The Government of Nunavut recommends the Proponent update its Wildlife Mitigation and Monitoring Plan to include details about restrictions on blasting and drilling activities including cessation of activities while wildlife are in the vicinity.</p>	
<b>ADDITIONAL COMMENTS</b>	
N/A	

NIRB SCREENING COMMENTS #3 (3 of 6)	
Department	Environment
Organization	Government of Nunavut
Subject/Topic	Potential Effects on the Back River
References	03MN107 – V6 Freshwater Environment
CONCERNS	
<p>The Proponent has stated plans to construct a dike separating the north and south portions of Whale Tail Lake. <i>“The Whale Tail Dike will divert discharges from the Whale Tail Lake (South Basin) watershed to the Lake A16 (Mammoth Lake) watershed, through Lake A45, and will augment discharges at Lake A45 and downstream lakes. The diversion is not expected to affect the Lake A45 watershed until the operational phase in 2020, because it will take some time for the Whale Tail Lake (South Basin) water level to increase to the spill elevation (Volume 6, Appendix 6-F).”</i> During this period of filling, flow to the Back River may be reduced. This could lead to adverse effects on wildlife populations that are dependent upon the Back River.</p> <p>The decrease in flow over this extended period may also adversely affect Inuit Harvesting activities along the downstream portions of the Back River. The Proponent has conducted consultations with the Hamlet of Baker Lake. The mouth of the Back River however exits into the ocean at the south end of the Rasmussen Basin. This area comprises core calving ground and post calving ground for the Wager Bay and Ahiak caribou herds. It is also utilized by hunters and fishers from Gjoa Haven, Taloyoak, and Kugaaruk for commercial and subsistence purposes.</p>	
SUGGESTIONS AND RECOMMENDATIONS	
<p>The Proponent should update their Wildlife Mitigation and Monitoring Plan to include assessment of potential effects on wildlife that range downstream from the project site to the mouth of the Back river. The Proponent should also conduct consultations with the hunters and fishers of the other communities that utilize the Back River: Gjoa Haven, Taloyoak, and Kugaaruk.</p>	
ADDITIONAL COMMENTS	
N/A	

NIRB SCREENING COMMENTS # 4 (4 of 6)	
<b>Department</b>	Environment
<b>Organization</b>	Government of Nunavut
<b>Subject/Topic</b>	Spill Response and Produced Waste
<b>References</b>	16MN056 – App 8 – D.6 Addendum Spill Contingency Plan
CONCERNS	
<p>The Proponent has stated that <i>“All the petroleum hydrocarbon contaminated soil is placed into the Meadowbank landfarm for treatment; this includes contaminated soil from the Baker Lake and Whale Tail facilities.”</i> Upon photo inspection of the landfarm it was noted that a liner and berms were not readily visible. Deposition of contaminated soil in a location without adequate protective lining can result in harmful materials entering the environment.</p> <p>In previous reports the Proponent has reported testing runoff water from contaminated soil for “oil and grease” The Department of Environment Environmental Guideline for Industrial Waste Discharges list Total Petroleum Hydrocarbons as a more appropriate test at a limit of 15ppm. Testing for just oil and grease will not detect certain hydrocarbon contamination such as gasoline.</p>	
SUGGESTIONS AND RECOMMENDATIONS	
<p>The Government of Nunavut recommends that the Proponent ensure that all contaminated soil to be deposited be placed in an area that has both adequate lining to prevent the seepage of hydrocarbons and other contaminants, along with berms to prevent any harmful runoff from entering the environment.</p> <p>The Government of Nunavut recommends that the Proponent update its Spill Response Plan to test for Total Petroleum Hydrocarbons as per The Department of Environment Environmental Guideline for Industrial Waste Discharge.</p>	
ADDITIONAL COMMENTS	
N/A	



