



NUNAVUT IMPACT REVIEW BOARD

FINAL HEARING REPORT

AGNICO EAGLE MINES LTD.

WHALE TAIL PIT PROJECT

NIRB FILE No. 16MN056



November 2017

INSIDE COVER PAGE



The Nunavut Impact Review Board's Primary Objectives under the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada*, Article 12, Section 12.2.5:

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 residents of Canada outside the Nunavut Settlement Area.

The Nunavut Impact Review Board's Primary Objectives under the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 23 states:

23(1) The Board must exercise its powers and perform its duties and functions in accordance with the following primary objectives:

- (a) to protect and promote the existing and future well-being of the residents and communities of the designated area; and
- (b) to protect the ecosystemic integrity of the designated area.

23(2) In exercising its powers or performing its duties and functions in accordance with the objective set out in paragraph (1)(a), the Board must take into account the well-being of residents of Canada outside the designated area.

Contact Information:

Nunavut Impact Review Board
PO Box 1360
29 Mitik Street
Cambridge Bay, NU X0B 0C0
Telephone: (867) 983-4600
Facsimile: (867) 983-2594







Cover Photo Credits: Board staff

SIGNATURE PAGE



Photo 1: Board Members: (from left) Guy Alikut, Philip (Omingmakyok) Kadlun, Elizabeth Copland, Marjorie Kaviq Kaluraq, Henry Ohokannoak and Allen Maghagak

THIS REPORT IS SUBMITTED TO THE HONOURABLE CAROLYN BENNETT, MINISTER OF CROWN-INDIGENOUS RELATIONS AND NORTHERN AFFAIRS BY THE NUNAVUT IMPACT REVIEW BOARD ON THIS 6TH DAY OF NOVEMBER 2017.

	
Elizabeth Copland, Chairperson	Marjorie Kaviq Kaluraq, Board Member
	
Guy Alikut, Board Member	Henry Ohokannoak, Board Member
	
Philip (Omingmakyok) Kadlun, Board Member	Allen Maghagak, Board Member

After due consideration of all information provided to the NIRB in respect of the Project, and in accordance with the objectives and requirements of the *Nunavut Agreement* and the *NuPPAA*, the NIRB has determined that with appropriate mitigation, management and monitoring measures (as set out in detail in the attached Final Hearing Report), the Project can be conducted in a manner that protects and promotes the existing and future well-being of the residents and communities of the Nunavut Settlement Area while also adequately protecting the ecosystemic integrity of the Nunavut Settlement Area. On this basis, it is the NIRB's recommendation that the Project should now be allowed to proceed to the regulatory stage.

Should you have questions or require clarification regarding this matter, please contact the NIRB's Executive Director, Ryan Barry at (867) 983-4608 or rbarry@nirb.ca.

Sincerely,



Elizabeth Copland
Chairperson
Nunavut Impact Review Board

cc: The Honourable Catherine McKenna, Minister of Environment and Climate Change
The Honourable Dominic LeBlanc, Minister of Fisheries and Oceans and the Canadian Coast Guard
The Honourable Jim Carr, Minister of Natural Resources
The Honourable Marc Garneau, Minister of Transport
The Honourable Hunter Tootoo, MP for Nunavut
The Honourable Peter Taptuna, Premier of Nunavut
Aluki Kotierk, President, Nunavut Tunngavik Incorporated
David Ningeonan, President, Kivalliq Inuit Association
Lootie Toomasie, Chairperson, Nunavut Water Board
Ryan Vanengen, Agnico Eagle Mines Ltd.
Jamie Quesnel, Agnico Eagle Mines Ltd.
Whale Tail Pit Distribution List

CHAIRPERSON'S FOREWORD

As required under Article 12, Section 12.5.6 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and s. 104(1) of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*), the Nunavut Impact Review Board (NIRB or Board) provides the following Final Hearing Report to the Ministers responsible for the Project. This Final Hearing Report is intended to be comprehensive and summarizes the Board's review of the Whale Tail Pit project proposal (the Project) as proposed by Agnico Eagle Mines Ltd. (the Proponent or Agnico Eagle) and as conducted by the Board under Article 12, Part 5 of the *Nunavut Agreement* and Part 3 of the *NuPPAA*. As set out in detail in the Report, the Board's assessment of the Project commenced on May 2016 upon receipt of the Whale Tail Pit project proposal, and concluded with the Board holding a Final Hearing for the file in Baker Lake on September 19-22, 2017.

This Report summarizes the information received from the Proponent and formal Intervenor, including the Kivalliq Inuit Association, various Federal Government Departments and the Government of Nunavut. The Report also reflects the important contributions of the Elders, students and Community Representatives from the seven Kivalliq communities (Chesterfield Inlet, Coral Harbour, Nauyasat, Baker Lake, Rankin Inlet, Whale Cove, and Arviat) who participated in the Pre-hearing Conference and Final Hearing for the Project. Thank you to all who shared their views and expertise, asked essential questions, expressed concerns, provided recommendations and assisted the Board in completing our work.

During the Community Roundtable Sessions at both the Pre-hearing Conference and at the Final Hearing, the NIRB heard that many Kivalliq residents, and especially the Elders, feel the Project, as with all mining projects in the area, requires communities to choose between the training, educational and economic opportunities associated with a new mine on one hand versus potentially damaging impacts on caribou and other wildlife, fish, freshwater and the marine environment on the other hand. Consequently, several Elders stated that while they supported the Project because it represents economic opportunities for the youth in their communities, they also felt they were sacrificing their want for the land to remain undisturbed and had deep concern that the impacts on caribou could result in lasting damage to already threatened populations. Both the youth and Elders spoke to the Board about the importance of caribou to all Inuit in the Kivalliq Region and noted that adverse impacts on caribou could have devastating consequences for the individuals and communities who continue to rely on caribou as they have for generations.

The Board feels strongly that Nunavummiut should not feel they are left with making a choice between sacrificing caribou populations for the sake of their economic futures. While the Board recognizes that there is some give and take required to allow for mining development in areas that are largely untouched by industrial activity, the Board is confident that by building on the experience and knowledge gained by the Proponent, regulators and community members as a result of Agnico Eagle's existing operations at the Meadowbank Gold Mine, there are ways of developing the Project that will limit the potential for adverse effects on caribou and all wildlife, as well as fish, freshwater and the marine environment.

Recognizing the critical importance of caribou to all Inuit in the Region, the Board has recommended that the Project only be allowed to proceed to the regulatory stage if governed by very protective terms and conditions. These terms and conditions are the result of considerable advice and direction provided by the participants in the review, often in collaboration with each other and the Proponent. The terms and conditions recommended by the Board also put into practice a high standard of the precautionary principle and emphasize that where data gaps exist, (such as the nature and extent of effects on caribou that are likely to occur as a result of the very intensive use of the private haul road between Meadowbank and the Whale Tail Pit) monitoring and potential mitigation and management plans must be adaptive, based on the best available data, Inuit Qaujimajatuqangit and Inuit Qaujimaningit, and must be continuously improved.

The Board has also recommended protective terms and conditions to limit the potential for adverse effects to result from releases into air and water and onto the land during the Project's normal operations or from potential accidents and malfunctions. Throughout the review, the Board was encouraged by Agnico Eagle's willingness to collaborate and make commitments to the Kivalliq Inuit Association, federal and territorial intervenors, the Baker Lake Hunters and Trappers Organization, and the Kivalliq communities to ensure the potential for project-induced effects is minimized. However, the Board highlights to all parties that the ultimate success of monitoring, mitigation and management measures remains dependent on everyone's continued commitment to finding a better path forward that ensures that mines are only developed when care for the wildlife, air, land and water is built into every stage of project development.

The Board also notes that the Kivalliq communities, while largely expressing support for the Project, also expressed frustration at not always being kept informed by Agnico Eagle about the challenges and opportunities associated with the Meadowbank Gold Mine, and also not being kept informed by the many regulatory agencies involved. The Board expects Agnico Eagle and all relevant regulators to acknowledge these community concerns and to take measures to ensure the Kivalliq communities have better access to Project-related information and follow up as this Project progresses.

In closing, I note that the Board's review benefitted a great deal from the active participation of all who shared their stories, experience, questions and concerns. The Board is grateful to you all for contributing; you provided the foundation for the Board's decision-making and the Board quite simply could not do its work without your involvement.

Sincerely,



Elizabeth Copland
Chairperson
Nunavut Impact Review Board

Δ^bΥ^o▷C▷[<]ΠΠς^{ςb}C^oΛ

[illegible][illegible][illegible][illegible]

AVANT-PROPOS DE LA PRÉSIDENTE

Tel que stipulé à l'article 12, paragraphe 12.5.6, de l'Accord entre les Inuits de la région du Nunavut et Sa Majesté la Reine en Chef du Canada (l'Accord du Nunavut,) et à l'article 104(1) de la Loi sur l'aménagement du territoire et l'évaluation des projets au Nunavut, L.C. 2013, ch. 14, art.2 (LATEPN), la Commission du Nunavut chargée de l'examen des répercussions (CNER ou la Commission) soumet le rapport ci-joint de l'audience finale aux ministres compétents, responsables du projet. Ce rapport résume globalement l'examen de la proposition de projet Fosse Whale Tail (le projet), déposée par Agnico Eagles Mines Ltd (le promoteur ou Agnico Eagle), examen dirigé par la Commission en vertu de l'article 12, Partie 5, de l'Accord sur le Nunavut et de la Partie 3 de la LATEPN. Tel que détaillé dans ce rapport, l'examen de la Commission a commencé en mai 2016, dès réception de la proposition du projet et s'est terminé par une audience finale portant sur le projet et organisée par la CNER du 19 au 22 septembre 2017 à Baker Lake.

Les informations transmises par le promoteur et les intervenants officiels, notamment la Kivalliq Inuit Association, divers ministères fédéraux et le gouvernement du Nunavut sont résumées dans ce rapport. Les importantes contributions des aînés, des étudiants et des représentants des sept collectivités de la région de Kivalliq (Chesterfield Inlet, Coral Harbour, Nauyasat, Baker Lake, Rankin Inlet, Whale Cove et Arviat) qui ont participé à la conférence pré-audience et à l'audience finale relative au projet y sont également traduites. La Commission remercie tous ceux et celles qui ont partagé leurs points de vue et leur expertise, ont posé des questions capitales, ont exprimé leurs préoccupations et l'ont aidée à parachever son travail.

Pendant les sessions de tables rondes communautaires, à la conférence pré-audience et à l'audience finale, la CNER a entendu de nombreux résidents de la région du Kivalliq, notamment des aînés, craindre qu'à l'instar des autres projets miniers de la région, ce projet n'oblige les collectivités à devoir choisir entre, d'une part les chances de formation, d'éducation et de développement économique découlant de l'exploitation minière et, d'autre part, les répercussions éventuellement néfastes sur les caribous et autres espèces sauvages, les poissons, les milieux d'eau douce et marin. Par conséquent, plusieurs aînés ont déclaré que tout en appuyant le projet à cause de ses possibilités économiques pour les jeunes de leurs communautés, ils avaient le sentiment de sacrifier leur désir de maintenir le caractère inaltéré du territoire et redoutaient fortement que l'impact sur les caribous n'ait des effets dévastateurs durables sur des populations déjà menacées. Les jeunes et les aînés ont sensibilisé la Commission à l'importance des caribous pour tous les Inuits de la région de Kivalliq et ont souligné de négatives incidences sur les caribous pourraient s'avérer dévastatrices pour les personnes et les collectivités qui continuent à en dépendre, comme ce fut le cas pour de nombreuses générations.

La Commission estime sincèrement que les Nunavummiut ne doivent pas être obligés de sacrifier des populations de caribous sur l'autel de futurs développements économiques. Tout en reconnaissant que des concessions devront être faites pour optimiser la mise en valeur des gisements miniers dans des régions vierges de toute activité industrielle, la Commission est persuadée qu'en se basant sur l'expérience et les connaissances acquises par le promoteur, les organes de réglementation et les membres de la communauté lors de l'exploitation de l'actuelle mine d'or Meadowbank par la compagnie Agnico Eagle, des mesures pourront être prises pour réaliser le projet tout en limitant ses incidences négatives sur les caribous et toutes les espèces sauvages ainsi que sur les poissons et les milieux d'eau douce et marin.

En tenant compte de l'importance cruciale des caribous pour tous les Inuits de la région, la Commission a recommandé que le projet ne puisse progresser que jusqu'à la phase de réglementation tout en étant régi par de très rigoureuses modalités et conditions. Ces exigences sont instruites par les orientations et les

conseils des participants à l'examen, souvent en inter-collaboration avec le promoteur. Ces modalités et conditions recommandées par la Commission appliquent un principe de précaution de très haut niveau et soulignent qu'en cas de lacunes dans les données (notamment la nature et l'ampleur des effets probables sur les caribous suite à l'intense utilisation de la route de transport privée entre Meadowbank et la fosse Whale Tail), les plans de surveillance, d'atténuation éventuelle et de gestion doivent être adaptés à partir des meilleures données possibles et des principes Qaujimajatuqangit inuit et doivent être continuellement améliorés.

La Commission a également recommandé des modalités et conditions protectrices afin de limiter les incidences dues aux émissions rejetées dans l'air, dans l'eau et sur la terre pendant l'exploitation régulière du projet ou en cas d'accident ou de défaillance. Pendant toute la durée de l'examen, la Commission s'est réjouie de la volonté d'Agnico Eagle de collaborer avec la Kivalliq Inuit Association, les intervenants fédéraux et territoriaux, l'Organisation des chasseurs et trappeurs de Baker Lake et les collectivités de la région de Kivalliq afin de minimiser les effets induits par le projet. La Commission a toutefois averti les parties concernées que les mesures de surveillance, d'atténuation et de gestion ne réussiraient que si tous et chacun s'engageaient à trouver de meilleures solutions d'avenir garantissant que seuls les projets miniers intégrant le bien-être des espèces sauvages et la protection de l'air, de la terre et de l'eau dans toutes leurs étapes, seraient autorisés à aller de l'avant.

La Commission a également constaté que tout en se prononçant largement en faveur du projet, les collectivités de la région de Kivalliq, étaient frustrées de ne pas être toujours informées par Agnico Eagle Mines Ltd. sur les défis et possibilités de la mine d'or Meadowbank et par les organes de réglementation impliqués. La Commission s'attend à ce qu'Agnico Eagle et tous les organismes de réglementation tiennent compte des préoccupations de ces collectivités et prennent des mesures pour leur faciliter l'accès aux informations liées au projet et à son évolution.

En terminant, je tiens à souligner que l'examen de la Commission a grandement bénéficié de l'active participation de tous les intervenants qui ont partagé leur histoire, leur expérience, leurs questions et leurs préoccupations. La Commission vous remercie toutes et tous de vos contributions ; vous avez établi la trame décisionnelle de la CNER qui, fondamentalement, n'aurait pu progresser sans votre engagement.

Veuillez agréer l'expression de mes sentiments les meilleurs.



Elizabeth Copland
Présidente
Commission du Nunavut chargée de l'examen des répercussions.

EXECUTIVE SUMMARY

This Final Hearing Report has been issued by the Nunavut Impact Review Board (NIRB or Board) to summarize the Board's review of Agnico Eagle Mines Ltd.'s (Agnico Eagle or the Proponent) Whale Tail Pit project proposal, NIRB File No.: 16MN056 (the Whale Tail Pit Project or the Project). The scope of the Whale Tail Pit Project as reviewed by the Board and summarized in this Final Hearing Report involves the proposed mobilization, construction, operation, closure, reclamation, and post-closure monitoring of a gold mine operation and associated infrastructure in the Kivalliq region of Nunavut. As described by Agnico Eagle, the open pit gold mine would be located at the Amaruq property on Inuit-owned lands, approximately 150 kilometres (km) north of the hamlet of Baker Lake and approximately 50 km northwest of the existing Meadowbank Gold Mine project. Facilities proposed to be constructed at the Whale Tail Pit site would include:

- A camp to house employees;
- Waste rock storage facilities;
- Ore stockpiling facilities;
- Bulk fuel storage facilities; and
- Water management infrastructure.

Processing of the ore mined at the Whale Tail Pit would take place at the Meadowbank Gold Mine site,¹ using the existing mill and tailings management infrastructure at Meadowbank, as well as some of the worker accommodations infrastructure at the Meadowbank site. The ore from the Whale Tail site would be trucked daily (18 trucks travelling 5 trips per day, 7 days a week) via an approximately 65-kilometre private haul road. Agnico Eagle proposes to also use Meadowbank's existing marine infrastructure in Baker Lake to support shipment of materials required for construction of the Project as well as annual resupply of fuel shipped during the open water season.

Construction of the Whale Tail Pit Project would begin in early 2018, with operations commencing in late 2018 and continuing into 2022. Construction and operation would be followed by closure of the site over approximately seven (7) years, ending in post closure monitoring.

As required under Article 12 of the *Nunavut Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada* (the *Nunavut Agreement*) and Part 3 of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*) upon receipt of the Whale Tail Pit project proposal in mid-2016, the Board engaged in the assessment of the potential environmental and socio-economic effects of the proposed Project to determine whether or not the Project should be allowed to proceed, and if so, on what terms and conditions. If the Project is approved to proceed and the NIRB issues a Project Certificate under *NuPPAA*, Agnico Eagle would be bound by the terms and conditions contained in the Project Certificate and failing to comply with any terms and conditions is an offence under *NuPPAA*.

¹ As described by Agnico Eagle Mines Ltd, the existing Meadowbank Gold Mine site is located 70 km directly north of the Hamlet of Baker Lake on Inuit-owned lands; see [Figure 1](#).

At the request of the Proponent, and as provided for under the *Nunavut Agreement* and the *NuPPAA*, throughout the NIRB's review of the Project, the NIRB worked closely with the Nunavut Water Board (NWB) to coordinate the NIRB's review with the NWB's consideration of the water licensing component of the Project. For the first time in the Boards' history, the NIRB and NWB conducted a joint Technical Meeting and Pre-hearing Conference for the Project in late April and early May 2017, and the NWB Public Hearing for the water licence applications for the Project was conducted in the week immediately following the NIRB's conclusion of the Final Hearing. While the NIRB recognizes that this level of coordination has created some challenges for all participants, the process is an indication that coordination can lead to greater efficiencies and potentially abbreviated timelines when all parties are committed to the process. The NIRB appreciates the efforts of all parties to contribute to, and adjust to this heightened level of coordination.

The Board has provided numerous opportunities throughout the review to participants from federal, territorial and local governments, the Kivalliq Inuit Association, local Hunters and Trappers Organization, Community Representatives from each of the seven (7) affected Kivalliq communities, Elders, students and members of the general public to share their perspectives about the Project, to ask questions and to highlight their concerns about the potential ecosystemic and socio-economic effects (both positive and negative) of the Project on the Nunavut Settlement Area and adjacent jurisdictions.

The Board heard that many community members in Baker Lake and surrounding areas support the Project, with the recognition that the mine will allow for a continuation of the training, employment, educational and economic opportunities provided previously by the existing Meadowbank Gold Mine.² As noted by Peter Tapatai from Baker Lake:

We were told there are 160 people working there who are Inuit. I don't think the government has even seen a change. At the moment, we are at the height of our lives because of the jobs that are here and available to us. Our people -- had the mine not been here, the people here would have had nothing, had no jobs. I would like to see that the company be given approval to open the Whale Tail Pit Project.

*It's even good to see that just by one company alone being here has helped our community a great deal. It's very good to see for those of us that have our own businesses. We have been given contracts. It's very good for us. We'd like to see that continue.*³

However, despite support for the potential positive socio-economic effects of the Project, several participants at the Final Hearing, including Intervenors, youth⁴, Elders⁵ and community members

² See for example, E. Kimmaliardjuk, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 600, lines 5-11.

³ P. Tapatai, Baker Lake, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 654, lines 14-26.

⁴ W. Gibbons, Baker Lake, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 737-738.

⁵ A. Poksiak Turner, Whale Cove, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 738.

also expressed concern regarding the potential for the new mine and haul road to have significant adverse effects on caribou and other wildlife, fish, freshwater and the marine environment. As outlined in detail in the text of the Report that follows, in a variety of submissions, the Board heard from Intervenor and community members that they felt they were balancing economic development with environmental protection:

And we have to watch out for the future; our caribou, make sure we're protecting them -- 'cause, when the mine closes and there's no more jobs, then people are still going to be relying on the caribou. Are the caribou going to be there? Is the water going to be safe to drink? Is the air going to be good? Is the land going to be clean? The dust from the tailings pits or whatever, if they dry up in 250 years, when I'm gone, are they going to be safe?⁶

The Board also heard several Intervenor raise issues regarding uncertainty about the evaluation of the potential for effects on caribou, including concerns related to the unprecedented volume of traffic on the Amaruq haul road:

As we have been discussing the past day, potential impacts to caribou is among the highest concern of the project. The difference -- one of the main differences for caribou is that the haul road is going to have close to ten times higher traffic levels than the existing all-weather access road between Baker Lake and Meadowbank. This has led to a number of uncertainties in the data that we have and in the effects that will be met with the new project and requires a high level of adaptive management as we go forward.⁷

Given the importance of caribou to Inuit in the Region and concerns and uncertainty about the potential for the Project to have effects on caribou, including cumulative effects on already declining populations, the Board understands how some community members felt that the economic opportunities associated with the Project could be characterized as coming at the cost of caribou and local harvesters. In the Board's view, however, with proper adaptive management, adequate monitoring and appropriate mitigation, Nunavummiut should not be faced with having to choose economic opportunity over environmental protection. This is particularly the case, where, as is the case for the Whale Tail Pit Project, the Proponent has an operating history in Nunavut and has been responsible previously for developing and implementing effects monitoring, mitigation and management programs for the existing Meadowbank Gold Mine. The Whale Tail Pit Project represents an opportunity for Agnico Eagle to put into practice the many lessons learned at the Meadowbank Gold Mine to continuously improve Agnico Eagle's development of the Project, including managing the potential for effects from the haul road on caribou.

On this basis, and after consideration of all information provided to the Board throughout the review of the Whale Tail Pit Project, including information presented at the Final Hearing, the

⁶ P. Kigjugalik Hughson, Baker Lake, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 663, lines 13-21.

⁷ K. Poole, Kivalliq Inuit Association, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 395, lines 3-12.

NIRB has now concluded that the Project may proceed to the licensing and permitting regulatory phase. The Board has concluded that with the participation and collaboration of the Baker Lake Hunters and Trappers Organization, and Intervenor such as the Kivalliq Inuit Association and the Government of Nunavut, greater certainty regarding effects predictions and mitigation measures applicable to limit the potential for significant adverse ecosystemic and socio-economic effects can be provided as the Project progresses. Having recommended that the Project proceed, as required under Article 12, Section 12.5.6(c) of the *Nunavut Agreement* and s. 104(1)(c) of the *NuPPAA*, the Board has recommended some 64 terms and conditions that should govern the Project going forward, including in key areas such as mitigation, management, monitoring and reporting in relation to specified ecosystemic and socio-economic effects. The Board is confident that if the Project complies with these recommendations the Whale Tail Pit Project can be developed, operated and reclaimed in a manner that would not unduly and adversely impact the ecosystemic integrity of the Nunavut Settlement Area.

The Board's conclusions and recommendations were informed and reflect the Board's thorough consideration of all the information provided by all participants in the Board's review. This included the Board's consideration of formal and informal presentations, questions and comments provided at the Final Hearing held September 19-22, 2017 in Baker Lake, the extensive documentation filed during the screening and review of this Project, Inuit Qaujimaningit and all information contained within the Environmental Impact Statement filed by Agnico Eagle.

As always, the Board is grateful to all who shared their experiences, expertise and perspectives to assist us in completing a thorough and timely assessment. We recognize and appreciate the positive, collaborative and respectful contributions of all who worked together to ensure that the Project, if developed in accordance with the recommended terms and conditions, delivers lasting economic benefits to the Kivalliq while minimizing the potential for adverse socio-economic and ecosystemic effects.

4C4F4L3456 bL<σ 22C2F6 Δb4L4C 22C4N2σ6. 1Δ956
 24Fσ656]C Cδ<J. b24C2σ6 3σΔ4Δ42C4C. C42 1Δ4L4C
 Δ4C4N2σ6. b4F4δ494 3C42.10

[illegible]

ሥልጣኔው የሚገኝበት ሁኔታ ሲሆን፣ ለዚህም ምሳሌ ለግብረ ሰው ማህበረሰብ ሲሆን፣ ለሌሎች ማህበረሰቦችም ሊሆን ይችላል። ለዚህም ምሳሌ ለግብረ ሰው ማህበረሰብ ሲሆን፣ ለሌሎች ማህበረሰቦችም ሊሆን ይችላል። ለዚህም ምሳሌ ለግብረ ሰው ማህበረሰብ ሲሆን፣ ለሌሎች ማህበረሰቦችም ሊሆን ይችላል።

[illegible][illegible][illegible]

¹⁰ ለር ርረርፊ፣ ነጋሪታችን፣ ልዩነትና የሕይወት ደካማነት በየአካባቢው 16MN056 በየአካባቢው፣ ሥርዓተ 22፣ ሆስፒታል 654፣ ዲፓሎማሲያን 14-26.

¹¹ል ረጽሳ፣ ካይሮውንጋብ፣ ላዊበርኪትድ ዶሃናቸው ጋካማህር በቦክስቡሎ 16MN056 በቦክሱሆ፣ ሥርጸ
22, ሊገሉ 737-738.

¹² Δ >ካላፍ ሮዕ, በዋናዊላፍ, ላዊበራሊዲኮ ዋሃኅራፍ ጋካሙሪ 16MN056 በበክካሎሙ, ሥርዓት 22, ሊከላፍ738.

[illegible][illegible]

RÉSUMÉ

Publié par la Commission du Nunavut chargée de l'examen des répercussions (CNER ou la Commission), ce rapport d'audience finale résume l'examen de la proposition de projet Fosse Whale Pit d'Agnico Eagle Mines Ltd., no. de dossier 16MN056 de la CNER (Projet Fosse Whale Tail ou Projet). La portée de ce projet, telle qu'examinée par la Commission et résumée dans ce rapport d'audience finale, englobe la mobilisation, la construction, l'exploitation, la fermeture, la remise en état et la surveillance post-fermeture d'une mine d'or et de l'infrastructure inhérente dans la région de Kivalliq au Nunavut. Cette mine d'or à ciel ouvert sera située sur la propriété Amaruq, sur les terres appartenant aux Inuits, à environ 150 kilomètres (km) au nord du hameau de Baker Lake et à environ 50 km au nord-ouest de l'actuelle mine d'or Meadowbank. Les installations construites sur le site de la fosse Whale Tail incluront:

- Un camp pour loger les employés;
- Des installations de stockage des stériles;
- Des installations de stockage en piles du minerai aurifère;
- Des installations de stockage en vrac du carburant; et
- Une infrastructure de gestion des eaux.

Le minerai extrait de la fosse Whale Tail sera traité sur le site de la mine d'or Meadowbank¹⁵, en utilisant l'usine de concentration et l'infrastructure de gestion des résidus de cette mine ainsi que certains aménagements résidentiels de ce site. Le minerai extrait de la fosse Whale Tail sera quotidiennement transporté par camion (18 camions feront 5 voyages par jour, 7 jours par semaine), sur une route de transport privée d'environ 65 kilomètres. Agnico Eagle prévoit également utiliser l'infrastructure maritime de la Meadowbank à Baker Lake pour le transport des matériaux requis pour la construction du projet ainsi que pour le réapprovisionnement annuel du carburant effectué lors de la saison des eaux libres.

La construction du projet de fosse Whale Tail commencera au début 2018 et l'exploitation s'effectuera de la fin 2018 jusqu'en 2022. La fermeture du site surviendra après sept (7 ans) environ d'exploitation et sera suivie d'une surveillance post-fermeture.

Dès réception de la proposition de projet de fosse Whale Tail, à la mi-2016, et tel que stipulé à l'article 12 de *l'Accord entre les Inuit de la région du Nunavut et Sa Majesté la Reine en Chef du Canada* (*l'Accord sur le Nunavut*) et à la Partie 3 de de la *Loi sur l'aménagement du territoire et l'évaluation des projets au Nunavut*, L.C. 2013, ch. 14, art.2 (*LATEPN*), la Commission a évalué les possibles répercussions environnementales et socioéconomiques du projet proposé afin de déterminer si ledit projet serait ou non autorisé à aller de l'avant et, le cas échéant, selon quelles modalités et conditions. Si le projet est accepté et que la CNER délivre un certificat de projet au titre de la *LATEPN*, Agnico Eagle sera lié par les modalités et conditions stipulées dans le certificat; le non-respect de ces modalités et conditions est une infraction en vertu de la *LATEPN*.

À la demande du promoteur et conformément à *l'Accord sur le Nunavut* et à la Partie 3 de la

¹⁵ Tel que décrit par Agnico Eagle Mines Ltd, l'actuelle mine d'or Meadowbank est directement située à 70 km au nord du hameau de Baker Lake sur des terres appartenant aux Inuits, voir la [Figure 1](#).

LATEPN, la CNER a étroitement collaboré avec l'Office des eaux du Nunavut (OEN) tout au long de son examen et ce, afin coordonner son examen avec les exigences de l'OEN quant à la délivrance de permis d'utilisation des eaux. Pour la première fois dans l'histoire de la CNER, la Commission et l'OEN ont organisé une réunion technique et une conférence pré-audience conjointes à la fin avril et au début de mai 2017. L'audience finale de l'OEN portant sur la demande de permis d'utilisation des eaux pour le projet a suivi d'une semaine l'audience finale de la CNER. La Commission reconnaît que malgré les difficultés subies par tous les participants en raison de ce niveau de collaboration, la procédure peut - lorsque toutes les parties s'y engagent -, engendrer de meilleures efficacités et éventuellement abréger les calendriers. La CNER tient à remercier toutes les parties de leur coopération et de leurs efforts d'ajustement à ce haut niveau de coordination.

Tout au long de l'examen, la Commission a multiplié les possibilités pour permettre aux représentants des gouvernements locaux, territoriaux et fédéral, de l'Association inuite de Kivalliq, des organisations locales de trappeurs et chasseurs, aux représentants de chacune des sept (7) collectivités touchées de la région de Kivalliq, des Aînés, étudiants et des membres de la population, d'exprimer leur point de vue sur le projet et de formuler leurs préoccupations quant aux éventuels effets écosystémiques et socioéconomiques (positifs et négatifs) su projet au Nunavut et dans les territoires adjacents.

La Commission a entendu plusieurs membres des communautés de Baker Lake et des régions avoisinantes s'exprimer en faveur du projet, soulignant que l'exploitation de la mine perpétuerait les possibilités de formation, d'emploi, d'éducation et de développement économique préalablement assurés par l'actuelle mine Meadowbank.¹⁶ Comme l'a indiqué Peter Tapatai de Baker Lake:

On nous a dit que là-bas, 160 ouvriers étaient inuits. Je ne pense pas que le gouvernement ait eu connaissance d'un changement. À l'heure actuelle, nous sommes au faite de nos vies grâce aux emplois qui nous sont disponibles. Sans la mine, notre peuple n'aurait rien eu, n'aurait pas eu d'emplois. J'aimerais donc que la compagnie soit autorisée à réaliser le projet de fosse Whale Tail.

C'est bon de constater qu'une seule compagnie a grandement aidé notre collectivité en s'installant dans la région. Et c'est très bon pour ceux d'entre nous qui possèdent leur propre entreprise. Nous avons obtenu des contrats. C'est excellent pour nous. Et nous aimerions que cela continue.¹⁷

Toutefois, malgré le soutien manifesté pour les possibles effets socioéconomiques positifs du projet, plusieurs participants à l'audience finale, incluant des intervenant, des jeunes¹⁸, des

¹⁶ Voir par exemple, E. Kimmaliardjuk, transcription de l'audience finale du dossier no. 16MN056 de la CNER, 21 septembre, p.600, lignes 5 à 11.

¹⁷ P. Tapatai, Baker Lake, transcription de l'audience finale du dossier no. 16MN056 de la CNER, 22 septembre, p.654, lignes 14 à 26.

¹⁸ W. Gibbons, Baker Lake, transcription de l'audience finale du dossier no. 16MN056 de la CNER, 22 septembre, p.737 et 738.

aînés¹⁹ et des membres de la communauté, se sont inquiétés des éventuels effets négatifs de la nouvelle mine et de la route de transport sur les caribous et autres espèces sauvages ainsi que sur les milieux d'eau douce et marin. Tel que détaillé dans divers mémoires inclus dans le rapport annexé, la Commission a entendu des intervenants et des membres de la communauté déclarer qu'ils soupesaient développement économique et protection environnementale.

*Et nous devons penser à l'avenir; nos caribous, nous devons veiller à les protéger – car lorsque les mines fermeront, il n'y aura plus d'emplois et les gens continueront à dépendre des caribous. Et est-ce que les caribous seront là? Est-ce que l'eau sera potable? Est-ce que l'air sera sain? Est-ce que la terre sera propre? la poussière des piles de déchets ou autres, s'il lui faut 250 ans pour se dissiper, sera-t-elle sécuritaire quand je ne serai plus là?*²⁰

La Commission a entendu plusieurs intervenants soulever des questions quant à l'incertitude de l'évaluation des effets potentiels sur les caribous, incluant des inquiétudes suscitées par le volume sans précédent de la circulation sur la route de transport Amaruq.

*Tel que discuté hier, les éventuelles répercussions sur les caribous suscitent nos plus grandes inquiétudes vis-à-vis du projet. La différence -- l'une des principales différences pour les caribous c'est que sur la route de transport, la circulation sera environ dix fois plus intense que sur la route d'accès tous temps entre Baker Lake et Meadowbank. Ce qui entraîne plusieurs incertitudes quant aux données que nous avons et aux effets qui se produiront et pour lesquels une gestion adaptée s'imposera au fur et à mesure de l'évolution du projet.*²¹

Étant donné l'importance des caribous pour les Inuits de la région ainsi que les préoccupations et les incertitudes quant aux éventuelles répercussions sur cette espèce sauvage, y compris les effets cumulatifs sur des populations déjà déclinantes, la Commission reconnaît que certains membres de la collectivité craindront que les possibilités économiques du projet ne se développent qu'au détriment des caribous et des récoltes locales. La Commission estime toutefois qu'avec une adéquate gestion adaptée, une surveillance judicieuse et des mesures d'atténuation appropriées, les Nunavummiut n'en seront pas réduits à choisir entre les possibilités économiques et la protection de l'environnement. C'est particulièrement vrai quand le promoteur a déjà une histoire et une réputation d'exploitant. (c'est le cas pour le projet de la fosse Whale Tail). Et ce promoteur a dû, pour la mine d'or Meadowbank, élaborer et mettre en vigueur des programmes de surveillance, d'atténuation et de gestion des répercussions. Le projet de fosse Whale Tail est l'occasion rêvée pour Agnico Eagle Mines Ltd, d'appliquer les nombreuses leçons tirées de l'exploitation de la mine Meadowbank en vue d'optimiser le développement de son projet, y compris de gérer les éventuels effets de la route de transport sur les caribous.

¹⁹ A. Poksiak Turner, Whale Cove, transcription de l'audience finale du dossier no. 16MN056 de la CNER, 22 septembre, p. 738.

²⁰ P. Kigjugalik Hughson, Baker Lake, transcription de l'audience finale du dossier no. 16MN056 de la CNER, 22 septembre, p.663, lignes 13 à 21.

²¹ K. Poole, Kivalliq Inuit Association, transcription de l'audience finale du dossier no. 16MN056 de la CNER, 21 septembre, p.395, lignes 3 à 12.

Dans ce contexte, et après étude de toutes les informations fournies pendant son examen du projet de Fosse Whale Tail, y compris des informations présentées lors de l'audience finale, la CNER a conclu que le projet pouvait progresser jusqu'à la phase de réglementation et de délivrance des permis. La Commission a convenu qu'avec la participation et la collaboration de l'Organisation des chasseurs et trappeurs de Baker Lake et celles des intervenants, comme la Kivalliq Inuit Association et le gouvernement du Nunavut, la possibilité d'incidences pourra être déterminée avec plus de certitude et des mesures d'atténuation pourront être appliquées au fur et à mesure de la réalisation du projet pour en limiter les effets néfastes écosystémiques et socioéconomiques. Ayant recommandé que le projet aille de l'avant, en vertu de l'article 12, du paragraphe 12.5.6(c) de l'*Accord sur le Nunavut* et du paragraphe 104(1)(c) de la *LATEPN*, la Commission a recommandé en outre quelques 64 modalités et conditions qui devront régir le projet, notamment dans les secteurs clés comme l'atténuation, la gestion, la surveillance des effets socioéconomiques et écosystémiques précisés, et la soumission d'un rapport afférent. La Commission est certaine que si le promoteur se conforme à ces recommandations, le projet de Fosse Whale Tail pourra être mis en valeur et exploité puis le site remis en état sans affecter indûment et négativement l'intégrité écosystémique du Nunavut.

Les conclusions et recommandations de la Commission ont été instruites par l'examen minutieux de toutes les informations fournies par tous les participants. Ce qui inclut l'étude des exposés/mémoires officiels et officieux, les questions et commentaires formulés lors de l'audience finale tenue du 19 au 22 septembre 2017 à Baker Lake, la vaste documentation soumise lors de l'examen préalable et de l'examen approfondi du projet, les principes Qaujimaningit inuits et toutes les données provenant de l'Énoncé des incidences environnementales fourni par Agnico Eagle.

Comme à l'accoutumé, la Commission tient à remercier tous ceux et celles qui ont partagé leurs expériences, leur expertise et leurs points de vue pour nous aider à effectuer cet examen minutieux et opportune. Nous reconnaissons et valorisons les contributions positives, collaboratives et respectueuses de tous ceux qui ont travaillé ensemble pour s'assurer que le projet, s'il est développé conformément aux termes et conditions recommandés, procure des avantages économiques durables au Kivalliq tout en minimisant le potentiel de conséquences socio-économiques et effets écosystémiques.

TABLE OF CONTENTS

INSIDE COVER PAGE.....	I
SIGNATURE PAGE	II
COVER LETTER.....	II
CHAIRPERSON’S FOREWORD	V
ᐃᑭᓄᓚᐅᐅᑦ ᐸᐸᕋᖃᐱᒪ.....	VII
AVANT-PROPOS DE LA PRÉSIDENTE	IX
EXECUTIVE SUMMARY	XI
ᐃᐱᔨᐳᕋᖃᓯᐲᕋᖃ ᐱᐱᓴᐳᕈᐱᐳᕋᖃᑐᑦ.....	XV
RÉSUMÉ.....	XIX
TABLE OF CONTENTS	XXIII
1. INTRODUCTION	1
1.1. PROJECT OVERVIEW.....	1
1.2. NIRB/NWB Co-ORDINATED PROCESS.....	2
1.3. MANDATE OF THE BOARD	4
1.4. JURISDICTION OF THE BOARD TO CONDUCT A REVIEW	4
1.5. PURPOSE OF THIS REPORT	5
1.6. EVIDENTIARY ISSUES	5
1.7. SCOPE OF THE NIRB’s ASSESSMENT.....	8
1.8. KEY ISSUES	11
2. PROJECT SETTING	12
2.1. DESCRIPTION OF PROJECT LOCATION.....	12
2.2. PROJECT DESCRIPTION	15
3. PROCEDURAL HISTORY OF THE PROJECT PROPOSAL	24
3.1. LAND USE PLANNING REQUIREMENTS	24
3.2. PROCEDURAL HISTORY OF THE NIRB ASSESSMENT OF THE PROJECT PROPOSAL.....	25
3.3. APPLICATIONS FOR ACTIVITIES EXCEPTED FROM THE REVIEW	34
4. INVOLVEMENT OF INTERESTED PARTIES.....	36
4.1. ENGAGEMENT OPPORTUNITIES.....	36
4.2. THE PARTICIPANTS.....	37
4.3. LIMITS ON PARTICIPATION AT THE FINAL HEARING	47
5. ECOSYSTEMIC EFFECTS	49
5.1. AIR QUALITY	50
5.2. CLIMATE AND METEOROLOGY	58
5.3. NOISE AND VIBRATION	60
5.4. TERRESTRIAL ENVIRONMENT (GEOLOGY AND GEOCHEMISTRY)	63

5.5.	GEOLOGICAL FEATURES, SOILS AND PERMAFROST	71
5.6.	HYDROGEOLOGY AND GROUNDWATER QUANTITY AND QUALITY	77
5.7.	SURFACE WATER HYDROLOGY, SURFACE WATER QUALITY AND SEDIMENT QUALITY..	83
5.8.	FRESHWATER AQUATIC ENVIRONMENT	95
5.9.	VEGETATION	108
5.10.	TERRESTRIAL WILDLIFE AND WILDLIFE HABITAT.....	111
5.11.	BIRDS AND BIRD HABITAT	136
5.12.	MARINE ENVIRONMENT INCLUDING MARINE WILDLIFE AND HABITAT.....	141
6.	SOCIO-ECONOMIC EFFECTS.....	149
6.1.	ECONOMIC DEVELOPMENT AND BUSINESS OPPORTUNITIES	149
6.2.	EMPLOYMENT, EDUCATION AND TRAINING	157
6.3.	POPULATION DEMOGRAPHICS	170
6.4.	TRADITIONAL ACTIVITY AND KNOWLEDGE	174
6.5.	NON-TRADITIONAL LAND USE AND RESOURCE USE	189
6.6.	HERITAGE RESOURCES.....	190
6.7.	INDIVIDUAL AND COMMUNITY WELLNESS.....	194
6.8.	COMMUNITY INFRASTRUCTURE AND PUBLIC SERVICES	200
7.	OTHERS MATTERS TAKEN INTO ACCOUNT.....	206
7.1.	COMMUNITY CONSULTATION.....	206
7.2.	HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT.....	209
7.3.	ACCIDENTS AND MALFUNCTIONS	214
7.4.	ALTERNATIVE ANALYSIS	217
7.5.	CUMULATIVE EFFECTS.....	220
7.6.	PERFORMANCE BONDING	226
8.	RECOMMENDATION TO THE MINISTER.....	229
9.	RECOMMENDED PROJECT SPECIFIC TERMS AND CONDITIONS	230
9.1.	THE EFFECT OF TERMS AND CONDITIONS OF THE MEADOWBANK PROJECT CERTIFICATE APPLYING TO THE WHALE TAIL PIT PROJECT	230
9.2.	THE ENFORCEABILITY OF TERMS AND CONDITIONS IN THE NEW PROJECT CERTIFICATE APPLYING TO THE WHALE TAIL PIT PROJECT	231
9.3.	THE NIRB'S MONITORING PROGRAM.....	231
9.4.	FORMAT OF RECOMMENDATIONS.....	232
9.5.	ECOSYSTEMIC TERMS AND CONDITIONS	233
9.6.	SOCIO-ECONOMIC TERMS AND CONDITIONS	255
9.7.	OTHER TERMS AND CONDITIONS	267
9.8.	RECOMMENDATIONS FOR REGULATORY AGENCIES AND LANDOWNERS	268

LIST OF FIGURES

Figure 1: Proposed Location and Claim Boundaries (<i>from the Whale Tail Pit Project Proposal Description, Volume 1</i>).....	2
Figure 2: Whale Tail Site Layout (<i>from the Whale Tail Pit Project Proposal Description, Volume 1</i>).....	19

LIST OF TABLES

Table 1: Procedural History	27
Table 2: Key Issues as Raised by Community Representatives regarding the Whale Tail Pit Project Proposal.....	42

LIST OF APPENDICES

Appendix A: Record of Proceedings	1
Appendix B: Table of Commitments from the Final Hearing	1
Appendix C: List of Exhibits from the Whale Tail Pt Project Final Hearing.....	1
Appendix D: List of Acronyms.....	1

1. INTRODUCTION

1.1. PROJECT OVERVIEW

The Whale Tail Pit Project proposal (NIRB File No. 16MN056, the Project) consists of the proposed mobilization, construction, operation, closure, reclamation, and post-closure monitoring of a gold mine operation in the Kivalliq region of Nunavut. The Proponent for the Project, Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent), proposes development of the Whale Tail Pit Project to continue employment and transition operations between the Meadowbank Gold Mine project, which is at the end of its operations, and the Meliadine Gold Project, which is in early construction, as originally submitted in 2016. Subsequently, at the Final Hearing the Proponent noted that the Whale Tail Pit Project would extend the life of Meadowbank as the resources at Meadowbank are exhausted and gone in the third quarter of 2018, while the Meliadine project is under construction and commercial production is scheduled for September 2019.^{22,23} As described by Agnico Eagle, the Project would be located at the Amaruq property on Inuit-owned lands, approximately 150 kilometres (km) north of the hamlet of Baker Lake and approximately 50 km northwest of the existing Meadowbank Gold Mine project (see [Figure 1](#)), while the Meadowbank Gold Mine site is located 70 km directly north of the Hamlet of Baker Lake on Inuit-owned lands. The proposed haul road would be located on both Inuit-owned lands (1/3) and Crown lands (2/3).