NIRB SCREENING COMMENTS # 5 (5 of 6)	
Department	Environment
Organization	Government of Nunavut
Subject/Topic	Caribou
References	160525 Project Description
CONCERNS	
<p>The Proponent's project spatially and temporally overlaps the range of both the Lorillard and Wager Bay caribou herds. Although the Proponent's access road lies outside the critical calving/key access corridor range, disturbances such as noise can still have the potential to impact sensitive life history stages for caribou. The proposed access road intercepts spring migration pre-calving routes onto calving grounds, fall migration pre and post-breeding routes off of calving grounds, the rut, and winter range. Please refer to the attached map.</p> <p>Core habitat delineation is the product of multi-year Geographic Information System (GIS) spatial kernel analysis of collared caribou cows also incorporating monitoring data and <i>Inuit Qaujimajatuqangit</i>. Scientific research (including telemetry and monitoring) and <i>Inuit Qaujimajatuqangit</i> have clearly shown that barren ground caribou annually and predictably use core calving and post-calving habitats as they are known to offer spatial and temporal segregation from factors that may decrease survival, including predation and industrial activities. Migration routes are also important, disruption of migrating caribou can displace the pregnant cows into areas of suboptimal calving habitat, leading to increased predation, poorer forage quality and the imprinting of calves to poorer habitat. <i>Inuit Qaujimajatuqangit</i> and the scientific monitoring of patterns of habitat use by caribou have supported the importance of critical calving, post-calving areas and migration routes to the long-term survival of caribou. Caribou play a key role in the maintenance of Inuit traditional lifestyles, including subsistence harvesting.</p>	
SUGGESTIONS AND RECOMMENDATIONS	
<p>The first priority for application of mitigation measures is to avoid adverse impacts on wildlife in the project area for the duration of the proposed activities. Avoidance can be achieved both spatially and temporally. Since the proposed access road overlaps migration routes onto and off of calving grounds and wintering habitat the GN recommends that construction be required to take place outside these time periods so as to avoid risks to migrating and rutting caribou. The Proponent's activities should be prohibited during the following timing windows for these caribou herds:</p> <p>Spring Migration: April 5th – May 28th  Fall Migration: September 22nd – October 22nd  Rut: October 10th – November 10th  This means that the recommended time frame for project activities to occur is May 29th – September</p>	

21st, and November 10th – April 4th. For wintering caribou (December 16th - April 4th), it is recommended that the Proponent reduce the potential disturbance to caribou as much as possible through the identification of mitigation measures.

Under *Monitoring and Reporting Requirements* in the previously issued *Screening Decision Report*, the NIRB recommended the Proponent submit updated monitoring plans which include all newly proposed activities prior to construction and/or undertaking activities including a Wildlife Management Plan. The Wildlife Management Plan should be updated to include:

Detailed descriptions of project activities, timeframes, duration and intensity;

- Identification of caribou use and caribou habitat within the proposed footprint of the activity and its associated areas of influence. Information for these can be obtained from the GN-DOE Wildlife Research Section;
- Identification of project overlaps with known areas of ecological significance and their associated timing windows (ex. caribou calving, post-calving grounds and migration routes);
- A description of how impacts including cumulative impacts will be avoided and minimized (ex. relocating activities, following timing windows, mitigation measures etc.);
- A description as to the mechanisms involved in detecting wildlife in and around project activities; and,
- Since the *Road Management Plan, Section 11 Wildlife Management* states that the Proponent will implement operation suspensions as mitigation measures; an activity suspension plan should be developed for interveners to review to determine its effectiveness.

The *Road Management Plan, Section 11.1 Wildlife Monitoring Program* states wildlife management and monitoring will be consistent with the Meadowbank All-Weather Access Road (AWAR) monitoring. The GN has suggested improvements to the Meadowbank AWAR monitoring in the past through commenting on the Proponent's Annual Monitoring Reports. These recommendations included:

- The road survey design should be updated to include two observers to view each side of the road simultaneously. Having one observer limits the observation to one side of the road only. If two passes of the road are undertaken to observe both sides of the road, the first pass will influence the results of the second pass;
- Developing protocols to minimize the risk of vehicle-related wildlife mortalities due to poor visibility;
- Further investigation of collar data for caribou if it appears there is an interaction with the access road; and
- An additional monitoring method in addition to road surveys.