The Whale Tail Pit Project proposal includes the development of an open pit gold mine located at the Amaruq property. Construction is proposed to take approximately one (1) year beginning in early 2018, with operations expected to commence in late 2018 and continuing for three (3) to four (4) years, from 2019 to 2022, followed by closure of the site from approximately 2022 to 2029, ending in post-closure monitoring. Development of the pit is intended to allow for access to an estimated 8.3 million tonnes (Mt) of ore, and produce 46.7 Mt of waste rock and 5.8 Mt of overburden. During the Final Hearings, Agnico Eagle provided updated timelines for the project phases with respect to the Whale Tail Pit Project proposal: construction to commence mid-2018 following receipt of approvals between 2018 and 2019; operations to commence in 2019 and continue to 2022; closure between 2023 and 2029 and post closure from 2030 to 2046.^{24,25}

Ore would be trucked from the Whale Tail site via an approximately 65 km private haul road at a rate of 9,000 to 12,000 tonnes per day to the existing Meadowbank Gold Mine²⁶ for milling.

²² Agnico Eagle Mines Ltd., *Introduction and Overview Presentation*, Exhibit 1, NIRB Final Hearing File No. 16MN056, September 22, 2017

²³ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 19, 2017, p. 33, lines 16-24 and p. 48, lines 1-7.

²⁴ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 84, lines 9-18.

²⁵ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 570, lines 4-10 and 20-21.

²⁶ The NIRB previously reviewed the related but distinct Meadowbank Gold Mine project (NIRB File No. 03MN107) in accordance with Article 12, Part 5 of the *Nunavut Agreement*. The Meadowbank Gold Mine project was allowed to proceed pursuant to the NIRB Project Certificate No. 004 which was issued December 30, 2006 following the approval of then Minister of Indian and Northern Affairs of the Meadowbank Gold Mine Project.

Approximately 8.3 Mt of tailings produced from the milling process would be stored within the existing Meadowbank Gold Mine's Tailings Storage Facility (TSF).

Infrastructure used for the Whale Tail Pit Project would include Agnico Eagle's existing marine infrastructure to support open-water shipping during the construction phase and annual resupply during operations, with the mine product, doré gold bars, to be flown to market directly from site.

It is anticipated that up to 500 employees would be required during the construction phase for the proposed Project, including for dewatering, with an on-site labour requirement of up to 931 people on rotation during operations.

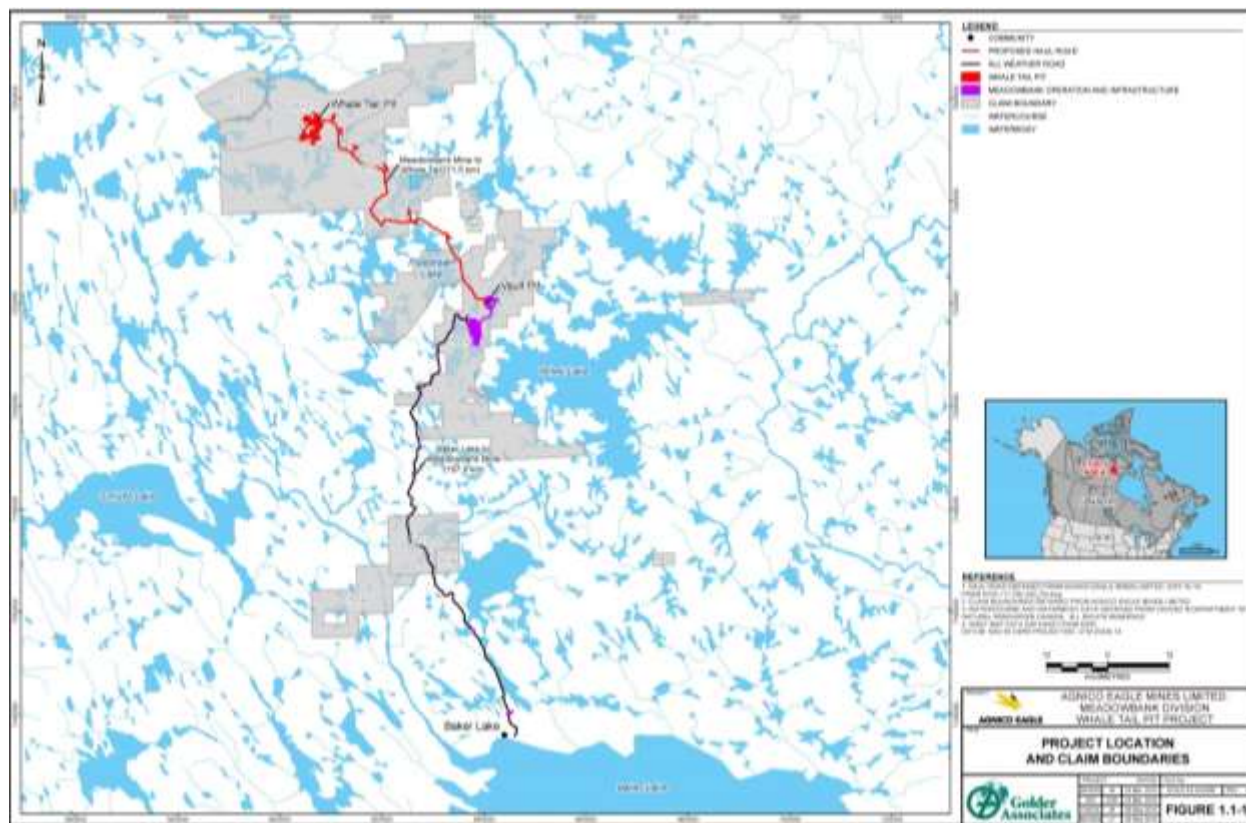


Figure 1: Proposed Location and Claim Boundaries (from the Whale Tail Pit Project Proposal Description, Volume 1)

1.2. NIRB/NWB Co-ORDINATED PROCESS

In 2011-2012, the Nunavut Impact Review Board (NIRB) and the Nunavut Water Board (NWB) developed a Detailed Coordinated Process Framework to meet legislative requirements for coordination and to address project specific requests from proponents to better integrate the NWB's licensing phase with the NIRB's impact assessment phase. The Detailed Coordinated Process Framework was introduced to provide clarity, transparency, and timelines for a coordinated approach to impact assessment and water licensing for the NIRB, the NWB, proponents and other parties participating in these processes. By allowing for the initial steps in

the NWB's water licensing process to run concurrently with the NIRB's Review process for major developments, the Detailed Coordinated Process Framework was designed to reduce the overall timeline for impact assessment and water licensing and also limit duplication and overlap, resulting in more timely, coordinated and efficient assessment and licensing.

This Framework was recently updated by the Boards to reflect an increased emphasis on coordination and the ability of the Boards to consider the conduct of joint hearings in accordance with the amended Article 13, Section 13.5.2 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada*, (Nunavut Agreement) and s. 193 *Nunavut Planning and Project Assessment Act (NuPPAA)*²⁷. These sections state respectively:

Nunavut Agreement, Article 13, Section 13.5.2: Where the project proposal is referred for review under Article 12, the NWB and the review body shall coordinate their efforts to avoid unnecessary duplication in the review and processing of the proposal. Legislation may provide for joint hearings or authorize the NWB to forego public hearings on any water application where it has participated in a public review of the relevant proposal pursuant to Article 12.

NuPPAA, s. 193: The Commission, any responsible authority, the Board, any federal environmental assessment panel and any joint panel must coordinate their respective activities relating to the review of a project requiring a licence under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* with those of the Nunavut Water Board so as to ensure efficiency and avoid duplication.

In Agnico Eagle Mines Ltd.'s (Agnico Eagle or the Proponent) submission of the Whale Tail Pit Project proposal to the NIRB and the water licence application to the NWB, Agnico Eagle requested a "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."²⁸ To accommodate Agnico Eagle's request, the NIRB and the NWB met in November 2016 to develop a project-specific process map that conveyed the Boards' willingness to coordinate a joint Technical Meeting, and Pre-hearing Conference (PHC). Following the jointly-conducted Technical Meeting and PHC and based on parties' submissions at the PHC, the Boards determined that separate but consecutive in person public hearings in the community of Baker Lake would be appropriate for the public hearing stage of the assessment of the Whale Tail Pit Project proposal.

As was noted by the NIRB and the NWB during their respective Public Hearings for the file, although the NWB conducted a Public Hearing with respect to the water licensing aspects of the Whale Tail Pit Project proposal on September 26 and 27 following the NIRB Final Hearing on September 19-22, the NWB's Public Hearing Record will not close until after the NIRB has submitted this Final Hearing Report and Recommendations to the Responsible Minister(s), and the Minister(s) have made a decision to approve the Whale Tail Pit Project proposal proceeding to the licensing stage. It should be noted that if the Minister(s) do not approve the Project

²⁷ *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2, came into force on July 9, 2015.

²⁸ S. Robert and R. Vanengen, Agnico Eagle Mines Ltd., Letter to Nunavut Impact Review Board Re: NIRB File 03MN107 Meadowbank Gold Mine – Amendment to Project Certificate (No. 004). May 25, 2016.

proceeding to the licensing stage, the NWB would not issue a decision in respect of the water licence applications.

1.3. MANDATE OF THE BOARD

As with all Nunavut Impact Review Board (NIRB) functions, Article 12, Part 2, Section 12.2.5 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and s. 23 of the *Nunavut Planning and Project Assessment Act (NuPPAA)*²⁷ require that:

Nunavut Agreement, Article 12, Section 12.2.5: 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 residents of Canada outside the Nunavut Settlement Area.

In the present context, the function of the Board is to gauge and define the extent of the regional impacts of the Whale Tail Pit Project proposal by conducting a thorough review of the predicted ecosystemic and socio-economic impacts of the Project. On the basis of the Board's review, the Board is then required to determine if the Project should be allowed to proceed, and if so, whether terms and conditions are required to mitigate, manage or monitor the anticipated impacts. Reflecting the provisions of the *Nunavut Agreement* and *NuPPAA*, in carrying out this function, the NIRB's primary objective is at all times the protection and promotion of the existing and future well-being of the residents and communities of the Nunavut Settlement Area, and protecting the ecosystemic integrity of the Nunavut Settlement Area.

1.4. JURISDICTION OF THE BOARD TO CONDUCT A REVIEW

The Board has jurisdiction over the review of this Project pursuant to Article 12, Parts 5 (Review of Project proposals by NIRB) and 12 (Application) of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)*. In addition, as this Whale Tail Pit Project proposal was received after the coming into force of the *Nunavut Planning and Project Assessment Act (NuPPAA)*²⁷ this Review was also conducted under the auspices of Part 3 of the *NuPPAA*. Reflecting the integrated regulatory system established under the *Nunavut Agreement* and the *NuPPAA*, when a Review of a project proposal is required under Article 12, Part 5 of the *Nunavut Agreement* and Part 3 of the *NuPPAA*, Section 12.10.1 of the *Nunavut Agreement* and s. 75(1)(b) of the *NuPPAA* prohibits the issuance of any licences or approvals that would be required in order to allow the project to proceed until after the required Review has been completed and a NIRB project certificate is issued. Consequently, other than the limited exceptions of exploration and development activities,²⁹ no permits, licences or authorizations for activities within the scope of the Whale Tail Pit Project as assessed have been granted to date.

²⁹ See the discussion in this Final Hearing Report in [Section 3.3](#) "Applications for Activities Excepted from the Review" for more detail regarding activities that were originally within the scope of the full Whale Tail Pit Project proposal but that were subsequently excepted from further assessment under this Review by the NIRB.

1.5. PURPOSE OF THIS REPORT

The reporting parameters for the Board's determination are found in Article 12, Section 12.5.6 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* which is consistent with s. 104(1) of the *Nunavut Planning and Project Assessment Act (NuPPAA)*²⁷:

Nunavut Agreement, Article 12, Section 12.5.6: After reviewing the project proposal, NIRB shall issue a report to the Minister and the Proponent containing:

- (a) its assessment of the project and its impacts;
- (b) its determination as to whether or not the project should proceed based on its assessment under (a); and
- (c) in the event the project were to proceed, terms and conditions reflecting the primary objectives set out in Section 12.2.5.

Reflecting these requirements, this Final Hearing Report presents the results of the NIRB's Review of the Whale Tail Pit Project. The report includes the NIRB's conclusions and recommendations to the Minister of Crown-Indigenous Relations and Northern Affairs (the Minister), reflecting the Board's authority under the *Nunavut Agreement* and the *NuPPAA*. The Board is satisfied that it has complied with its obligations under both and that it has sufficient information to draw conclusions and make recommendations regarding the potential effects of the project.

1.6. EVIDENTIARY ISSUES

1.6.1 The Burden and Standard of Proof

The Proponent bears the onus of proof and must demonstrate, on a balance of probabilities, that the Whale Tail Pit Project is consistent with the Board's mandate and requirements of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and the *Nunavut Planning and Project Assessment Act (NuPPAA)*.²⁷

In the context of this review specifically, it is the responsibility of the Proponent to provide the Board with an Environmental Impact Statement (EIS) that fully reflects all applicable NIRB issued guidelines and directions, the minimum EIS requirements set out under Section 12.5.2 of the *Nunavut Agreement* and s. 101(3) of the *NuPPAA* and the Minister's direction. In addition, the EIS must also provide the Board with the information necessary to assess the potential ecosystemic and socio-economic impacts of the Whale Tail Pit Project.

In addition to the overall onus on the Proponent during the Board's assessment, individual participants throughout the assessment process must also meet the burden of proof for specific information or assertions offered to the Board. As stated in the NIRB Rules of Procedure, any party offering evidence has the burden of ensuring that they have provided the Board with

sufficient information to support that participant's position.³⁰ Further, where there is conflicting information, the Board has the authority to decide which information will be accepted by the NIRB in whole or in part. The standard of proof in this Review required a careful balancing of all of the information filed in writing with the Board prior to the Final Hearing and the information provided to the Board in person at the Final Hearing. The sections of this Report discussing the Board's Views address how the Board balanced information provided on key topics. However, the onus remained on the Proponent throughout to demonstrate that the Whale Tail Pit Project is consistent with the Board's mandate and requirements of the *Nunavut Agreement* and the *NuPPAA*.

1.6.2 The Precautionary Principle and Adaptive Management

With respect to areas where there are substantial gaps in data or uncertainty regarding predicted effects, the Board was guided, as always, by the "precautionary principle". The concept as cited in previous EIS Guidelines and as followed by Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) during the preparation of the EIS for the Project, and that guided the Review is stated as follows:

Where there are threats of serious or irreversible damage, lack of full scientific certainty must not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

When the precautionary principle applies, as is the case with respect to some of the effects identified during the course of this review, it is the Proponent who bears the burden of proof to show that despite this uncertainty, the potential for adverse environmental impacts can be mitigated or reversed. The onus on the Proponent created by the precautionary principle in the case of the Whale Tail Pit Project proposal has been highlighted by the Board in the specific sections of this Report applicable to particular Valued Ecosystem Components and Valued Socio-Economic Components. Where the Proponent, parties or NIRB have identified that the precautionary principle is applicable, Agnico Eagle has been required to:

- Demonstrate that the proposed actions are examined in a precautionary manner in order to ensure that they do not cause serious or irreversible damage to the environment;
- Outline the assumptions made about the effects of the proposed actions and the approaches to minimize these effects;
- Identify any follow-up and monitoring activities planned, particularly in areas where scientific uncertainty exists in the prediction of effects; and
- Present public views on the acceptability of these effects.

This application of the precautionary principle in environmental decision-making enables the Board to make recommendations that reflect the potential for adverse environmental impacts, even though the risk of such impacts cannot be definitively proven based on the data available at the time of this assessment. As demonstrated in the submissions of many of the participants in this Review and as evident throughout this Final Hearing Report, implementing the

³⁰ NIRB Rules of Procedure, September 3, 2009, Rule 32.1 at p. 18.

precautionary approach in the context of this Review has resulted in the adoption of several “adaptive management” tools to address the potential for adverse impacts that may not be fully understood at the time of the assessment.

Adaptive management is essentially an ongoing process of decision-making that involves making initial decisions based on the existing data, subsequently monitoring for potential effects, assessing the effectiveness of the initial decisions (including assessing the effectiveness of mitigation measures), and then adjusting actions going forward to reflect the monitoring data and the effectiveness of measures taken to minimize adverse effects. Given that the Whale Tail Pit Project proposal involves both modifications to existing infrastructure at the Meadowbank Gold Mine, where considerable monitoring has been conducted by Agnico Eagle on an annual basis, as well as new infrastructure and mining operations at the Whale Tail Pit site where less monitoring has been undertaken to date, Agnico Eagle has been able to inform their proposed adaptive management measures with existing monitoring data and/or experience with the implementation of such measures at the Meadowbank Gold Mine site.

The feedback loop created by the precautionary approach and responsive adaptive management is reliant on, and emphasizes the importance of the NIRB’s project monitoring jurisdiction as set out in Article 12, Part 7 of the *Nunavut Agreement* and s. 135(2) of the *NuPPAA*. In addition, to affirming the importance of the monitoring functions under Part 7, Article 12, Part 8 of the *Nunavut Agreement* and s. 135 of *NuPPAA*, the Board also expressly recognizes the need for flexibility in relation to project certificates developed by the NIRB to allow for modifications to ensure project effects can continue to be effectively managed by mechanisms that can be adapted over time, and provides the NIRB with the jurisdictional basis to revisit and modify, as required to meet the Board’s objectives, the terms and conditions of a project certificate.

During the course of this Review although the precautionary principle and adaptive management were foundational to the entire assessment, these concepts figured most prominently in discussions regarding long-term monitoring of water quality in the flooded pit following closure,³¹ surface water quality downstream of the project,³² waste rock management,³³ loss to fish habitat,³⁴ potential effects associated with the operation of the private haul road,³⁵ and potential for the Project to have effects on caribou in both the short and long-term.³⁶

³¹ See for example discussions on this topic in the NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp.463-46, 524-528, and 557-558.

³² See for example discussions on this topic in the NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp.467, and 524-528.

³³ See for example discussions on this topic in the NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp.154-155, September 21, 2017, pp. 465-466, 516-517 and 521-522.

³⁴ See for example discussions on this topic in the NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 484-489.

³⁵ See for example discussions on this topic in the NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 142, 148, 157-158, 160 and 262

³⁶ See for example discussions on this topic in the NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 237-238 and 249-251, September 21, 2017, pp. 396-397, 400-401, 406, and 421-424, September 22, 2017, pp. 656-657, 659-660, 669, 694, 750-751, and 760.

[Sections 4: Ecosystemic Effects](#) and [6.4: Cumulative Effects](#) of this Report contain the detailed discussions in relation to the manner in which the precautionary principle and adaptive management have factored into the Board's assessment of specific potential effects and also, where applicable, the Board's monitoring and mitigation recommendations in relation to these effects.

1.6.3 Inuit Qaujimaningit

As indicated in previous Environmental Impact Statement (EIS) Guidelines, the Board's previous decisions and reflective of the minimum EIS requirements set out under Section 12.5.2 of the *Nunavut Agreement* and s. 101(3) of the *NuPPAA*, in the Board's view, Inuit Qaujimaningit, which encompasses Inuit Traditional Knowledge (and variations thereof) as well as contemporary Inuit knowledge that reflects Inuit societal values and experience, contributes vital information to the NIRB's assessment process. The term Inuit Qaujimaningit is meant to encompass local and community-based knowledge, ecological knowledge (both traditional and contemporary), which is rooted in the daily life of Inuit people and represents experience acquired over thousands of years of direct human contact with the environment.^{37,38} With its emphasis on personal observation, collective experience and oral transmission over many generations, Inuit Qaujimaningit provides factual information on such matters as ecosystem function, social and economic well-being, and explanations of these facts and causal relations among them. In this regard, Inuit Qaujimaningit has played a significant role in this assessment by contributing to the development of accurate baseline information; comparing predictions of effects with past experience; and assisting in the assessment of the magnitude of projected effects.

The Proponent was required to incorporate Inuit Qaujimaningit into its EIS, to the extent that the Proponent had access to such information and in keeping with the expectation that the Proponent would undertake appropriate due diligence to gain access to the information, but the Board understands that the availability of such information may be limited by obligations of confidentiality and other ethical obligations that may attach to such information. In addition to Inuit Qaujimaningit provided as part of the EIS, Inuit Qaujimaningit was also freely shared with the Board during the Community Roundtable portion of the Final Hearing in questions or responses provided by the intervenors, Elders, Inuit harvesters and other community members. The NIRB has benefitted from the Inuit Qaujimaningit provided in the EIS and shared by the participants at the Final Hearing.

1.7. SCOPE OF THE NIRB'S ASSESSMENT

The NIRB first became engaged in the process on June 17, 2016 when 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, with an accompanying positive conformity determination under the Keewatin Regional Land Use Plan.

³⁷ Berkes, F. 1993. Traditional ecological knowledge in perspective. In: Inglis, J. (ed.), *Traditional Ecological Knowledge: Concepts and Cases*. Ottawa: Canadian Museum of Nature, pp. 1-9.

³⁸ Stevenson, M. G. 1996. Indigenous knowledge in environmental assessment. *Arctic*, 49(3), 278-291.

The project proposal outlined the proposed project lifecycle for the development of the Whale Tail Pit Project and a request to the NIRB to reconsider the terms and conditions within Project Certificate No. 004 for the Meadowbank Gold Mine Project. The scope of the proposed Project included development of the Whale Tail Pit at the Amaruq property, associated mining infrastructure, expansion of the single-lane road between Meadowbank to the Amaruq exploration site and use of existing infrastructure at the Meadowbank Gold Mine site and at the Baker Lake facilities.

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 project proposal had not been assessed as part of the original Meadowbank Gold Mine project, and due to its location outside of the original Meadowbank Gold Mine project footprint, would require a separate screening assessment under the *Nunavut Planning and Project Assessment Act (NuPPAA)*.²⁷ On August 18, 2016 the Board issued a Screening Decision Report with the determination that the proposed Project required further assessment that would be best facilitated through a full environmental review under Article 12, Part 5 or 6 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and Part 3 of the *NuPPAA*. The NIRB based its determination on the following:

- 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.
- Potential adverse impacts to other 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.
- 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.
- 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.
- 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.
- Potential adverse impacts to historical, cultural and archaeological sites in the project area and due to project activities.
- Potential positive socio-economic impacts as the positive economic benefits from the Meadowbank Gold Mine would be extended with the development of the Whale Tail Pit.
- The project proposal is likely to arouse significant public concern.

- 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.
- 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.
- Expedited assessment timelines and the NIRB/NWB coordinated process.
- 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 facilitating the full participation of all interested parties.

The responsible Ministers responded to the NIRB's Screening Decision Report in a letter dated September 2, 2016 directing the Board to undertake a review of the Project proposal pursuant to Article 12, Part 5 of the *Nunavut Agreement* and s. 94(1)(a)(iv) of the *NuPPAA*.³⁹ In their referral to the NIRB, the responsible Ministers addressed the issues of cumulative effects, process coordination and participant funding raised in the Board's screening decision report, and further identified matters for the NIRB to consider as part of its Review of the Whale Tail Pit Project proposal:

- Given the current and increasing levels of mineral development in the Kivalliq Region, the Whale Tail Pit Project proposal has the potential for cumulative ecosystemic and socio-economic impacts which warrant special consideration; therefore, a thorough cumulative impacts assessment will be very important for the review. However, when assessing these impacts, I urge the Board to focus its cumulative effects assessment on impacts from reasonably foreseeable mine and transportation infrastructure developments.
- With respect to the request for a coordinated Nunavut Impact Review Board and Nunavut Water Board regulatory process, I agree with this suggested approach which was also effective for past reviews....a coordinated regulatory process would ensure harmonized timelines, and minimize delays in the review process while providing for a fulsome assessment.
- While [Participant] funding has been provided for a limited number of complex projects in Nunavut on a case-by-case basis for previous reviews, Indigenous and Northern Affairs does not have an established participant funding program. For this proposal, I am confident that the Board's review process will provide sufficient and meaningful opportunities for potentially affected groups to effectively participate in the review.
- The responsible Ministers would also like to encourage the Board to make use of existing documentation from past assessments as much as possible during the review process. I propose that the Board structure the review in a manner that will facilitate a thorough, yet expeditious review of the project proposal in close collaboration with the Nunavut Water Board.

³⁹ S. Van Dine, Assistant Deputy Minister, Indigenous and Northern Affairs, Decision Re: Agnico Eagle Mines Ltd.'s Whale Tail Pit Project proposal, NIRB File No. 16MN056, September 2, 2016.

On September 9, 2016 the NIRB distributed a preliminary scoping list for the proposed project with these issues in mind, and from October 17 to October 27, 2016 the Board conducted public scoping information sessions in the seven (7) communities of the Kivalliq region identified by the NIRB as potentially affected by the Project. As indicated in the Board's Public Scoping Meeting Summary Report, the scoping process assisted the Board in identifying those components of the biophysical and/or socio-economic environment that may be impacted by the Project and/or for which there is public concern. Following incorporation of the comments from parties and the scoping information session the NIRB released the *Final Scope* on November 10, 2016.

Following a cursory review of the July 6, 2016 submission from Agnico Eagle, the NIRB determined on November 10, 2016 that the submission satisfied the minimum environmental impact statement requirements set out under Article 12, Section 12.5.2 of the *Nunavut Agreement* and s. 101(3) of the *NuPPAA* and initiated the public review process.

1.8. KEY ISSUES

The NIRB received technical review comments on the Environmental Impact Statement and during the associated technical meetings, as well as comments provided by Community Representatives during the Community Roundtable Sessions, and input by parties during the Pre-hearing Conference (PHC) for the Whale Tail Pit Project held in April-May 2017. During the PHC⁴⁰ parties confirmed that if the commitments made by Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) were met in accordance with any timelines that involved submission deadlines before a Final Hearing for the NIRB and a Public Hearing for the Nunavut Water Board (NWB), that there would be no outstanding issues that would prevent the project proposal and water licence application from proceeding to public hearings. Agnico Eagle provided the required information to all parties by July 14, 2017 and the Review proceeded as planned to the public hearing phase for both the NIRB and NWB.

At the Final Hearing, it was noted that the following additional key issues remained the subject of discussion by parties, intervenors and community representatives:

- Long term monitoring of the flooded pit following closure;
- Fish-out program from Whale Tail Lake;
- Waste rock storage facility and appropriate cover at closure;
- Impacts of the project, specifically the haul road on caribou; and
- Use of the north wall pushback alternative.

⁴⁰ NIRB Pre-hearing Conference Decision Concerning the Whale Tail Pit Project, File No. 16MN056, June 8, 2017.

2. PROJECT SETTING⁴¹

2.1. DESCRIPTION OF PROJECT LOCATION

The proposed Whale Tail Pit Project (the Project) as described by Agnico Eagle is located at the Amaruq property, approximately 150 kilometres (km) north of the Hamlet of Baker Lake and approximately 50 km northwest of the Meadowbank Gold Mine project, within the Kivalliq region of Nunavut (see Figure 1). Along with additional infrastructure specific to the development and operation of the Whale Tail Pit, the proposed Project would also utilize existing infrastructure associated with the Meadowbank Gold Mine. Where appropriate, a focus on site features specific to the proposed Whale Tail Pit Project have been provided in the sections below.

2.1.1 Biophysical Conditions

The Meadowbank Gold Mine and the proposed Whale Tail Pit Project (the Project) are located in the Canadian Shield region, the largest physiographic region of Canada. The Project would take place in the Wager Bay Plateau Ecoregion, which is characterized by long cold winters and short cool summers. The Wager Bay Plateau is part of the northern Arctic, but the site is close to regions considered to be southern Arctic. Daily air temperatures between June and September average approximately seven (7) degrees Celsius (°C), while temperatures from October through May average -20.6 °C. The mean annual precipitation ranges from 200-300 millimetres. Prevailing winds originate from the northwest and exceed 20 kilometres per hour more than 25% of the year.

Both the proposed Whale Tail Pit Project and the Meadowbank Gold Mine site are located in the continuous permafrost zone with low ice content, meaning permafrost is found underlying 90 to 100% of the landscape. The depth of permafrost in the project area is estimated to be 450 to 550 metres (m), depending on proximity to lakes, similar to estimates for the Meadowbank Gold Mine site. Field results presented in the Environmental Impact Statement (EIS) suggest that mineral soils are predominantly acidic to neutral, with pH tending to increase with soil depth. An active layer is present during summer months, which can develop depths of one (1) to three (3) m by the end of summer seasons.

The ecoregion is classified as having a low arctic ecoclimate. It is characterized by a discontinuous cover of tundra vegetation, consisting of dwarf birch, willow, northern Labrador tea, *Dryas* spp., and *Vaccinium* spp. Taller dwarf birch, willow, and alder occur on warm sites; wet sites are dominated by willow and sedge. Lichen-covered rock outcroppings are prominent throughout the ecoregion, and towards the south, the vegetation becomes a mix of tundra vegetation and open dwarf coniferous forest. This ecoregion is composed of massive Archean rocks of the Canadian Shield that form broad, sloping uplands, plains, and valleys. Elevations rise gradually westward from Chesterfield Inlet to 600 m above sea level elevation, where it is deeply dissected. Turbic and Static Cryosols developed on discontinuous, thin, sandy moraine

⁴¹ Unless otherwise stated, information in this section is based on the information provided by the Proponent in the Environmental Impact Statement, received by the NIRB on May 25, 2016.

and alluvial deposits are the dominant soils in the ecoregion, while large areas of Regosolic Static Cryosols are associated with marine deposits along the coast.

Surface water, including lakes, ponds, rivers and streams, is abundant in the region, where lakes and ponds occupy approximately 16% of the surface in the terrestrial study area. Taliks are common beneath lakes within the project area; circular lakes with a radius greater than 300 m, or elongated lakes with a half-width of at least 150 m, are assumed to be connected to the deep groundwater flow regime through open taliks. Based on information presented by Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) in the EIS, below Whale Tail Lake, a talik would be expected to form a continuous channel that is closed in the northern portion of Whale Tail Lake below the open pit and open towards the south and central portion of the lake.

Lake water quality in the area is characteristic of low productivity headwater lakes in the Arctic – soft, low alkalinity, low total dissolved solids, low turbidity, and low total suspended solids. Discharges of watercourses typically peak in late-May to mid-June from snowmelt and rapidly decline in July. Low discharges prevail until frozen conditions in October to November, with a secondary peak in September from rainfall events.

The substrate of lakes and watercourses is a key habitat attribute that dictates species composition and abundance of benthic invertebrates. Coarse substrate (e.g., gravel, cobble, boulders, and bedrock) dominate the littoral zone of both Mammoth Lake and Whale Tail Lake, while streams in the area are characterized as either fine-substrate dominant (e.g., peat, tundra, or sand) or coarse-substrate dominant. Smaller lakes in the Vault Pit area near the Meadowbank Gold Mine range from depths of 1.8 m to 25 m, while their surface areas range from 3 hectares (ha) to 63 ha.

Numerous fish species are known to occur within the region, including lake trout, Arctic char, round whitefish, burbot, slimy sculpin, ninespine stickleback, and Arctic grayling. Lake trout and round whitefish are the dominant large-bodied species in the lakes surveyed in the project watersheds, followed by Arctic char. Baseline studies indicate that ninespine stickleback is the most abundant species in the Whale Tail and Mammoth lakes, and ninespine stickleback was also found to be the most abundant species in streams. Movement of large-bodied fish between lakes may be limited to the spring freshet period; however, juveniles may use stream connections for foraging and migration habitat. Three (3) watercourses identified along the haul road are classified as rivers and provide spawning, rearing, and foraging habitat for small-bodied fish, and provide migratory corridors and various habitat functions for large-bodied fish.

Five (5) migratory barren-ground caribou herds occur within the Kivalliq region, including the Beverly, Ahiak, Wager Bay, Lorillard, and Qamanirjuaq herds. Traditional Knowledge and baseline studies suggest that the project area is not within caribou calving grounds, though all five (5) herds are known to interact with the area based on collar data. Caribou from the Ahiak, Lorillard, and Wager Bay herds have the greatest likelihood of occurrence, with collar data suggesting that caribou occur most in the area in late winter and during fall rut. Muskox are also observed in the region, and based on Inuit Qaujimagatuqangit, are becoming more common.

Various migratory bird species are observed seasonally, including waterbirds and upland breeding birds. Canada goose, snow goose, long-tailed duck and loons are known to be the most abundant water bird species, while horned lark, American pipit, white-crowned sparrow, savannah sparrow, Lapland longspur, snow bunting, willow ptarmigan, rock ptarmigan, Semipalmated sandpiper, and American golden-plover, are commonly observed upland breeding bird species.

Predatory mammals, such as Arctic wolf, grizzly bear, and wolverine occur at low densities within the project area, though local Elders noted an increase in grizzly bear and wolverine occurrence in recent years. Of the ten (10) raptor species known to breed in the Kivalliq region, five (5) species are expected to occur within the project area, including: short-eared owl, snowy owl, rough-legged hawk, peregrine falcon, and gyrfalcon. Small mammals, such Arctic hare, Arctic ground squirrel, and northern collared lemming are observed in the region, and are a significant food resource for a variety of predatory mammals and birds.

Five (5) wildlife species of concern, listed under the *Species at Risk Act* and/or assessed by the Committee on the Status of Endangered Wildlife in Canada, have habitat ranges that overlap with the Project including grizzly bear, wolverine, peregrine falcon, red-necked phalarope, and short-eared owl. None of the upland birds that occur within the area are listed federally.

2.1.2 Socio-economic Conditions

The Kivalliq region consists of the hamlets of Arviat, Baker Lake, Chesterfield Inlet, Coral Harbour, Rankin Inlet, Nauyasat (Repulse Bay), and Whale Cove. Baker Lake is the third largest community in the region and is the nearest to the Meadowbank Gold Mine Project and the proposed Project. As of 2013, the population of the Kivalliq region of Nunavut was approximately 10,187, which reflects an annual population growth of 2% - 3% from 2006 (8,722). The community of Baker Lake has experienced a similar increase in population during the 2006-2013 period, with an increase from 1,807 to 2,117. During this period, male and non-Inuit populations in Baker Lake grew faster than female Inuit populations, as did the proportional representation of the working-age population. This pattern is said to be a result of increased intra-territorial in-migration to the Kivalliq region, and into Baker Lake, where approximately half (40 people) of in-migrants were of working age, and around the same number were from outside Nunavut.

Between 2006 and 2011, the Kivalliq labour force grew by 11% (360 people). Over a third of the growth, estimated to be 130 people active in the labour force, occurred in Baker Lake, although employment growth during this period was not consistent with labour force growth as only 155 additional individuals were employed of the 360 people who moved to the Region. Labour force participation rates increased during the period; however, given the size of employment expansion relative to the larger labour force expansion, unemployment rates increased. Nunavummiut representation at the Meadowbank Gold Mine has remained relatively stable during operations at approximately one third of the total operational workforce, over half of which reside in Baker Lake. Inuit representation at the Meadowbank Gold Mine has similarly remained steady between 31% and 34% since 2012. Inuit participation in Meadowbank Gold Mine's temporary workforce is higher, representing 95% of all temporary employment.

Regional and community-level education is provided by Kivalliq School Operations, Nunavut Arctic College, and the Kivalliq Mine Training Society. Although the majority of the Kivalliq region's population of 15 years and older have no certificate, diploma, or degree, the proportion decreased from 65% in 2006 to 61% in 2011, suggesting that regional educational attainment is improving. During this period, educational attainment in the Kivalliq region improved in every measured category, and in Baker Lake the percentage of residents with a high school diploma increased by 3%; however, the percentage with a college diploma decreased by 4%, and the overall percentage of the population without a degree or diploma grew by 1%.

Traditional activities, including wildlife harvesting, fishing, and arts and crafts, are important to the culture of the Kivalliq region and its communities. Baker Lake residents maintain a balance between wage employment to pay for commercial goods and services, and practicing traditional harvesting activities to feed their families and reinforce social relations. Residents estimate that approximately 90% of the community harvests regularly, where the most commonly harvested species are caribou, lake trout, wolf, fox, ptarmigan, geese, Arctic char, whitefish, and Arctic grayling. Subsistence wildlife harvesting plays an important role in the contemporary wellbeing of the Inuit of Baker Lake through the acquisition and sharing of knowledge through experience, and by providing an emotional and spiritual connection to the land. Traditional activities remain important to the wellbeing and culture, economy, and health of Inuit and Nunavummiut.

The majority of residents in the Kivalliq region live in subsidized non-market rental units. Housing shortages, overcrowding, and repairs are persistent issues within Nunavut, as well as within the Kivalliq region where 1,120 persons aged 15 years and over were on the public housing wait list in 2010. Based on 2014 statistics, Baker Lake placed 23rd out of the 25 Nunavut communities in a ranking of public housing shortage, at 19%. Although food costs in Baker Lake are among the lowest in the Kivalliq region, average food costs are twice that of the rest of Canada.

Kivalliq communities are serviced by health centres staffed by medical professionals and evacuation services, as well as regular fly-in specialists and physicians at varying frequencies throughout the year. Rankin Inlet features a health centre with full-time doctors, nurses, and midwives. Since 2010, per capita visits to health centres have remained relatively steady in all communities except Chesterfield Inlet and Baker Lake, where visits have increased slightly.

Although Baker Lake and Rankin Inlet experienced increases in crime rates in 2009 and 2010, rates have been decreasing since 2011. The Royal Canadian Mounted Police have detachments in all communities in the Kivalliq region.

2.2. PROJECT DESCRIPTION

The Whale Tail Pit Project (the Project) is a proposed open pit gold mine located at the Amaruq property, described by Agnico Eagle as located approximately 150 kilometres (km) north of the Hamlet of Baker Lake and approximately 50 km northwest of the Meadowbank Gold Mine project within the Kivalliq region. Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) proposes the development of the Whale Tail Pit Project to continue employment and transition

operations between the Meadowbank Gold Mine project,⁴² which is at the end of its operations, and the Meliadine Gold Project, which is in early construction as originally submitted in 2016. Subsequently, at the Final Hearing the Proponent noted that the Whale Tail Pit Project would extend the life of Meadowbank as the resources at Meadowbank are exhausted and gone in the third quarter of 2018, while the Meliadine project is under construction and in advance of commercial production predicted to commence in September 2019.^{23,Error! bookmark not defined.} Development of the Whale Tail Pit is intended to allow for access to an estimated 8.3 million tonnes (Mt) of ore, and produce 46.1 Mt of waste rock and 5.6 Mt of overburden.

Ore would be trucked from the Whale Tail site via an approximately 65 kilometre (km) private haul road at a rate of 9,000 to 12,000 tonnes per day to the Meadowbank Gold Mine for milling. Approximately 8.3 Mt of tailings produced from the milling process would be stored within the existing Meadowbank Gold Mine's Tailings Storage Facility (TSF), with approximately 5.3 Mt stored within the current footprint of the south cell TSF and approximately 3 Mt within the north cell TSF by constructing internal dike structures within the north cell.

Existing ancillary infrastructure used for the Whale Tail Pit Project would include Agnico Eagle's existing marine infrastructure located at Baker Lake and the all-weather access road between Baker Lake and the Meadowbank site, which would support open-water shipping during the construction phase and annual resupply during operations, with the mine product, doré gold bars, to be flown to market directly from site.