The Proponent intends to install motion sensing cameras in predetermined transects to monitor caribou which should enable the Proponent to detect whether caribou are being disturbed by the road before they are within sight of the road observer, and if so to take appropriate action and give appropriate notice.

#### ADDITIONAL COMMENTS

N/A

NIRB SCREENING COMMENTS # 6 (6 of 6)	
<b>Department</b>	Environment
<b>Organization</b>	Government of Nunavut
<b>Subject/Topic</b>	Cumulative Effects
<b>References</b>	16MN056 – App 3-D Cumulative Effects
CONCERNS	
<p>The Proponent has stated <i>“Communities likely have the largest effect on caribou (as a source of harvesters), followed by roads providing access from communities.”</i></p> <p>The Proponent proposes to extend the length of the All Weather Access Road (AWAR) and widen the length of it to accommodate increase traffic from the mining of the Whale Tail pit and the Amaruq exploration portal. This leads the Government of Nunavut to have concerns regarding the potential for cumulative effects not addressed in the initial screening for the AWAR. The project may have negative effects on the migrations of the Lorillard and Wager Bay caribou herds, as well as other ungulate and predator wildlife.</p> <p>The cumulative effects appendix only recognizes caribou ranges and lack sufficient detail to determine the extent that this development could have upon seasonal distributions such as migration routes onto and off of calving grounds. In particular disrupting caribou during annual spring migrations onto calving grounds can have negative consequences to pregnant cows. Migration corridors are critical for movement across the seasonal range. Caribou populations rely on migration to maximize their access to forage and habitats free of disturbance. Disturbance and/or obstacles along the migration route can displace herds, alter access to and from rut areas, and could lead to a loss of migratory behavior over time. Long term cumulative effects such as the cessation of migratory behavior would dramatically lower productivity and thus abundance, as well as fundamentally change caribou distribution across the landscape, which would impact subsistence harvesters.</p> <p>Cumulatively the all-weather road from Baker Lake to the Mine plus the addition of the Haul Road and the two pit’s span almost 180km across the landscape. Where traffic duration and frequency are scheduled to increase. Without proper mitigation practices in place this will essentially act as one giant barrier to caribou movements. The long term implications of this development to caribou migration movements must be appropriately monitored and mitigated.</p>	
SUGGESTIONS AND RECOMMENDATIONS	
<p>The Government of Nunavut recommends that the Proponent update its cumulative effects appendix to include additional details on the potential effects of the extension and expansion of the AWAR, with relation to migratory terrestrial wildlife. In particular the wildlife mitigation and monitoring plan should be updated to include long term mitigation efforts that restrict activities such as air and vehicle traffic,</p>	

loud/ repetitive noises and vibrations during spring and fall migration.

	<b>Spring Migration</b>	<b>Fall migration pre-breeding</b>	<b>Fall migration post-breeding</b>
<b>Lorillard</b>	April 5- May 28	Sept 22 – Oct 22	Nov 9 –Dec 15
<b>Wager Bay</b>	April 1 – May 29	Sept 22 – Oct 22	Nov 9 –Dec 15

**ADDITIONAL COMMENTS**

N/A



Environment and  
Climate Change Canada

Environnement et  
Changement climatique Canada

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

August 9, 2016

ECCC File: 6100 000 008/014

NIRB File: 16MN056

Sophia Granchinho  
Manager, Impact Assessment  
Nunavut Impact Review Board  
P.O. Box 1360  
Cambridge Bay, NU X0B 0C0

Via email: [info@nirb.ca](mailto:info@nirb.ca)

**RE: 16MN056 – Agnico Eagle Mines Ltd. – Whale Tail Project – NIRB Screening**

Attention: Sophia Granchinho

Environment and Climate Change Canada (ECCC) has conducted a preliminary review of the information submitted to the Nunavut Impact Review Board (NIRB) regarding the above-mentioned NIRB screening of the Whale Tail Project (the Project). ECCC's review is based on our mandate, in the context of the *Canadian Environmental Protection Act*, the pollution prevention provisions of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Please find ECCC's responses below to the NIRB's questions outlined in the Notice of Screening for this Project:

**Whether the project proposal is likely to arouse significant public concern; and if so, why**

ECCC has no comments on this point.