2.2.1 Need for the Project

Agnico Eagle described the Meadowbank Gold Mine as an important contributor to the economy of Baker Lake and the Kivalliq region, and highlighted that continued operations of the Meadowbank Gold Mine through the Whale Tail Pit Project would provide additional opportunities for continued employment, benefits and revenue streams for the Kivalliq Inuit Association (KIA) and Nunavut Tunngavik Incorporated (NTI), and contribute direct taxes, personal income tax, and sales tax to the territorial and federal governments. The proposed Project was also discussed as a means of reducing dependence on government without compromising the health of the people or the land, by creating stable private-sector employment that would increase the standard of living for residents of the Kivalliq region and reduce dependence on social assistance programs. It is anticipated that up to 500 employees would be required during the construction phase for the proposed Project, including for dewatering, with an on-site labour requirement of up to 931 people on rotation during operations.

Agnico Eagle described the proposed Whale Tail Pit Project as one that would:

- Contribute to durable social and economic benefits;
- Create employment for Canadians;
- Create employment for Nunavummiut;

⁴² The NIRB previously reviewed the related but distinct Meadowbank Gold Mine project (NIRB File No. 03MN107) in accordance with Part 5 of Article 12 of the *Nunavut Agreement*. The Meadowbank Gold Mine project was allowed to proceed pursuant to the NIRB Project Certificate No. 004 which was issued December 30, 2006 following the then Minister of Indian and Northern Affairs' approval of the Meadowbank Gold Mine project.

- Contribute to the vision and goals of Nunavummiut in terms of sustainable development (employment, training, career development, economic stability for residents of the Kivalliq region, and the creation of new business opportunities for Nunavut-based businesses);
- Contribute to the vision and goals of Nunavut Inuit through royalty payments to NTI and through land use fees, water compensation payments and Inuit Impact Benefits Agreement benefits to the KIA allowing both NTI and KIA to pursue their goals for sustainable development of Inuit Owned Land;
- Provide revenue to the Government of Canada through corporate and income taxes allowing Canada to continue funding northern development and northern programs;
- Provide revenue to the Government of Nunavut through payroll taxes, equivalent municipal taxes, and fuel taxes allowing the Government of Nunavut to pursue its goals and vision for Nunavut; and
- Generate a return on the investment made by Agnico Eagle on behalf of its shareholders and generate a profit for Agnico Eagle and its shareholders.⁴³

Further, Agnico Eagle noted that the development of the Project is part of an effort to extend the life of mine at the Meadowbank Gold Mine while exploration activity continues.⁴⁴

2.2.2 Project Components and Activities

The scope of the project proposal includes all physical works, activities, and/or undertakings, as scoped by the Nunavut Impact Review Board (NIRB) on June 17, 2016 for the Whale Tail Pit Project and encompasses the entire project life:

a) Meadowbank Gold Mine Site

Activities and Facilities would include use of existing infrastructure at the Meadowbank Gold Mine site and ongoing use of resources as previously approved, specifically:

- Camp to accommodate personnel;
- Airstrip facilities;
- All-weather access road between Baker Lake and the mine site;
- Mine facilities including maintenance shops, administration buildings, power generators, mine dry facility (to include lockers, sinks, and changing rooms for personnel), reagent storage areas, fuel storage, landfill, waste and hazardous materials storage area, incinerator, sewage treatment plant, landfarm, ore storage, and surface water management (to include pollution and sediment control or supernatant ponds);
- Operation of mill and batch plant;
- Tailings Storage Facility including tailings conveyance, waste and hazardous wastes storage; and
- Potable water sourced from Third Portage Lake and mill water sourced from the reclaim pond located near the mill.

⁴³ EIS, Volume 1, pp. 1-21-1-22

⁴⁴ EIS, Volume 1, p. 1-19

b) Baker Lake Docking Facility

Activities and Facilities would include ongoing use of existing barge unloading facilities, laydown storage and marshalling area, 60-million litre fuel tank farm, and interconnecting roads.

c) Whale Tail Pit

Note: Whale Tail Pit 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). See [Figure 2](#) for a proposed site layout of the Whale Tail Pit Project.

Activities and Facilities would include the development of one (1) open pit mine located within the Amaruq property, specifically:

- Construction of temporary dikes in Whale Tail Lake and Mammoth Lake;
- Partial dewatering and fishout of Whale Tail Lake (north basin) with discharge of the water into the south basin of Whale Tail Lake or into Mammoth Lake;
- Mine infrastructure development, specifically:
 - Camp and accommodations for 210 personnel;
 - Power plant;
 - Helipad;
 - Maintenance shop;
 - Bulk fuel storage facility (approximately 500,000 litre capacity);
 - Waste rock storage facility (WRSF);
 - Ore stockpiling facility;
 - Crushing facility;
 - Landfill; and
 - Laydown area.
- Construction of water management infrastructure and water treatment facilities to include:
 - Contact and fresh water collection ponds;
 - Diversion channels, retention dikes, dams and culverts;
 - Water treatment plant for effluent;
 - Sewage treatment plant;
 - Discharge diffuser; and
 - Construction of the Whale Tail attenuation pond to contain discharge of treated sewage and site contact water before being discharged into Mammoth Lake.
- Potable water for the Whale Tail camp sourced from Nemo Lake and Whale Tail Lake (South Basin) while non-contact water to be diverted from site through channels and dikes, with additional water raising the water level of Whale Tail Lake (South Basin) to be discharged into Mammoth Lake through a southwest diversion channel.

- Waste rock and overburden generated at the Whale Tail site would be placed in the Whale Tail WRSF, which would be located northwest of the pit area. A classification system, consistent with the Meadowbank Gold Mine, would be developed to identify and safely store non-potentially and potentially acid generating rocks in designated areas which would be designed for long-term stability.

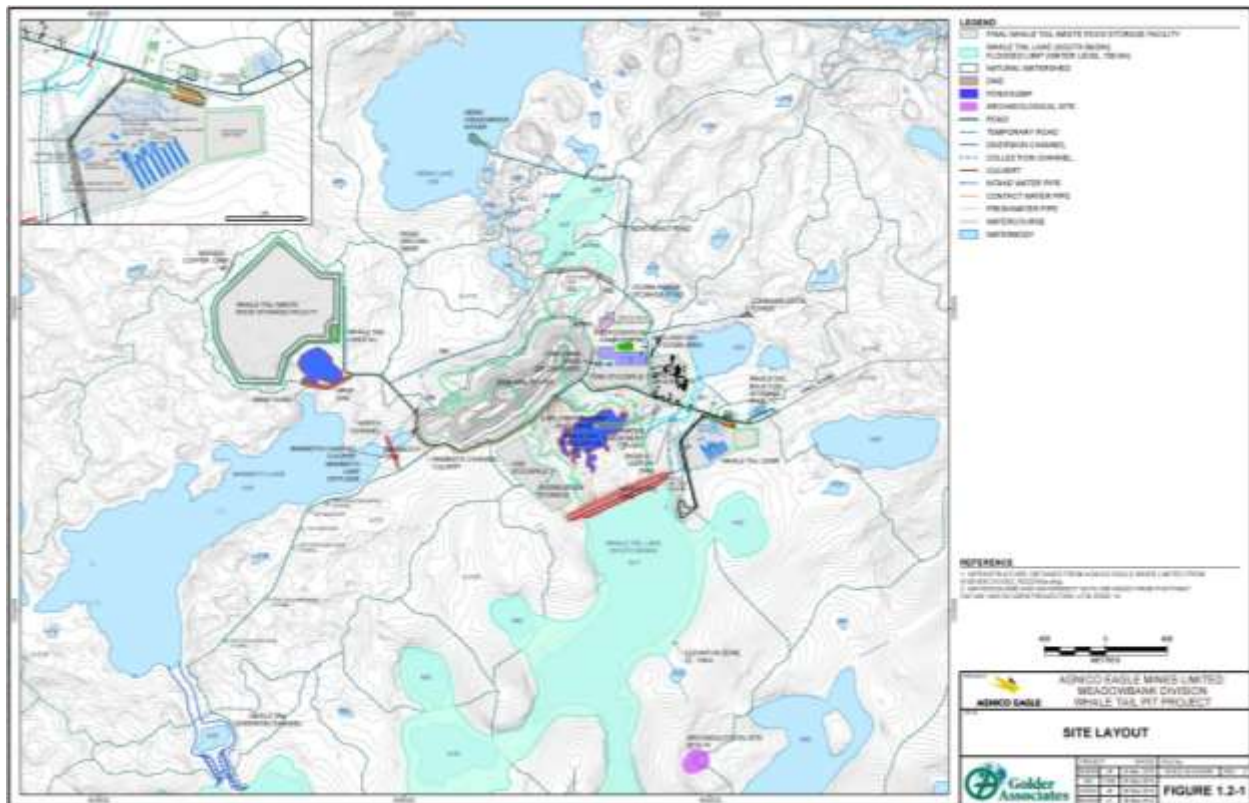


Figure 2: Whale Tail Site Layout (from the *Whale Tail Pit Project Proposal Description, Volume 1*)

d) Mobilization and Shipping

Activities and Facilities would include annual sealift delivery of fuel, equipment and supplies to the existing Baker Lake marshalling facility during the ice-free (open water) season, use of laydown areas at various project sites, shipping of doré gold bars off site via air. Further, the Project would include the extension and widening of the previously approved Amaruq exploration road into a private mine haul road extending from the current 6.5 metre width to 9.5 metres width. After the expansion, this road would remain closed to the public.

e) Abandonment, Decommissioning and Reclamation

Activities and Facilities would include closure and remediation of the Whale Tail Pit infrastructure, 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 Gold Mine site. Progressive reclamation opportunities during operations would include the potential reclamation of facilities and equipment identified as no longer being required, use of consumable inventories to reduce volumes to allow for the closure and reclamation of quarries and borrow sites no longer

required. Additional closure activities would include cover placement over the Whale Tail WRSF, as well as maintenance and monitoring of the reclaimed areas of the WRSF.

2.2.3 Linkage between the Project Proposal and Previously Assessed Project Proposals

The development of the Whale Tail Pit Project would include the utilization of select key infrastructure components that are currently part of the approved Meadowbank Gold Mine²⁶ as follows:

- Infrastructure at Meadowbank Gold Mine site would include:
 - 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.
- Transportation of supplies and employees to the existing Meadowbank Gold Mine 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 Gold Mine site.

The scope of the original Meadowbank Gold Mine project included the construction, operation and eventual reclamation of an open pit gold mine located, as described by Agnico Eagle, 70 km directly north of the Hamlet of Baker Lake on Inuit-owned surface lands; associated infrastructure for the extraction, transportation and shipment of gold ore from three (3) deposits (Portage Pit, Goose Pit and Vault Pit); the construction of ancillary project infrastructure located approximately 2 km east of the Hamlet of Baker Lake that consisted of a barge unloading facility, a laydown storage and marshalling area, a 60 million litre fuel tank farm; and the construction of a 110 km all-weather private access road linking the ancillary project infrastructure with the Meadowbank Gold Mine site. On December 30, 2006, the NIRB issued Project Certificate No. 004 for the Meadowbank Gold Mine project.²⁶

On November 20, 2009 the NIRB issued an amendment of the Project Certificate to reflect the Proponent Project Name Change and modification associated with the all-weather access road following reconsideration of Term and Condition #32 under Section 12.8.2 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)*.⁴⁵

On August 12, 2016 the NIRB issued amendment 002 of the Project Certificate to reflect the development of the Vault Pit Expansion Project, which included reconsideration of relevant terms and conditions within Project Certificate 004 under the NIRB's authority under Section

⁴⁵ The NIRB issued amendment 001 of the Project Certificate to Agnico Eagle Mines Limited on November 20, 2009 following the approval by the then Minister of Indian and Northern Affairs for the reconsideration of Condition 32.

12.8.2(b) and 12.8.3 of the *Nunavut Agreement*.⁴⁶ The Vault Pit Expansion Project proposal included the expansion of the Vault Pit to develop two (2) small extensions known as Phaser Pit and the BB Phaser Pit which is an extension of the Vault Pit deposit. These two (2) small open pits would extend from the perimeter of Vault Pit to the southwest into Phaser Lake. The Vault Pit Expansion Project proposal includes the expected extraction of an additional 269,438 tonnes (t) of ore from Phaser Pit and 132,950 t from BB Phaser Pit. This is in addition to the current approved production of approximately 29.8 million tonnes (Mt) and 10.7 Mt of ore from the entire Meadowbank Gold Mine pits and the Vault Pit, respectively, over the life of the mine. The following additional activities and components at the Vault mine site were approved when amendment 002 of Project Certificate 004 was issued: construction and operation of additional haul roads connecting the new pits to Vault Pit infrastructure; water diversion and management activities; dewatering and fish-out of Phaser Lake; and eventual re-flooding of Phaser Pit and BB Phaser Pit along Vault Pit.

The Vault Pit Expansion Project is expected to extend the life of the mine by approximately 30 days and all activities associated with the construction, development, and operation of the proposed Phaser and BB Phaser Pits would continue to utilize the currently approved mine facilities.

Agnico Eagle noted within its EIS that closure and reclamation activities at the Meadowbank Gold Mine would remain the same as authorized under the current Project Certificate. However, closure of the Meadowbank mill, maintenance shop, powerhouse, and camp would be delayed by three (3) years if the Whale Tail Pit project proposal were to be approved to proceed.

2.2.4 Project Phases

Construction – 2018 (proposed)

The mobilization and on-site construction activities would be expected to take one (1) year to complete. Agnico Eagle indicated that it continues to conduct feasibility and design studies with both the cold northern climate and remote location as the principal considerations for successful design, construction, and operations of the Project.

Key activities during this period as outlined in the EIS would include:

- Commence widening of the exploration access road to a haul road;
- Commence stripping of the open pit;
- Commence placement of waste rock and overburden in the Whale Tail waste rock storage facility (WRSF) area;
- Commence construction of:
 - Industrial pad and associated buildings;
 - Ore stockpiles and overburden storage;
 - Whale Tail Dike;
 - Mammoth Dike;

⁴⁶ The NIRB issued the amendment 002 of the Project Certificate to Agnico Eagle Mines Limited on August 12, 2016 following the approval by the Minister of Indigenous and Northern Affairs for the Vault Pit Expansion Project.

- Site access roads;
- Contact water intake causeway in the Whale Tail Attenuation Pond;
- Construction of:
 - Whale Tail WRSF Dike;
 - Fresh water intake causeway in Nemo Lake;
 - Water Treatment Plant;
 - Explosive magazine pads;
- Fish out program of the Whale Tail Lake (North Basin).

Operations – 2019-2022 (proposed)

The proposed operations phase of the Project would occur during a three (3) to four (4) year period, and would include the commissioning of select constructed mine components and structures, as well as operation of the mine with associated production.

Key activities during this period as outlined in the EIS would include:

- Completion of:
 - Widening of the haul road;
 - Industrial pad and associated buildings;
 - Ore pads and overburden storage pad;
 - Whale Tail Dike;
 - Mammoth Dike;
 - Communication Tower;
 - Site Access Roads;
 - Causeway in the Whale Tail Attenuation Pond;
 - Water management infrastructure;
- Construction of:
 - Northeast Dike
 - Discharge diffuser in Mammoth Lake;
 - South Whale Tail Diversion Channel;
 - Water Management Channel in the North Sector;
- Construction and operation of the landfill;
- Dewatering of Whale Tail Lake (North Basin) during the first year of operations; and
- Placing non-potentially acid generating rock (NPAG) in the WRSF.

Mining of the Whale Tail Pit would begin towards the end of Year 1 of the Project, with mill feed expected to begin in Year 2, during the first year of Operations. Infrastructure and activities at the Meadowbank Gold Mine would be extended during the operations period to support the Project, including the Meadowbank Gold Mine mill that would operate at a mill rate between 9,000 and 12,000 tonnes per day.

Closure – 2023-2029 (proposed)

Site closure would occur through three (3) stages, progressive reclamation (during operations), final closure, and post-closure. Following three (3) to four (4) years of operations, site closure and remediation activities would be undertaken during a four- (4) year period. Within Appendix 8-F – Addendum for Closure and Reclamation Plan, Agnico Eagle described its overall closure goal as being “to return the proposed project site and affected areas to viable and, wherever practicable, self-sustaining ecosystems that are compatible with a healthy environment and with human activities. The overall closure goal is supported by the four closure principles of physical stability, chemical stability, no long-term active care requirements, and compatibility with future land uses for each component of the Project.”⁴⁷

Key activities during this period as outlined in the EIS would include:

- Complete trucking of ore to the Meadowbank Gold Mine mill;
- Complete covering of the Whale Tail WRSF using NPAG waste rock;
 - Proposed cover of two (2) to four (4) m of NPAG waste rock will be finalized during design phase of the Project
- Decommission non-essential mine infrastructure and support buildings;
- Draw-down of Northeast sector and breach of Northeast dike;
- Draw-down of the raised Whale Tail Lake (South Basin) to natural elevation to contribute to refilling of the Whale Tail open pit;
- Reclamation of non-essential infrastructure;
- Refill the mined-out open-pit using active pumping and natural flow;
- Commence monitoring activities; and
- Move the water treatment plant to the Whale Tail WRSF area, if necessary.

Post Closure – 2030-2046 (proposed)

Post-closure activities would occur over a seven (7) year period following the main project closure, and would include key activities such as:

- Refilling of Whale Tail Lake (North Basin);
- Breaching of the Whale Tail Dike when the south and north basins of Whale Tail Lake reach equal elevation;
- Completion of decommissioning and reclamation activities;
- Breaching of the Whale Tail WRSF Dike;
- Ongoing monitoring; and
- Completion of monitoring period.

Post-closure environmental monitoring would be undertaken to verify that reclamation was successful and that reclamation objectives were met and were in compliance with project authorizations.

⁴⁷ EIS, Volume 8, Appendix 8-F, p. 19

3. PROCEDURAL HISTORY OF THE PROJECT PROPOSAL

[Table 1](#) below provides a brief summary of the key procedural steps associated with the Nunavut Impact Review Board's (NIRB or Board) assessments for the Whale Tail Pit Project under Article 12, Part 5 of the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and Part 3 of the *Nunavut Planning and Project Assessment Act (NuPPAA)*²⁷, and the Nunavut Water Board's (NWB) consideration of the associated Type "A" water licence application (Application). The procedural steps commenced with the receipt of the original project proposal from the Nunavut Planning Commission on June 17, 2016 with an accompanying positive conformity determination under the Keewatin Regional Land Use Plan, continuing through to the completion of the NIRB and NWB's Pre-hearing Conference (PHC) held in Baker Lake on May 2, 2017 and continuing through to the completion of the NIRB's Final Hearing held in Baker Lake on September 22, 2017.

[Table 1](#) also identifies key milestones, opportunities for public participation, and involvement of parties throughout the NIRB and the NWB processes and associated timelines. Please refer to [Appendix A](#) for a record of proceedings for the Final Hearing, [Appendix C](#) for a list of exhibits presented at the Final Hearing and [Appendix D](#) for a list of Acronyms.

3.1. LAND USE PLANNING REQUIREMENTS

On June 17, 2016 the Nunavut Planning Commission (NPC) issued correspondence to the NIRB, the NWB and relevant parties indicating that Agnico Eagle Mines Ltd.'s (Agnico Eagle or the Proponent) "Whale Tail Pit" project proposal required screening by the NIRB as follows:⁴⁸

The NPC has determined that the above-noted project proposal is a significant modification to the project, as its purpose is to establish a mining operation in a previously unconsidered location, as well as an access road to this new site. The project proposal conforms to the Keewatin Regional Land Use Plan (KRLUP), subject to the attached conformity requirements from the KRLUP that are applicable to the project proposal.

The project proposal requires screening by the Nunavut Impact Review Board (NIRB) because it does not belong to a class of exempt works or activities set out in Schedule 12-1 of the Nunavut Land Claims Agreement. By this letter and additional enclosures, the NPC is forwarding the project proposal with this determination to the Nunavut Impact Review Board (NIRB) for screening.

In addition, the NPC directed that the Proponent must comply with various conformity requirements applicable to the project proposal, which was then referred to the NIRB for assessment.

⁴⁸ P. Scholz, Nunavut Planning Commission, Letter to Parties Re: NPC File #148297 Whale Tail Pit Project – Meadowbank Division. June 17, 2016.

3.2. PROCEDURAL HISTORY OF THE NIRB ASSESSMENT OF THE PROJECT PROPOSAL

The key procedural steps that have been taken by the NIRB during consideration of the Environmental Impact Statement (EIS) are set out in [Table 1](#) that follows. In particular, the NIRB wishes to highlight and provide more detail regarding important procedural developments leading up to the Final Hearing.

The NIRB first became engaged in the process on June 17, 2016 when the NIRB received a referral to screen Agnico Eagle Mines Limited's (Agnico Eagle or the Proponent) "Whale Tail Pit" project proposal (the Project) from the Nunavut Planning Commission, with an accompanying positive conformity determination under the Keewatin Regional Land Use Plan. Agnico Eagle originally submitted the Whale Tail Pit Project proposal as a reconsideration of the Meadowbank Gold Mine Project Certificate terms and conditions. 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 parties' views as to whether the proposal should be processed by the NIRB 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 *Nunavut Planning and Project Assessment Act (NuPPAA)*²⁷ 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 project proposal had not been assessed as part of the original Meadowbank Gold Mine project, and due to its location outside of the original Meadowbank Gold Mine project footprint, the Project would require a separate screening assessment under the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and NuPPAA.

Pursuant to Article 12, Section 12.4.4 of the *Nunavut Agreement* and s. 86 of the NuPPAA, the NIRB screened this project proposal and on August 18, 2016 the Board issued a Screening Decision Report with the determination that the proposed project required further assessment best facilitated through a full environmental review under Article 12, Part 5 or 6 of the *Nunavut Agreement* and Part 3 of the NuPPAA.

Following receipt of the responsible Ministers' decision on September 2, 2016 supporting the NIRB's recommendation that a full environmental review be conducted, the NIRB commenced the review process on September 9, 2017 issuing the *Draft Scope* for review by parties.

By October 11, 2016 the NIRB was in receipt of comments on the *Draft Scope* of the assessment for the NIRB's Review of the project proposal. Following incorporation of the comments from parties and the scoping information sessions held by the NIRB in the Kivalliq region from October 17 to October 27, 2016, the NIRB released the *Final Scope* on November 10, 2016.

On November 23 and 24, 2017 the Nunavut Water Board (NWB) and the NIRB's staff and legal counsel convened a coordination workshop to further discuss project-specific coordination of the technical comment and review phases of the NIRB's assessment of the Project and the NWB's

consideration of the water licence applications for the Project and to develop an updated project-specific process map.

On November 25, 2016 the NIRB commenced its formal technical review of the EIS and invited interested parties to submit Information Requests (IRs) directed to the Proponent and/or other parties involved in the assessment of the Whale Tail Pit Project proposal as a means to identify information gaps within the EIS that needed to be addressed so that parties could develop their respective technical review comments.

On January 27, 2017, in joint correspondence issued with the NWB, the NIRB invited interested persons to provide the NIRB with their technical review comments by March 28, 2017 in preparation for a joint Technical Meeting and PHC that the both Boards had directed their respective staff to hold in Baker Lake, tentatively in the weeks of April 24 and May 1, 2017.

On June 8, 2017, the NIRB and NWB released the jointly prepared Pre-hearing Conference Decision Report that provided a summary of the discussions and outcomes resulting from the joint NIRB and NWB Technical Meeting held in Baker Lake, Nunavut on April 27-29, 2017, and the Community Roundtable and PHC held in Baker Lake on May 1 and 2, 2017.

On July 17, 2017 the NIRB issued its Notice of Public Hearing, which included an invitation to any party not already intervening in the process but wishing to be granted intervenor status at the NIRB Final Hearing to apply to the Board. On July 28, 2017 the NIRB accepted the Baker Lake Hunters and Trappers Organization's request for intervenor status at the NIRB's Final Hearing.

On August 14, 2017 intervenors submitted their final written submissions in respect of the Whale Tail Pit Project in preparation for the Final Hearing and on August 28, 2017 Agnico Eagle provided a reply to intervenors' final written submissions.

As this summary is not exhaustive, parties wishing to develop a more complete understanding of the activities associated with the NIRB's assessment for this project proposal are encouraged to consult the complete listing of all associated documentation available from the NIRB's online public registry at www.nirb.ca by using any of the following search criteria:

- Project Name: Whale Tail Pit Project
- NIRB File No.: 16MN056
- Application No.: 124683

Table 1: Procedural History

Assessment Steps	Party	Timeline	Process Steps	Notes ^a
Screening	Agnico Eagle Mines Limited (Agnico Eagle or Proponent or Application)	May 25, 2016	The NIRB receives information in support of the Agnico Eagle's Whale Tail Pit Project proposal	Proponent requested that the assessment of the Whale Tail Pit Project proposal be by way of a reconsideration of the existing Meadowbank Gold Mine Project Certificate No. 004 rather than being screened as a separate project proposal. Proponent further requested the NIRB's consideration of the project proposal be conducted under either Article 12, Section 12.8.2 of the <i>Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)</i> alone or under Section 12.8.2 of the <i>Nunavut Agreement</i> and s. 112(1) of the <i>Nunavut Planning and Project Assessment Act (NuPPAA)</i> . Further, Proponent requested a fully coordinated NIRB/Nunavut Water Board (NWB) regulatory process.
	NIRB	June 15, 2016	Noted requirement of conformity determination prior to commencement of assessment	
	Nunavut Planning Commission	June 17, 2016	Conformity determination issued with the Keewatin Regional Land Use Plan and screening referral	Correspondence noted the Whale Tail Pit Project proposal involved the development of a mining undertaking in a location that was not previously included in the assessment of the Meadowbank Gold Mine project, as well as development of supporting infrastructure to service the new site.
	NIRB	June 20, 2016	Public engagement and comment request on assessment process	Correspondence requested parties to provide comment regarding reconsideration of the Meadowbank Gold Mine Project Certificate for the "Whale Tail Pit" project proposal.
	Public/Parties	July 6, 2016	Comments received on assessment process	Comments from: Kivalliq Inuit Association (KIA), Government of Nunavut (GN), Government of Canada – Northern Projects Management Office and Yellowknife Dene First Nations.
	NWB	July 8, 2016	The NWB receives an application for Amendment to the Type "A" Water Licence 2AM-MEA1525 for Meadowbank Gold Mine	The Application is to include development of Whale Tail open pit. Agnico Eagle requested previously that NIRB coordinate its assessment of the Whale Tail Pit Project proposal with the NWB's associated licensing process.

Table 1: Procedural History

Assessment Steps	Party	Timeline	Process Steps	Notes ^a
1. Scoping & Completeness Review	NIRB	July 21, 2016	Screening under section 86 of the <i>NuPPAA</i> required	
	NIRB	July 26, 2016	Public engagement and comment request on project proposal	
	NIRB	July 29, 2016	Ministerial extension request	Requested an extended timeline for the screening of the Project.
	Public/Parties	August 9, 2016	Comments received on project proposal	Comments received from: KIA, GN, Environment and Climate Change Canada (ECCC), Fisheries and Oceans Canada (DFO), Indigenous and Northern Affairs Canada (INAC), Natural Resources Canada (NRCan) and Transport Canada (TC).
	NIRB	August 18, 2016	Screening decision report to the responsible Minister	Project recommend for review under Article 12, Part 5 or 6 of the <i>Nunavut Agreement</i> and under Part 3 of the <i>NuPPAA</i> due to its location outside of the original Meadowbank Gold Mine project footprint.
	Responsible Ministers (INAC, DFO, NRCan and TC)	September 2, 2016	Responsible Ministers issued decision supporting the NIRB's recommendation	Project referred to the NIRB for Review pursuant to subparagraph 94(1)(a)(iv) of the <i>NuPPAA</i> . The responsible Ministers addressed the issues of cumulative effects, process coordination and participant funding raised in the NIRB's screening decision report, and further identified matters for the NIRB to consider as part of its Review of the Whale Tail Pit Project proposal.
	NIRB	September 9, 2016	NIRB Review commences: Ministers' decision distributed and <i>Draft Scope</i> released for comments	Correspondence included request to Agnico Eagle to confirm that the submission received on July 6, 2016 would be considered as the Proponent's Environmental Impact Statement (EIS) for the NIRB's Review and whether supplemental information would be provided to support the submission.
	Agnico Eagle	September 30, 2016	Confirmation provided to the NIRB noting the July submission sufficient to address EIS requirements	Correspondence included another request by Proponent for a full coordinated process by the NIRB and the NWB.

Table 1: Procedural History

Assessment Steps	Party	Timeline	Process Steps	Notes ^a
	NWB	October 3, 2016	Comment request on the scope, completeness of information provided and identify the deficiencies.	Correspondence included request to Agnico Eagle to confirm that the Application could be considered by NWB as an application for a new Type “A” Water Licence.
	Public/Parties	October 11, 2016	Comments received on <i>Draft Scope</i> of assessment for the NIRB’s Review of the Project	Comments received from: KIA, GN, ECCC, DFO, INAC, NRCan and TC.
	Agnico Eagle	October 15, 2016	Confirmation to the NWB that the Application could be considered for a new Type “A” Water Licence.	
	NIRB	October 17 to October 27, 2016	Public Scoping Meetings	Meetings held in the Kivalliq communities of Chesterfield Inlet, Coral Harbour, Naujaat (Repulse Bay), Rankin Inlet, Whale Cove, Arviat, and Baker Lake.
	Public/Parties	November 3, 2016	Comments received on completeness and initial assessment of the Application	Comments received from: ECCC, DFO, and INAC.
	NWB	November 7, 2016	Request Proponent respond to parties’ comments on the completeness of the water licence application	
	NIRB	November 10, 2016	<i>Final Scope</i> released	Correspondence also noted that the July 6, 2016 submission from Agnico Eagle satisfies the minimum EIS requirements as per Section 12.5.2 of the <i>Nunavut Agreement</i> .
2. Technical Review of EIS and Water Licence Application	NIRB & NWB	November 25, 2016	Commencement of NIRB’s technical review period and description on coordinated process	Correspondence included a process map that described the coordination process for the Whale Tail Pit Project. Correspondence also included a reminder to the Proponent on the deadline for the Response to completeness of Application. NIRB’s technical review period included 30-day information request period.

Table 1: Procedural History

Assessment Steps	Party	Timeline	Process Steps	Notes ^a
	NIRB	December 7, 2016	Public scoping meeting summary report released	Report summarized community scoping sessions.
	Agnico Eagle	December 7, 2016 & January 25, 2017	Responses to completeness/initial assessment review submitted to the NWB	
	Public/Parties	December 22, 2016	Submission of Information Requests (IRs) by parties	IRs received from: KIA, GN, DFO, ECCC, Health Canada (HC), INAC, NRCan, and TC.
	NIRB	December 23, 2016	IRs distributed to appropriate parties	IRs requested additional information from the Proponent.
	Agnico Eagle	January 20, 2017	Responses to IRs submitted to the NIRB	
	NIRB & NWB	January 27, 2017	NIRB commenced 60-day technical review period NWB gave Notice of Application and commenced 60-day technical review period	Technical review comments were requested from parties for the project proposal and the associated water licence application. In addition, the correspondence included scheduling of the Technical Meeting, Pre-hearing Conference (PHC) and Community Roundtable. The correspondence further included the NWB's notice of the Application in accordance with s. 55(1) of the <i>Nunavut Waters and Nunavut Surface Rights Tribunal Act</i> (NWNSTRA), advising the parties of the consequences of failing to identify issues of water user compensation to the NWB in accordance with s. 59 and s. 60(2) of the NWNSTRA. ⁴⁹
	NIRB & NWB	March 13, 2017	Circulation of <i>draft</i> agenda and request for comments	Correspondence provided information on the Technical Meeting and PHC protocol.

⁴⁹ Section 59: In the circumstances described in paragraph 58(b), an applicant need not compensate the person under section 58 if the person fails to respond to the notice of application given under subsection 55(1) within the time period specified in the notice for making representations to the NWB. Section 60(2) Subsection (l) does not apply in respect of a person referred to in that subsection who fails to respond to the notice of application given under subsection 55(1) within the time period specified in that notice for making representations to the NWB.

Table 1: Procedural History

Assessment Steps	Party	Timeline	Process Steps	Notes ^a
3. Joint Technical Meeting	Public/Parties	March 28, 2017	Technical review comments on the EIS submitted to the NIRB	Comments received from: KIA, GN, ECCC, DFO, HC, INAC, NRCan, and TC.
			Technical review comments on the Application submitted to the NWB	Comments received from: KIA, ECCC, DFO, and INAC.
	NIRB & NWB	March 30, 2017	Technical comments distributed to the Proponent	
	Agnico Eagle	April 7, 2017 & April 25, 2017	Responses to technical review comments submitted to the NIRB and the NWB	
	Canadian Northern Economic Development Agency (CanNor)	April 10, 2017	Provided confirmation of Federal Agencies to attend Technical Meeting and PHC	Confirmed attendees: DFO, ECCC, INAC, NRCan, TC, CanNor and Department of Justice.
	Public/Parties	April 21 to April 25, 2017	Presentations provided for joint NIRB/NWB Technical Meeting and PHC	
	NIRB & NWB	April 24, 2017	Release of <i>Final</i> Agenda	
	NIRB & NWB	April 27, 2017	Community Information Evening Session	
	NIRB & NWB	April 28 to April 29, 2017	Technical meeting in Baker Lake	Parties in attendance included: Nunavut Tunngavik Inc. (NTI), KIA, GN, ECCC, DFO, INAC, NRCan, TC and Agnico Eagle.
	NIRB & NWB	May 1 to May 2, 2017	Community Roundtable and PHC in Baker Lake	Parties in attendance included: NTI, KIA, GN, ECCC, DFO, INAC, NRCan, TC, Agnico Eagle as well as community representatives from seven (7) Nunavut communities in the Kivalliq region.
4. Joint Pre-hearing Conference	NIRB & NWB	June 8, 2017	Release of PHC Decision Report	

Table 1: Procedural History

Assessment Steps	Party	Timeline	Process Steps	Notes ^a
5. Final Written Submissions	Agnico Eagle	June 22 to July 14, 2017	Submissions of commitments	Documents were submitted in support of the commitments made during the technical meeting and PHC as outlined in the PHC Decision Report.
	Agnico Eagle	July 17, 2017	Response to recommended changes to Meadowbank Project Certificate	Confirmed that Agnico Eagle does not recommend any substantive changes to the Meadowbank Project Certificate No. 004 terms and conditions.
	NIRB	July 17, 2017	Release of Notice of Final Hearing	Notice included direction to parties wishing to apply for formal intervenor status for the hearing proceedings.
	Baker Lake Hunters and Trappers Organization (HTO)	July 20, 2017	Request for intervenor status	Correspondence provided direction to parties on the recommended format for the final written submissions, presentations and general logistics for the upcoming Final Hearing.
	NIRB	July 27, 2017	Format for Final Written Submissions and Logistics Information	
	NIRB	July 28, 2017	Intervenor Status Acceptance	NIRB accepted Baker Lake HTO's request for intervenor status
	NIRB	August 11, 2017	Request for community representatives	Correspondences submitted to all seven (7) communities in the Kivalliq region requesting nomination of up to a total of five (5) community representatives to attend the Final Hearing
	NIRB	August 11, 2017	Circulation of <i>Draft</i> Agenda and request for comments	Correspondence included information on the structure of the Technical Sessions and the Community Roundtable and the logistics for the Final Hearing.
	Parties/Intervenors	August 14, 2017	Submission of Final Written Submissions	Final written submissions received from: NTI/KIA, Baker Lake HTO, GN, ECCC, DFO, HC, INAC, NRCan, and TC.
	NIRB	August 16, 2017	Final written submissions distributed to Proponent	
	Parties/Intervenors	August 24, 2017	Comments on <i>Draft</i> Agenda and confirmation of attendance	Comments received from Agnico Eagle

Table 1: Procedural History

Assessment Steps	Party	Timeline	Process Steps	Notes ^a
Final Hearing	Agnico Eagle	August 28, 2017	Responses to final written submissions submitted to the NIRB	
	NIRB	August 31, 2017	Release of <i>Final Agenda</i>	
	Parties/Intervenors	September 5 to September 12, 2017	Presentations provided for the NIRB's Final Hearing	
	NIRB	September 7, 2017	Request for Baker Lake Mayor to Provide Opening Remarks	
	NIRB	September 19 to September 20, 2017	Technical Sessions held in Baker Lake	Parties in attendance included: KIA, Baker Lake HTO, GN, ECCC, DFO, INAC, NRCan, TC and Agnico Eagle.
	NIRB	September 21 to September 22, 2017	Community Roundtable held in Baker Lake	Parties in attendance included: KIA, Baker Lake HTO, GN, ECCC, DFO, INAC, NRCan, TC, Agnico Eagle as well as community representatives from seven (7) Nunavut communities in the Kivalliq region.

NOTES: a = Abbreviations: Environment and Climate Change Canada (ECCC), Environmental Impact Statement (EIS), Fisheries and Oceans Canada (DFO), Government of Nunavut (GN), Health Canada (HC), Baker Lake Hunters and Trappers Organization (HTO), Indigenous and Northern Affairs Canada (INAC), Information Request (IR), Kivalliq Inuit Association (KIA), Natural Resources Canada (NRCan), Canadian Northern Economic Development Agency (CanNor), Nunavut Impact Review Board (NIRB), *Nunavut Planning and Project Assessment Act (NuPPAA)*, Nunavut Tunngavik Inc. (NTI), Nunavut Water Board (NWB), *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSRTA)*, Pre-hearing Conference (PHC), Transport Canada (TC).

3.3. APPLICATIONS FOR ACTIVITIES EXCEPTED FROM THE REVIEW

On July 14, 2017 the NIRB received a submission from Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) entitled the “Whale Tail Pit Project Type B Predevelopment Application” (the Exception Application). In the Exception Application, Agnico Eagle requested that the NIRB exercise their discretion under the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)*, Article 12, Section 12.10.2(b) and *Nunavut Planning and Project Assessment Act (NuPPAA)* s. 155 to except from the requirement for further assessment various “predevelopment activities” associated with the main Whale Tail Pit Project proposal under Review. The scope of Agnico Eagle’s application included what Agnico Eagle described as proposed predevelopment/site preparation activities, which would occur between November 2017 and June 2018. Agnico Eagle also noted within the application that no mining activities were included in the application, and while some of the proposed infrastructure could be characterized as ‘permanent’, the proposed facilities and activities would be used to support exploration at Whale Tail Pit should the NIRB recommend and the Minister ultimately agree that the full Whale Tail Pit Project proposal should not be allowed to proceed.

The NIRB’s jurisdiction to except exploration and development activities from further review is set out in Article 12, Sections 12.10.1 and 12.10.2 of the *Nunavut Agreement*:

Nunavut Agreement, Article 12, Section 12.10.1: No licence or approval that would be required in order to allow a proposed project to proceed shall be issued in respect of a project that is to be screened by NIRB until the screening has been completed and, if a review pursuant to Part 5 or 6 is to be conducted, until after that review has been completed and a NIRB project certificate has been issued by NIRB pursuant to these provisions.

Exceptions

Nunavut Agreement, Article 12, Section 12.10.2: Notwithstanding Section 12.10.1, where a project proposal has been referred for review pursuant to Part 5 or 6, approvals or licences for exploration or development activities related to that project may be issued if:

- (a) the activity falls within Schedule 12-1; or
- (b) the activity can, in the judgement of NIRB, proceed without such a review

Essentially, these provisions allow the NIRB to except specified low impact exploration or development activities from further assessment in an on-going Review. The net effect of the NIRB excepting specified activities from further review is that regulatory authorities can grant the approvals or licences for these activities without waiting for the completion of decision-making in respect of the Review of the entire project.

It should be noted that the NIRB’s determination in relation to the Exception Application in no way limited the Board’s recommendations to the Minister(s) as expressed in this Final Hearing Report in respect of whether the Whale Tail Pit Project proposal, in its entirety, should be

allowed to proceed, nor does the NIRB's determination in respect of the Exception Application affect the decision-making of the Responsible Minister(s) in respect of the entire Whale Tail Pit Project and/or the potential issuance of a NIRB Project Certificate under Section 12.5.12 of the *Nunavut Agreement* and s. 111(1) of the *NuPPAA* following the decision of the Minister of Crown-Indigenous Relations and Northern Affairs that the Project, in its entirety be allowed to proceed.

Reflecting the Board's jurisdiction under Article 12, Section 12.10.2(b) of the *Nunavut Agreement* and s. 155(1) of the *NuPPAA*, upon receipt of the Exception Application the NIRB conducted a thorough review of the technical matters pertaining to the Exception Application, including inviting written comments, allowing the Proponent to present the Exception Application at the Final Hearing for the Project on September 20, 2017 and allowing parties and the Board to ask questions regarding the Exception Application at the Final Hearing.

On October 10, 2017, the NIRB issued its Determination Report⁵⁰ to regulatory authorities specifying that the Board had determined that the following exploration and development works described in the Exception Application could proceed to the licensing/permitting stage independently of the conclusion of the Review of the Whale Tail Project Proposal:

- Pre-delivery of material, fuel, and equipment;
- Construction of concrete pads, including options for supplies laydown area (the future site of the camp), and water treatment plant foundation; and
- Upgrade/widen Whale Tail Pit haul road from 6.5 m wide to 9.5 m plus bypasses to ensure the safe pre-delivery of material and equipment (such as Vault Pit 777 haul trucks).

However, the Board did not except from further review all the activities included in Agnico Eagle's Exception Application. The Board rejected Agnico Eagle's request to except the activities set out below, finding that for these activities the information supplied with the Exception Application did not establish that the potential for impacts associated with these proposed these activities was sufficiently understood to proceed without further assessment. The Board also noted that the uncertainty created by data gaps associated with these activities could not be addressed by the NIRB providing recommendations to minimize the potential for impacts. Consequently, the NIRB determined that these specific activities should not be authorized to proceed in advance of the Board's consideration of the main project under Review, and therefore these activities remained within the scope of the entire Whale Tail Pit Project and are included in the scope of this Final Hearing Report and Recommendations:

- Construction of temporary bridge crossing over the Mammoth Channel in March 2018;
- Construction of some service roads around the Whale Tail Pit site to undertake other predevelopment activities including:
 - Road between Quarry 2 and Waste Rock Storage Facility (WRSF);
 - Road between exploration area and new road between Quarry 2 and the WRSF;

⁵⁰ NIRB Exception From Review Determination Report, NIRB File No.: 16MN056, October 10, 2017.