**Whether the project proposal is likely to cause significant adverse eco-systemic or socio-economic effects; and if so, why**

ECCC has identified the following items which fall within its areas of expertise that require further technical review to reduce adverse eco-systemic impacts. A Part 5

Review of the Whale Tail Project would ensure that the following topics and the supporting material provided could be adequately reviewed.

#### Atmospheric Environment

Potential negative impacts to air quality resulting from dust as well as greenhouse gas emissions from mining and vehicle operations.

#### Freshwater Environment

Potential negative impacts to water quality resulting from metal leaching, acid rock drainage and mercury methylation.

The development of protective effluent quality criteria to ensure minimal impacts to the receiving environment. This includes ensuring that the lakes do not become eutrophic and experience winter kill of fish.

#### **Whether the project is likely to cause significant adverse impacts on wildlife habitat or Inuit harvesting activities; if so, why**

ECCC has identified the following items which fall within its area of expertise that require further technical review to reduce negative impacts on wildlife.

#### Migratory Birds and Species at Risk.

The development of mitigation measures to reduce effects on wildlife and their habitat, especially in regards to the planned fish-out.

#### **Whether the project is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (please provide any recommended mitigation measures)**

ECCC notes that potential effects may be similar to those associated with the Meadowbank Mine Project and as such are expected to be predictable and mitigable with known technology. However, project design, monitoring, adaptive management, and closure planning will be key to limiting the duration and scale of impacts.

#### **Any matter of importance to the Party related to the project proposal**

Please note that should this Project not proceed to a Part 5 Review, ECCC requests an opportunity to conduct a more in-depth review of the screening application and provide additional comments.

Should you require further information, please do not hesitate to contact Melissa Pinto at (867) 669-4733 or [Melissa.Pinto@canada.ca](mailto:Melissa.Pinto@canada.ca).

Sincerely,



Mary Taylor  
Executive Director, Environmental Assessment



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

501 University Crescent  
Winnipeg, MB  
R3T 2N6

*Our file*      *Notre référence*  
16-HCAA-00370

August 4, 2016

Nunavut Impact Review Board (NIRB)  
PO Box 1360  
Cambridge Bay, NU  
X0B 0C0

Dear NIRB:

**Subject: Screening – Whale Tail Pit Project**

As directed by the NIRB in their letter dated July 26, 2016, Fisheries and Oceans Canada (DFO) is providing the following comment with respect to Agnico Eagle Mines Ltd (AEM)'s Whale Tail Pit Project NIRB Screening.

DFO understands that the NIRB would like parties to provide comments regarding:

- 1) Whether the project proposal is likely to arouse significant public concern; and if so, why;

DFO is not aware of any significant public concern at this stage of review, however, it is recommended that consultation take place to ensure that public concern is heard and addressed via the environmental assessment process administered by the NIRB.

- 2) Whether the project proposal is likely to cause significant adverse eco-systemic or socioeconomic effects; and if so, why;

Fisheries and Oceans has identified several significant eco-systemic impacts associated with this Project proposal, but not limited to, the following:

- Water level variations to Mammoth Lake, Whale Tail Lake, Nemo Lake and surrounding waterbodies due to dewatering and diversion activities
- Dikes in Mammoth and Whale Tail Lakes
- Dewatering and fish out in Mammoth and Whale Tail Lakes
- Construction of a mining pit in Whale Tail Lake basin
- Flooding of Whale Tail Lake
- Alterations in water quality in fish habitat

- 3) Whether the project is likely to cause significant adverse impacts on wildlife habitat or Inuit harvesting activities; if so, why;



The Project will likely result in serious harm to fish and fish habitat, thus impacting Inuit harvesting activity in the affected waterbodies. The Project will have a significant impact at a local scale.