- Road and one (1) culvert between exploration camp and proposed Nemo freshwater intake;
- Quarrying at Quarry 2 (for construction); and
- Construction of the waste rock berm.

4. INVOLVEMENT OF INTERESTED PARTIES

4.1. ENGAGEMENT OPPORTUNITIES

4.1.1 *Public Consultation*

Public participation is a central objective of the Nunavut Impact Review Board (NIRB)'s assessment processes. Meaningful public participation within the review process requires that the assessment process address concerns of the general public regarding the anticipated or potential environmental effects of the Whale Tail Pit Project proposal (the Project). The NIRB's review process must also involve potentially affected Nunavummiut (defined as the people inhabiting the territory of Nunavut) to address concerns regarding any changes that the Project may cause to the environment and the resulting effects of any such changes on the traditional and current use of land/ice and resources.

The Board's public consultation process included community consultations. For this assessment, the NIRB held public information meetings in the seven (7) communities of the Kivalliq region of Nunavut deemed to be the most affected by the proposed Project i.e. Chesterfield Inlet, Coral Harbour, Nauyasat (Repulse Bay), Baker Lake, Rankin Inlet, Whale Cove, and Arviat.

The Final Hearing was held in Baker Lake, Nunavut, the nearest community to the proposed Project, and the Board sat extended hours so that members of the public had the opportunity to attend and ask questions during the day or evening to accommodate their work schedules. Elders and other community members who were present at the Final Hearing were encouraged to make statements, ask questions and identify their concerns with the Project proposal. The NIRB further supported public participation by enabling the seven (7) communities in the Kivalliq region to each select and send up to five (5) representatives to attend the Final Hearing, ask questions and make submissions.

Attendance at any of the NIRB's public meetings associated with this project, including the Final Hearing, was tracked via the sign in sheets associated with these meetings. It is the NIRB's practice to ask all participants to sign in at the beginning of each day of proceedings; a full listing of sign-in sheets from the Final Hearing is available online from the NIRB's public registry www.nirb.ca by using the following search criteria:

- Project Name: Whale Tail Pit Project
- NIRB File No.: 16MN056
- Application No.: 124683

The consultation efforts and opportunities for Nunavummiut and residents of Canada to provide their comments to the NIRB during the review process are outlined in [Table 1](#).

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) was also required by the Board to document its efforts regarding consultation to ensure that Nunavummiut had the information they required regarding the Whale Tail Pit Project proposal and its potential impacts. In addition, the Proponent was required to demonstrate how Inuit Qaujimaningit collected through consultation informed the development of the Environmental Impact Statement (EIS). Agnico Eagle's specific consultation efforts are summarized in Section 2.3 and Appendix 2-G of Volume 2 of the EIS.

In addition to the consultation activities of the NIRB and the Proponent, increasingly over the past decade and with better public access to the internet and Northern-based media outlets, the media has assumed an important role in support of the NIRB's goals of enhanced public awareness and participation. Media outlets have assisted by providing notice of meetings and hearings, disseminating information and reporting on the Final Hearing.

4.2. THE PARTICIPANTS

4.2.1 Nunavut Tunngavik Inc.

Nunavut Tunngavik Incorporated (NTI) is the successor to the Tungavik Federation of Nunavut, which was the signatory to the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and coordinates and manages Inuit responsibilities as set out in the *Nunavut Agreement*. NTI is responsible for representing the Inuit of all the regions and communities of Nunavut to safeguard, administer and advance the rights and benefits that belong to the Inuit of Nunavut and to promote their economic, social, and cultural well-being through succeeding generations. This responsibility includes the administration and management of subsurface Inuit Owned Lands, and the collection of the Inuit share of royalties on both Inuit Owned Lands and Crown land such as are associated with proposed projects. NTI is responsible for determining which Inuit organization discharges implementation responsibilities under Article 39 of the *Nunavut Agreement*.

NTI and the Kivalliq Inuit Association (KIA) coordinated their technical review of the Environmental Impact Statement (EIS). The purpose of technical review completed by NTI and the KIA was to ensure that the potential impacts and benefits were comprehensively assessed through scientific, socio-economic, impact assessment and Inuit Qaujimajatuqangit best practices. The NTI participated at the joint NIRB and Nunavut Water Board (NWB) Technical Meeting, Community Roundtable and Pre-hearing Conference (PHC), and attended NIRB's Final Hearing.

4.2.2 Kivalliq Inuit Association

The Kivalliq Inuit Association (KIA) is a Designated Inuit Organization under the *Nunavut Agreement*, representing interests, rights and values of Inuit in the Kivalliq region at the territorial and regional levels. The KIA supports sustainable economic development opportunities for Nunavut Inuit. As a Designated Inuit Organization, the KIA is mandated to deal with Inuit Owned Land management issues within the Kivalliq region. Through its Lands Department, the KIA administers the use of Inuit-owned surface lands such as are associated with the Whale Tail Pit Project, in order to meet legal obligations respecting surface land

management. The KIA negotiates Inuit Impact Benefit Agreements in accordance with Article 26 of the *Nunavut Agreement*.

As noted above, the KIA and Nunavut Tunngavik Inc. coordinated their technical review of the EIS. The KIA has participated in the NIRB and the NWB's assessment of the proposed Project since the initiation of the Review of the proposal and the Application, providing comments, concerns and advice to the NIRB for consideration regarding the scope of the Project and assessment, throughout the information request period, and providing comments to both the NIRB and the NWB through the technical review period, and providing final written submissions to the NIRB. The KIA participated at the joint NIRB and NWB Technical Meeting, Community Roundtable and PHC, and participated at the NIRB's Final Hearing.

4.2.3 Government of Nunavut

The Government of Nunavut (GN) has jurisdictional responsibility and permitting authority over activities that affect wildlife and wildlife habitat, Commissioner's lands, municipalities, education, health, social services, public safety, culture, community development, property rights and the administrations of the laws in Nunavut.

The GN reviewed the EIS in consideration of the following:

- The requirements and principles (including the principles of conservation) found in the *Nunavut Agreement*;
- The requirements of the laws and regulations of Nunavut;
- The priorities of the Government of Nunavut and Nunavummiut; and
- The NIRB's guiding principles – the "Precautionary Principle" in particular.

The GN has participated in the NIRB's assessment of the proposed Project since the initiation of the Review of the proposal, providing comments, concerns and advice to the NIRB for consideration regarding the scope of the project and assessment, and throughout the information request period and the technical review period, and providing final written submissions. The GN participated at the joint NIRB and NWB Technical Meeting, Community Roundtable and PHC, and participated at the NIRB's Final Hearing.

4.2.4 Environment and Climate Change Canada

Environment and Climate Change Canada (ECCC, previously Environment Canada) is responsible for leading implementation of the Government of Canada's environmental agenda, and is committed to contributing to the realization of sustainable development in Canada's North. ECCC's mandate covers the preservation and enhancement of the quality of the natural environment, including water, air, soil, flora and fauna, as well as species at risk and migratory birds. In addition, ECCC administers subsection 36(3) of the *Fisheries Act*, which prohibits the deposit of a deleterious substance into fish-bearing waters. ECCC also administers the permitting of disposal at sea and participates in the regulation of toxic chemicals pursuant to the pollution provisions of the *Fisheries Act*, and oversees the development and implementation of environmental quality guidelines pursuant to the *Canadian Environmental Protection Act, 1999*. ECCC is responsible for protecting and conserving migratory bird populations and individuals,

under the *Migratory Birds Convention Act, 1994*, and administers the *Species at Risk Act* in cooperation with Fisheries and Oceans Canada and the Parks Canada Agency.

ECCC has participated in the NIRB and the NWB's assessment of the proposed Project and consideration of the water licence application since the initiation of the NIRB's Review of the proposal and the NWB's consideration of the Application, providing comments, concerns and advice to the NIRB for consideration regarding the scope of the project and assessment, throughout the information request period and providing comments to both the NIRB and the NWB through the technical review period, and providing final written submissions to the NIRB. ECCC participated in the joint NIRB and NWB Technical Meeting, Community Roundtable and PHC, and participated at the NIRB's Final Hearing.

4.2.5 Fisheries and Oceans Canada

Fisheries and Oceans Canada (DFO) is the federal government department that exercises authority over sea, coastal and inland fisheries within Canada's territorial boundaries. Under the *Fisheries Act*, DFO is responsible for the management, protection and conservation of fish (which include marine mammals as defined by the *Fisheries Act*) and their habitats. The mandate of the Fisheries Protection Program of DFO is to maintain the sustainability and ongoing productivity of commercial, recreational and Aboriginal fisheries. Subsection 35 (1) of the fisheries protection provisions of the *Fisheries Act* states that "No person shall carry on any work, undertaking or activity that results in *serious harm to fish* that are part of a commercial, recreational, or Aboriginal fishery or to fish that support such a fishery."

The *Species at Risk Act* is intended to prevent Canadian indigenous species, subspecies and distinct populations of wildlife from being extirpated or becoming extinct; to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity; and to manage species of special concern to prevent them from becoming endangered or threatened. The Minister of Fisheries and Oceans is the competent minister for listed aquatic species that are fish (as defined in s. 2 of the *Fisheries Act*) or marine plants (as defined in s. 47 of the *Fisheries Act*).

The purpose of technical review undertaken by DFO of the EIS was to ensure that works, undertakings and activities proposed in and around fisheries are conducted in such a way that the Proponent would be in compliance with the applicable provisions of the *Fisheries Act*.

DFO has participated in the NIRB and the NWB's assessment of the proposed Project since the initiation of the NIRB's Review of the proposal and the NWB's consideration of the Application, providing comments, concerns and advice to the NIRB for consideration regarding the scope of the project and assessment, throughout the information request period and providing comments to both the NIRB and the NWB through the technical review period, and providing final written submissions to the NIRB. The DFO attended the joint NIRB and NWB Technical Meeting, Community Roundtable and PHC, and participated at the NIRB's Final Hearing.

4.2.6 Health Canada

Health Canada (HC) is responsible for maintaining and improving the health of Canadians. HC has no regulations or permits related to the Project, but has provided the NIRB with technical advice relevant to HC's mandate for the NIRB's environmental assessment of the Project. HC has participated in the NIRB's assessment of the proposed Project since the initiation of the Review of the proposal, providing comments, concerns and advice to the NIRB for consideration for the information request period and the technical review period, and providing final written submissions. HC did not attend the joint NIRB and NWB Technical Meeting, Community Roundtable and PHC, or the Final Hearing.

4.2.7 Indigenous and Northern Affairs Canada

Indigenous and Northern Affairs Canada (INAC, previously Aboriginal Affairs and Northern Development Canada) is the federal government department responsible for meeting the Government's obligations and commitments to First Nations, Inuit and Métis, and for fulfilling the federal government's constitutional responsibilities in the North. In Nunavut, INAC has responsibilities for land and water resource management. In the NIRB Review process for the Whale Tail Pit Project, INAC provided technical advice relative to its mandate and made recommendations to the NIRB to assist with the assessment of the Project.

INAC's Minister, in concurrence with other responsible Ministers, will have a decision-making role in response to the Board's recommendations. If the proposed Project is approved to proceed, INAC will be responsible for inspecting and enforcing those conditions contained within any Crown land authorization and water licence associated with the Project proposal. INAC participated actively in the NIRB Review process.

INAC has participated in the NIRB's assessment of the proposed Project and the NWB's consideration of the Application since the initiation of the NIRB's Review of the Project and the NWB's consideration of the Application; providing comments, concerns and advice to the NIRB for consideration regarding the scope of the project and assessment, throughout the information request period and providing comments to both the NIRB and the NWB through the technical review period. INAC attended the joint NIRB and NWB Technical Meeting, Community Roundtable and PHC, and participated at the NIRB's Final Hearing.

4.2.8 Natural Resources Canada

The mandate of Natural Resources Canada (NRCan) is to develop, implement and deliver policies, programs, science and technology for the sustainable development and responsible use of Canada's mineral, energy and forestry resources. NRCan has the jurisdiction to issue a licence governing the manufacturing and storage of explosives through the federal *Explosives Act*. NRCan provided scientific and technical expertise to the NIRB's Review in the areas of hydrogeology, permafrost and terrain conditions.

NRCan has participated in the NIRB's assessment of the proposed Project since the initiation of the Review of the proposal, providing comments, concerns and advice to the NIRB for consideration regarding the scope of the project and assessment, and throughout the information

request and the technical review period. NRCan attended the joint NIRB and NWB Technical Meeting, Community Roundtable and PHC, and participated at the NIRB's Final Hearing.

4.2.9 Transport Canada

Transport Canada (TC) is responsible for development and administration of transportation policies and programs for Canada. TC also has a responsibility to regulate associated transportation infrastructure, equipment, and personnel in accordance with key relevant pieces of legislation, including the *Navigation Protection Act*, *Aeronautics Act*, *Canada Shipping Act, 2001*, *Arctic Waters Pollution Prevention Act*, *Marine Liability Act*, *Marine Transportation Security Act*, and the *Transportation of Dangerous Goods Act*. TC provided scientific and technical expertise to the NIRB's Review in the areas of marine operations, and navigation in Canadian waters.

TC has participated in the NIRB's assessment of the proposed Project since the initiation of the Review of the proposal, providing comments, concerns and advice to the NIRB for consideration regarding the scope of the Project and assessment, and throughout the information request and the technical review period. TC also attended the joint NIRB and NWB Technical Meeting, Community Roundtable and PHC, and attended the NIRB's Final Hearing. Following review of the EIS and additional information provided by the Proponent in addition to Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) indicating that it will not "Opt-In" for its project related in-works on non-Scheduled waterways to be reviewed under the *Navigation Protection Act*, TC determined that it had no regulatory role in the Whale Tail Pit Project proposal; however, TC noted that it would be available to provide advice and/or information regarding any activities related to its mandate.

4.2.10 Baker Lake Hunters and Trappers Organization

The Baker Lake Hunters and Trappers Organization (HTO) represents Baker Lake, the closest community to the proposed project site. The Baker Lake HTO has assigned powers and functions recognized through the *Nunavut Agreement* as follows:

- The regulation of harvesting practices and techniques among members, including the use of non-quota limitations;
- The allocation and enforcement of community basic needs levels and adjusted basic needs levels among members; and
- The assignment to non-members, with or without valuable consideration and conditions, of any portion of community basic needs levels and adjusted basic needs levels.

Following the conclusion of the NIRB's Pre-hearing Conference for the Project, the Baker Lake HTO applied for and was granted Intervenor Status by the NIRB. The Baker Lake HTO submitted final written submissions and participated at the Final Hearing.

4.2.11 Local Community Representatives

The NIRB invited five (5) community representatives from each of the seven (7) communities of the Kivalliq region of Nunavut deemed to be the most affected by the proposed Project to attend the Final Hearing in Baker Lake: Arviat, Chesterfield Inlet, Coral Harbour, Nauyasat, Baker Lake,

Rankin Inlet, and Whale Cove. Community organizations were contacted in order to solicit representatives from broad demographic groups to participate, including local women's groups, Hunters and Trappers Organizations, Elders' societies, Hamlet Councils, and youth groups. Where no local group existed, the NIRB sought advice from regional associations and organizations to confirm participants for the Final Hearing. A total of 22 community representatives from the seven (7) communities in the Kivalliq region attended the technical sessions of the Final Hearing and participated directly in the Community Roundtable portion of the Hearing.

The format of the Final Hearing allowed the community representatives to observe the technical presentations provided by Agnico Eagle and the Intervenor during the two days of the proceedings, after which they participated directly through the Community Roundtable portion of the Final Hearing. During the Community Roundtable, representatives from the communities replaced the registered Intervenor at the table to hear summary presentations by Agnico Eagle regarding each component of the project proposal. Due to time constraints during the Final Hearing, the summary presentations from Intervenor regarding their respective mandates, jurisdictions and the conclusions associated with their review of the Proponent's EIS were not repeated during the Community Roundtable, as all community representatives were present to hear this information during the technical presentations of the Intervenor at the Final Hearing. Community representatives were however given time during the Community Roundtable to pose questions directly to Agnico Eagle and/or Intervenor and to provide their comments and concerns directly to the Board for consideration.

Sections 5, 6 and 7 of this report include specific reference to relevant comments, issues, and concerns expressed by community representatives at the Final Hearing; [Table 2](#) below provides a brief summary of the key issues, concerns and perspectives offered by the community representatives and members of the public during the Community Roundtable sessions of the Final Hearing.

Table 2: Key Issues as Raised by Community Representatives regarding the Whale Tail Pit Project Proposal

SUBJECT	ISSUES/CONCERNS/COMMENTS
ECOSYSTEMIC EFFECTS	
Caribou	How do you monitor caribou to make sure that they are not being affected by the mine (do you take skin and blood samples, do you get samples of meat)?
	When Cumberland first started the project, there were many caribou, since this project started we have seen caribou declines—have mine vehicles hit any caribou during the Meadowbank project? Will the caribou impacts be like the fish where 20% of the fish in the area may be affected? Are there any records of caribou loss associated with the previous Meadowbank project?
	We have seen huge drops in the number of caribou since the mine started up—we are very concerned about any additional declines in the caribou, Agnico Eagle must recognize our concerns.
	Will the practices that have been improved at Meadowbank in terms of

Table 2: Key Issues as Raised by Community Representatives regarding the Whale Tail Pit Project Proposal

SUBJECT	ISSUES/CONCERNS/COMMENTS
	managing the road better to avoid wildlife fatalities (and caribou in particular) on the road be implemented at the Whale Tail Pit?
Caribou	Caribou crossings are sacred and should be protected, because changes in these areas can cause caribou to not return to these areas and change their migration routes.
	Would like to see better use of technology (drones, cameras, etc.) so that there is less reliance on heavy collars on caribou
	Reliance on caribou collaring data for assessing the extent of the caribou is unreliable as it is a very small percentage of the animals.
	The study area should include not just adjacent to the mine site, but also the overall region—caribou do not stay in one place.
Caribou	How will you manage the cameras that you will use to monitor the caribou migration to make sure that they are not knocked out by predators gnawing on them and/or otherwise disturbing them?
	Our Elders would teach us to hunt; they used to tell us to make sure that the lead caribou should be allowed to pass undisturbed; now that the road is finished, have you seen any caribou be stopped in their travels by the road?
	Do not want to see the use of collars on caribou. Is there some other way of studying them?
Caribou	It is expected that the road construction will affect the caribou (we expect them to go around the road if they are in small enough numbers, but not during migration when they are in larger numbers, they will continue to go through no matter what).
	How is the project expected to affect the caribou?
Chemicals	What kinds of chemicals will be used on-site; and for what purposes?
	How will Agnico Eagle dispose of any chemicals that remain and prevent these chemicals from entering the environment?
Dewatering	How big is the area of the lake that will dewatered (will it be only a small part)?
Dust	Will the dust remaining in the tailings pits be safe when the pits dry out?
Fish	What will the effects be on fish? And how do you monitor for potential effects?
Fish Outs	Concerned about how fish outs and transfers of fish from one lake to another will work; the temperature of the lakes can vary considerably from one lake to another – does Agnico Eagle take that into consideration when doing the fish outs so that the fish are not shocked by being removed from one lake and put into another lake?
	How far apart are the lakes that the fish will be transferred from and to?
	What is the fish out process like—do you take them out and put them into a tank for transfer?
	How do you handle fish during the transfer; I have heard that fish will die

Table 2: Key Issues as Raised by Community Representatives regarding the Whale Tail Pit Project Proposal

SUBJECT	ISSUES/CONCERNS/COMMENTS
	if handled too much and if they are exposed to hot temperatures.
Fish Outs	How many fish die and are affected during the fish outs? How many fish are in that lake and how many will have to be moved?
Freshwater Quality	Does Agnico Eagle test the water from the River and down throughout the watershed downstream of the Meadowbank Gold Mine?
Gravel	Will Agnico Eagle have to work with the Hamlet to get gravel from the Hamlet or does Agnico Eagle have authority to quarry their own gravel?
Haul Trucks	Are the haul trucks that are going to be used for the Whale Tail Pit development the same as Meadowbank?
Housekeeping	Agnico Eagle should be managing the housekeeping and waste management at the new Whale Tail Pit to the same standard as the Meadowbank site, which is very well maintained (the communities could learn something from Agnico Eagle as to how to maintain a site).
Marine Wildlife and Marine Habitat	In Coral Harbour, our marine wildlife, seals, whales and walrus are very important to us. We feel that there have been impacts from shipping on the marine wildlife in the area (they are being scared away from that area). We do not want ships go between Walrus Island and Coats Island. We have raised this and ask this of shipping companies for not only us, but our children and their future. We saw two ships take walrus from Coats Island and they had Zodiac boats and were travelling around the walrus—we think the ship was a Russian tourist ship, but the community had not been informed about their presence. Not only walrus are there, but also Murres on the island and they are also being disturbed. When we see ships and people disturbing our marine wildlife we don't know how we go about reporting this and we don't know how to get this information to anyone who can stop these disturbances and protect the marine wildlife along the routes.
Mining	Will Agnico Eagle be mining the same way at the Whale Tail Pit as they are doing at Meadowbank?
Musk Ox	Are the road effects on musk ox being monitored; and if so, how are these effects being monitored and what is that monitoring information
Musk Ox	What will be the impacts be on the musk ox near the Whale Tail Pit site?
Permafrost	How deep will the Whale Tail Pit be, and where it crosses the permafrost with there be an effect on the permafrost?
Reclamation of Pits	Now that you have created the pits at Meadowbank and started re-flooding them at closure, have you monitored the water quality in the pits afterward and have you seen effects on the water quality in those pits?
Road Construction	Are you going to construct the haul road in the same way as the Meadowbank road?
Road (All Weather Access Road)	If NIRB doesn't approve the Whale Tail Pit, what would happen to the All Weather Access Road to the Meadowbank Gold Mine?
Road (Haul Road)	What does the company mean by "private road" – does it mean that local

Table 2: Key Issues as Raised by Community Representatives regarding the Whale Tail Pit Project Proposal

SUBJECT	ISSUES/CONCERNS/COMMENTS
between Amaruq and Meadowbank)	people cannot access the area at all—will they be prevented from entering the area by the road?
Road (Haul Road between Amaruq and Meadowbank)	Will there be signage along the road?
Shipping	Can the ships dock/shelter along the shipping route if the weather gets bad?
	Will the project shipping for the Whale Tail Pit Project add additional shipments to the amount of shipping taking place now?
	Is it the shipping companies that are responsible for spills/accidents that might occur along the shipping route, or it is the mining company?
	How do communities get a hold of someone to look into things if we do something that might be a contaminant coming out of a ship?
Shipping	Are there any monitoring vessels in the area?
	The freight that is being brought here; where does it come from and is it inspected before it comes into Nunavut?
Terrestrial Wildlife and Habitat	How is wildlife in the area tested to ensure that it is healthy and/or good to eat (especially the blood, meat, skin, etc.)?
	How will the project potentially affect wildlife (in addition to caribou and musk oxen) such as polar bears, grizzly bears, wolverine and ground squirrels?
Water Quality	Does Agnico Eagle test the water from the River and down throughout the watershed downstream of the Meadowbank Gold Mine?
Water Quality	What is meant by reaching “appropriate water quality” when the dikes will be breached—are those limits appropriate for recreational use of the water, drinking water, for fish living in the water, etc.?
SOCIO-ECONOMIC EFFECTS	
Archaeological Sites	What will happen to grave sites identified close to the Whale Tail Pit?
Benefits, Royalties and Taxation	How are the royalties associated with the project going to get distributed in the communities, especially the community most directly affected, Baker Lake?
	Over the 10 years of operating at Meadowbank how much as Agnico Eagle made, and where has that money gone?
	The lands surround the existing mine are torn up and our communities outside Baker Lake haven’t even seen \$50 per person.
Community Consultations	What consultations were conducted in Coral Harbor, Rankin Inlet and Nauyasat; it does not seem to be that Agnico Eagle has consulted in those communities about this project.
Community Infrastructure and Public Services	Why are there no Chesterfield Inlet events planned in the future community events supported by Agnico Eagle?

Table 2: Key Issues as Raised by Community Representatives regarding the Whale Tail Pit Project Proposal

SUBJECT	ISSUES/CONCERNS/COMMENTS
Contracting and Business Opportunities	Local businessmen are in favour of the Whale Tail Pit Project getting the green light. Had the Meadowbank Gold Mine not been approved, Baker Lake would not be doing as well as we are—it is very good to see for those of us who have our own businesses, it has been very good for us.
	As members of our communities we have seen a lot of our people working, but our businesses also have to ensure that we give priority to Inuit employment first and foremost.
Culture, Resources and Land Use	What does CLARC stand for? Could these Committees be used to report back to the Communities affected by these projects?
Economic Development & Self Reliance	It would be very difficult if there is a delay in the construction of Whale Tail Pit Project and the shutdown at Meadowbank for the workers who would otherwise be able to transition from one to another.
Economic Development & Self Reliance	We have to ensure that the youth are encouraged to work at the mine and stay employed at the mine, rather than rely on Government handouts; but when their rent goes way up because they are employed, there is no incentive for them to continue working because it then becomes harder for them to feed their families because they are paying so much more for the same housing.
Education and Training	For employees who are currently at the Meadowbank site who are receiving on-the-job training, will this continue with the Whale Tail Pit Project? There are many people who are receiving training and it is important for them to be allowed to continue with the on-the-job training, but I am worried about what will happen to them when the Meadowbank Gold Mine shuts down.
	Very encouraged that some young people who have trained at Meadowbank now have attained certifications that will be recognized nationally—we are very proud of these people.
	For some youth, the fact that they do not have formal educations (less than Grade 12 education) can become a barrier to them filing out an application form because without Grade 12 they feel that they do not stand a chance of getting a job.
	Students need to become educated to ensure that they can gain work, but also so that they can protect the land.
Education and Training	It is very helpful for Agnico Eagle to attend at the high school to bring different types of workers to meet with the students to give them information about the different types of jobs that may be available to them.
	Is the education and training being provided by Agnico Eagle incorporating Inuit Qaujimajatuqangit; and are these things being taught by the people who know them well?
Elders	Will Elders be included in the advisory committees that work with Agnico Eagle to make decisions as Meadowbank and the Whale Tail Pit continue development going forward?

Table 2: Key Issues as Raised by Community Representatives regarding the Whale Tail Pit Project Proposal

SUBJECT	ISSUES/CONCERNS/COMMENTS
Employment	<p>Of the new positions that will be added for the Whale Tail Pit, how many will be local hires and will these jobs be managerial and give an opportunity for advancement to the current Inuit employees?</p> <p>How will Agnico Eagle ensure that Inuit workers are not intimidated by their supervisors to not work safely, properly and in a way that respects all employees and the land together?</p>
Human Health and Well-Being	<p>Is Agnico Eagle providing counselling services to support employees that may have experienced trauma in their lives?</p> <p>Agnico Eagle should ensure that support workers, especially for people who need mental health supports, should speak Inuktitut so that there are no language/cultural barriers that will prevent people from speaking with counsellors.</p>
Inuit Qaujimajatuqangit	When our Inuit Qaujimajatuqangit is collected, Inuit do not earn anything. We need to see the Elders compensated for this information; Inuit are the experts and should be compensated for sharing their expertise.
Livelihood & Employment	Our youth need jobs for the longer term and should have work for more than just a few years; it is important that they can work for some time.
Taxi Services	In a number of communities the taxis don't always come when they are called and then people miss their flight from the communities to the mine and lose their jobs. Can Agnico Eagle do something to make sure that doesn't happen?
Youth	Are there any opportunities for youth at the mine; and how old do you need to be to work at the mine?
OTHER ISSUES	
Accidents and Malfunctions	<p>Has Agnico Eagle considered increased policing to prevent hunters from using the road/shooting caribou too close to the road?</p> <p>Are there things that can be done to ensure the safety of hunters and everyone else using the roads? Who needs to be included in those discussions to increase enforcement and truly ensure safety?</p> <p>Speed limits should be enforced along the road to make sure that trucks (especially transporting fuel) are travelling safely and don't create spills of fuel on the land along the road</p> <p>When Agnico Eagle is offloading fuel from ships and onto land, there should be care taken to make sure there is no spillage.</p>

4.3. LIMITS ON PARTICIPATION AT THE FINAL HEARING

Participation of intervenors and the public is important in the NIRB's process, especially for responsible authorities who would be exercising on-going jurisdiction over several key aspects of the project potentially affected by the proposed Whale Tail Pit Project. Attendance at Final Hearings by responsible authorities with jurisdiction for the project proposal is important and the Board's expectation is that if the assessment of the Whale Tail Pit Project ultimately results in the issuance of a Project Certificate, then the regulatory authorities would be responsible for

implementing the terms and conditions within the Project Certificate in accordance with their authorities and jurisdictional responsibilities as required under Article 12, Section 12.9.1 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and s. 136(1) of the *Nunavut Planning and Project Assessment Act (NuPPAA)*.

Although the NIRB is mindful of the fact that travel is both time consuming and expensive, particularly for those government agencies without offices physically located in Nunavut, the NIRB emphasizes that regulatory participants routinely find considerable value in attending Final Hearings in person. The Final Hearing provides an opportunity for active engagement between the parties that can take place during face-to-face discussions that is not at all the same when a participant attends by teleconference only. It has been the NIRB's experience in past Final Hearings that teleconference participation is not an effective substitute for the kind of engagement that arises when a department representative is available in person to ask questions, and just as importantly, to be questioned by the Proponent, public, Community Representatives and Board Members at the Hearing.

Further, the NIRB reminds all parties that even when a responsible authority reaches agreement with the Proponent on the technical issues raised in that agency's submissions, this does not mean that the Board and other participants in the process will necessarily agree that the issue has been resolved to their satisfaction. Consequently, there may still be considerable discussion required at the Final Hearing with respect to issues considered by the responsible authority to be "resolved". Conducting these types of open discussions in a Final Hearing via teleconference is less than ideal and poses a significant obstacle to the Board's full and fair consideration of issues that remained unresolved or for issues that require the agreement and advice of several intervenors and communities.

Finally, the NIRB notes that it is very difficult for community members to establish an effective and on-going working relationship with responsible authorities that do not make the effort to travel to their community. Responsible authorities who fail to appear in person at the Final Hearing have difficulty establishing the kind of on-going working relationship with affected communities that supports effective regulation of projects in the territory. This is particularly the case where there is no, or only limited agency presence in the region generally.

5. ECOSYSTEMIC EFFECTS

In Volume 3 of the Environmental Impact Statement (EIS), Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) described its method for analyzing potential effects, as well as classifying and determining the significance of impacts from the Whale Tail Pit Project proposal (the Project) on the biophysical and socio-economic environments. The assessment approach was based on ecological, cultural, and socio-economic principles and environmental best practice. Key elements of the assessment methods and approach considered by Agnico Eagle included:

- Valued Components (VCs);
- Spatial and Temporal Boundaries;
- Pathway Analysis;
- Residual Effects Analysis;
- Prediction Confidence and Uncertainty;
- Residual Impact Classification and Determination of Significance; and
- Monitoring and Follow-up.

Agnico Eagle noted that the VCs selected in 2005 for the original Meadowbank Final EIS were considered to be appropriate for the Whale Tail Project proposal EIS as they were consistent with issues raised during the 2005 Final EIS process and recent public meetings held by Agnico Eagle in 2014, 2015 and 2016. The VCs were selected based on the EIS Guidelines issued by the Nunavut Impact Review Board (NIRB) in 2004⁵¹ for the Meadowbank Gold Mine Project and based on the recent final EIS Amendment in support of the Vault Pit Expansion into Phaser Lake in 2016.

Once the VCs were selected, Agnico Eagle conducted a ‘pathway analysis’ to identify and assess the linkages between the Project components or activities and potential residual effects (i.e. effects after mitigation) to VCs. Pathways were determined to be primary, secondary, or as having no linkage using: scientific and traditional knowledge, logic, experience with similar developments, and environmental design features. Each potential pathway was assessed and described as follows:

- no linkage – pathway is removed by environmental design features (i.e. effect mitigation) so that the Project results in no detectable (measurable) environmental change and residual effects to a VC when compared to baseline or guideline values;
- secondary – pathway could result in a minor environmental change, but would have a negligible residual effect on a VC when compared to baseline or guideline values; or
- primary – pathway is likely to result in a measurable environmental change that could contribute to residual effects on a VC when compared to baseline or guideline values.

⁵¹ NIRB 2004. *Environmental Impact Statement Guidelines for the Meadowbank Project*. February 2004.

Pathways with no linkages or those that were considered minor were not predicted to result in environmentally significant effects and were not analyzed further by Agnico Eagle. Alternatively, primary pathways were considered through further effects analysis to determine the potential environmental significance of the Project on the key properties of VCs. Key properties were called “assessment endpoints” and were considered features that should be protected for their use by future human generations.

For its assessment of potential project-related ecosystemic impacts, Agnico Eagle established distinct temporal and spatial boundaries for each VC assessed within the EIS prior to the effects analysis. The temporal boundaries for each VC were defined in association with planned activities over the lifetime of the Project – mobilization and construction, operation, reclamation and closure, and post-closure monitoring. Potential impacts on VCs were assessed within boundaries established as the project footprint, Local Study Area (LSA), and Regional Study Area (RSA).

Agnico Eagle included a residual effects assessment within the EIS that presented a numerical and/or qualitative description of magnitude, geographic extent, duration, and frequency of residual effects for each pathway. From the summary of residual effects, each pathway that was linked to an assessment endpoint was classified using categorical scales for each impact criterion (e.g., low magnitude, regional geographic extent, long-term duration, high likelihood). Results from the effects analysis and residual impact classification were then used in the evaluation of the significance of impacts from the Project on VCs.

In addition to project-specific effects, Agnico Eagle conducted an analysis of cumulative effects on applicable VCs. Agnico Eagle employed the same approach as that used for the project-specific analysis and residual impact classification and determination of significance.

For each effects analysis, key sources of uncertainty were presented by Agnico Eagle in the EIS, as well as discussions on how the uncertainty was addressed to increase the level of confidence that potential effects to the VC from the Project would not be worse than what was predicted. Monitoring programs were proposed by Agnico Eagle to address the uncertainties associated with the impact predictions and environmental design features. In general, monitoring will be used to verify impact predictions and determine the effectiveness of environmental design features/mitigation. Monitoring will also be used to identify unanticipated effects and implement adaptive management, where required.

5.1. AIR QUALITY

5.1.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) expects short-term and seasonal project-related impacts to air quality that would be limited in their spatial extent. The assessment is summarized below and detailed in Volume 4, Section 4.3 of the Environmental Impact Statement (EIS). No significance determination was made in the air quality section itself; rather, Agnico Eagle considered the impact of changes to air quality on vegetation in Volume 5, Section 5.4, on wildlife in Volume 5, Section 5.5, on the freshwater environment in Volume 6, Section 6.4, and as part of the Human Health and Ecological Risk Assessment in Volume 3, Appendix 3-

B of the EIS. Supporting baseline information and methods were provided in the Air Quality Baseline Report (Volume 4, Appendix 4-A), the Air Quality Emissions Inventory (Volume 4, Appendix 4-B), and the Air Quality Modelling Technical Summary (Volume 4, Appendix 4-C). Additional model results were provided following the Pre-hearing Conference in a technical memorandum (Commitment 7).⁵² In Volume 4, Section 4.3 of the EIS, Agnico Eagle also listed several sources of Inuit Qaujimajatuqangit that had been incorporated into its assessment, and noted that Inuit have documented recent changes to air quality and are concerned about potential effects of these changes on traditional land use activities and resources.

Agnico Eagle set the spatial boundary for the assessment of potential impacts on air quality as a 60 kilometre (km) by 60 km square centered on the Whale Tail Pit, in addition to the length of the haul road from the Meadowbank Gold Mine to the Whale Tail Pit (approximately 72 km), with impacts predicted at increasing distances outwards from the road. Agnico Eagle focused its impact assessment on the operations phase and specifically on the peak year of anticipated emissions (2020).

Agnico Eagle identified three (3) primary pathways of potential project impacts on air quality:

- Emissions and dust produced along the proposed haul road from the Meadowbank Gold Mine to the Whale Tail Pit during operations
- Emissions and dust produced through mining operations at the Whale Tail Pit
- Emissions and dust produced through milling and camp operations at the Meadowbank Gold Mine.

Agnico Eagle considered emissions from construction and decommissioning to be secondary pathways and were not explicitly assessed.

Agnico Eagle considered the following individual compounds in its assessment of air quality: Carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), sulphur dioxide (SO₂), particulate matter smaller than 2.5 micrograms (PM_{2.5}), particulate matter smaller than 10 micrograms (PM₁₀), and total suspended particulate (TSP). To establish baseline ambient air quality, Agnico Eagle compiled and analyzed published concentrations of these *criteria air contaminants* (CACs) for various locations within Nunavut and the Northwest Territories.

Agnico Eagle's analysis of potential effects (see Volume 4, Appendices 4-B and 4-C for details of emissions estimates and dispersion modelling) demonstrated that the emissions of CO, NO₂ and SO₂ that would be produced by vehicles along the proposed haul road are predicted to be low compared to baseline and ambient air quality standards. Agnico Eagle's analysis also revealed that predicted maximum TSP concentrations would exceed the 24-hour average ambient air quality standard at distances up to 1,500 m from the road, and maximum annual TSP concentrations would exceed the standard within the first 100 to 300 metres. Results for PM_{2.5} predict the 24-hour standard to be exceeded within 100 m of the road, but the annual standard would not be exceeded at any distances. Agnico Eagle concluded that the effects to air quality would be limited in spatial extent, occur primarily on dry windy days in the summer, and would

⁵² Golder Associates Ltd. July 2017. *Comparison of Vault Haul Road Observation of Road Dust to Whale Tail EIS Haul Road Predictions*. Whale Tail Commitment 7. Prepared for Agnico Eagle Mines Ltd.

be reversible once the all-weather access road (AWAR) is decommissioned. In its supplemental analysis provided in response to concerns about the data and methods used to model dust from the proposed haul road, Agnico Eagle concluded that compliance with the Alberta residential/recreational guidelines for dustfall would likely be attained at 300 to 500 m from the road, or as near as 100 to 300 m.⁵³

Agnico Eagle's results of predicted air quality at the Whale Tail Pit showed that predicted concentrations of CO, NO₂, SO₂, and PM_{2.5} would be below air quality standards; however, concentrations of 24-hour TSP and 24-hour PM₁₀ would exceed the standards. Agnico Eagle concluded that the effects to air quality would be limited in spatial extent, occur primarily on dry windy days in the summer, and would be reversible once the Whale Tail Pit is decommissioned.

Agnico Eagle predicted the effects of continued operations at the Meadowbank mill and camp on air quality by considering the 2014 monitoring results from the Meadowbank Gold Mine. Agnico Eagle stated that in 2014, the Meadowbank Mill processed an average of 11,313 tonnes of ore per day (t/d), which is greater than the 9,000 t/d expected to be produced from the Whale Tail Pit should the project proceed. Two (2) monitoring stations at Meadowbank exclusively monitor dustfall, and two (2) other stations monitor dustfall in addition to TSP, PM₁₀, PM_{2.5}, and NO₂. Agnico Eagle noted that the 2014 monitoring data indicate one 24-hour exceedance each for the Government of Nunavut's ambient air quality standards for TSP and PM_{2.5}, and that there were no exceedances of NO₂ concentrations in 2014. Further, five (5) out of 44 dustfall samples at Meadowbank exceeded the Alberta recreational/residential area dustfall guideline, but no dustfall samples at Meadowbank exceeded the industrial/commercial dustfall guideline. Agnico Eagle concluded that impacts to regional air quality due to the Meadowbank milling and camp operations would be minimal and reversible.

Agnico Eagle's proposed mitigation for fugitive dust as outlined in the EIS would include daily road watering at the Whale Tail Pit and Meadowbank Mill during the summer, strategic road watering along the haul road at hot-spots, near sensitive habitat, and/or during dry windy conditions in summer, as well as enforcement of speed limits along the haul road. In response to Technical Comments from the Kivalliq Inuit Association and Health Canada requesting the Proponent adopt and describe an adaptive management approach that considers additional measures of dust control, Agnico Eagle clarified it would i) use esker material to top the road ii) ensure speed limits are respected, and iii) apply water and/or chemical suppressants approved by the Government of Nunavut. During the Final Hearing, Agnico Eagle stated it would use a chemical suppressant where topdressing the road with low silt esker material and applying water is insufficient. Agnico Eagle noted that TETRA Flake is the chemical suppressant currently used on the Vault haul road at the Meadowbank Gold Mine. Agnico Eagle went on to say that in 2016 and 2017, dust suppressants were applied along the AWAR in areas of concern identified by the Baker Lake Hunters and Trappers Organization (HTO), and that it would continue to apply suppressants to these areas during the Whale Tail Pit operations.⁵⁴

⁵³ Golder Associates Ltd. July 2017. *Comparison of Vault Haul Road Observation of Road Dust to Whale Tail EIS Haul Road Predictions*. Whale Tail Commitment 7. Prepared for Agnico Eagle Mines Ltd.

⁵⁴ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 108-109, lines 18-26, 1-21

In the EIS, Agnico Eagle noted that it would update the Air Quality Monitoring Plan currently in place at Meadowbank (see Volume 8, Appendix 8-E.1) and would continue to monitor NO₂, particulate matter, and dustfall at the Meadowbank Gold Mine and along the Meadowbank AWAR to Baker Lake, and would implement such monitoring at the Whale Tail Pit and along the haul road from Meadowbank. In response to a Technical Comment from ECCC regarding the proposed dustfall monitoring locations, Agnico Eagle confirmed the monitoring proposed in Appendix 8-E.1 had been updated to include two additional dustfall monitoring stations. During the Final Hearing, Agnico Eagle reviewed its proposed locations for dustfall monitoring, noting stations would be installed around the mine site and in transects along the haul road at kilometre (km) 18, km 36, and km 54.⁵⁵ Following the Pre-hearing Conference, and prior to the Final Hearing, Agnico Eagle provided a summary of its meeting minutes with ECCC for the selection of a feasible location of the active sampling location for particulate matter and emissions at the Whale Tail Pit to monitor for the air quality impacts of the Project. Specifically, the summary indicated that: no additional stations were agreed upon; the station as described within the Air Quality Monitoring Plan would remain unchanged and the Plan would be updated in future iterations based on evaluations and investigations by Agnico Eagle and regulatory review.⁵⁶

In the EIS, Agnico Eagle also acknowledged the potential for the proposed Project to contribute to acid deposition and to in turn impact soil, water, and vegetation. However, Agnico Eagle concluded these impacts would be minimal and highlighted that there have been no apparent impacts of acid deposition from current emissions from the Meadowbank mill.