- 4) Whether the project is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (please provide any recommended mitigation measures);

Proponents are responsible for avoiding and mitigating *serious harm to fish* that are part of or support commercial, recreational or Aboriginal fisheries. When proponents are unable to completely avoid or mitigate *serious harm to fish*, their projects will normally require authorization under Subsection 35(2) of the *Fisheries Act* in order for the project to proceed without contravening the Act. DFO will work with the Proponent in the environmental assessment and regulatory review processes to identify appropriate mitigation measures.

- 5) Any matter of importance to the Party related to the project proposal.

DFO will be a responsible minister with respect to this Project, and recommend a Review proceed.

DFO has reviewed the Terms and Conditions of the Meadowbank Project Certificate No.004 that relate to our mandate and expertise and have identified the terms and conditions relating to fish and fish habitat impacts (below). Upon initial review, it would appear that these conditions will not require reconsideration if similar such conditions are created for an independent Whale Tail Project Certificate.

No.11 (Agnico Eagle) shall provide details regarding the effluent outfall configuration, including discharge characteristics, the likely behaviour of the plume(s), and bathymetric information for Wally Lake in the water licence application to the NWB.

No.13 (Agnico Eagle) shall not permit the water discharged into Wally Lake and Third Portage Lake to exceed receiving environment discharge criteria established by the NWB or as otherwise required by law.

No.49 Agnico Eagle Mines Ltd shall develop, implement and report on the fish-out programs for the dewatering of Second Portage Lake, Third Portage Lake, Vault Lake and Phaser Lake.

No.53 Agnico Eagle Mines Ltd shall, in consultation with the HTO's and DFO, develop a Fish Habitat Monitoring Plan, including augmenting baseline fisheries data in the period prior to operation, with the clear objective of demonstrating the success of the No Net Loss Plan approved by the DFO. The Fish Habitat Monitoring Plan should include Phaser Lake.

If you have any questions, please contact Elizabeth Patreau at (204)583-3259, or by email at [Elizabeth.Patreau@dfo-mpo.gc.ca](mailto:Elizabeth.Patreau@dfo-mpo.gc.ca). Please refer to the file number referenced above when corresponding with the Program.

Sincerely,

A handwritten signature in black ink, appearing to read 'Martyn Curtis', with a large, stylized loop at the end.

Martyn Curtis  
A/Regional Manager, Regulatory Reviews  
Fisheries Protection Program

cc. Elizabeth Patreau- DFO



Nunavut Regional Office  
P.O. Box 100  
Iqaluit, NU, X0A 0H0

Your file - Votre référence  
16MN056  
Our file - Notre référence  
5510-5-3-6-2

August 9, 2016

Sophia Granchinho  
Manager, Impact Assessment  
Nunavut Impact Review Board  
PO Box 1360  
Cambridge Bay, NU, X0B 0C0  
Via electronic mail to: info@nirb.ca

**Re: Notice of Screening for Agnico Eagle Mines Ltd.'s "Whale Tail Pit" project proposal;**

Dear Sophia Granchinho,

On July 26, 2016, the Nunavut Impact Review Board (NIRB) invited parties to comment on the Screening triggered by section 86 of the *Nunavut Planning and Project Assessment Act* (NuPPAA) for Agnico Eagle Mines Ltd.'s "Whale Tail Pit" project proposal. Indigenous and Northern Affairs Canada (INAC) appreciates the opportunity to provide comments pertaining to the NIRB's request.

**Whether the project proposal is likely to arouse significant public concern; and if so, why:**

The potential for the Whale Tail Pit project to arouse significant public concern exists due to the scale and type of project being proposed. The magnitude of concern would be clarified through further opportunities for the public to provide comment on the proposed project. Community information sessions conducted by the NIRB and continued consultation by the proponent are appropriate measures to assess the concern related to this project.

**Whether the project proposal is likely to cause significant adverse eco-systemic or socio-economic effects; or significant adverse impacts on wildlife habitat or Inuit harvesting activities; if so, why:**

Due to the nature and scale of the project proposal, INAC is of the view that the project has the potential to cause significant adverse eco-systemic or socio-economic effects. Therefore, the potential adverse effects of the Whale Tail Pit project would be most appropriately assessed through a full environmental review.



INAC conducted a preliminary assessment of the Whale Tail Pit project proposal and has identified the following components of the project that have the potential to cause significant effects and merit more in-depth assessment:

- Mine tailings and waste rock storage and management;
- The potential for acid rock drainage (ARD) and the effectiveness of ARD containment and mitigation;
- The potential impacts to surface water quality and quantity;
- The anticipated impacts of construction, operation and closure activities on wildlife, water quality and quantity, vegetation, landforms and permafrost features in the area;
- The potential impacts of dyke construction at Mammoth Lake and Whale Tail Lake and the dewatering of Whale Tail Lake;
- The potential impacts of upgrading the existing exploration road;
- The impacts of potential accidents and malfunctions on site and during transportation;
- The potential for cumulative ecosystemic and socio-economic impacts due to the increased mining and transportation activity in the Kivalliq region; and,
- The potential socio-economic impacts on relevant communities, including those that may arise due to the employment of large numbers of people.

**Whether the project is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (please provide any recommended mitigation measures); and**

INAC is of the view that a project of this scale operating in the North is not the type where potential adverse effects are highly predictable. Recommended mitigation measures could be provided following a more in-depth review in the areas of INAC's jurisdictional responsibility.

This responsibility in relation to the proposed project includes: Ministerial responsibilities for approval of the water licence and administration of Crown land. Furthermore, INAC appreciates being of assistance to the NIRB throughout the impact assessment process and expects to offer expertise in the following areas:

- Geotechnical engineering and permafrost considerations
- Site water management
- Surface and ground water quality and quantity
- Hazardous material handling and storage
- Wastewater treatment
- Waste management
- Mine and quarry design and construction
- Closure and reclamation planning
- Environmental monitoring and management plans
- Cumulative effects and alternatives assessment
- Socio-economic impacts and benefits analysis

**Any matter of importance to the Party related to the project proposal**

INAC understands that developing the Whale Tail Pit project would be important for the proponent in order to reduce the production gap between the end of the Meadowbank project and the start of the proposed Meliadine Mine; however, the timelines of these operations should not prevent the Whale Tail Pit project from undergoing the rigorous assessment that would be typical of a development project of this scale.

INAC recognizes that the proponent has submitted a detailed environmental impact statement and supports the NIRB's approach to expedite the associated assessment process if the submission is deemed sufficient to allow for a review.

Given the limited timeframe to provide comments, this assessment does not represent a full technical review. If the NIRB determines that a full environmental review is not required, INAC requests additional opportunity to provide more in-depth comments and request additional information from the proponent, if necessary.

INAC appreciates the opportunity to provide comments and looks forward to working further with the NIRB and the Proponent, as necessary, throughout any further review related to this project. Should you have any questions, please contact Jason Patchell at (867) 975-4556 or by e-mail at [jason.patchell@aandc-aadnc.gc.ca](mailto:jason.patchell@aandc-aadnc.gc.ca).