5.1.2 Views and Concerns of Interested Parties

Within their joint final written submission, Nunavut Tunngavik Inc. (NTI) and the Kivalliq Inuit Association (KIA) highlighted the importance of dust as a potential issue with the Inuit of the Kivalliq region and noted that it supports the use of the Vault pit haul road dustfall station to validate and update the air quality modelling as noted in the memorandum⁵² describing the comparison of Vault Haul road observation of road dust to Whale Tail EIS Haul Road predictions. The NTI and KIA requested that Agnico Eagle continue monitoring dustfall through the operating life of the Whale Tail Pit Project along the Vault pit haul road as well as from June to August perpendicular to the AWAR from Baker Lake to Meadowbank.⁵⁷ In response, Agnico Eagle agreed to continue monitoring along the Vault pit haul road and also to conduct additional monitoring along the AWAR in June and August 2018, with results informing future updates to the Air Quality and Dustfall Monitoring Plan accordingly.⁵⁸

During the Final Hearing, the KIA asked Agnico Eagle to clarify whether the dustfall monitoring stations along the AWAR from Baker Lake to Meadowbank would be monitored in June and July like those on the Whale Tail haul road. In response, Agnico Eagle confirmed they would.⁵⁹

⁵⁵ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 108, lines 4-17

⁵⁶ Golder Associates Ltd. June 2017. *ECCC and Agnico Eagle Meeting: Whale Tail Pit Air Quality Monitoring Station*. Whale Tail Commitment 4. Prepared for Agnico Eagle Mines Ltd.

⁵⁷ Nunavut Tunngavik Inc. and Kivalliq Inuit Association Final Written Submissions, August 14, 2017.

⁵⁸ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

⁵⁹ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 142, line 6.

Further, the KIA asked during the Final Hearing whether Agnico Eagle knew what volume of water would be used as a dust suppressant along the road.⁶⁰ Agnico Eagle's deferred response noted seven (7) cubic metres of water per kilometre are used at Meadowbank.⁶¹ During the Final Hearing, the KIA further asked Agnico Eagle to comment on the effectiveness of TETRA Flake compared to other potential dust suppressants that were going to be tested. Agnico Eagle confirmed it had completed a pilot study on the AWAR between Baker Lake and Meadowbank in locations identified through discussions with the Baker Lake Hunters and Trappers Organization (HTO). Agnico Eagle noted that based on that study and through further discussions with the Baker Lake HTO, TETRA Flake was selected, adding that the results were described in its last annual report to the NIRB on the Meadowbank Gold Mine Project. Lastly, the KIA asked for clarification regarding the locations of the dustfall monitoring stations along the haul road, in particular their distance perpendicular to the road. Agnico Eagle reiterated that the stations in the transects are 30 m upwind, 30 m downwind, 100 m downwind, 300 m downwind, and 1000 m downwind, and noted that in some cases they are north/south, and in some cases east/west, but in all cases they are at locations selected to be consistent with one another.⁶²

During the Technical Review period of the EIS, Environment and Climate Change Canada (ECCC) requested clarification from Agnico Eagle regarding its proposed air quality monitoring stations, including the location of an active particulate monitoring station. During the Technical Meeting, Agnico Eagle committed to work with ECCC to select an appropriate location for the active particulate monitoring station. In a follow-up meeting between ECCC and Agnico Eagle, one (1) proposed and two (2) alternate locations were discussed, and Agnico Eagle agreed to evaluate adding a supplemental low-powered particulate monitoring station and assess relocating the proposed monitoring station once site infrastructure is in place.⁵⁶ In its final written submission⁶³ and during the Final Hearing, ECCC confirmed it would review these assessments in future iterations of the Air Quality Monitoring Plan, and had no outstanding concerns at this point.

The Baker Lake HTO also raised concerns regarding dust, noting in its final written submission that the high volume of dust produced along the Meadowbank AWAR has been a source of long-standing frustration. Expressing concerns that monitoring is carried out by Agnico Eagle and associated mitigative decisions made by Agnico Eagle without clear participation of the community of Baker Lake, the Baker Lake HTO recommended that Agnico Eagle fund an independent dustfall monitoring study to determine whether or not dust suppressant is required. To ensure that perspectives of residents of Baker Lake are considered, the Baker Lake HTO stated that it would like Agnico Eagle, the KIA, and the Government of Nunavut to form a monitoring committee that includes representatives from local councils and organizations (i.e.

⁶⁰ A. Sexton, Kivalliq Inuit Association, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 142, line 9-16

⁶¹ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 374, lines 18-23

⁶² R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 144-145, lines 13-26, 1-16

⁶³ Environment and Climate Change Canada Final Written Submissions, August 14, 2017.

Hamlet Council and HTO) to oversee monitoring and make decisions about mitigation.⁶⁴ In response to the final written submission, Agnico Eagle confirmed it would hire an independent consultant to conduct a dustfall monitoring study in 2018 but noted that the KIA has completed its own independent review of all monitoring results at Meadowbank.⁶⁵

During the Final Hearing, the Baker Lake HTO noted the Proponent compared dustfall monitoring results to Alberta guidelines, and asked Agnico Eagle whether there were other jurisdictions that could be used for comparison. The HTO went on to note that the area around Baker Lake is flat, barren ground tundra with no trees, whereas Alberta does have trees. Agnico Eagle replied that there are other jurisdictions with standards that could be used, including British Columbia, Manitoba and Ontario. Agnico Eagle noted the thresholds in British Columbia are similar to those in Alberta, and that Alberta was used in this case because it was also used for the Meadowbank and Meliadine Projects.⁶⁶

During the Final Hearing the Baker Lake HTO also asked Agnico Eagle whether Inuit Qaujimagatuqangit studies were incorporated in the dust monitoring along the Awar, and further, whether Agnico Eagle would commit to the suggestion made by the Baker Lake HTO in its final written submission that Agnico Eagle fund an independent study focused on perspectives and observations of Inuit and Baker Lake residents.⁶⁷ Agnico Eagle emphasized that it has utilized all information available including Inuit Qaujimagatuqangit studies, and noted it is committed to defining that scope of work and selection of the researcher with the Baker Lake HTO.⁶⁸

During the Final Hearing, NIRB staff noted ongoing concerns it has heard by the community of Baker Lake regarding dust generation along the Meadowbank Awar.⁶⁹ NIRB staff asked Agnico Eagle what specific dust suppressants would be applied to the proposed road and how frequently, and how this would compare with the current practice along the existing Meadowbank Awar. Agnico Eagle answered that the dust suppressant being used currently on the Awar is a dry, flake material, which, based on the 2016 pilot study, was the most effective product, and that likely this would be the same material used along the haul road if dust becomes a concern. Agnico Eagle reiterated that the Baker Lake HTO and the Hamlet of Baker Lake had been involved in discussions in choosing this suppressant, that dust monitoring has shown Alberta standards are being met, and confirmed it feels its dust suppression along the Awar is effective.⁷⁰

⁶⁴ Baker Lake Hunters and Trappers Organization Final Written Submissions, August 14, 2017.

⁶⁵ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

⁶⁶ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 146-147, lines 1-26, 1-10

⁶⁷ W. Bernauer, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 147-148, lines 18-26, 1-3

⁶⁸ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 148, lines 4-12.

⁶⁹ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 157-158, lines 26, 1-6

⁷⁰ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 162-164, lines 20-26, 1-26, 1-14

5.1.3 Views of the Board

The Board notes that Agnico Eagle has committed to implementing various mitigation measures, as well as to updating its existing Air Quality Monitoring Plan as project designs are finalized, additional monitoring data gathered, and discussions with parties advance. The Board acknowledges the air quality assessment conducted by Agnico Eagle including its supplemental analysis at the request of intervening parties and expects that all air quality parameters outlined in its assessments, and within the proposed Air Quality Monitoring Plan would be managed appropriately to ensure that impacts do not exceed relevant standards, guidelines, nor what was predicted in the EIS. During the Final Hearing, the Board asked several questions that helped clarify any uncertainty it had.

During the Final Hearing, the Board asked Agnico Eagle to clarify whether water or chemicals would be used as dust suppressants.⁷¹ Agnico Eagle answered that water is used on the haul roads, at Meadowbank, and around Vault pit, while at certain locations along the AWAR from Baker Lake to Meadowbank the chemical product is used that was chosen based on the 2016 pilot program and through engagement with the Baker Lake Hunters and Trappers Organization (HTO).⁷² The Board also asked whether haul trucks are covered, what they would be carrying, and how many trucks would be travelling back and forth in one day.⁷³ Agnico Eagle replied that currently between the Vault pit and the Meadowbank mill the trucks carrying rock are not covered. Agnico Eagle further noted that there would be ten (10) haul trucks per hour along the haul road, 24 hours a day, seven (7) days a week, with the exception of blizzard days and when caribou are migrating.⁷⁴

Further, the Board also sought clarity from Agnico Eagle regarding dust monitoring, and expressed concern that the Alberta guidelines used to assess dustfall levels are set for a very different environment, as was brought up by the Baker Lake HTO. The Board further noted that in a snowy, windy, and treeless environment, the dust would be carried further than in other environments.⁷⁵ In response, Agnico Eagle noted that vegetation, soil, and bird monitoring studies are used in addition to the dustfall monitoring stations to assess the effects of dust, and highlighted that speed limits and the use of dust suppressants along the AWAR would reduce the impact of dust.⁷⁶

⁷¹ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 170-171, lines 22-26, 1-3

⁷² J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 171, lines 4-19

⁷³ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 171-172, lines 22-26, 1-5

⁷⁴ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 172-173, lines 9-26, 1-7

⁷⁵ P. Kadlun, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 178, lines 10-21 and pp. 180-181, lines 7-26, 1-7

⁷⁶ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 178-180 lines 23-26, 1-26, 1-4 pp. 181-182, lines 8-26, 1-19

During the Final Hearing, the Board asked Environment and Climate Change Canada (ECCC) to clarify the locations and frequency of the air quality analysis.⁷⁷ ECCC replied that the air quality assessment and modelling was done by Agnico Eagle and covers an area tens of kilometres wide. ECCC also noted the Proponent has committed to air quality and dustfall monitoring at various locations around Meadowbank, Amaruq, and the road between the two sites.⁷⁸ The Board also asked ECCC to explain what an active particulate monitoring station does and to clarify if it remained concerned about the location of the sampling stations.⁷⁹ ECCC defined an active air sampler as one with a pump that pulls in air and in this case, samples it for various PM_{2.5} which is particulate matter smaller than two and a half (2.5) microns, PM₁₀ – particulate matter smaller than ten (10) microns - and total suspended particulate. ECCC noted that in contrast, a dustfall sampler is a passive system that does not require power and effectively is just a jar that fills with dust. ECCC noted it had been concerned because the Proponent's chosen sampling location was not downwind of the pit, but acknowledged Agnico Eagle had committed to exploring alternative and supplementary locations - subject to constraints imposed by requirements for power - and that ECCC would discuss the matter further with Agnico Eagle if the Project is approved. The Board concurred that the sampling station should be put in the direction of the prevailing winds.⁸⁰

The Final Hearing was an opportunity for the Board to clarify the Proponent's air quality monitoring and mitigation plans. The Board acknowledges the significant commentary that took place throughout the Review process and during the Final Hearing between stakeholders, agencies, and Agnico Eagle. The Board recognizes the commitment of the Proponent to update its Air Quality Monitoring Plan to reflect requests from intervening parties regarding sampling locations in particular, its commitment to work with the Baker Lake HTO to select and fund an independent study of dustfall, and its commitment to continue discussions with stakeholders to address any other concerns related to dust. The Board is encouraged by the past efforts of the Proponent to test, choose, and apply appropriate dust suppressants in collaboration with the Baker Lake HTO along the Meadowbank AWAR and the commitment to apply the lessons learned by the Proponent during the operation of the AWAR to the operation of the Whale Tail haul road. The Board expects the Proponent to continue to investigate other options for dust suppressants such as EnviroKleen®, which has been noted to be very effective elsewhere. The Board understands the compound effects that can occur from dust deposition on vegetation, and subsequently on wildlife if effects are not identified and responsively mitigated.

The Board is in agreement with commentary provided throughout the Review of the Project that for the proper management of dust and air-related issues, consistent and on-going consultation and collaboration with Nunavut stakeholders, agencies, and appropriate regulators alike will be required. In this regard, the Board stresses that mitigation, monitoring, and adaptive

⁷⁷ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 473-474, lines 9-17 and 23-26, 1-4

⁷⁸ B. Asher, Environment and Climate Change Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 474, lines 9-23

⁷⁹ E. Copland, Board Chairperson, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 476, lines 2-5, 22-23

⁸⁰ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 478, lines 2-16

management measures should be continuously assessed and refined to ensure the safe and environmentally-protective delivery of the Project throughout all phases.

5.1.4 Conclusions and Recommendations of the Board

In considering the views of the Proponent and those of parties throughout the assessment of the Project and as outlined above, the Board believes that the Project's potential effects to air quality could be appropriately managed through the commitments provided by the Proponent and the application of key mitigation and monitoring measures. Specifically, the Board recommends terms and conditions requiring the following (a brief summary of the Board's recommended terms and conditions is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

- Develop and implement an Air Quality Monitoring and Management Plan to ensure that impacts of the project on air quality are identified, effectively mitigated and adaptively managed throughout the Project;
- Report annually on the effectiveness of dust and emissions mitigation, referencing results of dustfall monitoring, sampling of criteria air contaminant concentrations, emissions stack testing, and analysis of metals concentrations in vegetation, soil, and snow samples, and demonstrate that any exceedances of air quality standards or guidelines or of the predictions made in the EIS and supplemental analysis are being addressed; and
- Update the existing Dust Management and Monitoring Plan for the Meadowbank Mine site to align plan requirements with commitments made, verify commitments to the utilization of dust suppressants along all roads associated with the Project, and provide specific triggers, thresholds and adaptive management measures that will apply if monitoring indicates that dust deposition is higher than predicted.

5.2. CLIMATE AND METEOROLOGY

5.2.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) expects minimal interaction between the Project and weather and climate. The assessment is summarized below and detailed in Volume 4, Section 4.2 of the Environmental Impact Statement (EIS). No assessment endpoint was pinpointed for which significance was assessed, however climate change impacts on permafrost are mentioned in Volume 5, Section 5.3 and climate change impacts on vegetation (wildlife habitat) are discussed in Volume 5, Section 5.4. Supporting baseline information and methods were provided in Volume 4, Appendices 4-A and 4-B. In Volume 4, Section 4.2 of the EIS, Agnico Eagle also listed several sources of Inuit Qaujimajatuqangit that had been incorporated into its assessment, noting that the Inuit of Baker Lake have observed changes to weather and climate and are concerned about impacts to wildlife, wildlife habitat, and traditional activity.

Agnico Eagle set the spatial boundary for the assessment of potential impacts to weather and climate as the Kivalliq region of Nunavut. Potential effects of the Project were assessed using

peak predicted project-related greenhouse gas (GHG) emissions (year 2020). Potential effects of Climate Change on the Project were assessed using climate model projections to the year 2100.

Agnico Eagle's baseline temperature, precipitation, and wind data incorporated measurements collected in 2013 and 2014 at a meteorological station at the Meadowbank Gold Mine, as well as 1981 to 2010 climate normal data from the Environment Canada Baker Lake A meteorology station. Agnico Eagle considered the potential for the Project to impact weather and climate through an assessment of GHG emissions. Agnico Eagle estimated greenhouse gas emissions from off-road exhaust, on-road exhaust, the power plant and the camp heater as well as for the Meadowbank mill, and compared these values against Environment Canada's average values from 2007 to 2011 for Nunavut and for Canada. Results suggest that the Project would result in a 56% increase in GHG emissions for Nunavut, and less than 0.05% of national emissions. Agnico Eagle confirmed that because emissions are expected to exceed 50,000 tonnes per year, it will continue to report to Environment Canada's Greenhouse Gas Emissions Reporting Program as required.

Agnico Eagle also considered the potential for climate change to impact the Project, noting that the most recent climate model projections (CMIP5) under two of the Intergovernmental Panel on Climate Change (IPCC)'s scenarios (the business as usual scenario, and mitigation scenario RCP4.5) predict increases of mean temperature of 7°C to 13°C in late fall and 3°C to 5°C in late spring by the year 2100. Agnico Eagle concluded however that these changes would likely have negligible effects on the Project due to the short duration of the proposed Project. See however, [Section 5.5](#) for a discussion of potential interactions of climate change on the proposed Waste Rock Storage Facility, and the Proponent's proposed mitigation.

5.2.2 Views of the Board

The Board is reasonably satisfied with the degree to which the Proponent accounted for the effects of the Project on climate change. The Board also acknowledges the Proponent's initial design considerations and, through discussions with intervening parties, its commitments to ensure the impacts of climate change on the Project (e.g., the Waste Rock Storage Facility) will be minimized (see [Section 5.5](#)). The Board notes, however, that information and assessments involving the potential impacts that climate change could have on the Project and the effects of the Project on climate continues to evolve; therefore, the Proponent needs to remain committed to revising and updating current information, operational procedures, plans, and predictions to account for any relative variations and changes that had not been anticipated.

The Board expects that Agnico Eagle will continually monitor, analyze, and report on its emissions, and acknowledges the Proponent's commitment to continue reporting to Environment Canada's Greenhouse Gas Emissions Reporting Program. The Board acknowledges that Inuit Qaujimajatuqangit was considered along with scientific knowledge and climate data trends to form components of Agnico Eagle's assessment of climate and meteorology, and would like to encourage the Proponent to continue to apply Inuit Qaujimajatuqangit as well as the best available science and technology to inform project design and closure strategies (see [Section 5.5](#)), as well as to minimize its emissions of greenhouse gases.

5.2.3 Conclusions and Recommendations of the Board

In considering the views of the Proponent and those of parties throughout the assessment of the Project and as outlined above, the Board believes that the Project's potential effects to climate could be appropriately managed through the commitments provided by the Proponent and the application of key mitigation and monitoring measures. Specifically, the Board recommends terms and conditions requiring the following (a brief summary of the Board's recommended terms and conditions is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

- Maintain a Greenhouse Gas Emissions (GHG) Reduction Plan to track emissions and demonstrate mitigation is appropriately managing effects of the Project; and
- Monitor thermal conditions of the Waste Rock Storage Areas to ensure long-term stability and integrity in a changing climate, and implement alternative mitigation measures if needed (see [Section 5.5](#)).

5.3. NOISE AND VIBRATION

5.3.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) expects noise and vibration impacts from the Project to be within acceptable limits, as summarized below and as detailed in Volume 4, Section 4.4 of the Environmental Impact Statement (EIS). No significance determination was made in the noise section itself; rather, potential effects of noise and vibration on wildlife are discussed in Volume 5, Section 5.5. Supporting baseline information and methods were provided in Volume 4, Appendix 4-D. In Volume 4, Section 4.4 of the EIS, Agnico Eagle also listed several sources of Inuit Qaujimajatuqangit that had been incorporated into its assessment, and noted that concerns had been expressed during consultations with Baker Lake community members about the direct and indirect effects of noise on wildlife.

The Local Study Area (LSA) and Regional Study Area (RSA) used by Agnico Eagle in its assessment were 5 kilometres (km) and 7 km surrounding the project footprint, respectively, consistent with the Meadowbank Final Environmental Impact Statement (EIS). The footprint included the Whale Tail Pit, waste piles, power plant, ore crushing facility, water treatment plant, and haul road. Temporally, impacts were considered for the construction, operations, and closure phases.

Agnico Eagle identified the following primary pathways of potential project-related impacts related to noise and vibration:

- Haul Road Construction (use of construction equipment/machinery, and possible blasting);
- Pit Operation (use of mining equipment/machinery, blasting); and
- Haul Road Operation (vehicle traffic).

To assess the potential impacts of noise from equipment and machinery, computer models were used to model noise propagation to receptors throughout the LSA and RSA (see Appendix 4-E).

Agnico Eagle also combined predicted noise levels with baseline ambient noise levels measured in August 2015, and compared these to limits set out by the Alberta Energy Regulator (AER), noting that there are no Nunavut-specific regulatory guidelines. To assess the potential impacts of noise and vibration resulting from blasting, Agnico Eagle compared its empirical predictions to limits set out by the Ontario Ministry of Environment as well as by Fisheries and Oceans Canada (DFO).

Agnico Eagle predicted the following for the Haul Road Construction:

- Noise levels will decay to below existing ambient noise levels at the boundary of the LSA.
- Noise levels will be less than AER limits at the boundary of the LSA.
- Noise and vibration levels associated with blasting will decay to levels below Ontario's limits at the boundary of the LSA.

Agnico Eagle predicted the following for the Pit Operations:

- Noise levels will decay to below existing ambient noise levels at the boundary of the RSA.
- Noise levels will be less than AER limits at the boundary of the LSA.
- Noise and vibration levels associated with blasting will decay to levels below Ontario's Ministry of Environment limits at the boundary of the LSA.
- Noise and vibration associated with blasting during pit operations will not affect fish spawning or fish habitat.

Agnico Eagle predicted the following for the Haul Road Operation:

- Noise levels will decay to below existing ambient noise levels at the boundary of the RSA.
- Noise levels will be less than AER limits at the boundary of the LSA.

Agnico Eagle has committed to annual noise monitoring at four (4) locations in the vicinity of the Whale Tail Pit Project in accordance the Meadowbank noise management plan, and to implement mitigation where practical if noise is found to exceed identified limits.

5.3.2 Views and Concerns of Interested Parties

During the Final Hearing, NIRB staff noted ongoing concerns the Board has heard by the community of Baker Lake regarding noise generation along the Meadowbank all-weather access road,⁸¹ and asked Agnico Eagle how far from the proposed haul road would traffic be expected to be heard by humans, and to no longer disturb caribou or muskox.⁸² Agnico Eagle responded that its noise monitoring stations – located about 1.5 to 2 km from the active areas of operation at Meadowbank – show noise meets the thresholds for humans. In a deferred response, Agnico

⁸¹ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 157-158, lines 26, 1-6

⁸² R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 160, lines 1-6

Eagle added that its noise modelling predicts that noise levels would be at 40 decibels (dB) at 2.5 km from the Whale Tail Pit, which is about the same noise level as a refrigerator humming, and that noise would be back to normal background levels (30 dB) at 7 km away from the Pit.⁸³

5.3.3 Views of the Board

During the Final Hearing, the Board asked Agnico Eagle to confirm if noise monitoring is done only twice per year, to clarify how far from the road the monitoring is conducted, and whether monitoring in the winter would be considered.⁸⁴ Agnico Eagle confirmed noise is monitored continuously for two (2) weeks each July and two (2) weeks each August, noting battery life and helicopter use constrain the monitoring to summertime, and also that because snow absorbs sound, summer values are conservative. Agnico Eagle also noted that the monitoring stations are located at 2, 4, and 5 km from the mine site.⁸⁵

The Board also asked Agnico Eagle how far noise generated from the proposed Whale Tail Pit would travel, how far it would be heard and what controls would be put in place to limit noise and its effects.⁸⁶ In response, Agnico Eagle noted that the noise levels are predicted to be less than 35 dB at 5 km from the road and 30 dB at 7 km from the haul road, and remarked for comparison, that noise levels by refrigerators is 40 dB, indicating noise is not travelling far from the source. Agnico Eagle noted mitigation would include exhaust muffling equipment and also remarked that the noise from blasting is reduced as they go deeper into the pit due to the natural insulation effect of the pit walls.⁸⁷ The Board later asked whether the Proponent's noise modelling took weather into effect.⁸⁸ Agnico Eagle replied that the modelling was based on calm, clear days, which is a conservative scenario, because in other conditions, such as snow, sound is muffled.

The Board recognizes that noise from the Project has the potential to adversely affect fish, birds, wildlife, and human health and safety. The Final Hearing was an opportunity for the Board to clarify the Proponent's assessment of noise and its plans for noise mitigation and monitoring. The Board acknowledges the Proponent's mitigation plans to minimize impacts including the use of exhaust muffling equipment. The Board also acknowledges the implementation of blasting distance buffers to protect fish, birds, and wildlife and to conduct additional noise and vibration research to determine whether the proposed no-blasting buffers for wildlife need to be revised (see [Section 5.10](#) for more regarding wildlife mitigation). The Board stresses the importance of monitoring to ensure noise levels do not exceed standards or guidelines, nor levels predicted in

⁸³ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 376-377, lines 13-26, 1-18

⁸⁴ K. Kaluraq, Nunavut Impact Review Board, NIRB Final Hearing File No. 16MN056 Transcript September 20, 2017 p. 173, lines 12-16

⁸⁵ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 173-174, lines 18-26, 1-26, 1-26, 1-8

⁸⁶ E Copland, Board Chairperson, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 282-283, lines 26, 1-5

⁸⁷ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 283-284, lines 6-26, 1-19

⁸⁸ P. Kadlun, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 710-711, lines 16-26, and 1.

the EIS, and recognizes the Proponent's commitment to monitor noise on an annual basis and to take steps to resolve any exceedances.

5.3.4 Conclusions and Recommendations of the Board

In considering the views of the Proponent and those of parties throughout the assessment of the Project and as outlined above, the Board believes that the Project's potential effects from noise and vibration could be appropriately managed through the commitments provided by the Proponent and the application of key mitigation and monitoring measures. Specifically, the Board recommends terms and conditions requiring the following (a brief summary of the Board's recommended terms and conditions is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

- Demonstrate considerations for noise reduction through siting and design of the Whale Tail camp and project infrastructure; and
- Demonstrate that noise and vibration levels remain within predicted levels for all Project areas including along the haul road, and that any exceedances of standards or guidelines or of the predictions made in the EIS are being addressed.

5.4. TERRESTRIAL ENVIRONMENT (GEOLOGY AND GEOCHEMISTRY)

5.4.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) discussed geological and geochemical conditions of the project study area and conducted an assessment of project effects related to geology and geochemistry in Volume 5, Section 5.2 of the Environmental Impact Statement (EIS). Additional discussions on geology and characterization of geochemical conditions in the project area, including methods for data collection, are presented in Volume 5, Appendix 5-E of the EIS. Further details on potential project effects on water quality from geological and geochemical conditions at the Project were discussed by Agnico Eagle in an addendum⁸⁹ to Appendix 6-H of the EIS and in a memorandum⁹⁰ on arsenic leaching in the Tailings Storage Facility (TSF) provided to the NIRB following the Pre-hearing Conference (PHC). Proposed environmental management plans to inform monitoring and mitigation measures for potential environmental effects from the geological and geochemical conditions in the project area are presented in Volume 8 of the EIS and in a memorandum on arsenic leaching in the TSF submitted to the NIRB by Agnico Eagle following the PHC. The Proponent noted that, generally, the geological and geochemical conditions at the Whale Tail Pit area are similar to conditions at the Meadowbank Gold Mine area.

⁸⁹ Golder Associates Ltd. July 2017. *Addendum to Agnico Eagle Mines Whale Tail FEIS Appendix 6-H. Sensitivity Analyses on Water Quality Modelling in support of Responses to Technical Commitments 30, 36, 37 and 42 and Intervenor Comments ECCC #15 and INAC-TRC #3 and #5, on the Water Licence "A" Application to the Nunavut Water Board.* Prepared for Agnico Eagle Mines Ltd.

⁹⁰ Golder Associates Ltd. June 2017. *Arsenic Leaching in the Tailings Facility.* Whale Tail Commitment 43. Prepared for Agnico Eagle Mines Ltd.

Agnico Eagle set the spatial boundaries for the assessment of project effects on geology and geochemistry to encompass the Project's physical footprint, and set the temporal boundaries to include the construction, operations, closure, and post-closure phases of the Project.

The Proponent identified three (3) types of mineralization at the Whale Tail deposit: (1) gold associated with pyrrhotite or arsenopyrite in iron formation, (2) chert, and (3) veins throughout the entire rock sequence. The characteristics of overburden in the Whale Tail Pit area is expected to be similar to that at the Meadowbank Gold Mine area, and will consist of glacial till with an average thickness of 2.75 metres (m), with local deposits over 10 m thick.

The Proponent conducted a chemical characterization program to assess the geochemical properties of the ore and Whale Tail Lake sediments, as well as the mine wastes that would be generated from the Project, including waste rock, overburden and tailings. Agnico Eagle conducted static and kinetic tests to assess the acid rock drainage (ARD) and metal leaching (ML) potential of these mine-generated materials. Agnico Eagle also noted that the Whale Tail Pit deposit and surrounding host rocks are low in sulphur, but that the sulphur in the surrounding host-rocks are associated with arsenic. The Proponent noted that approximately 73% of the waste rock (33.6 million tonnes) to be mined are predicted as non-potentially acid generating (NPAG) and have low leachability, and consequently would not require the implementation of ARD control measures. The surficial overburden, which would consist of glacial till, is also predicted to be NPAG with low leachability. However, some components of the waste rock and lake sediments are predicted to leach arsenic at concentrations that exceed the site-specific Portage effluent criteria established for the Meadowbank Gold Mine Project.

The ore and some components of the surrounding waste rock, such as chert, are predicted to be potentially acid generating (PAG). The chert and other PAG waste rock represent 27% of the waste rock (12.4 million tonnes) to be mined for the Project. The ore is enriched with arsenic, antimony, bismuth, chromium, selenium, silver and nickel, with some components of the ore expected to leach arsenic at concentrations that exceed the site-specific Portage effluent criterion established for the Meadowbank Gold Mine Project. Kinetic tests conducted on samples of PAG ore and waste rock indicate that the timing for the onset of possible ARD conditions on site may be after the life of mine.

The Proponent noted that the tailings are likely to be PAG due to their low carbonate-mineral buffering capacity relative to sulphide content. Based on kinetic testing, the natural buffering capacity of the tailings is expected to be consumed, after which the tailings may oxidize and develop acidic conditions. Agnico Eagle noted that the tailings waste stream from the processing of the Whale Tail Pit ore is expected to have a higher concentration of arsenic than in the original ore, but that the arsenic will not be mobilized into the liquid phase from the tailings solid phase at concentrations that exceed the site-specific Portage effluent criteria established for the Meadowbank Gold Mine Project. Agnico Eagle also noted that the tailings are expected to contain elevated concentrations of antimony, bismuth, copper, selenium, and silver, which may result in ML under acidic conditions.

Agnico Eagle identified a number of measures to mitigate potential effects to the environment as a result of the geology and geochemistry of mined materials at the project site, including the following:

- All site contact water would be monitored for exceedances of measurable parameters of concern, such as arsenic, prior to discharge to the receiving environment.
- ARD control measures for all PAG waste rock stockpiles would be implemented at the end of mining operations.
- Long-term oxidation control of tailings in the Meadowbank Gold TSF would be implemented to prevent the onset of ARD.

Agnico Eagle has also developed a number of mitigation and monitoring plans to manage potential effects to the environment as a result of the geology and geochemistry of mined materials at the project site, including the following:

- Mine Waste Rock and Tailings Management Plan
- Water Quality and Flow Management Plan
- Groundwater Monitoring Plan
- Operational ARD/ML Testing and Sampling Plan
- Closure and Reclamation Plan

Following the PHC, and prior to the Final Hearing, Agnico Eagle provided results of sensitivity analyses it conducted on the site and receiving environment water quality model to evaluate potential consequences of the risk of worst case scenario occurrences for arsenic and phosphorus loading. The Proponent noted that, based on its conservative approach in the development of the water quality model, such worst case scenarios are unlikely to occur under the current mine design specifications and existing site conditions. Agnico Eagle also provided additional details on its proposed methods to control potential arsenic leaching from the TSF, which would involve freezing the tailings so contaminant sources, such as arsenic within tailings, remain immobile and bound to frozen materials.^{91,92}

During the Final Hearing, Agnico Eagle discussed its commitment to assessing final treatment options for arsenic and phosphorous associated with mine contact water and to implementing appropriate treatment to ensure that mine effluent meets approved site-specific water quality objectives prior to discharge to the receiving environment. The Proponent also committed to implementing site-specific monitoring plans to mitigate potential environmental effects from project area geological and geochemical conditions, including ARD/ML sampling, a Waste Rock Facility Management Plan (WRSF), and a Water Quality and Flow Management Plan, and to

⁹¹ Golder Associates Ltd. July 2017. *Addendum to Agnico Eagle Mines Whale Tail FEIS Appendix 6-H. Sensitivity Analyses on Water Quality Modelling in support of Responses to Technical Commitments 30, 36, 37 and 42 and Intervenor Comments ECCC #15 and INAC-TRC #3 and #5, on the Water Licence "A" Application to the Nunavut Water Board.* Prepared for Agnico Eagle Mines Ltd.

⁹² Golder Associates Ltd. June 2017. *Arsenic Leaching in the Tailings Facility.* Whale Tail Commitment 43. Prepared for Agnico Eagle Mines Ltd.

updating the WRSF Plan to detail procedures for the segregation of PAG and NPAG waste rock.⁹³

5.4.2 Views and Concerns of Interested Parties

Within its final written submission, Environment and Climate Change Canada (ECCC) raised ongoing concern with respect to water quality, including seepage from the waste rock storage facility (WRSF), effluent quality criteria (EQC) and sludge management and mercury. ECCC indicated that the environmental risks and benefits of removing approximately half of the exposed north wall ultramafic (UM) material from the Whale Tail pit (i.e. a north wall pushback) have not been fully quantified or discussed within the EIS. In addition, ECCC noted that given the large volume of waste rock that would be produced by a north wall pushback, which would increase the WRSF to an elevation of 95 metres, together with the nominal improvements in water quality, an alternatives analysis should be conducted. ECCC recommended that Agnico Eagle conduct an alternatives analysis of the pit design with and without the north wall pushback scenario, in order to assess the potential risks and benefits to the aquatic receiving environment and considering the entire life of mine and through post-closure.⁹⁴ In response to ECCC's concerns with respect to the north wall pushback, Agnico Eagle noted that it does not anticipate any other effects from proceeding with the north wall pushback and indicated that the north wall pushback is determined to be economically viable and to be minable within the same period as the base case without the north wall pushback. Further, Agnico Eagle stated that the north wall pushback scenario would also improve downstream lake water quality, reflecting the lower arsenic concentration in the flooded North Whale Tail Lake water that will flow into Mammoth Lake upon dike breaching.⁹⁵ During the technical presentation at the Final Hearing, ECCC summarized that the department was satisfied by the information provided by Agnico Eagle and anticipates that operational information would refine predictions and management actions for the north wall pushback alternative.⁹⁶

During the Final Hearings, the Nunavut Water Board (NWB) staff requested clarification whether or not the north wall pushback was an option and whether the decision has been made to include it within the design following consultation with the agencies.⁹⁷ In response, Agnico Eagle noted that the north wall pushback option has been adopted as the preferred alternative, based on the reduction of arsenic concentrations during the flooding of the pit during closure and following discussions with multiple intervenors.⁹⁸

ECCC further noted within its final written submissions that it would be necessary to conduct ongoing monitoring of the WRSF conditions during operations and to characterize

⁹³ Agnico Eagle Mines Ltd., *Freshwater Environment Presentation*, Exhibit 04, NIRB Final Hearing File No. 16MN056, September 20, 2017.

⁹⁴ Environment and Climate Change Canada Final Written Submissions, August 14, 2017.

⁹⁵ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

⁹⁶ T. Auser, Environment and Climate Change Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 464-470, lines 13-26, 1-26, 1-26, 1-26, 1-26, 1-26 and 1-26.

⁹⁷ K. Kharatyan, Nunavut Water Board, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 167, lines 10-20.

⁹⁸ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 167-168, lines 21-26 and 1-4.

seepage/runoff quality on an ongoing basis and update modeled predictions. Based on its review of the Proponent's sensitivity analysis for a range of modeled conditions for water quality, including treatment options for arsenic and phosphorus effluents and the acid rock drainage (ARD) and metal leaching (ML) potential of proposed waste rock cover material compositions, ECCC recommended that the Proponent submit detailed management plans to be implemented for waste rock segregation and testing, thermal monitoring of waste rock, and seepage management and monitoring. ECCC further recommended that monitoring results for receiving waters should be compared to model predictions and thresholds identified for management actions should trends indicate water quality objectives may be exceeded.⁹⁹

On a related subject, INAC noted within its final written submission that modelling conducted by the Proponent on post-closure seepage from the proposed WRSF indicates that arsenic concentrations in seepage could become elevated, and may cause adverse impacts to the receiving environment if discharged without treatment. INAC also noted that it may prove a challenge to prevent contamination of the WRSF cover with arsenic bearing rock material during the closure. To address this issue, INAC recommended that the Proponent consider potential mitigation options such as cover enhancements and/or long-term seepage water treatment. Further, INAC recommended that Agnico Eagle conduct detailed hydrodynamic modelling to evaluate the mixing of WRSF seepage discharges to Mammoth Lake during the post-closure phase of the project.¹⁰⁰

In response to ECCC's and INAC's comments, Agnico Eagle stated that it agrees with ECCC's recommendations and will adhere to relevant management plans provided in its EIS including the ARD/ML Monitoring Plan in Volume 8, Appendix 8-E.5, the Waste Rock Storage Facility Management Plan in Volume 8, Appendix 8-A.1, and the Water Quality and Flow Monitoring Plan in Volume 8, Appendix 8-B.3 during construction, operations and closure. Agnico Eagle also indicated that monitoring would continue into post-closure, and that modelled predictions would be updated based on additional data collection on site to inform adaptive management. In response to INAC's concerns about potential WRSF cover contamination with arsenic bearing rock, the Proponent indicated that details of steps it plans to implement for the segregation and storage of waste rock would be included in its update to the WRSF Plan, together with updates to other management plans, to be submitted to applicable regulatory agencies 60 days prior to operations. Further, Agnico Eagle noted that it would conduct the hydrodynamic modeling during operation and closure with updated data on WRSF contact water quality and flow volume to inform future closure and post-closure water management planning. Agnico Eagle stated that it believes the information provided to ECCC, INAC and the NIRB is adequate to assess the impacts of the Project on the environment and to make a determination on the Project.¹⁰¹ During the technical presentation at the Final Hearing, ECCC noted that it accepted the more stringent treatment objectives for arsenic and for phosphorus.¹⁰²

⁹⁹ Environment and Climate Change Canada Final Written Submissions, August 14, 2017.

¹⁰⁰ Indigenous and Northern Affairs Canada Final Written Submissions, August 14, 2017.

¹⁰¹ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

¹⁰² T. Auser, Environment and Climate Change Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 464-470, lines 13-26, 1-26, 1-26, 1-26, 1-26, 1-26 and 1-26.

During the Final Hearing, staff of the NWB requested that Agnico Eagle confirm whether, if required, contact water associated with the WRSF and the Whale Tail pit would be treated at closure prior to discharge to the receiving environment.¹⁰³ In response, the Proponent noted that the option to treat effluent from the WRSF and the Whale Tail pit was developed as a contingency, and that, based on its proposed plans to segregate the various waste rock types and monitor associated effluents, it expects contact water to meet applicable site-specific water quality guidelines for the Project at closure without treatment.¹⁰⁴

During the Final Hearing, INAC requested that Agnico Eagle further clarify how it would segregate potentially acid generating (PAG) waste rock from non-potentially acid generating (NPAG) waste rock at the proposed WRSF to prevent cross-contamination of NPAG waste rock.¹⁰⁵ In addition, INAC requested that Agnico Eagle confirm the timing for testing of waste rock to determine acid generating potential.¹⁰⁶ In response, the Proponent indicated that mine site workers responsible for the hauling of waste rock would be given instructions by a dispatch system on the locations for disposition of the PAG and NPAG waste rock streams to prevent contamination of the NPAG waste rock with PAG waste rock. In addition, a layer of NPAG waste rock would be placed on the PAG waste rock pile as a cover to prevent contamination of the PAG waste rock pile.¹⁰⁷ Agnico Eagle also indicated that waste rock generated during drilling activities in the pit would be tested at an on-site laboratory to confirm PAG or NPAG properties prior to deposition in dedicated waste rock piles.¹⁰⁸

INAC also requested that Agnico Eagle clarify whether the proposed sampling program for waste rock characterization would pay special attention to rocks with higher potential for ML and ARD.¹⁰⁹ In response, the Proponent indicated that it had committed to updating applicable management plans to adapt them to site-specific conditions at the Whale Tail Pit site, including focused sampling of waste rock with potential for ML and ARD.¹¹⁰

As part of its technical presentation during the Final Hearing, ECCC reiterated its recommendation that the Proponent submit detailed management plans to be implemented for waste rock segregation and testing, including related seepage management and monitoring plans, a schedule for reporting of results, and proposed contingency measures to address

¹⁰³ K. Kharatyan, Nunavut Water Board, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 340-341, lines 22-26 and 1-6.

¹⁰⁴ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 341, lines 7-25.

¹⁰⁵ R. Theoret-Gosselin, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 154, lines 1-12.

¹⁰⁶ R. Theoret-Gosselin, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 155, lines 8-17.

¹⁰⁷ E. Voyer, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN006 Transcript, September 20, 2017, pp. 154-155, lines 15-26 and 1-6.

¹⁰⁸ E. Voyer, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN006 Transcript, September 20, 2017, pp. 155-156, lines 19-26 and 1-9.

¹⁰⁹ K. Costello, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 329-330, lines 20-26 and 1-12.

¹¹⁰ V. Bertrand, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 330-331, lines 13-26 and 1-6.

outcomes of waste rock and seepage testing. ECCC also reiterated its recommendation that Agnico Eagle conduct alternatives analysis of the pit design with and without the north wall pushback scenario and conduct a mercury monitoring program to improve understanding of mercury dynamics in a northern impoundment scenario. ECCC confirmed that it was satisfied with the Proponent's responses to its recommendations as contained in Agnico Eagle's response to parties' final written submissions, and that ECCC considered these outstanding issues resolved and that details on recommended studies would be finalized in the regulatory permitting phase of the Project.¹¹¹

As part of its technical presentation during the Final Hearing, INAC noted that, based on the Proponent's responses to INAC's final written submissions and follow-up discussions with, and commitments by Agnico Eagle, it considered the outstanding issues related to WRSF seepage and arsenic and water quality issues regarding the proposed open pit resolved.¹¹²

During the Final Hearing, the Board staff requested clarification from the Kivalliq Inuit Association (KIA) on the results of the discussions regarding the arsenic levels related to the WRSF and whether the concerns with respect to this topic have been resolved.¹¹³ In response, KIA noted they have had workshops with the Proponent and have come to an agreement on several issues related to waste rock, water quality and sampling of the mixing zone.¹¹⁴

Details on views of Interested Parties and the Proponent regarding ground and surface water quality and quantity are presented in [Sections 5.6](#) and [5.7](#) of this Report.

5.4.3 Views of the Board

During the Final Hearing, the Board requested that Agnico Eagle confirm whether ore to be hauled from the Whale Tail Pit to the processing plant at the Meadowbank Gold Mine site would be covered during transport, and whether the hauled ore would contain additional chemicals.¹¹⁵ In response, the Proponent indicated that the hauled ore would not be covered during transport from the mine pit to the processing plant, and noted that the hauled ore would often be in a wet state, which should reduce the likelihood of dispersion during transport.¹¹⁶

The Board further noted uncertainty with respect to the detection of arsenic and phosphorus in the effluent and noted that Agnico Eagle needs to ensure that there is no arsenic and phosphorus leaching from the bottom of the open pit when refilling with water. Further, the Board requested

¹¹¹ T. Auser, Environment and Climate Change Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 464-470, lines 13-26, 1-26, 1-26, 1-26, 1-26, 1-26 and 1-26.

¹¹² K. Costello, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 515-516, lines 24-26 and 1-22.

¹¹³ S. Granchinho, Board Staff, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 412, lines 13-19.

¹¹⁴ L. Manzo, Kivalliq Inuit Association, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 412, lines 23-26.

¹¹⁵ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 171, lines 20-26.

¹¹⁶ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 172, lines 8-17.

clarification whether or not ongoing testing would be occurring prior to refilling of the open pit, during the refilling and following the breaching of the dikes.¹¹⁷ In response, the Proponent noted that it was analyzing the types of rocks to be encountered in the pit area during the operations phase, through pilot testing of the chemical properties of site-specific rock samples, including their potential to release chemicals of concerns from exposure to water. Agnico Eagle indicated that results of these tests would be used to update models to better understand the chemical properties of the rock types at the project site to be disturbed during mine operations, and to refine predictions of water quality within the pit.¹¹⁸

Further, the Board requested that Agnico Eagle explain closure plans for proposed waste rock piles, and to confirm whether the waste rock would be transferred to the open pit at closure.¹¹⁹ In response, the Proponent noted that waste rock would be permanently stored at the proposed Waste Rock Storage Facility for the Project and would be capped with appropriate material to prevent effluent leaching and the release of potential contaminants to the receiving environment. Agnico Eagle, however, noted that it had placed some waste rock at the Portage Pit as part of the Meadowbank Gold Mine operations.¹²⁰

The proposed environmental design features, mitigation measures and monitoring programs identified by Agnico Eagle for minimizing the impacts to the environment from site-specific geological and geochemical conditions are, in the Board's view, satisfactory for this stage of project development. The Board believes that commitments by Agnico Eagle to collect additional data and to update associated models at the regulatory phase, along with the Proponent's proposed follow-up programs described at the Final Hearing, would be critical in ensuring that mitigation measures achieve the desired objectives and adequately address concerns related to the surficial and bedrock geology and geochemistry of the project area and the receiving environment.

5.4.4 Conclusions and Recommendations of the Board

Following a review of the material presented by Agnico Eagle in the EIS and a consideration of views of Parties, the Board believes that the Project's potential effects related to geology and geochemistry could be appropriately managed through the adherence to commitments provided by the Proponent and the implementation of proposed mitigation measures. Specifically, the Board recommends terms and conditions requiring the following (a brief summary of the Board's recommended terms and conditions is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

¹¹⁷ A. Maghagak, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 184, lines 2-20.

¹¹⁸ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 184-186, lines 22-26, 1-26, and 1-26.

¹¹⁹ H. Ohokannoak, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 190, lines 17-26.

¹²⁰ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 191-192, lines 4-26 and 16-18.

- Conduct detailed hydrodynamic modelling during operations and closure to evaluate the mixing of the waste rock storage facility seepage into Mammoth Lake post-closure. Based on the results, implement monitoring programs and adaptive management strategies to minimize the need for active intervention including long-term water treatment of mine contact water;
- Update the Mine Waste Rock and Tailings Management Plan in consultation with applicable regulatory agencies, including Natural Resources Canada, to reflect site-specific geological and geochemical conditions prior to mining of the Whale Tail deposit;
- Develop and implement monitoring programs for the Tailings Storage Facility and the Waste Rock Storage Facility;
- Submit a detailed Acid Rock Drainage and Metal Leaching Management Plan;
- Provide periodic reports on adaptations made to the Mine Waste Rock and Tailings Management Plan based on results of site-specific monitoring programs.

5.5. GEOLOGICAL FEATURES, SOILS AND PERMAFROST

5.5.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) discussed its effects assessment for terrain, permafrost, and soils in the project study area in Volume 5, Section 5.3 of the Environmental Impact Statement (EIS). Inuit Qaujimajatuqangit that informed the assessment is presented in Volume 7, Appendix 7-A of the EIS. A detailed discussion on baseline conditions for terrain, permafrost, and soils in the project area, including methods for data collection, is presented in Volume 5, Appendix 5-A and Volume 6, Appendix 6-A of the EIS. Proposed environmental management plans to inform monitoring and mitigation measures for potential project effects to geological features, soils and permafrost are presented in Volume 8 of the EIS. Based on a pathway analysis approach to effects assessments, and Inuit Qaujimajatuqangit collected, the Proponent treated permafrost as a valued component, but not terrain and soils. The Proponent noted that, generally, the geological features, soil types, and permafrost conditions at the Whale Tail Pit area are similar to those at the Meadowbank Gold Mine area.

The Proponent set the spatial boundaries for the assessment of project effects on terrain, permafrost, and soils to encompass the project's physical footprint (approximately 820 ha), and set the temporal study boundaries to include the construction, operations, closure, and post-closure phases of the Project.

Agnico Eagle presented the following Inuit Qaujimajatuqangit as relevant to geological features, permafrost, and soils in the project study area:

- Eskers are preferred habitat for various wildlife including muskox, caribou, grizzly bear, wolves, Arctic fox, and Arctic ground squirrel.
- Bedrock cliffs are important habitat for various raptors including peregrine falcon, gyrfalcon, and rough-legged hawk.
- Organic decomposed soil has traditionally been used by Inuit to facilitate movement of dog sleds over snow.

- Local communities noted that meat caches now have to be buried deeper in the ground, than was the case historically, due to lowering of the permafrost layer from recent trends of higher temperatures.

Agnico Eagle indicated that the surficial geology of the project area is dominated by till overlying bedrock that frequently outcrops to form geological features such as elevated plateaus and elongated ridges, including eskers and terrace complexes. Lakes are abundant in the project area due to the presence of numerous geological depressions.

The Proponent noted that the project footprint is underlain by 450- to 550-meter-thick continuous permafrost that influences periglacial processes and features throughout the landscape such as frost shattered bedrock, various types of polygon formations, and mudboils. Agnico Eagle noted, however, that a talik, i.e. a layer of year-round unfrozen ground in the permafrost zone, is expected to occur in the central section of Whale Tail Lake.

Agnico Eagle indicated that the soils in the project area are predominantly Cryosols, and are similar to the soil types identified at the Meadowbank Gold Mine. Field studies indicated that the soils in the project area are predominantly acidic to neutral with acidity tending to decrease with soil depth. The Proponent indicated that the commonly found soils in the project area are coarse-textured, which are relatively resistant to compaction, and are generally classified as poor with respect to their reclamation suitability. Agnico Eagle noted that approximately 30% of soil samples collected from the project area during baseline studies indicated exceedances of Canadian Council of Ministers of the Environment (CCME) guidelines for arsenic, chromium, or nickel.

Agnico Eagle indicated that changes to the existing terrain and soils in the project area would be confined to the project footprint, and predicted the following potential effects on terrain, permafrost and soils:

- Extraction of rock and soil material for construction and the creation of an open pit mine will result in physical loss of terrain, permafrost and soil.
- Potential groundwater inflows into the open pit and the planned flooding of the pit at closure may result in permafrost degradation, an increase in the active layer, and the creation of a larger talik beneath the pit lake.
- Creation of water diversion channels and planned flooding of a number of upstream tributary lakes to support the construction of the Whale Tail Dike will result in an increase in the thickness of the active layer and degradation of the permafrost layer underlying the diversion channels and upstream lakes.
- Physical loss or permanent alteration of terrain and soil features within the project footprint will result from the construction of the haul road network and the use of some eskers as borrow sources.
- Site preparation such as soil stripping and other related land disturbance activities are expected to result in changes to the distribution of terrain features and soils.
- Project activities associated with land disturbance may result in changes to the physical, chemical and biological properties of soils.

- Compaction of soils from contouring and site preparation activities may result in soil erosion and changes to soil quality.

Agnico Eagle noted that the Project is expected to result in the retreat of permafrost into the edges of the open pit, while the temporary flooding of portions of Whale Tail Lake and some of the lakes that flow into Whale Tail Lake is not anticipated to change the amount of permafrost from baseline conditions. Agnico Eagle also stated that any effects to soils and terrain, such as erosion, would be confined to the project footprint.

The Proponent identified a number of measures to mitigate potential effects to terrain, permafrost, and soils in the project study area, including the following:

- Minimizing the facility footprint through project design.
- Minimizing the use of esker features as borrow sources.
- Installation of thermistors and piezometers within key water management structures, such as the dikes, to monitor hydraulic and thermal behaviour during reservoir filling, and implementing adaptive management measures if required.
- Placement of construction and road fills directly over existing terrain, without stripping or grubbing, to avoid disturbance of the subgrade soils.
- Establishing road fill thickness that promotes the formation of permafrost into thaw-stable fill materials to enhance the stability of the foundations.

Agnico Eagle discussed a number of mitigation and monitoring plans to manage potential effects to terrain, permafrost, and soils in the project study area, including the following:

- Terrestrial Ecosystem Management Plan
- Mine Waste Rock and Tailings Management Plan
- Closure and Reclamation Plan

Agnico Eagle noted that it applied a conservative approach to the analysis of potential project effects on geological features, soils and permafrost to address a number of factors including the level of uncertainty in the thickness of the active layer within the Whale Tail deposit; the uncertainty regarding soil storage effects for soils in northern climates; and the level of uncertainty in the estimation of the distribution of surficial materials and soil types from field surveys and mapping.

The Proponent indicated that, based on its pathway approach to the assessment, measurable end points for the determination of significance of residual effects were not established for permafrost, terrain, and soils. Instead, the predicted effects on permafrost, terrain, and soil were assessed in relation to project effects on valued components such as vegetation and terrestrial wildlife and wildlife habitat (see [Section 5.9](#) and [Section 5.10](#) of this report for further discussion).

During the Final Hearing, Agnico Eagle discussed its commitment to conduct additional site-specific thermal modelling to support final design of mine infrastructure, including the final

cover design of the Waste Rock Storage Facility (WRSF) to ensure that the WRSF remains frozen in perpetuity after closure.¹²¹

5.5.2 Views and Concerns of Interested Parties

Within their respective final written submissions, Indigenous and Northern Affairs Canada (INAC) and Natural Resources Canada (NRCan) both noted that the closure concept proposed by the Agnico Eagle for the Whale Tail waste rock storage facility (WRSF), which would include a two (2) to four (4) meter thick cover, is dependent on the encapsulation or permanent freezing of waste rock with elevated acid rock drainage or metal leaching potential within the waste rock pile. INAC expressed concerns about the accuracy of the Proponent's prediction, based on thermal modeling, of a 3.8 m depth of the active zone under a 100-year climate change scenario. NRCan also indicated that it had concerns with the Proponent's simple 1-dimensional (1-D) approach to thermal analysis. To address these concerns, INAC recommended that the Proponent recalibrate the model to improve the accuracy of predictions, as the modelling did not incorporate observational data from the existing Meadowbank Gold Mine site. INAC also recommended that the Proponent submit the WRSF cover design incorporating the thermal modelling result for review and approval by applicable authorizing agencies prior to closure.¹²² NRCan recommended that the Proponent conduct two-dimensional (2D) thermal modelling to support detailed design of the WRSF, and also recommended that the Proponent continue to use applicable data from the Meadowbank Gold Mine site and data collected from any thermistors to be installed in the WRSF to refine their thermal analysis.¹²³ In response to INAC's and NRCan's comments, Agnico Eagle noted that it would continue to complete thermal modelling to support detailed design of the WRSF during the construction and operation phases of the Project. The Proponent also agreed with NRCan's recommendation that data generated from ongoing monitoring of the Meadowbank Gold Mine be used to refine the thermal analysis to support the final design and cover for the WRSF.¹²⁴ During its technical presentation at the Final Hearing, NRCan re-iterated the recommendations with respect to the design cover thickness for the WRSF.¹²⁵

Within its final written submission, NRCan stated that it generally agrees with the terrain mapping conducted by the Proponent to determine baseline permafrost and terrain conditions, but noted that scale of the mapping was too small to accurately assess permafrost conditions. NRCan also noted that the Proponent conducted limited site-specific permafrost analysis and relied on information gained from the design, construction and operation of the existing Meadowbank Gold Mine to inform terrain conditions of the Whale Tail Pit Project site. NRCan agreed with the Proponent's plans to conduct additional site-specific investigations to better characterize ground ice conditions at the Whale Tail Pit Project site, and recommended that Agnico Eagle complete planned geotechnical investigations and update the characterization of

¹²¹ Agnico Eagle Mines Ltd., *Freshwater Environment Presentation*, Exhibit 04, NIRB Final Hearing File No. 16MN056, September 20, 2017.

¹²² Indigenous and Northern Affairs Canada Final Written Submissions, August 14, 2017.

¹²³ Natural Resources Canada Final Written Submissions, August 14, 2017.

¹²⁴ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

¹²⁵ R. Besner, Natural Resources Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 555-556, lines 17-26 and 1-15.

ground ice conditions in the project area to inform detailed design of project components.¹²⁶ In response to NRCan's comments, Agnico Eagle indicated that it believes the information provided to NRCan and the NIRB in support of the Review of the Project was sufficient to assess the impacts of the Project on the environment and to make a determination on the Project. Agnico Eagle also noted that it planned to provide geotechnical characterizations to support detailed design of project components for the purpose of the Type "A" Water Licence requirements.¹²⁷ During its technical presentation, NRCan noted that it agrees that the Proponent's approach to conduct geotechnical investigations to support stability analysis of the project facilities is reasonable and recommended the Proponent complete the geotechnical investigations that are planned and update the characterization of ground ice conditions in the project area to support detail and final design of project components.¹²⁸

As part of its technical presentation during the Final Hearing, INAC noted that, based on the Proponent's responses to INAC's final written submissions and follow-up discussions with, and commitments by Agnico Eagle, it considered the outstanding issues related to the potential for incomplete encapsulation of the WRSF resolved.¹²⁹

In a related technical presentation during the Final Hearing, NRCan stated that it was generally satisfied with the Proponent's responses and additional commitments made to address issues NRCan had raised in its final written submission, including those related to the WRSF closure concept, terrain mapping, and site-specific ground ice or permafrost conditions.¹³⁰

During the Final Hearing, a member of the Community of Baker Lake requested that Agnico Eagle confirm the proposed depth of the Whale Tail pit and whether the pit would impact permafrost in the area.¹³¹ In response, the Proponent indicated that the pit would be 130 m deep and would be surrounded by permafrost. The Proponent also indicated that the layer of permafrost near the pit area would likely thaw during mining operations but that most of the affected area would return to baseline/frozen conditions at closure.¹³²

Details on views of Interested Parties and the Proponent regarding climate change, and ground and surface water quality and quantity are presented in [Sections 5.2](#), [5.6](#), and [5.7](#) of this Report, respectively.

¹²⁶ Natural Resources Canada Final Written Submissions, August 14, 2017.

¹²⁷ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

¹²⁸ R. Besner, Natural Resources Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 554-555, lines 17-26 and 1-16.

¹²⁹ K. Costello, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 515-516, lines 24-26 and 1-22.

¹³⁰ R. Besner, Natural Resources Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 552-559, lines 4-26, 1-26, 1-26, 1-26, 1-26, 1-11, and 15-26.

¹³¹ J. Ukpatiku, Baker Lake Youth – Grade 11 Class, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 708, lines 2-5.

¹³² R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 708, lines 6-18.

5.5.3 Views of the Board

The proposed environmental design features and mitigation measures identified by Agnico Eagle for minimizing the impacts to geological features, surficial and bedrock geology, and geochemistry are, in the Board's view, satisfactory for this stage of project development. The Board believes that the collection of additional data and updating the associated models that Agnico Eagle committed to providing at the regulatory phase, and the proposed follow-up described at the Final Hearing, will be critical in ensuring that the measures proposed are, and will continue to be, effective in achieving the desired objectives and adequately addressing concerns related to the geological features, soils, and permafrost in the Project area.

During the Final Hearing, the Board requested details on the duration of the proposed post-closure monitoring to be conducted to ensure that the encapsulated Waste Rock Storage Facility remains frozen in perpetuity considering possible influences of climate change.¹³³ In response, INAC noted that the post-closure monitoring of the Project would last approximately 30 years, and that adaptive management measures may be required, based on results during the post-closure monitoring period.¹³⁴

The Board also requested confirmation of any permafrost-related monitoring that had been conducted in the general area overlapping the Meadowbank Gold Mine.¹³⁵ In response, NRCan indicated that the Proponent was undertaking permafrost-related monitoring at its existing Meadowbank Gold Mine site, and that NRCan, in collaboration with the Government of Nunavut and ten (10) communities in the region, had undertaken permafrost monitoring across the Kivalliq region from 2008 to 2014, and that the results from those studies informs the Nunavut-wide permafrost monitoring network.¹³⁶

The Board acknowledges Agnico Eagle's commitment to mitigate, monitor, and adaptively manage impacts to permafrost, landforms, and soils for the duration of the Project, and expects that the Proponent will consult and collaborate with regulators and stakeholders as construction designs are finalized and project activities are undertaken. As changing climatic conditions have the potential to impact project components, such as the tailings impoundment facility and the waste rock storage facility, and the terrestrial environment in unexpected ways, the Board stresses the importance of diligent mitigation and rigorous monitoring to ensure that all potential effects are forecasted and adaptively managed if unanticipated effects are identified. The Board notes that failure to maintain the integrity of the terrestrial environment throughout the Project lifecycle could result in significant residual impacts to soil, water, vegetation, and wildlife in the area. For more information on discussions related specifically to climate change see [Section 5.2: Climate and Meteorology](#).

¹³³ P. Kadlun, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 545, lines 26-12.

¹³⁴ K. Costello, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 546, lines 2-22.

¹³⁵ E. Copland, Board Chairperson, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 477 lines 19-20.

¹³⁶ R. Besner, Natural Resources Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 560, lines 2-14.

5.5.4 Conclusions and Recommendations of the Board

Following a review of the material presented by Agnico Eagle in the EIS and a consideration of the views of the Parties, the Board believes that the Project's potential effects to geological features, soils, and permafrost could be appropriately managed through the adherence to commitments provided by the Proponent and the implementation of proposed mitigation measures. Specifically, the Board recommends terms and conditions requiring the following (a brief summary of the Board's recommended terms and conditions is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

- Undertake the additional site-specific geotechnical investigations required to identify sensitive land features and to inform final engineering design prior to the construction of project components such as the waste rock storage facility and quarries;
- Undertake additional site-specific permafrost monitoring, mapping and thermal analysis to document permafrost conditions, including seasonal thaw and amount of ground ice, to inform the detailed design of project infrastructure and to ensure the integrity of such infrastructures;
- Develop and implement an Erosion Management Plan to prevent or minimize erosion and its resulting effects from project-related land disturbance;
- Develop and implement a plan for progressive reclamation of disturbed areas within the project footprint and provide periodic reports on progressive reclamation efforts to applicable regulatory bodies; and
- Explore the feasibility of topsoil/organic matter salvage as part of project development and provide updates to the Closure and Reclamation Plan based on this investigation.

5.6. HYDROGEOLOGY AND GROUNDWATER QUANTITY AND QUALITY

5.6.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) discussed its effects assessments for groundwater quantity and quality in the project study area in Volume 6, Section 5.2 of the Environmental Impact Statement (EIS). A detailed discussion of baseline conditions for hydrogeology and groundwater quantity and quality in the project area, including methods for data collection, are presented in Volume 6, Appendices 6-A, 6-B, 6-G, 6-H, and 6-N of the EIS, with additional information provided following the Pre-hearing Conference (PHC) as an addendum¹³⁷ to Appendix 6-H. Agnico Eagle treated hydrogeology and groundwater quantity and quality as intermediates on effects pathways to valued components (VCs) such as surface water hydrology and surface water quality, and did not conduct specific effects analysis for hydrogeology and groundwater quantity and quality. The Proponent indicated that it did not identify Inuit Qaujimajatuqangit specific information on groundwater or hydrogeology, but that the assessment was informed by Inuit Qaujimajatuqangit collected on freshwater-related VCs

¹³⁷ Golder Associates Ltd. July 2017. *Addendum to Agnico Eagle Mines Whale Tail FEIS Appendix 6-H. Sensitivity Analyses on Water Quality Modelling in support of Responses to Technical Commitments 30, 36, 37 and 42 and Intervenor Comments ECCC #15 and INAC-TRC #3 and #5, on the Water Licence "A" Application to the Nunavut Water Board.* Prepared for Agnico Eagle Mines Ltd.

such as surface water quality and fish habitat. Proposed environmental management plans to inform monitoring and mitigation measures for potential project effects to hydrogeology and groundwater quantity and quality are presented in Volume 8 of the EIS. Agnico Eagle noted that, generally, the hydrogeological conditions at the Whale Tail Pit area are similar to those at the Meadowbank Gold Mine area.

The Proponent set the spatial boundaries for the assessment of project effects on hydrogeology, and groundwater quantity and quality to encompass the Project's physical footprint, and set the temporal boundaries to include the construction, operations, closure, and post-closure phases of the Project.

Agnico Eagle presented the following Inuit Qaujimajatuqangit as relevant to hydrogeology and groundwater quantity and quality in the project study area:

- Groundwater presents a pathway or link to surface water quality and fish habitat.
- Groundwater is not currently used, or likely to be used in the near future, for traditional activities.

As part of the hydrogeology baseline study, Agnico Eagle characterized the hydrogeological setting, hydrostratigraphy, and groundwater quality, and developed a baseline conceptual hydrogeological model of the project site. The model included key hydrogeological characteristics such as groundwater flow and direction, and groundwater quality.

Agnico Eagle noted that the surficial project footprint is underlain by continuous permafrost reaching depths of approximately 425 m below a 1 to 3 m active layer. The permafrost layer within the project site is assumed by the Proponent to be essentially impermeable. The Proponent, however, noted that a through talik is anticipated below Whale Tail Lake, and circular lakes with radius greater than 300 m, or elongated lakes with a half-width of at least 150 m, in the area are assumed to be connected to deep groundwater resources by open taliks.

The Proponent noted that it used three (3) main hydrostratigraphic units (overburden; weathered rock; and competent rock) with varying permeability and specific storage capacity for the base case conceptual modelling of the project site. Agnico Eagle described overburden and weathered bedrock as limited to the near surface, and assumed relatively competent rock is the dominant hydrostratigraphic unit. The hydraulic connectivity of competent rock is assumed to decrease with depth. Agnico Eagle further noted that zones of enhanced permeability, such as fault zones, may be present at the project site, but that to date it has not confirmed the presence of such structures. To address uncertainty in the predictions of the hydrogeological conditions of the project site, the Proponent indicated that it employed the conservative approach in conceptual modelling of hydrogeological features, and expects that the actual quantity of groundwater inflows to the open pits and impacts to its quality would be less than as predicted by the model.

Agnico Eagle expects groundwater in the project area to be hard to very hard, with neutral to slightly basic pH and good buffering capacity. Agnico Eagle also expects the concentration of total dissolved solids in groundwater to range from 193 to 1,900 milligrams per litre, increasing with depth. Additionally, baseline concentrations of fluoride, copper, iron, selenium, chloride,

manganese, and sodium in groundwater in the project area are assumed by the Proponent to exceed concentrations in guidelines for the protection of aquatic life and drinking water.

The Proponent noted that there are two (2) groundwater flow regimes in the project area: (1) a deep groundwater flow regime beneath permafrost; and (2) a shallow groundwater flow regime in the active layer near the ground surface. The groundwater flow regimes are isolated systems, except in areas of taliks beneath lakes where the systems may be connected.

To assess potential effects of the Project on groundwater resources, the Proponent applied numerical modelling to predict life-of-mine groundwater inflow and groundwater quality at the Whale Tail Pit, and other proposed water retention facilities such as the Attenuation Pond, and the diked area within Whale Tail Lake. Budget analyses were performed to estimate the changes to pre-mining groundwater inflows and outflows from lakes in the project area during the operations phase and after flooding of the mine pit and Whale Tail Lake during the closure phase.

Agnico Eagle predicted that near to pre-mining (baseline) regimes for hydraulic gradients and groundwater flow directions would be re-established after the implementation of proposed closure activities such as the flooding of the open pit and in the dewatered portion of the Whale Tail Lake.

To address uncertainties with the modelling and resulting effects predictions for hydrogeological conditions and groundwater quantity and quality of the project area, Agnico Eagle conducted analysis to assess the sensitivity of the various models used in the assessment to input data such as hydrogeological parameters. Results of the sensitivity analysis were used to inform the implementation of conservative approaches to address worst case scenarios and related requirements for monitoring and follow up programs for hydrogeology, groundwater quantity and quality conditions in the project area.

Mitigation and monitoring plans developed by Agnico Eagle to manage potential effects to hydrogeology and groundwater quantity and quality in the project study area, include the following:

- Water Management Plan
- Water Quality and Flow Monitoring Plan
- Groundwater Monitoring Plan
- Closure and Reclamation Plan

Following the PHC, and prior to the Final Hearing, Agnico Eagle presented results of sensitivity analysis it had conducted on the site, with respect to the receiving environment water quality model, to evaluate potential consequences of the risk of worst case scenario occurrences for arsenic and phosphorus loading in the receiving environment, including groundwater resources. The Proponent noted that, based on its conservative approach in the development of the water quality model, such worst case scenarios were unlikely to occur under the current mine design specifications and existing site conditions.

During the Final Hearing, Agnico Eagle discussed its commitment to conduct site-specific hydrogeological modelling to validate hydraulic gradients predicted for the project area to support mine closure planning.¹³⁸

5.6.2 Views and Concerns of Interested Parties

Within its final written submission, Indigenous and Northern Affairs Canada (INAC) recommended that the Proponent conduct additional hydrogeological characterization studies at the proposed Whale Tail pit site to address uncertainties and to validate Agnico Eagle's conclusions about hydraulic gradients and arsenic diffusion potential, and to inform any additional related studies that may be required. INAC further recommended the Proponent revise the monitoring plans to ensure intensive monitoring of the flooded pit and also include contingency plans with appropriate monitoring measures to ensure that the water quality in the flooded pit at closure remains below established discharge criteria.¹³⁹ In related comments in its final written submission, Natural Resources Canada (NRCAN) noted that the samples collected by the Proponent to determine in-situ groundwater conditions at the project site were contaminated during field collection, and as a result were not representative of conditions at the project site, as acknowledged by the Proponent. To address this gap in hydrogeological characterization, NRCAN recommended that Agnico Eagle reassess the hydrogeological characterization of the site with additional site-specific samples. In addition, NRCAN recommended that the Proponent validate and adjust its groundwater model based on additional data collected during the operations phase of the Project.¹⁴⁰ In response to INAC's and NRCAN's recommendations, Agnico Eagle indicated that it believes the information that had been provided to INAC, NRCAN and the NIRB was sufficient to assess the impacts of the Whale Tail Pit Project on the environment and to support the NIRB's decision-making for the Project. Agnico Eagle agreed to conduct detailed hydrogeological characterization studies to evaluate the hydraulic gradients and to assess the potential for arsenic diffusion from the pit walls, and indicated that the data would be collected during construction and operation to verify inputs to water quality modelling and to inform future closure and post-closure water quality predictions.¹⁴¹

During its technical presentation at the Final Hearing, NRCAN indicated that it is in agreement with the Proponent's monitoring plan from a hydrogeological point of view and reiterated its recommendation that the Proponent verify the pit would act as recharge area.¹⁴² Further, NRCAN noted that it has reviewed the additional information provided following the PHC and is satisfied with the information provided by Agnico Eagle in response to concerns with respect to groundwater quality.¹⁴³

¹³⁸ Agnico Eagle Mines Ltd., *Freshwater Environment Presentation*, Exhibit 04, NIRB Final Hearing File No. 16MN056, September 20, 2017.

¹³⁹ Indigenous and Northern Affairs Canada Final Written Submissions, August 14, 2017.

¹⁴⁰ Natural Resources Canada Final Written Submissions, August 14, 2017.

¹⁴¹ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

¹⁴² R. Besner, Natural Resources Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 557-558, lines 18-26 and 1-6.

¹⁴³ R. Besner, Natural Resources Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 558-559, lines 7-24 and 1-14.

During its technical presentation at the Final Hearing, INAC noted that its concern with respect to requiring information regarding the hydraulic gradients in the area of the pit to confirm the likelihood of diffusion would be addressed by the Proponent conducting the hydrogeological characterization studies. Further, INAC recommended that quantitative analysis of stable meromixis be performed if some concern remains on the potential for diffusion.¹⁴⁴

NRCan indicated within its final written submission that it believes the Proponent has conducted reasonable analysis of talik conditions and permafrost distribution within the footprint of the proposed Whale Tail pit, and recommended that the Proponent consider conducting a sensitivity analysis to address any uncertainties in the thermal model parameters prior to final project design.¹⁴⁵ In response to NRCan's recommendation, Agnico Eagle noted that it would continue to update and refine the ground water modeling to support a Whale Tail Pit site-wide hydrogeological model.¹⁴⁶ In its technical presentation at the Final Hearing, NRCan reiterated its recommendation with respect to the sensitivity analysis to manage any uncertainties.¹⁴⁷

NRCan further noted within its final written submission that the Proponent has predicted that water in the Whale Tail pit would develop layers that would not mix, and, as a result, no groundwater inflow from the surrounding area is expected to enter the bottom of the flooded Whale Tail pit at closure. NRCan also noted that the Proponent has identified an adaptive management plan to monitor long-term water quality in the flooded Whale Tail pit. Further, NRCan indicated that it was in agreement with the Proponent's plan from a hydrological point of view and recommended that Agnico Eagle continue to verify the hypothesis presented in the plan.¹⁴⁸ In response to the comments, Agnico Eagle acknowledged NRCan's agreement with its updated Water Quality and Flow Monitoring Plan submitted to the NIRB and Nunavut Water Board (NWB) in May 2017.¹⁴⁹

During the Final Hearing, NRCan and INAC each stated that they were generally satisfied with the Proponent's responses and additional commitments made to address issues they had raised in their final written submissions, including those related to site-specific hydrogeological characterization, including pit water quality monitoring.^{150,151}

Details on views of Interested Parties and the Proponent regarding hydrology and surface water quality are presented in [Section 5.7](#) of this Report.

¹⁴⁴ R. Theoret-Gosselin, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 524-528, lines 10-26, 1-26, 1-26, 1-26, and 1-2.

¹⁴⁵ Natural Resources Canada Final Written Submissions, August 14, 2017.

¹⁴⁶ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

¹⁴⁷ R. Besner, Natural Resources Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 557, lines 3-11.

¹⁴⁸ Natural Resources Canada Final Written Submissions, August 14, 2017.

¹⁴⁹ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

¹⁵⁰ R. Besner, Natural Resources Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 557-559, lines 12-26, 1-26 and 1-14.

¹⁵¹ K. Costello, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 515-516, lines 24-26 and 1-22.

5.6.3 Views of the Board

With respect to the hydrogeology and groundwater at the proposed project site, the Board examined the information provided by Agnico Eagle and noted the representations made by intervening parties in their final written submissions and presentations during the Final Hearing and by the public throughout the Review of the Project. The Board has determined that from a general perspective, most of the relevant issues have been adequately addressed for this stage of assessment, recognizing that the water licensing process with the NWB provides more in-depth consideration of certain relevant topics.

The Board further notes that the Proponent has committed, as indicated in the EIS and at the Final Hearing, to undertake continued baseline studies and monitoring as well as implement preventative mitigation measures to reduce the potential project impacts to hydrogeology and groundwater quality and quantity.

5.6.4 Conclusions and Recommendations of the Board

Following a review of the material presented by Agnico Eagle in the EIS and a consideration of views of Parties, the Board believes that the Project's potential effects related to hydrogeology and groundwater quantity and quality could be appropriately managed through the adherence to commitments provided by the Proponent and the implementation of proposed mitigation measures. Specifically, the Board recommends terms and conditions requiring the following (a brief summary of the Board's recommended terms and conditions is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

- Develop and implement a thermal monitoring plan to address potential changes in talik distribution and flow paths that may result from the development of the Project;
- Collect site-specific hydraulic data (e.g., from new monitoring wells) in key areas during the pre-development, construction and operation phases to better define vertical and horizontal groundwater flow in the project development area as part of the Groundwater Monitoring Plan;
- Conduct a hydrogeological characterization study to verify the potential for arsenic diffusion from submerged Whale Tail pit walls and, if warranted, perform detailed hydrodynamic modelling of the flooded pit lake prior to closure to evaluate meromictic conditions and flooded pit water quality;
- Provide periodic updates to the Groundwater Monitoring Plan, including adaptive management strategies, to reflect site-specific conditions encountered at the project site; and
- Conduct analyses over time to confirm and update, accordingly, the approximate fill time for the Whale Tail pit at closure.

5.7. SURFACE WATER HYDROLOGY, SURFACE WATER QUALITY AND SEDIMENT QUALITY

5.7.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) noted that infrastructure development, dewatering, and diversion activities would result in effects on discharges, water levels, and channel/bank stability in watersheds of the surface water quantity local study area (LSA) only, including watershed A (i.e. where Whale Tail Lake [Lake A17] and Mammoth Lake [Lake A16] are located), and watershed C (i.e. where Nemo Lake [Lake C38] is located), which would vary over the construction, dewatering, operational, and closure phases. The effects are projected to be negligible following the closure phase and are predicted to be negligible beyond the LSA at all times. With respect to surface water quality, Agnico Eagle noted that the Project would not have a significant effect to water quality based on the ratings assigned for duration, geographic extent and magnitude for the three (3) primary pathways as assessed and the potential effects to the assessment endpoint.

Agnico Eagle presented its assessment of potential project-induced impacts on surface water hydrology (quantity) and surface water quality (freshwater) within Volume 6, Sections 6.3 and 6.4 of the Environmental Impact Statement (EIS). Supporting baseline information and methods were provided in Appendices 6-C, 6-D, 6-G, 6-H, 6-I7-A of the EIS with additional information provided following the Pre-hearing Conference as an addendum⁸⁹ to Appendix 6-H, and a memo discussing the cross section schematic of Whale Tail Pit.¹⁵² Agnico Eagle also provided several sources of Inuit Qaujimajatuqangit that had been incorporated into its assessment, and noted that concerns had been expressed during consultations with Baker Lake community members about the direct and indirect effects of the changing weather and climate, its effects on water levels and water quality, specific project activities and the protection of lakes from disturbance due to construction activities.

Surface Water Hydrology

Agnico Eagle identified the spatial boundaries for surface water hydrology to assess the potential effect of the Project on the surface water quantity. The surface water quantity LSA includes the A and C watersheds, and watersheds of each watercourse crossed by the haul road. The Project, and specifically the haul road, is located within the Meadowbank River, Quoich River, and Thelon River watersheds, and the surface water quantity regional study area (RSA) was defined to consider the effects of the Project with other developments, activities, and natural factors that influence surface water quantity within these watersheds. However, due to the size of these watersheds, the surface water quantity RSA was limited to specific drainage areas, downstream of which potential effects would no longer be measurable. Temporally, impacts were considered for the construction, operations, and closure phases.

Baseline studies were completed by Agnico Eagle in 2015 for the Whale Tail Pit study area and the haul road study area. Agnico Eagle noted that the proposed project footprint is comprised of several watersheds with an extensive network of lakes, ponds and interconnecting streams, which

¹⁵² Golder Associates Ltd. July 2017. *Cross Section Schematic*. Whale Tail Commitment 29. Prepared for Agnico Eagle Mines Ltd.

all drain north to the Meadowbank River. Whale Tail Pit is located in the A watershed while water management activities are planned in the A watershed and C watershed. Morainal shorelines were observed for the LSA with limited areas of bedrock and shallowly sloped sandy shorelines. Agnico Eagle noted that the predominant materials are boulder gardens mixed with cobble with very limited soils or organic materials on top. The proposed haul road is located within the Meadowbank River, Quoich River, and Thelon River watersheds, and crosses a total of 28 watercourses, including three (3) rivers, and 25 smaller watercourses.

Agnico Eagle identified the following primary pathways of potential project-related impacts related to surface water quantity:

- Project footprint, which will physically alter watershed areas and drainage patterns, may change downstream discharges, water levels, and channel/bank stability in streams, and affect water quality, fish habitat, and fish;
- Dewatering of lakes may change discharges, water levels, and channel/bank stability in receiving and downstream waterbodies, and affect water quality, fish and fish habitat; and
- Alteration of watershed flow paths may change discharges, water levels, and channel/bank stability in diverted and receiving waterbodies, and affect water quantity, water quality, fish and fish habitat.

As these primary pathways overlap to varying degree through time, effect analysis results were presented by the Proponent by project phase, in terms of change in discharge and water level regimes, from which additional information was derived (e.g., flood zones). Agnico Eagle predicted that construction, operational and closure activities are expected to reduce discharges and water levels at Mammoth Lake (Lake A16), primarily from the reduction in drainage area from the Whale Tail Waste Rock Storage Facility Dike, from the Whale Tail Dike and from an additional reduction in drainage area from the Mammoth Dike. Effects on discharges and water levels are expected to diminish with increases in drainage area, and are not expected to be measurable at Lake A69 (downstream of Lake A75 and the last lake in watershed A). Slightly reduced discharges and water levels are expected at Lake A5, are assumed to occur at Lake A4, Lake A3, Lake A2, and Lake A1, and are not expected to be measurable at Lake DS1 (which drains north to the Meadowbank River). Effects on discharges and water levels at Nemo Lake (Lake C38) and downstream lakes from water withdrawal are expected to be negligible. Cumulative effects are expected at Mammoth Lake (Lake A16) and downstream lakes from dewatering activities, during the operational phase activities and the closure phase, while cumulative effects are expected at Nemo Lake (Lake C38) and downstream lakes from the operational phase activities. At post-closure, Agnico Eagle predicted that the end pit lake will increase the surface area of Whale Tail Lake (Lake A17) by 13% from 1.66 km² (baseline conditions) to 1.87 km² (post-closure conditions), resulting in proportionate increases in direct precipitation and evaporative losses, and decreases in runoff from adjacent land areas. All other lakes are expected to return to baseline conditions.

Agnico Eagle concluded that the residual effects of the Project on surface water quantity would result in a change of state from baseline conditions, with the effects continuing over the assessment period. However, the effects are expected to remain confined to the LSA and are expected to be reversible following the closure phase of the Project. Further, Agnico Eagle

noted that there are no reasonably foreseeable future developments and cumulative effects are expected to be negligible as a result.

Mitigation and monitoring plans developed by Agnico Eagle to manage potential effects to surface water hydrology in the project study area include the following:

- Water Management Plan
- Water Quality and Flow Monitoring Plan
- Groundwater Monitoring Plan
- Whale Tail Pit Haul Road Management Plan
- Closure and Reclamation Plan

Surface Water Quality

The LSA for surface water quality was selected by Agnico Eagle to include all areas of direct physical disturbance from project activities and facilities, such as the personnel camp, maintenance shop, tank farm, Waste Rock Storage Facility, pit, and water treatment plant. The LSA also considered the boundaries of local watersheds and the spatial extent of the potential direct and indirect changes from the Project to the physical and biological properties of hydrology, surface water quality, and fish. The LSA for the 62.5 kilometres (km) long haul road is a 100 m buffer on either side of the road alignment. The LSA associated with the road alignment (200 m corridor) is anticipated to be large enough to capture the residual effects from the haul road on adjacent aquatic areas and potential fishery units; therefore, no RSA for the road was defined. The Whale Tail Pit RSA for water quality is within the RSA for surface water quantity (see above), extends to the downstream end of Lake DS1 (which drains north to the Meadowbank River), and includes areas downstream of the Project, along the flow path of water, with consideration of the effects of the Project with other developments, activities, and natural factors that influence water quality. Temporally, impacts were considered for the construction, operations, and closure phases.

Baseline water quality studies were completed by Agnico Eagle in 2014 and 2015 for the Whale Tail Pit study area and the haul road study area. The results from these studies indicated that most water chemistry constituent concentrations were below analytical detection limits. Agnico Eagle further noted that the lake water pH was circum-neutral (6.4 to 7.6) in all lakes. Nutrient concentrations were low in the lakes, the tributary stations and the haul road study area, with results less than the detection limit in most samples. Metals were below the analytical detection limit in most samples, and when they were detected, concentrations were below the Canadian drinking water quality guidelines and Canadian water quality guidelines (CWQG), with two exceptions. Agnico Eagle noted that aluminum was above the CWQG at two tributary stations in August only.

Baseline sediment quality studies were completed by Agnico Eagle in 2014 and 2015 for the Whale Tail Pit study area and reference lakes. The results from these studies indicated that the majority of sediment chemistry constituent concentrations were similar between lakes, and concentrations were less than the interim sediment quality and probable effect level guidelines for cadmium, copper, lead, and mercury in all samples.