Sincerely,

[Original signed by]

Michael Sewchand  
A/Manager, Impact Assessment



Natural Resources  
Canada

Ressources naturelles  
Canada

**NIRB File No.: 16MN056**

**NRCan File No: NT-086**

August 9, 2016

Sophia Granchinho, M.Sc., EP  
Manager, Impact Assessment  
Nunavut Impact Review Board  
PO Box 1360  
Cambridge Bay, NU, X0B 0C0

*Submitted via e-mail*

**Subject: Natural Resources Canada's (NRCan) Comments Regarding Agnico  
Eagle Mine's (AEM) Whale Tail Project**

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Dear Ms. Granchinho,

Thank you for your letter of July 26, 2016 requesting comments from parties on the Nunavut Impact Review Board's (NIRB) Screening of Agnico Eagle Mine's (AEM) proposed Whale Tail Project pursuant to section 86 of the *Nunavut Planning and Project Assessment Act* (NuPPAA).

Recognizing that the Proponent has provided a detailed environmental impact statement to the NIRB, Natural Resources Canada (NRCan) has reviewed the Project Scope and the Project Description submitted by the Proponent. These comments are intended to assist the Board in determining "whether the project has the potential to result in significant ecosystem or socio-economic impacts and accordingly whether it requires a review by the Board, or by a federal environmental assessment panel, as the case may be," as outlined in s. 88 of NuPPAA.

- **Whether the project proposal is likely to arouse significant public concern; and if so, why;**

NRCan has no specific comments at this stage on whether the project is likely to arouse significant public concern.

- **Whether the project proposal is likely to cause significant adverse eco-systemic or socio-economic effects; and if so, why;**

Although the Proponent anticipates that the Whale Tail project will partly rely on existing infrastructure at the Meadowbank Gold Mine, the scope of the Whale Tail project includes the development of an open pit gold mine, partial dewatering and dike construction at Whale Tail and Mammoth lakes, and construction of new infrastructure including a waste rock storage facility at the Amaruq property. These elements are

**Canada**



located beyond the physical footprint of the approved mine and so would be new to this environmental setting. Therefore, the project does have the potential to cause significant adverse eco-systemic effects.

- **Whether the project is likely to cause significant adverse impacts on wildlife habitat or Inuit harvest activities; if so, why;**

NRCan has no specific comments with regard to whether the project is likely to cause significant adverse impacts on wildlife habitat or Inuit harvest activities.

- **Whether the project is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (please provide any recommended mitigation measures);**

The potential adverse environmental effects resulting from the proposed project may be predictable and adequately mitigated through known technologies but this cannot be determined without the opportunity for the rigorous technical scrutiny that would be afforded by a full environmental review.

- **Any matter of importance to the Party related to the project proposal.**

The project proposal includes the construction and operation of an Emulsion Storage Facility located close to the Whale Tail site. As currently described, the operation of the facility will likely require a licence for the manufacturing of bulk explosives issued under the *Explosives Act* by NRCan.

If you have any questions concerning our comments, or if I may be of further assistance, please contact me directly at (343) 292-6046 or by e-mail at [jennifer.dorr@canada.ca](mailto:jennifer.dorr@canada.ca).

Thank you for the opportunity to provide comments.

Sincerely,

Jennifer Dorr  
Senior Environmental Assessment Officer  
Environmental Assessment Division, Office of the Chief Scientist  
Natural Resources Canada



Transport Canada Transports Canada

Prairie and Northern Region  
Environmental Services, Programs  
P.O. Box 8550  
3<sup>rd</sup> Floor, 344 Edmonton Street  
Winnipeg, Manitoba  
R3C 0P6

Your file Votre référence  
16MN056

Our file Notre référence  
7075-70-1-319

August 9, 2016

Sophia Granchinho  
Manager, Impact Assessment  
Nunavut Impact Review Board  
PO Box 1360  
Cambridge Bay, NU, X0B 0C0

**Re: Comment Request for Notice of Screening for Agnico Eagle Mine's "Whale Tail" Project Proposal**

Dear Sophia Granchinho,

Transport Canada received the Nunavut Impact Review Board letter dated July 26, 2016, which requested parties to review and provide comments on Agnico Eagle Mines Ltd.'s proposed Whale Tail Project.

Transport Canada is responsible for the transportation policies and programs that promote a safe transportation system, ensuring that they work effectively and in an integrated manner. After reviewing the project proposal and supporting documents, Transport Canada has identified an interest in various project components and activities that would pertain to our mandate and area of expertise of our department.

- Dewatering and diversion activities on Whale Tail Lake, and Mammoth Lake
- Construction of the Whale Tail Dike, and the Mammoth Lake Dike
- Freshwater Intake on Nemo Lake and Whale Tail Lake,
- Diffuser on Mammoth Lake

Transport Canada is of the opinion that the proposed project has the potential to cause significant adverse effects on the ecosystem and may be a cause of significant public concern. Transport Canada is of the view that the proposed Whale Tail project is not the type where potential adverse effects are highly predictable and recommended mitigation measures could be provided following a more in-depth review. Given the limited timeframe to provide comments, this assessment does not represent a full technical review. Transport Canada is providing the following for the Nunavut Impact Review Board's consideration:

**NAVIGATION PROTECTION**

Transport Canada notes that an application under the Navigation Protection Act (NPA) may be required for the proposed dike construction and dewatering of Mammoth Lake and Whale Tail Lake. Dewatering of a navigable waterway is prohibited under Section 24 of the NPA, unless exempted by Governor in Council. Transport Canada suggests Agnico Eagle Mines to submit information to Transport Canada to determine the navigability of Mammoth Lake and Whale Tail Lake.

Section 4(1) of the NPA contains a provision which allows the owner of a proposed work in any navigable waterway (other than those listed in the Schedule) to 'Opt-in' to Transport Canada's legislative regime and the NPA review process. If an opt-in request is accepted by Transport Canada under Section 4(1), then all provisions and review processes of the NPA would apply to the work.

Canada



The following website provides more information on the NPA:

<http://www.tc.gc.ca/enq/programs-621.html>

Transport Canada also recommends Agnico Eagle Mines to review the Order Amending the Minor Works and Waters Order and self-assess to determine if the proposed works may be considered a Minor Work. Minor works under the Order do not require notice or Approval by TC.

For the Order Amending the Minor Works and Waters Order, please see the following website:

<http://www.gazette.gc.ca/rp-pr/p1/2014/2014-04-19/html/notice-avis-eng.php#trans2>

#### **Transportation of Dangerous Goods**

Persons that handle, offer for transport, transport or import dangerous goods must comply with the Transportation of Dangerous Goods (TDG) Regulations. There is no requirement for permits or licences in order to handle/offer for transport/transport/import dangerous goods. One exception would be for dangerous goods that require an Emergency Response Assistance Plan (ERAP) under Section 7 of the *Transportation of Dangerous Goods Act, 1992* (e.g. certain explosives, propane in 3000 L or greater size tanks). ERAPs are intended to assist local emergency responders by providing them with technical experts and specialized equipment at an accident site.

#### **Aboriginal Consultation**

Transport Canada may have a duty to consult Aboriginal groups due to potential approvals the department may issue. Transport Canada will need to assess whether it has a duty to consult with groups whose Aboriginal or treaty rights may be adversely impacted by the project and/or by the department's decision to issue such approvals as are required under its mandate. As well, Transport Canada will participate in any coordinated 'whole of government' aboriginal consultation within the Northern Project Management Office and Nunavut Impact Review Board environmental assessment processes.

Transport Canada appreciates the opportunity to provide comments on the Whale Tale project proposal. These comments are based upon our understanding of the supporting documents submitted by the Agnico Eagle Mines.

Should you have any questions regarding Transport Canada's comments concerning this project, please contact me via email at [christopher.aguirre@tc.gc.ca](mailto:christopher.aguirre@tc.gc.ca) or by telephone at (204) 984-2615.

Regards,



Christopher Aguirre  
Environmental Officer

cc. Adam Downing – TC  
Jeffrey Tindall – TC