Sediment quality was not considered to be a valued component by Agnico Eagle as changes to sediment quality would be managed by minimizing changes to water quality and by best management practices to reduce or minimize erosion and sedimentation, and as such, sediment quality was only considered in the impact assessment due to the link between water quality, sediment quality, and aquatic biota. However, Agnico Eagle noted that sediment quality was considered a measurable indicator for the water quality assessment endpoint and that analyses of residual effects on sediment quality were qualitative.

Agnico Eagle identified the following primary pathways of potential project-related impacts to surface water quality as:

- Air emissions and the deposition of dust and acidifying air emissions to waterbodies;
- Water management and flooding; and
- Development of the project footprint, water management and effluent discharge.

Agnico Eagle noted that the analyses of residual effects from the Project on water quality were quantitative, where possible, and included data from field studies, scientific literature, monitoring programs at existing mines, government publications, and personal communications. Traditional knowledge and community information were incorporated where available. For the assessment results, Agnico Eagle discussed each of the primary pathways separately.

Air Emissions

Agnico Eagle noted that project-related air emissions have the potential to affect local terrestrial and aquatic ecosystems; and to address the concerns raised by community members during consultation. Agnico Eagle evaluated the potential effects of dust and air emissions deposition on the surface water quality. Agnico Eagle indicated that the duration of the effects of dust and air emission deposition are predicted to be short to medium-term, primarily restricted to operations, with some pathways noticeable in the construction and closure phases. Based on the results of the air quality predictions for the Project and the use of mitigation measures, Agnico Eagle noted that the effects of deposition of dust and acidifying air emissions are predicted to have a negligible effect on water quality, and thus a negligible effect on aquatic ecosystems and traditional and non-traditional uses.

Flooding

Agnico Eagle noted that the planned diversion of Whale Tail Lake (South Basin) would result in flooding of tributary lakes, which may result in increased concentrations of mercury in the water and biota, from decomposition of newly flooded vegetation. The effects of flooding on mercury cycling would be limited to the period of time when Whale Tail Lake (South Basin) is flooding (i.e. approximately 2 years). Based on a literature research, Agnico Eagle noted that mercury concentrations in water and biota can start to increase one (1) to two (2) years after flooding; the time to return to baseline conditions is unknown, but it is assumed by Agnico Eagle that the time will be less than the time observed in naturally flooded reservoirs since the flooded state would be temporary. Based on these assumptions, the duration of effects was rated as medium-term and the geographical extent of effects was considered local because effects will be limited to Whale Tail Lake. The potential magnitude of the effect was rated as moderate because some parameters may increase above guidelines, but not to a level that could affect the sustainability of the ecosystem or limit the continued traditional and non-traditional uses.

Effluent Discharge

As noted by Agnico Eagle, management of water in the Whale Tail Pit area and the discharge of effluent to the downstream environment have the potential to change water quality through disturbance of lakes and effluent release. Agnico Eagle noted that there is the potential to change Mammoth Lake (Lake A16) and the downstream receiving environment from the project activities related to this pathway. Lakes that have been identified as culturally important (e.g., Innugugayualik and Pipedream lakes (Section 6.4.1.1; Volume 7, Appendix 7-A)) would not be affected by this pathway. However, Agnico Eagle noted that management of water on site would be necessary to manage and minimize downstream effects. Discharge of effluent would be limited to the operations phase, but the potential effects are predicted to extend through to early post-closure.

Agnico Eagle predicted that there would be a change in downstream water quality due to the project activities but that changes will be limited to phosphorus only. The predictions were considered conservative, but Agnico Eagle suggested there could be increases in phosphorus in the downstream lakes, which could change productivity. The duration of the effect was rated as long-term but not permanent because the model predicts a return to baseline conditions in post-closure. The geographic extent of this effect was rated as regional as there is the potential for changes in nutrients to Downstream Node 2. Downstream Node 2 receives water from the main drainage pathways of Lake A12 (downstream of Lake A15 which in turn is downstream of Mammoth Lake) and Lake A76 (downstream of Lake A12). The magnitude was rated as moderate to high because there is a high degree of conservatism in the predictions, and increased phosphorus could affect sustainability of the ecosystem, in a select system of lakes, but may not affect aquatic health.

Agnico Eagle concluded that based on the ratings assigned for duration, geographic extent, and magnitude for the three (3) primary pathways, and the potential effects to the assessment endpoint, which includes a healthy ecosystem and continued traditional use, the residual effects of the Project to surface water quality will not be significant. Further, Agnico Eagle noted that there are no reasonably foreseeable future developments, and cumulative effects are expected to be negligible for surface water quality.

Mitigation and monitoring plans developed by Agnico Eagle to manage potential effects to surface water hydrology in the project study area include the following:

- Water Quality Monitoring and Management Plan for Dike Construction and Dewatering
- Water Management Plan
- Water Quality and Flow Monitoring Plan
- Groundwater Monitoring Plan
- Whale Tail Pit Haul Road Management Plan
- Core Receiving Environment Monitoring Plan
- Closure and Reclamation Plan

Following the Pre-hearing Conference, and prior to the Final Hearing, Agnico Eagle presented results of sensitivity analyses it had conducted on the site, with respect to the receiving

environment water quality model, to evaluate potential consequences of the risk of worst case scenario occurrences for arsenic and phosphorus loading in the receiving environment, including groundwater resources. The Proponent noted that, based on its conservative approach in the development of the water quality model, such worst case scenarios were unlikely to occur under the current mine design specifications and existing site conditions.

5.7.2 Views and Concerns of Interested Parties

Within their joint final written submission, Nunavut Tunngavik Inc. (NTI) and the Kivalliq Inuit Association (KIA) expressed concern about the potential impacts of arsenic and phosphorus on water quality at the project site and the surrounding receiving environment.¹⁵³ Both parties further noted that they would be relying on expertise within federal departments such as Indigenous and Northern Affairs Canada (INAC) and Environment and Climate Change Canada (ECCC) to resolve concerns about the Project's potential impacts on water quality. In response to NTI and KIA's comments, Agnico Eagle confirmed that it had addressed water quality concerns associated with the proposed Project in its response to final written submissions by ECCC and INAC.¹⁵⁴

Within its final written submission, Fisheries and Oceans Canada (DFO) noted that Agnico Eagle should have an appropriate number of monitoring stations to assess impacts to water quality during operations and post-closure in order to validate their assumptions in the environmental assessment. For consistency and for support of the proposed offsetting efforts, DFO provided preferred locations that should be used for the monitoring program and stressed that consistency in the locations of monitoring samples would provide adequate data for fluctuations in water quality due to mining operations throughout the construction and operation phases, and after closure. DFO further noted that it would like to ensure that in addition to any other parameters being tested at a given station, that temperature, pressure, dissolved oxygen, pH, salinity and conductivity be tested, as well as requiring multiple samples to be taken at depths of 1, 5 and 10 m. DFO furthermore requested that reference lakes be included in the monitoring and that a rationale be provided for the current reference lakes selected. DFO also noted concern about the frequency of sampling that would occur throughout operations, closure and post-closure at monitoring stations and requested that a consistent frequency be considered for sampling at all monitoring locations throughout the project to acquire an ample amount of data to inform future monitoring related studies.¹⁵⁵ In response to the written submissions, Agnico Eagle referred DFO to the Core Receiving Environmental Monitoring Program (CREMP) for details on their requests noting the evaluation of a reference lake associated with project lakes is consistent with CREMP monitoring goal to evaluate impacts in the receiving environments and would ensure consistency in sampling locations and frequency according to DFO's request.¹⁵⁶ During its technical presentation at the Final Hearing, DFO stressed that the CREMP is a different plan focused on measuring different parameters than the water quality and flow monitoring plan and noted its concern that data generated from the two plans, including reference data may not be directly comparable and/or complementary. DFO further requested that Agnico Eagle clarify its

¹⁵³ Nunavut Tunngavik Inc. and Kivalliq Inuit Association Final Written Submissions, August 14, 2017.

¹⁵⁴ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

¹⁵⁵ Fisheries and Oceans Canada Final Written Submissions, August 14, 2016.

¹⁵⁶ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

rationale for the selection of the reference lakes as the lakes are not within the Whale Tail Lake watershed. During its presentation, DFO noted that it would work with Agnico Eagle to ensure that monitoring supports any research proposed as complementary measures to offset serious harm to fish.¹⁵⁷

ECCC further noted within its final written submission that the Proponent provided proposed Effluent Quality Criteria (EQC) along with estimates of effluent quality for the discharge into Mammoth Lake from the Attenuation Pond treatment plant, and recommended the EQC be set based on concentrations that are achievable and that minimize discharge levels to receiving waters, and that the EQC should be applicable to all mine-related discharges to surface waters.¹⁵⁸ In response, Agnico Eagle agreed with ECCC's recommendation and noted that following additional meetings with ECCC, the EQCs have been updated and would be under the jurisdiction of the Nunavut Water Board (NWB).¹⁵⁹ During the technical presentation at the Final Hearing, ECCC noted that it accepted the revised criteria levels by Agnico Eagle and agreed to work with the Proponent to identify the appropriate effluent quality criteria for mercury.¹⁶⁰

In related comments in its final written submission, INAC noted that based on its review of the Proponent's modelling of post-closure water quality in the flooded Whale Tail Pit or Lake and diffusion of arsenic into the pit/lake from the surrounding rock formations, arsenic concentrations in the flooded pit/lake were predicted to be an order of magnitude greater than the site-specific water quality objective (SSWQO) for arsenic proposed for the Project. INAC further noted that results of the modelling suggest that some type of active intervention, such as long-term treatment of water in the flooded pit/lake, may be required post-closure to meet SSWQO for the discharge of pit water to the receiving environment.¹⁶¹ During the Final Hearing, ECCC noted that Agnico Eagle responded to ECCC's concern with respect to the SSWQO for arsenic by removing amphibian data and provided a summary of statistics for the models along with a rationale for selecting the normal model. ECCC indicated that it accepts the revised SSWQO of 25 mg/L for total arsenic.¹⁶²

ECCC further indicated in its final written submission that the conclusions provided on mercury and methylmercury in connection with flooding of terrestrial areas were tentative and qualified as reported within the Azimuth Consulting Group Partnership Report that was submitted by Agnico Eagle. ECCC noted that conducting an investigation of the key uncertainties identified within the report (Arctic environment, ice rafting, tundra soils, ice cover, interrupted discharge, cold water, slow fish growth, and shortened reservoir life) would contribute to understanding mercury dynamics in a Northern impoundment scenario and could improve mercury predictions

¹⁵⁷ M. D'Aguiar, Fisheries and Oceans Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 492-493, lines 1-26 and 1-24.

¹⁵⁸ Environment and Climate Change Canada Final Written Submissions, August 14, 2017.

¹⁵⁹ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

¹⁶⁰ T. Auser, Environment and Climate Change Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 467, lines 7-22.

¹⁶¹ Indigenous and Northern Affairs Canada Final Written Submissions, August 14, 2017.

¹⁶² T. Auser, Environment and Climate Change Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 463-464, lines 25-26 and 1-12.

for fish, other aquatic biota, sediment, and water quality.¹⁶³ In response to the final written submission, Agnico Eagle agreed with ECCC's recommendation to conduct a separate study in order to inform mercury modeling for this Project. Further, adaptive management actions by Agnico Eagle would be considered based on the results of this study.¹⁶⁴

ECCC further noted within its final written submissions that the Proponent's sediment core analysis to confirm baseline sediment conditions at the proposed Whale Tail Pit, as part of the Core Receiving Environment Monitoring Program (CREMP), was limited to metals only. To allow for a comparison of pre- and post-disturbance conditions and to support interpretation of benthic data, ECCC recommended that Agnico Eagle conduct a full suite of testing on sediment core samples for pH, metals, particle size, total organic carbon, total phosphorus, and moisture content.¹⁶⁵ In response to ECCC's comment, Agnico Eagle noted that it currently conducts sediment core sampling program every three (3) years for the analysis of metals, pH, and total organic carbon at the Meadowbank Gold Mine, and proposed to continue to apply this program, with site-specific protocols, at the Whale Tail Pit Project site as part of CREMP.¹⁶⁶

As part of its technical presentation during the Final Hearing, ECCC reiterated its recommendation that the Proponent conduct a full suite of sediment core sampling and analysis, and noted that, based on the Proponent's commitment to conduct a full suite of sediment core sampling and analysis as part of the Whale Tail Pit Project, ECCC considered this outstanding issue resolved.¹⁶⁷

In its final written submission, Indigenous and Northern Affairs Canada (INAC) noted that ammonia and nitrate residuals from explosive use are common contaminants associated with mining operations and these levels could become a potential issue if the Meadowbank project data are not representative of the Whale Tail Project as the Whale Tail project predicted ammonia and nitrate concentrations were based on monitoring data from the Meadowbank project. In an effort to account for site-specific variables, INAC previously recommended during the technical review period that a loadings-based approach be used to correlate explosives use with ammonia and nitrate concentrations. The Proponent presented a number of counter-arguments and has not implemented the approach recommended by INAC. Within its final written submission, INAC maintained that a loading-based approach would yield superior results but stated that it is of the view that the risks associated with using the Proponent's approach are minimal. As a result, INAC indicated that it would not be pursuing the issue further.¹⁶⁸ On a related topic, NRCan noted that it was satisfied with the explosives storage information provided by Agnico Eagle.¹⁶⁹ During its technical presentation at the Final Hearing, INAC noted that its

¹⁶³ Environment and Climate Change Canada Final Written Submissions, August 14, 2017.

¹⁶⁴ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

¹⁶⁵ Environment and Climate Change Canada Final Written Submissions, August 14, 2017.

¹⁶⁶ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

¹⁶⁷ T. Auser, Environment and Climate Change Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 471, lines 10-23.

¹⁶⁸ Indigenous and Northern Affairs Canada Final Written Submissions, August 14, 2017.

¹⁶⁹ Natural Resources Canada Final Written Submissions, August 14, 2017.

concerns about the methodology used to evaluate ammonia and nitrate levels from the use of explosives were resolved following a teleconference with Agnico Eagle.¹⁷⁰

During the Final Hearing, INAC stated as clarification to the Board that inspectors from INAC do not conduct monthly site-wide water quality monitoring when conducting their inspection for compliance with the water licence. The monitoring program is the responsibility of the Proponent.¹⁷¹

Following DFO's technical presentation at the Final Hearing and questioning by Agnico Eagle, DFO confirmed that the outstanding items will be addressed during the regulatory phase of the process.¹⁷² The NIRB staff requested that Agnico Eagle respond to DFO's comment to provide a rationale for the selection of the reference lakes as well as confirmation from DFO if they are satisfied with Agnico Eagle's response.¹⁷³ In response, Agnico Eagle provided a rationale for the selection of the two reference lakes, noting that lakes were evaluated at the basin levels for the Meadowbank site, the Whale Tail Pit site and the reference lakes with the reference lakes located between the two projects for the CREMP.¹⁷⁴ In response, DFO noted that "[c]onceptually that sounds like a reasonable rationale. What we would ask Agnico Eagle to provide is a direct comparison, so -- and a more detailed rationale for some details about the watershed features that are in the Whale Tail watershed and those reference lakes."¹⁷⁵

As part of its technical presentation during the Final Hearing, INAC noted that, based on the Proponents responses to INAC's final written submissions and follow-up discussions with, and commitments by Agnico Eagle, it considered the outstanding issues related to potential impacts on water quality and post-closure water quality in the flooded Whale Tail Pit resolved.¹⁷⁶

A Community Representative from Chesterfield Inlet requested clarification from Agnico Eagle on the monitoring of the pits following closure and asked:

*...what the water -- what quality is like. Have you done that before, after you created the pit and flooded it with water? And how has that been over a period of time?...what the water is like in the pits.*¹⁷⁷

¹⁷⁰ R. Theoret-Gosselin, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 535, lines 16-19.

¹⁷¹ K. Costello, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 331, lines 10-22.

¹⁷² M. D'Aguiar, Fisheries and Oceans Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 496, lines 18-19.

¹⁷³ S. Granchinho, Nunavut Impact Review Board, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 496-498, lines 25-26, 1-5, 10-22 and 9-12.

¹⁷⁴ R Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 497-498, lines 10-26 and 1-2.

¹⁷⁵ B. Ross, Fisheries and Oceans Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 498, lines 5-10.

¹⁷⁶ K. Costello, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 122-123, lines 26-27 and 1-23.

¹⁷⁷ H. Aggark, Chesterfield Inlet, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 605, lines 3-8.

Agnico Eagle responded to the question stating that its northern experience with re-flooding of pits comes from the Bay Goose Pit located at Meadowbank project site where Agnico Eagle has started transferring water into the pit. Further, Agnico Eagle noted that water would not be discharged from the pit until the pit water meets the approved water quality criteria.¹⁷⁸

A member of the public requested clarification on Agnico Eagle's water quality monitoring program; specifically asking whether Agnico Eagle will "*test the waters from Meadowbank all the way down to Quoich River*".¹⁷⁹ In response, Agnico Eagle noted that the water quality program includes Tehek Lake which flows into Quoich and eventually into Baker Lake, and is located at the outflow of its project lakes and the furthest lake from the mine site.¹⁸⁰

5.7.3 Views of the Board

The Board acknowledges the measures that have been developed and proposed by the Proponent to date to mitigate potential impacts to surface water resources; however, the Board remains concerned with the potential for changes in surface water and sediment quality, permafrost/talik distribution, groundwater distribution and flow paths that may be directly or indirectly attributable to Project facilities and activities. The Board is aware that these issues will require further consideration and approval by respective regulatory authorities recognizing that the water licencing process with the NWB provides more-in-depth consideration of certain relevant topics. The Board also stresses the need for these issues to be assessed and monitored throughout the life of the Project, and that a precautionary approach be taken in relation to considerations of surface water. The Board also believes that the potential impacts to surface water could affect or be perceived to affect the people who live close to and who travel through the Project area for the life of the Project, especially since the Whale Tail Pit Project, and specifically the haul road, is located within multiple watersheds, including the Meadowbank River, Quoich River, and Thelon River watersheds..

The Board encourages Agnico Eagle to continue to work with the public and other regulatory authorities as it continues to update its modelling, mitigation measures and management plans to ensure that surface water is protected and that the public is aware of activities conducted throughout the life of the Project.

The Board further notes that parties raised concerns with respect to the potential for elevated arsenic concentrations in seepage from the Waste Rock Storage Facility and the diffusion of arsenic into the pit from the surrounding rock formations thereby causing adverse impacts to downstream surface waterbodies. This would include potential impacts to Mammoth Lake from discharges to the surface water. The Board acknowledges that Agnico Eagle has committed to work with the regulatory bodies to ensure that this issue is addressed, and to ensure that a precautionary approach is taken in relation to consideration of surface water, and specifically

¹⁷⁸ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 605-606, lines 22-26 and 1-10.

¹⁷⁹ E. Elytook, Baker Lake, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 666, lines 13-18.

¹⁸⁰ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 666-667, lines 22-26 and 1-10.

Mammoth Lake, during the post-closure period. The Board stresses the importance of ongoing monitoring to ensure mitigation measures are implemented where necessary.

The Board stresses the importance of a well-rounded aquatics effects monitoring program with an appropriate number of monitoring stations and reference lakes for assessing the potential impacts of the Whale Tail Pit Project to surface water and sediment quality in the receiving environment during operations and post-closure. This will enable the identification of trends and additional adaptive management strategies if required, including those as may be required for the management of sediment and erosion control. The Board acknowledges that Agnico Eagle has a CREMP in place associated with operations at the Meadowbank Gold Mine to evaluate impacts in the receiving environments, which it is understood will also be applied for the Whale Tail Pit Project, but the Board recommends Agnico Eagle update the CREMP to address the recommendations made by parties during the review of the Project and as may be directed by the NWB in the subsequent regulatory phase.

During the Final Hearing, the Board requested clarification from Agnico Eagle on the dewatering process of Whale Tail Lake and the proposed fish-out program, specifically how many lakes would the water be pumped to in the area.¹⁸¹ In response, Agnico Eagle provided a summary of the dewatering process noting that the water from the area where the pit would be located would be pumped out to the southern basin of Whale Tail Lake with the dewatering process occurring in stages along with the fish-out program. Agnico Eagle also noted that the dewatering and fish-out programs were refined based on their experience at Meadowbank and that the Baker Lake HTO would be involved with the fish-out program.¹⁸² The Board further asked DFO whether they would be present during the dewatering of Whale Tail Lake.¹⁸³ In response, DFO noted that officers would visit the site to ensure compliance on a case-by-case basis but would not commit to having a fisheries officer on-site.¹⁸⁴

The Board also requested clarification on the length of the water quality program following closure of the mine.¹⁸⁵ In response, Agnico Eagle noted that the dikes would not be breached until the water quality meets the water quality objectives based on the NWB requirements and post-closure monitoring would occur from 2030 to 2046.¹⁸⁶

The Board further requested clarification on INAC's compliance monitoring asking:

¹⁸¹ H. Ohokannoak, NIRB Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 93, lines 11-21.

¹⁸² J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 93-95, lines 25-26, 1-26 and 1-8.

¹⁸³ H. Ohokannoak, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 500, lines 9-13.

¹⁸⁴ B. Ross, Fisheries and Oceans Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 501, lines 1-7.

¹⁸⁵ A. Maghagak, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 189, lines 2-12.

¹⁸⁶ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 189-190, lines 16-26, 1-26 and 1-13.

“...for clarification, how often will you guys be visiting the sites to ensure that -- that the licence's terms and conditions are compliant to the terms, and how often will you be visiting those sites to monitor the compliance, or will you leave that up to NIRB?”¹⁸⁷

In response, INAC mentioned that should the project proceed, terms and conditions would be incorporated within relevant authorizations following a project certificate workshop. Inspections would be conducted by INAC's water resource officers. In addition, INAC indicated that the department has a memorandum of understanding with the KIA that has been in place for over ten (10) years to monitor in the area of some of the major mineral developments in order to track baseline conditions or to determine if changes have been occurring.¹⁸⁸

The Board acknowledges Agnico Eagle's commitment, as indicated in the EIS and at the Final Hearing, to undertake continued baseline studies and monitoring, as well as to implement preventative mitigation measures to reduce the potential project impacts. In addition, the Board expects that the Proponent will consult and collaborate with regulators and stakeholders as construction designs are finalized and project activities are undertaken. The Board expects that Agnico Eagle will use the lessons learned from its existing Meadowbank Gold Mine operations to mitigate, monitor, and adaptively manage impacts to the surface water environment for the duration of the Project. As changing climatic conditions have the potential to impact the surface water quality in unexpected ways, the Board stresses the importance of diligent mitigation and rigorous monitoring to ensure that all potential effects are forecasted and adaptively managed.

5.7.4 Conclusions and Recommendations of the Board

Following a review of the information provided by Agnico Eagle in the EIS, the Board believes that the Project's potential effects related to surface water hydrology, surface water quality and sediment quality could be appropriately managed through the commitments provided by the Proponent and application of the following key mitigation measures. Specifically, the Board recommends terms and conditions requiring the following (a brief summary of the Board's recommended terms and conditions is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

- Monitor the effects of the Project on surface water quality conditions relative to project infrastructure, and ensure monitoring data is sufficient to compare the impact predictions in the EIS for the Project with actual monitoring results;
- Ensure that the sampling locations and frequency of monitoring is consistent with and reflects the requirements of the monitoring programs;
- Implement water conservation and recycling at site to maximize water reuse and minimize the use of natural waters;

¹⁸⁷ A. Maghagak, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 547, lines 8-13.

¹⁸⁸ K. Costello, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 547-548, lines 16-26 and 1-23.

- Maintain a Core Receiving Environment Monitoring Program designed to determine the short and long-term effects in the aquatic environment resulting from the Project; evaluate the accuracy of Project effect predictions; assess the effectiveness of mitigation and management measures on Project effects; identify additional mitigation measures to avert or reduce environmental effects due to Project activities; reflect site-specific water quality conditions; include details comparing the watershed features in the Whale Tail watershed to those watersheds used as reference lakes; and evaluate the mixing and non-mixing portion of the pit;
- Include sufficient sampling and monitoring programs to appropriately characterize the receiving environment to ensure that adequate data is available to assess impact predictions made within the Environmental Impact Statement for the Whale Tail Pit Project:

5.8. FRESHWATER AQUATIC ENVIRONMENT

5.8.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) concluded that the primary effects will largely result from direct habitat losses from the construction of the Mammoth and Whale Tail dikes, the Whale Tail Pit, the dewatering and fish out of the diked area in Mammoth Lake (Lake A16) and Whale Tail Lake (Lake A17), and the flooding of Whale Tail Lake (Lake A17). Indirect effects to fish and fish habitat will include those related to changes in surface water quantity and water quality. Agnico Eagle further noted that the Project is not expected to have a significant adverse effect on fish and fish habitat valued components, based on the weight of evidence from the analysis of primary pathways. Any unavoidable effects to the productivity of the fishery from the construction of the dikes and subsequent dewatering of the diked area will be addressed through the implementation of offsetting measures, developed in consultation with Fisheries and Oceans Canada (DFO) and local stakeholders, with the goal of maintaining or improving the productivity of the fishery.

Agnico Eagle presented its assessment of potential project-induced impacts on fish and fish habitat within Volume 6, Sections 6.5 of the Environmental Impact Statement (EIS). Supporting baseline information and methods were provided in Appendices 6-D, 6-G, 6-J, 6-K, 6-L, 7-A of the EIS with additional information provided following the Pre-hearing Conference as an addendum to Appendix 6-H.⁸⁹ Agnico Eagle also noted that Inuit Qaujimagatuqangit was used in conjunction with western scientific methods to characterize fish populations in lakes and streams in the regional study area (RSA) and to also better understand the fish populations and habitat in assessment areas to predict the impacts to lakes and streams as a result of the Project.

Agnico Eagle noted that the Whale Tail Pit local study area (LSA) for fish and fish habitat, and for water quality are the same and was selected to include the areas of direct physical disturbance from project activities and facilities (see Sect in 5.7.1). The RSA for fish and fish habitat was divided into assessment areas to reflect the potential number of fishery (or population) units that may be affected by the Project. Temporally, impacts were considered for the construction, operations, and closure phases.

Agnico Eagle completed baseline fish and fish habitat studies in 2014 and 2015 in the RSA including the areas in close proximity to the proposed haul road and the Whale Tail Pit area. The results from the haul pit road studies indicated that three (3) watercourses were classified as rivers with potential habitat for valued components such as Arctic char and Arctic grayling. These large rivers provide spawning, rearing, and foraging habitat for small-bodied fish, and provide migratory corridors and various habitat functions for large-bodied fish. A number of fish species were captured at the watercourse crossings for the haul road: slimy sculpin, Arctic char, Arctic grayling, burbot and ninespine stickleback.

For the Whale Tail Pit area, Agnico Eagle noted that most streams assessed had interstitial flow at some time during the year. Eight (8) streams had surface flow (i.e. water present above the substrate) year-round. Five (5) streams had ephemeral flows and would likely be dry in late summer. Potential Arctic grayling spawning habitat was observed at two (2) locations; however, no Arctic grayling eggs or adults were observed nor collected. Six (6) fish species were captured in lakes and streams in the RSA near the Whale Tail Pit; including lake trout, Arctic char, round whitefish, burbot, slimy sculpin, and ninespine stickleback. Agnico Eagle further noted that six (6) major groups of phytoplankton were present in the lakes within the Whale Tail Pit area, which included Cyanophyta (blue-green algae), Chlorophyta (green algae), Chrysophyta (golden-brown algae), Bacillariophyceae (diatoms), Cryptophyta (cryptomonads), and Dinoflagellata. Chrysophytes were observed to be the dominant taxonomic group in terms of density and biomass during both years of sampling. Overall, rotifers were the most abundant major taxonomic group of zooplankton noted by Agnico Eagle at most locations in 2015 with the exception of Nemo Lake where copepods were the most abundant taxa. Cladocerans made up a relatively small proportion of the zooplankton community during the summer months. Agnico Eagle further noted that benthic invertebrate abundance and richness were low at most locations sampled in 2014 and 2015. Dominant taxa were primarily chironomids in the subfamilies Chironominae and Tanypodinae and fingernail clams (Sphaeriidae). The highest abundances were observed for Mammoth Lake, which also had the highest within lake spatial variability in abundance. Qualitative periphyton surveys were done in July and September in the same general locations in each lake. A different area was surveyed in August. Periphyton growth in July was generally considered sparse to moderate with periphyton cover more noticeable at depth. In August, periphyton growth was generally considered low to moderate with green filamentous algae observed at most locations.

Agnico Eagle identified nine (9) primary pathways that required further effects analysis to determine the environmental significance from the Project on fish and fish habitat. Agnico Eagle noted that the primary pathway effects would result largely from direct habitat losses from the construction of the Mammoth and Whale Tail dikes, the Whale Tail Pit, the dewatering and fish out of the diked area in Mammoth Lake (Lake A16) and Whale Tail Lake (Lake A17), and the flooding of Whale Tail Lake (Lake A17). Indirect effects to fish and fish habitat would include those related to changes in surface water quantity and water quality.

Habitat Losses

Agnico Eagle indicated that the construction of the North East, Mammoth, and Whale Tail dikes and the subsequent dewatering of the diked area would result in habitat losses for Arctic char, lake trout, and round whitefish. These changes are expected to occur on a regional scale and

have a moderate effect on valued component fish species that rely on coarse substrate habitat for spawning and rearing in Mammoth Lake and Whale Tail Lake. Further, Agnico Eagle noted that most of the residual effects from direct changes in habitat will be long-term in duration and reversible following back-flooding, breach of dikes, and reconnection of habitats. Residual effects from direct losses of lake habitat from the dike (sections remaining at post-closure) and the open pit development are expected to be permanent, but are expected to be low in magnitude and occur at the local scale.

Fish-Out

Agnico Eagle noted that dewatering of Whale Tail Lake (North Basin) and a small portion of Mammoth Lake at the narrows between Whale Tail Lake and Mammoth Lake would be required to access the mineral deposit. Prior to dewatering, a fishout will be conducted to remove fish from the dewatered area. Fish mortality is expected to result in a moderate effect to Arctic char, lake trout, and lake round whitefish, and the forage species that support the fishery. Residual effects from the fish-out are expected to occur at the regional scale and be short-term in duration.

Habitat Fragmentation

Agnico Eagle noted that construction and operations of the Mammoth, Whale Tail, and North East dikes and diversions would also result in effects to habitat connectivity. The presence of the dikes would impede fish passage between Whale Tail Lake and Mammoth Lake, and between these lakes and affected tributary habitats. Fish populations above and below any barriers are expected to be maintained. Habitats with the potential to provide overwintering, spawning, rearing, and foraging functions would remain available for populations during construction through post-closure. Agnico Eagle indicated that fragmentation effects related to the project dikes are expected to be low in magnitude, long-term in duration, and occur at the regional scale. Any effects are expected to be reversible when the dikes are breached at closure.

Habitat Alteration from Flooding

The construction and operations of the Mammoth, Whale Tail, and North East dikes and their associated diversions would result in the flooding of tributary streams, affecting the abundance and distribution of Arctic char, lake trout, and round whitefish. With flooding, affected stream habitat would be eliminated with the increase in elevation and total surface area of Whale Tail Lake (South Basin). Agnico Eagle indicated that species distributions have the potential to shift (i.e. expand distributions) as Arctic char, lake trout, and round whitefish gain access to forage fish populations in small lakes and ponds. The effects of flooding from the project dikes and diversions, if any, are expected to be low in magnitude, medium-term in duration, and occur at the local scale.

Downstream Changes to Flows

Agnico Eagle indicated that water diversions during construction and operations phases would reduce water depths and volumes of Mammoth Lake and downstream lakes, resulting in a reduction in fish habitat. A similar effect is expected for streams below Mammoth Lake where the timing window for fish use of affected streams may be limited to periods of high flow, such as the spring freshet period in June. Project activities resulting in downstream reductions in flows during construction and closure phases are expected to have a moderate impact on Arctic char, lake trout, and round whitefish occurring on a regional scale. It is expected that residual

effects would be short-term for the construction phase and medium-term during back-flooding of the diked area at closure.

Changes to Lake Ecosystem Productivity

The effect of increased nutrient concentrations to Mammoth Lake, and downstream lakes during operations and closure are expected to result in a general increase in productivity at lower trophic levels. Biomass of phytoplankton, zooplankton, and benthic invertebrates would likely increase during this period. Agnico Eagle indicated that possible shifts in overall community structure and dominant taxonomic groups may result due to the meso-eutrophic trigger value being exceeded in Mammoth Lake, Lake A15 (downstream of Mammoth Lake), and Lake A12 (downstream of Lake A15) during operations and closure, with a subsequent return to oligotrophic conditions expected by 2039. Due to the increased food base (lower trophic levels and forage fish), Agnico Eagle noted that there may also be a minor increase in growth and reproduction rates in Arctic char, lake trout, and round whitefish, and the forage fish that support the fishery. However, an increase in nutrient levels in Mammoth Lake and downstream lakes may also result in a moderate increase in algae or sediment on lake habitats, including spawning shoals, leading to reductions in oxygen levels. Agnico Eagle concluded that an increase in nutrient levels is expected to result in negative residual effects to the fishery in response to any changes in trophic status during closure and operations. Residual effects from changes in nutrient levels are expected to be moderate on fish and fish habitat, occur at the regional scale, long-term, and reversible during post-closure.

With respect to cumulative effects, Agnico Eagle noted that there are no reasonably foreseeable future developments and as such, cumulative effects are expected to be negligible for fish and fish habitat within the RSA. Agnico Eagle further noted that any measurable effects of the Project to the productivity of the fishery (or support for the productivity of the fishery) will be restricted to the A1 assessment area within the RSA. The A watershed was divided by Agnico Eagle into two assessment areas; A1 assessment area is defined as lakes and streams upstream of stream A76-75 and above Lake A1, while lakes and streams downstream of Stream A76-A75 and above Lake A69 are include in an assessment area, defined as the A69 assessment area.

Mitigation and monitoring plans developed by Agnico Eagle to manage potential effects to fish and fish habitat in the project study area include the following:

- Dike Construction Monitoring Plan
- Water Management Plan
- Water Quality and Flow Monitoring Plan
- Spill Contingency Plan
- Core Receiving Environment Monitoring Plan
- Habitat Compensation Plan
- Conceptual Fisheries Offsetting Plan

During the Final Hearing, Agnico Eagle discussed its commitment on the concepts presented within the offsetting plan and noted its confidence that the loss of fish habitat due to the Whale Tail Pit operations is offset. Agnico Eagle also noted that it would continue to work with Fisheries and Oceans Canada (DFO), the Kivalliq Inuit Association and the Baker Lake Hunters

and Trappers Organization (HTO) to finalize the final offsetting plan during the authorization period.¹⁸⁹ Agnico Eagle further discussed its commitment to conduct additional treatment for phosphorus following DFO's comment regarding potential changes to the lake ecosystem productivity and will incorporate the recommendations as suggested for the freshwater aquatic environment monitoring, mitigation and management plans.¹⁹⁰

5.8.2 Views and Concerns of Interested Parties

Within its final written submission, Environment and Climate Change Canada (ECCC) noted ongoing concern with the proposed discharging of sludge wastes from the water treatment plant into the Whale Tail attenuation pond as this pond would be located within the drained north basin of Whale Tail Lake which would become submerged with the Whale Tail Lake upon re-flooding of the north basin. ECCC indicated that there would be no way to manage potential environmental effects such as migration of contaminants from the sludge into Whale Tail Lake over time and recommended that the sludge be disposed using methods that have been demonstrated to provide effective containment and isolation under Northern conditions.¹⁹¹ In response to the final written submission, Agnico Eagle agreed with the recommendation and noted that it would dispose of the sludge in the Whale Tail Pit Waste Rock Storage Facility, rather than into the attenuation pond.¹⁹²

Within its final written submission, Fisheries and Oceans Canada (DFO) raised concern with respect to habitat losses within the freshwater environment noting the importance of understanding potential negative impacts that may persist into mine closure and reclamation to ensure that permanent impacts are effectively offset. DFO noted uncertainty as to whether the proposed increased surface area of Whale Tail Lake will be a viable offset, and questioned how Agnico Eagle would effectively monitor the mixing or non-mixing in the pit portion of the Whale Tail Lake. DFO further noted concerns that the water quality from the pit could negatively affect the remainder of the lake and fish habitat, and that only one (1) monitoring station was proposed by Agnico Eagle to monitor potential mixing or non-mixing in the pit. DFO also indicated that it did not agree with Agnico Eagle's conclusion that there is sufficient evidence that the Whale Tail end pit would support fish in the post closure scenario. DFO noted that the document¹⁹³ referenced by Agnico Eagle to support this hypothesis had multiple statements that provided a significant level of uncertainty associated with end pit lakes. However, the Proponent still concluded that there would be no mixing between the pit water and the overlying water, though no rationale for this key conclusion is provided (either based on other locations, wind impact analysis, or temperature induced mixing). DFO provided a list of

¹⁸⁹ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 134-135, lines 13-26, 1-20.

¹⁹⁰ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 138, lines 2-12.

¹⁹¹ Environment and Climate Change Canada Final Written Submissions, August 14, 2017.

¹⁹² Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

¹⁹³ Gammons, C.H., Harris, L.N., Castro J.M., Cott, P.A., and Hanna, B.W. 2009. *Creating lakes from open pit mines: processes and considerations – with emphasis on northern environments*. Can. Tech. Rep. Fish. Aquat. Sci. 2826: ix + 106p.

references noting that these documents would provide a beneficial overview of end pit lake scenarios to aid in the Proponent's evaluation.¹⁹⁴

In response to the final written submission, Agnico Eagle referred DFO to the Core Receiving Environmental Monitoring Program (CREMP), noting that it will adopt the monthly monitoring in the pit during flooding and closure and agrees to evaluate the mixing and non-mixing portion of the pit through depth profile, limnological monitoring and depth integrated sampling with the goal to achieve receiving water quality objectives. Agnico Eagle further noted that it would review the list of references provided and would provide additional and updated information on the evaluation of end pit lake scenarios in the Final Offsetting Plan but wanted to stress that it took a conservative approach under a post-closure scenario when developing the draft Fish Habitat Offsetting Plan.¹⁹⁵ During its final technical presentation at the Final Hearing, DFO noted that Agnico Eagle has made efforts to address DFO's concern, however sufficient information to support consideration of the post-closure pit as fish habitat is not yet available. DFO also noted that additional offsetting measures should also be explored and indicated that the department will work with the Proponent, the Kivalliq Inuit Association and the HTO during the regulatory phase to ensure that all losses to fish and fish habitat are accounted for and fully offset.¹⁹⁶

Within its final written submission, DFO further noted the importance of weighting all fish species equally in order for DFO to evaluate potential fishery losses and gains in Agnico Eagle's offsetting plans. All fish as listed in the Local Study Area are species of fishery and fishery support value in Nunavut.¹⁹⁷ In response to DFO's final written submission, Agnico Eagle noted that equal weights were assigned to each of the six (6) species present in the study area as describe within the draft offsetting plan.¹⁹⁸

With respect to fish habitat alterations, DFO noted within its final written submissions the importance of understanding all impacts associated with flooding extending over multiple waterbodies in order to properly evaluate and calculate fishery losses and create offsetting plans. DFO indicated that it was unclear within the draft Fish Habitat Offsetting Plan whether habitat units associated with the flooding activities are still being considered as functional habitat 'gains'. DFO indicated in its comments that this issue was still unresolved; however, DFO acknowledged that Agnico Eagle continued to engage DFO in an effort to resolve this issue. DFO noted within its technical comments and during technical meetings that DFO's position remains that the alteration of these streams due to flooding may have negative effects on the fishery and, as such, would not be considered as productivity gains or habitat gains, but rather a loss in current functional stream habitat. DFO requested during the technical meetings that the offsetting plan be updated by updating the calculations of hectares and habitat units during all phases of the project. This was subsequently completed by Agnico Eagle but DFO noted that the updated calculations still demonstrates Agnico Eagle's assertion that flooding activities would

¹⁹⁴ Fisheries and Oceans Canada Final Written Submissions, August 14, 2017.

¹⁹⁵ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

¹⁹⁶ M. D'Aguiar, Fisheries and Oceans Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 484-486-, lines 10-26, 1-26 and 1-6.

¹⁹⁷ Fisheries and Oceans Canada Final Written Submissions, August 14, 2017.

¹⁹⁸ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

result in habitat gains in such a way that the increased surface area will counterbalance losses in other areas. DFO expressed concern that only a temporal loss factor has been applied and requested Agnico Eagle clarify the calculated numbers for all phases of the project, providing rationale, and further requested Agnico Eagle provide the calculations (including the raw data used in the calculations) to determine how these numbers were being reached. DFO further required information regarding Agnico Eagle's plan to permanently flood Whale Tail Lake by raising the water level by 0.5 m, including the rationale, and ability to sustain this condition so as to provide measurable increases in fisheries productivity. Finally, DFO further requested this proposed flooding not be included as a gain in the Conceptual Offsetting Plan.¹⁹⁹

In response to the final written submissions, Agnico Eagle referred DFO to the draft Fish Habitat Offsetting Plan, noting that the plan captures the requests by DFO and the updated calculations for habitat gains, losses and modifications were reflected in the draft and represent change in habitat area from baseline to post-closure, including all-habitat types. With respect to habitat gains associated with temporary flooding activities, Agnico Eagle noted that the original decision to flood the Whale Tail Lake (South Basin) was driven by the results of the Multiple Accounts Analysis, and the selected option was driven in part by the increased benefits of creating additional fisheries habitat, as per DFO's guidance.²⁰⁰ Further, Agnico Eagle noted its opinion that increasing the water elevation by 0.5 m on the upstream side of the Mammoth dike would be a feasible method to create offsetting habitat for the Project, as it understand flooding is generally an effective and sensible way to create aquatic habitat for offsetting purposes. Agnico Eagle indicated that as it has presented in this document, - and discussed in greater detail, this option was chosen as most appropriate after considering - a suite of offsetting options that provide sufficient net gains to offset the proposed habitat losses.²⁰¹

During its technical presentation at the Final Hearing, DFO reiterated its request that Agnico Eagle omit any habitat gains associated with temporary flooding activities during the operations on the basis that, in DFO's view, temporary flooding activities will not result in an overall positive change in fish productivity. DFO indicated that additional rationalization on other calculated fish habitat losses and gains associated with the proposed offsetting plan would be required to address DFO's concern.²⁰² Further, DFO noted it was still unclear what mechanisms would be used to ensure Whale Tail Lake will remain at the increased elevation by 0.5 m in perpetuity and therefore DFO required more information on the plans to confirm that the increased elevation would be a permanent change.. Further, DFO reiterated that it is not confident that this type of flooding and associated increase in lake surface area would result in positive habitat gain, given the uncertainty in the long-term productivity of end-pit lakes. As such, DFO noted that additional measures to offset the loss of fish habitat may be required.²⁰³

¹⁹⁹ Fisheries and Oceans Canada Final Written Submissions, August 14, 2017.

²⁰⁰ DFO (Fisheries and Oceans Canada). 2013. Fisheries Productivity Investment Policy: a proponent's guide to offsetting. Published by: Ecosystem Programs Policy Fisheries and Oceans Canada. Ottawa ON, November 2013.

²⁰¹ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

²⁰² M. D'Aguiar, Fisheries and Oceans Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 486-488-, lines 9-26, 1-26 and 1.

²⁰³ M. D'Aguiar, Fisheries and Oceans Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 489-491, lines 18-26, 1-26 and 1

During the Final Hearing, DFO requested clarification on the water levels for the Whale Tail Lake (South Basin), the timing when the water levels would return to pre-mining conditions and what would be occurring prior to closure.²⁰⁴ In response, Agnico Eagle provided a summary of the proposed flooding of the Whale Tail Lake, South Basin and water diversion activities. Agnico Eagle noted that following the construction of the Whale Tail dike in February 2019, water will be removed from the north basin to the south basin which would raise the water levels in the south basin. The water levels are expected to continue to raise naturally following freshet in 2019 and 2020 and by July 2020, Agnico Eagle expects the water to spill into the diversion channel flowing into Mammoth Lake. At closure in 2022, water will be removed from the south basin into the north basin and by 2025 Agnico Eagle expects to breach the dikes and water levels would return to their normal levels.²⁰⁵

With respect to the ecosystem productivity, DFO observed that a trophic change in the lake system from nutrient overloading in addition the disruptions of habitat fragmentation and water quality changes would result in fishery losses and indicated the importance of understanding the changes of lake ecosystem productivity when altering the natural condition of lakes. DFO stressed within its final written submissions that if the trophic status is predicted to change from oligotrophic state to eutrophic and return again in a few years, this would harm fishery productivity and should be considered as losses in the calculations for offsetting. DFO further noted that the draft Fisheries Offsetting and Monitoring Plan was updated following the Pre-hearing Conference to include further investigations for phosphorus treatment options; however, it was unclear if the proposed changes as presented would still result in a change to the trophic status of the lake. DFO further requested clarification regarding whether Agnico Eagle would be working in conjunction with the University of Manitoba on analyzing the change in fisheries productivity due to the proposed change in the lake ecosystem (oligotrophic to eutrophic and back).²⁰⁶ In related comments, ECCC noted that the modelled scenarios for the effects of the north wall pushback on water quality predicted that total phosphorus concentrations are to stay at levels just above the oligotrophic range at closure and throughout post-closure. ECCC noted that it would be important to monitor actual loadings/concentrations in the receiving environment, identify trends in downstream chemistry and productivity, and track trophic status.²⁰⁷

In response to the final written submissions, Agnico Eagle noted that the updated predications indicate that there would still be a change in trophic status and it is predicted that the nutrients would increase in Mammoth Lake, gradually transitioning from oligotrophic, to worst case mesotrophic (instead of eutrophic) through operations, and back to oligotrophic post-closure. Agnico Eagle further indicated that a sudden change from oligotrophic to mesotrophic status is not anticipated; rather it is expected that there will be a gradual increase in nutrients through operations, and a gradual decrease in nutrients from the start of closure through post-closure. This increase in nutrients is expected to increase the biomass of phytoplankton, zooplankton, and benthic invertebrates which may also lead to increased growth and production of fish. As a

²⁰⁴ B. Ross, Fisheries and Oceans Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 152, lines 14-26.

²⁰⁵ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 152-153, lines 2-26 and 1-19.

²⁰⁶ Fisheries and Oceans Canada Final Written Submissions, August 14, 2017.

²⁰⁷ Environment and Climate Change Canada Final Written Submissions, August 14, 2017.

result, Agnico Eagle believes these are not habitat losses and have not accounted for these in the draft Fish Habitat Offsetting Plan. Agnico Eagle indicated it would work with the DFO to select the most appropriate research topic and academic institution to develop regional studies related to fisheries productivity in the lake ecosystems near the Whale Tail Pit Project.²⁰⁸ In their technical presentation at the Final Hearing, DFO stated that given that a trophic change is still predicted to occur, it is unclear how this predicted change in trophic status would impact fish productivity and requested that Agnico Eagle conduct an appropriate analysis which can be provided during the regulatory phase. Further, DFO recommended that in addition to the proposed monitoring and adaptive management planned by Agnico Eagle to monitor potential changes to downstream environments, that Agnico Eagle also conduct additional studies to assess the impacts of the predicted trophic change on fisheries productivity or fish productivity.²⁰⁹

During the Final Hearing, ECCC requested clarification on the trophic status of Mammoth Lake during post-closure.²¹⁰ In response, Agnico Eagle indicated that the lake is currently ultra-oligotrophic and during post-closure conditions Mammoth Lake would be between mesotrophic/oligotrophic conditions based on highly conservative modelling conditions.²¹¹ ECCC requested further clarification whether the model assumed that the total suspended solid (TSS) discharge would be at 15 milligrams/litre (mg/L) and whether TSS is expected to decline over time during post-closure.²¹² Agnico Eagle noted that the model assumption was that the values of TSS would stay constant at 15 mg/L but it is expected that the TSS values would decrease during post-closure as there would be no more sewage treatment required. Agnico Eagle also noted that this has been observed at other mine sites.²¹³

Within its final written submission, Transport Canada (TC) commented on the navigability of Mammoth and Whale Tail lakes and determined that based on the information provided by the Proponent, these two lakes are not navigable for the purposes of the *Navigation Protection Act (NPA)* and s. 23 of the NPA would not apply. Further, TC indicated that the water intake on Nemo Lake and Whale Tail Lake, the diffuser on Mammoth Lake, and the crossings related to the Haul Road and water management infrastructure are on waterbodies that are not listed in the Schedule under the NPA. Based on this information, TC indicated its understanding that the Proponent has chosen not to Opt-In for their project related in-water works on non-Scheduled waterways reviewed under the NPA.²¹⁴ On this basis, Agnico Eagle acknowledged that it would not have to seek an exemption from the Governor in Council with respect to the Mammoth and Whale Tail lakes as they are non-navigable for the purposes of the NPA and Agnico Eagle has

²⁰⁸ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

²⁰⁹ M. D'Aguiar, Fisheries and Oceans Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 489-491-, lines 20-26, 1-7 and 11-22.

²¹⁰ T. Auser, Environment and Climate Change Canada., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 149, lines 1-7.

²¹¹ V. Bertrand, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 149, lines 12-17.

²¹² T. Auser, Environment and Climate Change Canada., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 149, lines 19-20 and 25-26.

²¹³ V. Bertrand, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 149-15-, lines 2, 1-3 and 10-18.

²¹⁴ Transport Canada Final Written Submissions, August 14, 2017.

chosen not to voluntarily opt into the Program. Further, as the responsibility to assess and address potential impacts to navigational access and safety resulting from these works rests with the Proponent, Agnico Eagle noted that it would consider the potential for impacts to navigational access and safety resulting from project facilities and activities over the life of the project.²¹⁵

A Community Representative from Chesterfield Inlet requested clarification from Agnico Eagle on the proposed fish-out program and asked “...*how far is [sic are the lakes] from one to the other before you put the fish in the other lake? Or is it through the rivers? Or do you put them in tanks and move them? What is the process?*”... “*How many die? And how many are affected and injured?*” The Community Representative further noted concern with the transfer of fish during the warm summer months and stated that “*fish do get affected very easily, and they die when they are handled too much*”, noting though that his experience comes from ocean commercial fishing and not from handling fish in inland waters.²¹⁶ In response to the clarification request, Agnico Eagle provided a description of the proposed fish-out program noting that the fish would be transferred from the north basin to the south basin of Whale Tail Lake with the fish transferred from one basin to the next using tubs of cold water for the transfer. Further, Agnico Eagle noted that from their previous fish-out programs and through consultation with the Baker Lake HTO that the best period to conduct the fish-out program is during the months of June and July as “*the fish do transfer better.*”²¹⁷

A member of the public from Baker Lake asked for clarification from Agnico Eagle on the amount of fish within Whale Tail Lake and the amount specifically that would be transferred during the fishout program.²¹⁸ In response, Agnico Eagle noted that, based on its previous fish-out programs and based on the volume of the north basin of Whale Tail, Agnico Eagle would move a total of 3,346 fish to the south basin. This would include 1,000 lake trout; 60 Arctic char; 375 ground whitefish; and then quite a few small fish, including sculpin and stickleback.²¹⁹

A Community Representative noted concern with chemicals that would be used at the mine site and asked “... *with regards to birds, caribou, wildlife, fish, will these animals be impacted directly through the tributaries and the river systems and freshwater and through air?*”²²⁰ In response, Agnico Eagle noted that any chemicals used at the site are used under strict regulations.²²¹

²¹⁵ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

²¹⁶ E. Kimmaliardjuk, Chesterfield Inlet, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 600-602, lines 17-26, 1-3, 7-23, and 3-14.

²¹⁷ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 603-604, lines 8-26, and 1-174.

²¹⁸ H. Igkoe, Baker Lake Community Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 700-701, lines 22-26, 1-3.

²¹⁹ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 721, lines 5-15.

²²⁰ A. Panigoniak Sr., Arviat, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 733, lines 2-11.

²²¹ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 733-734, lines 20-26 and 1-6.

5.8.3 Views of the Board

With respect to the freshwater aquatic environment, the Board examined the information provided by Agnico Eagle and noted the representations made by intervening parties in their final written submissions and presentations during the Final Hearing and the comments provided by community members throughout the Review of the Project. The Board has determined that from a general perspective, most of the relevant issues have been adequately addressed for this stage of assessment, recognizing that the water licencing process of the Nunavut Water Board provides more in-depth consideration of certain relevant topics. The Board's preference would be that all aquatic habitat is protected and maintained; however the Board recognizes that Agnico Eagle will work with DFO and other regulatory bodies to establish appropriate fish habitat compensation, and that the proposed compensation measures are well supported by Parties.

The Board is aware that there are a number of issues such as the offsetting plan that will require further updating, consideration and approval by the respective regulatory authorities. In particular, the Board highlights that as with DFO, the NIRB questions the assumption that Agnico Eagle has made that the increase in surface area resulting from flooding will result in a viable offset of losses to aquatic habitat. Although the Board anticipates that DFO will deal with this issue in more depth when considering the design of the offsetting plan for the Project, the NIRB agrees with the more conservative approach of DFO to offsetting than the position put forward by Agnico Eagle. The Board also acknowledges Agnico Eagle's commitment to work with the local community and the Kivalliq Inuit Association during the fish-out program and relocation or use of the fish. Finally, the Board is aware that there are a number of issues related to fish and fish habitat such as the potential for an increase in mercury concentrations in fish that will require further consideration and approval by the respective regulatory authorities during the regulatory phase.

The Board agrees that continued assessment of the potential impacts of the Project on the mortality of a number of fish species (e.g., Arctic Char and Arctic Grayling) and other freshwater organisms will need to be conducted throughout the life of the Project. The Board is confident that monitoring required for the Project and associated regulatory oversight will mitigate the potential for impacts and ensure continued protection of the freshwater environment.

The Board acknowledges that regulatory approvals will be required to address potential changes to habitat or the loss of habitat resulting from Project-induced alterations and disruption in the flow of water in local watersheds. Further, the Board notes that provision of sufficient compensation to affected communities may need to be determined for fish mortalities directly or indirectly attributable to the Project; it is the Board's understanding that Fisheries and Oceans Canada (DFO) has necessary regulatory oversight to ensure this is appropriately addressed. However, Agnico Eagle must also ensure that adequate and continual monitoring and adaptive management strategies are implemented, and that any potential impacts to the freshwater aquatic environment are prevented or minimized.

During the Final Hearing, the Board requested clarification on the water sampling program and how far sampling is conducted and how the sampling would occur.²²² In response, Agnico Eagle indicated that the furthest downstream monitoring station to be about 10 kilometres away from the closest monitoring station. Further, Agnico Eagle indicated that they are planning on monitoring the downstream lakes during the open-water season.²²³ The Board further questioned Agnico Eagle on its fish monitoring program, asking whether the quality of fish would be monitored in addition to the fish habitat and what would occur if the fish quality changed as a result of the long term effects from phosphorus or arsenic uptake from the changes in water quality in Mammoth Lake.²²⁴ In response, Agnico Eagle noted that they will follow the requirements of the metal mining effluent regulations (MMER) which would include monitoring of fish health as well as tissues and benthic invertebrates. In addition, Agnico Eagle noted that ongoing monitoring would occur at the discharge point over a long term for water quality and fish quality and fish habitat.²²⁵

Following the technical presentation by DFO, the Board requested clarification on the fish sampling program asking:

*I would like to get clarification from DFO whether fish sampling of the species that were listed in the proponent's presentation at Whale Tail, Mammoth, and Nemo Lakes -- I would like to know if fish sampling will be done in three phases, prior to, during, and after the -- the diking has been built on Whale Tail Lake. And I'm asking this question because there will be some habitat alteration.*²²⁶

In response, DFO noted that monitoring of fish and fish habitat before, during, and after the Project would be a requirement of any *Fisheries Act* authorization that would be issued by DFO if the Project were allowed to proceed.²²⁷

The Board also questioned Agnico Eagle regarding its proposed fish-out programs, specifically related to the works that would be conducted in collaboration with the Baker Lake Hunters and Trappers Organization (HTO). The Board requested that Agnico Eagle clarify if it would be open to donating the impacted fish to the community through the Baker Lake HTO following any required testing.²²⁸ In response, Agnico Eagle clarified that the transfer of fish to the south basin would be part of regulations and agreements through Fisheries and Oceans Canada (DFO),

²²² G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 169-170, lines 22-26 and 11-13.

²²³ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 170, lines 3-9 and 17-21.

²²⁴ K. Kaluraq, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 176-177, lines 16-18 and 7-12.

²²⁵ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 176-178, lines 22-26, 1-3, 17-16 and 1-7.

²²⁶ A. Maghagak, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 501, lines 16-24.

²²⁷ B. Ross, Fisheries and Oceans Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 502, lines 2-7 and 10-13.

²²⁸ A. Maghagak, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 183, lines 1-11.

but that it would be willing to engage in discussions with DFO and the Baker Lake HTO to develop an agreeable solution.²²⁹ The Board also requested clarification on the percentage of fish that would be transferred, wasted and given away to people during the fish-out program.²³⁰ In response, Agnico Eagle noted that, based on its experience at the Vault Lake Phaser Lake fish-out program approximately 80% of fish captured were transferred successfully, while the rest are used for studies on the health of the fish with some of the remaining fish being shared with the community.²³¹

Following ECCC's technical presentation at the Final Hearing, the Board questioned ECCC on whether the arsenic levels as noted by Agnico Eagle's water quality report are "...*typical for lakes where there might be recreational use or fish harvesting activity*".²³² ECCC noted that it believed that the question would be better answered by Health Canada. Agnico Eagle provided clarification that as a mining company, its arsenic objectives would comply with the *Metal Mining Effluent Regulations*²³³ for arsenic which is set at 0.5 mg/L for effluent discharge, and that the values presented are typical of lakes in the area used recreationally and for harvesting.²³⁴ In a deferred response, Health Canada indicated that there is no Canadian recreational water quality guideline for arsenic due to insufficient information to support the establishment of a guideline, as is the case for most chemicals in recreational waters. Health Canada discussed acceptable drinking water levels for arsenic, and noted that to assess risks from fish consumption, it would require additional information.²³⁵

The Board would like to highlight the importance of Inuit Qaujimaningit as it relates to fish and fish habitat and the consumption of fish. Appropriate tissue sampling to establish a baseline is an important component to ensure the public are informed about the safety of consuming fish which may be impacted by Project activities. The importance of country food to the people who live close to and who travel through the Project area, deserves consideration throughout the life of the Project. The Board also encourages Agnico Eagle to work with the public as it works on the next stages of its final design to ensure that the public are informed and have input into the design and final location of Project infrastructure in a manner that minimizes harm to fish and fish habitat, wherever possible.

²²⁹ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 183, lines 15-25.

²³⁰ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 503-504, lines 9-19 and 4-10.

²³¹ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 505, lines 3-25.

²³² K. Kaluraq, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 475, lines 3-9.

²³³ SOR/2002-222.

²³⁴ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 506-507, lines 23-26 and 1-18.

²³⁵ S. Gruda-Dolbec, Department of Justice on behalf of Health Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2016, pp. 665-666, lines 1-26 and 1-4.

5.8.4 Conclusions and Recommendations of the Board

After reviewing the information provided by Agnico Eagle in the EIS as well as considering the views of Parties, the Board believes that the Project's potential effects related to the freshwater aquatic environment could be appropriately managed through the commitments provided by the Proponent and application of mitigation measures. Specifically, the Board recommends terms and conditions requiring the following (a brief summary of the Board's recommended terms and conditions is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

- Maintain appropriate setbacks or mitigation as directed by the Nunavut Water Board between project quarries and fish-bearing or permanent waterbodies to prevent acid rock drainage or metal leaching into such waterbodies;
- Design project infrastructure in watercourses to reduce barriers to fish movement in fish-bearing streams and rivers, unless otherwise authorized by Fisheries and Oceans Canada;
- Engage with Fisheries and Oceans Canada to develop project specific thresholds, mitigation and monitoring for any blasting activities that would exceed the requirements of Fisheries and Oceans Canada's *Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters*;
- Conduct additional analysis, in consultation with applicable regulatory agencies such as Fisheries and Oceans Canada, to support the conclusions that a change in trophic status in Mammoth Lake would not impact fish productivity;
- Undertake additional site-specific studies to assess the predicted trophic change on lake ecosystem productivity to monitor potential changes to downstream environments;
- Monitor actual loadings/concentrations in the receiving environment, identify trends in downstream chemistry and productivity, and track trophic status of Mammoth Lake; and
- Assess whether the increased surface area of Whale Tail Lake is a viable offset to habitat losses resulting from development of the Project; and whether Whale Tail end pit would support fish in the post closure scenario, with the results incorporated in the offsetting plan.

5.9. VEGETATION

5.9.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) predicted that the Project would result in a limited amount of terrestrial vegetation loss and degradation in the vicinity of the footprint, but did not predict the impacts to be permanent nor significant. Agnico Eagle's assessment of Vegetation is summarized below and detailed in Volume 5, Section 5.4 of the Environmental Impact Statement (EIS). Supporting baseline information and methods were provided in Volume 5, Appendix 5-C. In Volume 5, Section 5.4 of the EIS, Agnico Eagle also listed several sources of Inuit Qaujimajatuqangit that were incorporated into its assessment, and highlighted the widespread traditional use of plants by Inuit, as well as the concerns raised during consultation regarding impacts of climate change on vegetation, and of vegetation loss on caribou habitat. Vegetation baseline data collected were used to support the assessment of impacts to wildlife and

wildlife habitat (Volume 5, Section 5.5) as well as impacts to traditional land and resource use (Volume 7, Section 7.3). Vegetation monitoring objectives and methods are detailed in the Terrestrial Ecosystem Management Plan.

To assess impacts on vegetation, Agnico Eagle considered a circular Local Study Area (LSA) of 28,215 hectares (ha) that encompassed all proposed project facilities including the haul road, plus a buffer of 1.5 kilometres (km). The Regional Study Area (RSA) of its assessment was established as a similar circular area extending out 25 km from project facilities, and included part of the Meadowbank all-weather access road (501,700 ha in total). Temporally, Agnico Eagle considered impacts for the construction, operations, and closure phases.

Agnico Eagle identified the following primary pathways where the Project would likely result in impacts to vegetation:

- Changes to vegetation quantity due to direct vegetation loss within the project footprint;
- Changes to vegetation quality due to changes in water flows and drainage from the project footprint including the haul road; and
- Changes to vegetation quality due to dust deposition from roads and mining activities.

Agnico Eagle characterized baseline plant species and vegetation communities within the study areas, based on field surveys in 2014 and 2015 as well as the classification of satellite imagery. Agnico Eagle determined that approximately 348 ha of vegetated ecosystem units would be lost at the mine site and approximately 133 ha of vegetated units would be lost along the haul road, representing 1.6% and 0.6% of the LSA, respectively. Agnico Eagle also quantified an expected loss of roughly 481 ha (0.1%) of vegetated units in the RSA. Agnico Eagle's analysis showed that Heath Tundra, Heath Upland, and Lichen/Rock Complex would be the main ecosystem units impacted in both the LSA and RSA. Noting the harsh climatic conditions, and lack of available soils and seed for native plants, Agnico Eagle emphasized that lost areas ultimately would not be manually revegetated, but would be reclaimed to promote natural revegetation over time, reducing overall residual effects within the LSA.

With respect to potential impacts on vegetation quality, Agnico Eagle noted that lake dewatering during construction would result in approximately 165.9 ha of upstream terrestrial vegetation (not extending beyond the RSA) being flooded. Plant species composition, community structure, and diversity would be impacted, but Agnico Eagle concluded that these effects would be temporary in nature, as flooded areas would be dewatered at closure.

Agnico Eagle also assessed the potential impact of dust on vegetation quality, noting that dust may impact plants physically through smothering or blocking of stomata, as well as chemically, with lichens and bryophytes being particularly sensitive. Agnico Eagle summarized the sources and predicted quantities of project-related dust as assessed in Volume 4, Section 4.3 and highlighted in the vegetation effects assessment that its air quality modelling indicated that the major impacts of dust deposition would likely be on plant communities within 100 metres of the proposed haul road during the summer. With traffic volumes expected to be low, and by limiting traffic speeds and implementing road watering when necessary, Agnico Eagle viewed potential

effects from dust on vegetation as minimal and temporary, as the haul road would be discontinued and reclaimed to promote natural revegetation.

Agnico Eagle concluded that overall impacts on self-sustaining and ecologically effective plant populations and communities from the Project would not be significant. Agnico Eagle committed to monitor vegetation conditions over time to ensure mitigation and restoration efforts are effective.

5.9.2 Views and Concerns of Interested Parties

Within its final written submission, Indigenous and Northern Affairs Canada (INAC) noted that the proposed Closure and Reclamation Plan involves natural revegetation of disturbed areas which, based on experience at similar sites, is likely to require centuries. Within this context, INAC noted that active revegetation is often used to accelerate the process of returning industrial properties to their predevelopment condition. INAC noted that in the case of the Whale Tail Project and other northern mining developments, limited information is available to support the design of effective revegetation strategies. INAC therefore recommended during the technical review period that the Proponent design and implement an active revegetation research program to better define re-vegetation strategies that are applicable to the reclamation of comparable northern developments. INAC noted that the Proponent accepted this recommendation and was at the early stages of designing the research program.²³⁶ In response to INAC's final written submission, Agnico Eagle re-iterated that it would maintain its commitment to initiate the design and implementation of re-vegetation studies to better define re-vegetation strategies that are applicable to the reclamation of comparable northern developments.²³⁷

As part of its technical presentation during the Final Hearing, INAC noted that, based on the Proponent's responses to INAC's final written submissions, and follow-up discussions with, and commitments made by Agnico Eagle, it considered the outstanding issues related to vegetation resolved.²³⁸

5.9.3 Views of the Board

The Board is reasonably satisfied with the degree to which Agnico Eagle assessed the impacts of the Project on vegetation and recognizes the Proponent's design and construction considerations to minimize vegetation loss (such as minimizing the Project footprint), as well as the proposed mitigation methods described within its Terrestrial Ecosystem Management Plan to minimize vegetation degradation. Agnico Eagle is expected to continue to collect information and update applicable operational and mitigation plans on a regular basis, including those relating to vegetation distribution, abundance, and health. As noted by INAC, the Board also stresses that disturbed Arctic tundra ecosystems have exceptionally long recovery times, which emphasizes the need for effective monitoring of the potential for these effects and a responsive adaptive management approach to mitigate any effects on vegetation identified through monitoring. The Board acknowledges the Proponent's commitment to initiate the design and implementation of

²³⁶ Indigenous and Northern Affairs Canada Final Written Submissions, August 14, 2017.

²³⁷ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

²³⁸ K. Costello, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 122-123, lines 26-27 and 1-23.

re-vegetation studies to better define re-vegetation strategies that are applicable to the reclamation of comparable northern developments.

The Board would also like to emphasize the importance of Inuit Qaujimaningit and notes that the potential for the Project to impact upon the abundance and distribution of unique or valuable plants can affect the importance of a landscape, as perceived by Inuit that use the areas in proximity to the Project (i.e. aesthetics and availability of country food). This should be considered by Agnico Eagle throughout the life of the Project and communities should be informed of results of studies on vegetation sampling and the efficacy of dust control as inferred by results from vegetation surveys.

5.9.4 Conclusions and Recommendations of the Board

In considering the views of the Proponent and those of parties throughout the assessment of the Project and as outlined above, the Board believes that the Project's potential effects to vegetation could be appropriately managed through the commitments provided by the Proponent and the application of key mitigation and monitoring measures. Specifically, the Board recommends terms and conditions requiring the following (a brief summary of the Board's recommended terms and conditions is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

- Develop and implement an invasive plant species management plan which includes various measures to ensure that equipment and supplies brought to the project site do not introduce invasive vegetation species, and monitoring and reporting protocols; and report annually on results of invasive plant species surveys and invasive plant management;
- Implement progressive reclamation and revegetation strategies that demonstrate consideration for lessons learned at the Meadowbank Gold Mine and other northern Projects, and incorporate results from Project-specific revegetation research.

5.10. TERRESTRIAL WILDLIFE AND WILDLIFE HABITAT

5.10.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) provided its assessment of potential project-related effects on terrestrial wildlife and wildlife habitat, as well as birds and bird habitat, in Volume 5, Section 5.5 of the Environmental Impact Statement (EIS). See [Section 5.11: Birds and Bird Habitat](#) of this Report for a summary of the latter. Agnico Eagle's terrestrial wildlife and wildlife habitat assessment considered caribou, muskox, Arctic wolf, Grizzly Bear, wolverine, and small mammals; however, Agnico Eagle focused its assessment on caribou, stating that effects on other wildlife species would be negligible given their low densities and/or limited evidence of impacts from monitoring studies at the Meadowbank Gold Mine and other mines. Agnico Eagle concluded that there would be no significant adverse effects on terrestrial wildlife.

Appendix 5-C describes Agnico Eagle's baseline characterization of terrestrial wildlife and wildlife habitat within the study areas based on field surveys, incidental observations, the

Meadowbank Hunter Harvest Survey (which documents hunting and harvesting rates along the all-weather access road), and habitat suitability mapping. Agnico Eagle also noted that terrestrial wildlife in the region has been studied since 1999 as part of the Meadowbank Gold Mine baseline and long-term monitoring studies including through a caribou satellite-collaring program led by the Government of Nunavut – Department of Environment (GN-DoE). Appendix 5-D within Volume 5 depicts caribou residency and road crossing in the study areas based on the collar data. A general overview of the approach used to assess cumulative effects is provided in Volume 3, Appendix 3-D. Additional information was provided following the Pre-hearing Conference (PHC) with respect to Agnico Eagle's caribou Zone of Influence (ZOI) assessment and cumulative encounter and residency assessment in two (2) technical memorandums.^{239,240} Further, Agnico Eagle provided a revised Terrestrial Ecosystem Management Plan (TEMP) which included the extension of the Meadowbank Gold Mine through the Whale Tail Pit operations, incorporated detailed decision trees outlining monitoring and adaptive management for varying scenarios of wildlife occurrence.²⁴¹ In Volume 5, Section 5.5 of the EIS, Agnico Eagle also listed several sources of Inuit Qaujimajatuqangit that were incorporated into its baseline study and impact assessment.

As part of its assessment of impacts on terrestrial wildlife, Agnico Eagle considered a circular Local Study Area (LSA) of 28,215 hectares (ha) that encompassed all proposed project facilities including the haul road, plus a buffer of 1.5 kilometres (km). The Regional Study Area (RSA) of its assessment was established as a similar circular area extending out 25 km from project facilities, and included part of the Meadowbank all-weather access road (AWAR) (501,700 ha in total). Temporally, Agnico Eagle considered impacts for the construction, operations, and closure phases.

Agnico Eagle identified the following primary pathways where the Project would likely result in impacts to terrestrial wildlife and wildlife habitat:

- Direct loss and fragmentation of habitat from Project infrastructure;
- Sensory disturbance from vehicles, equipment, human presence, and vibrations affecting movement and behaviour, and quality of habitat; and
- Barriers to migration, which may affect population connectivity and distribution.

Agnico Eagle indicated that approximately 70% of the LSA (19,775 ha) and 62% of the RSA (308,844 ha) is considered preferred winter caribou habitat, while 74% (20,802 ha) and 68% (341,349 ha) is considered preferred growing season caribou habitat. Agnico Eagle noted that its compact arrangement of project infrastructure, including designing roads as low and as narrow as possible, would minimize the amount of lost and fragmented habitat. Agnico Eagle demonstrated that the 820 ha including 342 ha of vegetated units would be lost due to the Project (see [Section 5.9: Vegetation](#)) and that these losses would equate to approximately 2% and 0.1%

²³⁹ Golder Associates Ltd. July 2017. *Meadowbank Gold Mine and All-weather Access Road Caribou Zone of Influence Assessment*. Whale Tail Commitment 8. Prepared for Agnico Eagle Mines Ltd.

²⁴⁰ Golder Associates Ltd. July 2017. *Cumulative Encounter and Residency Assessment for Caribou*. Whale Tail Commitments 9 and 10. Prepared for Agnico Eagle Mines Ltd.

²⁴¹ Agnico Eagle Mines Ltd. July 2017. *Terrestrial Ecosystem Management Plan, Version 4*. [Provided in response to Commitment 11].

of preferred winter and growing season habitat in the LSA and RSA, respectively. Agnico Eagle considered this direct habitat loss to be local in geographic extent, with some loss to be permanent, while other areas would naturally regenerate post-closure. Agnico Eagle rated the potential impact as moderate overall, adding that none of the habitat that would be lost is known to be caribou calving habitat.

Agnico Eagle acknowledged that sensory disturbance from the Project would reduce the proportion of preferred caribou habitat in the LSA and RSA, reporting that studies at other mines have shown caribou distribution is reduced within 14 to 40 km of the mines (i.e. Zones of Influence of up to 40 km from a development have been detected). Agnico Eagle noted in its assessment that caribou continue to be observed near the Meadowbank Gold Mine and cross the AWAR, and suggested the ZOI is likely relatively small. In response to requests from Parties, during the Technical Meeting and PHC Agnico Eagle committed to quantitatively calculate a ZOI. A new technical memo was subsequently submitted by Agnico Eagle showing a ZOI of up to 35 km in the winter.²³⁹

Agnico Eagle reiterated in the EIS that it predicts air quality and noise impacts to be limited in space and time (see [Section 5.1: Air Quality](#) and [Section 5.3: Noise and Vibration](#)), but stated that if the Project were to cause all of the preferred habitat in the LSA to become low quality or avoided habitat, it would reduce the amount of preferred habitat in the RSA by approximately 6% in both summer and winter. Agnico Eagle's proposed mitigation for sensory disturbance includes managing traffic volumes, enforcing speed limits, providing wildlife awareness training to all employees, site notifications, and providing wildlife the right-of-way on roads (see the Noise Monitoring and Abatement Plan, the Whale Tail Pit Haul Road Management Plan, the Air Quality Monitoring Plan, and the Terrestrial Ecosystem Management Plan, Volume 8, Appendices 8-C.1, Appendix 8-E.1, and Appendix 8-E.7, respectively). Agnico Eagle rated potential impacts from sensory disturbance as moderate in magnitude and reversible in nature.

Agnico Eagle also acknowledged that roads can be a barrier to wildlife migration and noted that Elders have observed a large caribou herd having difficulty crossing the existing Meadowbank road. Agnico Eagle also noted that caribou mortalities have occurred along the Meadowbank AWAR as a result of vehicle collisions. Agnico Eagle emphasized that collar data shows that caribou are in the LSA and RSA seasonally and infrequently, and show that individual caribou approaching the AWAR do eventually cross it. Agnico Eagle's proposed mitigation actions for the proposed haul road mimic those in place at Meadowbank, including closing the road during caribou migration, designing roads with low profiles, avoiding build-up of snow banks in winter, enforcing speed limits, and giving animals the right-of-way. Agnico Eagle also noted that upon closure, the proposed haul road would be decommissioned and re-contoured to facilitate caribou crossings. Agnico Eagle rated potential impacts from barriers to migration as moderate in magnitude and reversible in nature.

Agnico Eagle described the potential for cumulative effects to caribou herds as low, finding little development in the Kivalliq region and in the range of the herds that interact with the Project (see Volume 3, Appendix 3-D of the EIS). In response to requests from Parties during the Technical Meeting and PHC, Agnico Eagle submitted a new technical memorandum in July 2017 with an updated cumulative effects assessment.²⁴⁰ The memo characterized rates and duration of caribou encounters with known past, present, and potential future developments, with

additional details for each herd and each season. The memo concluded that the Project would result in no measurable changes to the energetic state of Ahiak, Beverly, Lorillard and Wager Bay caribou herds, and no demographic consequences to the populations.

Agnico Eagle's TEMP was submitted as Appendix 8-E.7 of the EIS, with Agnico Eagle identifying this as the TEMP for the Meadowbank Gold Mine Project with updates to include the Whale Tail Pit and Haul Road. The TEMP was revised several times between February and July 2017 following requests from and discussions with parties before, during, and after the Technical Meeting and PHC. As well, Agnico Eagle committed to the creation of a Terrestrial Advisory Group (TAG) to administer the TEMP as recommended by the Kivalliq Inuit Association (KIA) and Nunavut Tunngavik Incorporated in their Technical Comments (Commitment 18). Membership in the TAG may include Agnico Eagle, the GN, the KIA, the Baker Lake Hunters and Trappers Organization (HTO) and Environment and Climate Change Canada (ECCC).

In the latest version of the TEMP (Version 4.0), Agnico Eagle outlines a tiered monitoring and mitigation approach for caribou, ranging from green (routine monitoring) to yellow (Levels 1 and 2: increased monitoring and alerts when caribou approach) to red (Level 3: heightened monitoring and mitigation when a group of more than 140 caribou is within 1.5 km of project activities). As described in the TEMP, Agnico Eagle's proposed monitoring methods for caribou would include review of caribou satellite collar data from the GN-DoE, and at least weekly height-of-land surveys and ground surveys along the AWAR and at the mine site, and a Hunter Harvest Survey to monitor trends in wildlife harvests by Baker Lake residents along the roads. During the Final Hearing, Agnico Eagle noted it is also considering monitoring with cameras. As well, during the Final Hearing Agnico Eagle reiterated its support for and collaboration with researchers, the GN, the Baker Lake HTO, the KIA, and Elders for studying and monitoring caribou. Examples provided by Agnico Eagle include a Memorandum of Understanding with the GN, which commits Agnico Eagle to contribute \$150,000 per year for the GN-led collaring program; working with the Terrestrial Advisory Group to select the locations of height-of-land surveys; and hiring of two (2) local field technicians to monitor wildlife along roads. Agnico Eagle noted its proposed tiered monitoring and mitigation approach has been proven effective at Meadowbank over the last ten (10) years and the revised TEMP goes above and beyond what has been done at Meadowbank.²⁴²

Overall, Agnico Eagle predicted there would not be any significant adverse effects on terrestrial wildlife populations, and emphasized during the Final Hearing that its goal is to have zero harm to caribou.

5.10.2 Views and Concerns of Interested Parties

Within their joint final written submission, Nunavut Tunngavik Inc. (NTI) and the Kivalliq Inuit Association (KIA) identified several outstanding issues of concern and reasons for low confidence in Agnico Eagle's effects assessment related to limited data and analysis. Firstly, the KIA and NTI noted that Agnico Eagle's assessment of potential effects on caribou from the proposed haul road are largely based on experiences from the Meadowbank Gold Mine, while

²⁴² R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 206-212

there would be much higher rates of traffic (up to 10 times as much traffic) along the haul road for the proposed Whale Tail Pit Project when compared to the AWAR associated with the existing Meadowbank Gold Mine. The KIA and NTI further noted that although the Government of Nunavut (GN) had initiated an analysis of caribou movements in relation to the AWAR,²⁴³ the KIA and NTI had not yet received any indication that the collar data had been analyzed to understand the movements of caribou in relation to the AWAR. The KIA and NTI observed that the effects of the AWAR could therefore not be clearly understood, nor could this preliminary information be used to establish thresholds for mitigation for the proposed haul road. The KIA and NTI further added that Agnico Eagle did not evaluate whether the monitoring methods proposed in the Terrestrial Ecosystem Management Plan (TEMP) for triggering enhanced levels of mitigation are adequate, and the thresholds were not based on all available data. In their final submission, the KIA and NTI recommended that the NIRB require Agnico Eagle to use all available data (height-of-land and road surveys and collars) to evaluate the applicability of the monitoring thresholds.²⁴⁴ In its response to the KIA and NTI's final written submission, Agnico Eagle agreed to use all available data to ensure adequate monitoring thresholds and appropriate adaptive management, noting that the TEMP would continue to evolve through ongoing discussions with the KIA, the GN, NTI, and the Baker Lake Hunters and Trappers Organization (HTO) via the proposed Terrestrial Advisory Group (TAG).²⁴⁵

The issue of limited caribou collar data was further discussed during the Final Hearing, with the KIA noting that “...up until last year, there was less than eight collars active on the Lorillard herd, and now I think they've jumped that up to about 12, but these collars -- and the last population estimate that I've aware of for the Lorillard/Wager Bay complex is 15 years ago at roughly 40,000 caribou. So we have no idea where that's gone, but that means that these collars represent, more or less, 4 to 5,000 collars..”. Based on these values, the KIA asked Agnico Eagle if the monitoring thresholds that trigger enhanced mitigation for caribou are adequate.²⁴⁶ In response, Agnico Eagle acknowledged that the available data from collared caribou is limited, but reiterated its commitment to work with the GN to continue the collaring program, while also noting that it intends to use height-of-land surveys, haul road surveys, and other techniques in addition to relying upon available collar data. The KIA later noted its request for further analysis on collared caribou movements to measure responses to the AWAR, including the incorporation of height-of-land and road survey data, harvest levels, and environmental conditions – in order to describe the representation of the collars and further refine the thresholds in the TEMP.²⁴⁷ Agnico Eagle subsequently agreed to this request and included details in their list of submitted commitments (see Exhibit 22).²⁴⁸

²⁴³ See: Kite, R., Boulanger, J., Campbell, M., Harvey, G., Shaw, J., Lee, D. July 2017. *Seasonal caribou distributions and movement patterns in relation to a road in the Kivalliq region of Nunavut – DRAFT*.

²⁴⁴ Nunavut Tunngavik Inc. and Kivalliq Inuit Association Final Written Submissions, August 14, 2017.

²⁴⁵ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

²⁴⁶ K. Poole, Kivalliq Inuit Association, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 237-238, lines 23-26, 1-22.

²⁴⁷ K. Poole, Kivalliq Inuit Association, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 396, 397, lines 1-26, 1.

²⁴⁸ Agnico Eagle Mines Ltd., *Commitments regarding Terrestrial Environment (With Reference to Kivalliq Inuit Association Final Written Submission Comments)*, Exhibit 22, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017.

In their final written submission, the KIA and NTI also noted that Agnico Eagle's calculated 30-35 km Zone of Influence (ZOI) around the existing Meadowbank Gold Mine and AWAR was based on limited data and references pre-development (i.e. baseline) collar data when traffic volumes were lower and vehicle sizes smaller and thus the true ZOI may be larger than the predicted 30-35 km. The KIA and NTI suggested that the ZOI be evaluated without pre-development data, or Agnico Eagle should change the predicted impact of the Project on caribou from *low* to *moderate*. In its response to the final written submissions, Agnico Eagle acknowledged the uncertainty associated with calculation of a 30-35 km ZOI for the winter season due to low sample sizes, but reiterated that its results demonstrate that caribou residency time in the calculated ZOIs has actually increased or been similar to baseline in two (2) out of three (3) years, and in spring and fall when the number of collars was greatest and more balanced. Agnico Eagle also reiterated that spring and fall results had larger collar samples and showed no avoidance of the Meadowbank Gold Mine and the AWAR. Agnico Eagle expressed that ignoring baseline results would lead to less certainty about these changes.²⁴⁹

In their final written submission, the KIA and NTI also commented that the limited collar data is concerning because Agnico Eagle's cumulative effects assessment utilized only caribou collar data to calculate the rate at which caribou encounter ZOIs associated with various projects in the region and the residency time within a ZOI. The KIA and NTI also noted uncertainty in how representative the collar data is in terms of actual herd movement, and remarked that even though the number of encounters is low, each encounter may represent many thousand caribou. The KIA and NTI recommended that Agnico Eagle modify the magnitude of potential cumulative effects from *low* to *moderate*.²⁵⁰ Agnico Eagle stated in its written response to the KIA and NTI that it maintained cumulative effects should be low. Agnico Eagle expressed that its analysis show there are some years with no caribou encounters, and even if the encounter rate is taken to be 11 (as the GN suggested in their final written submission), studies at other projects (AREVA's Kiggavik Project and Dominion Diamond's Jay Project) found no significant adverse effects to caribou with higher encounter rates.²⁵¹

The KIA and NTI recommended in their final written submission that the NIRB require the GN to complete the 2010 Draft Caribou Strategy Framework within two (2) years in order to offset uncertainty about cumulative impacts to caribou and strengthen monitoring and mitigation at the herd level. The KIA and NTI further recommended that the NIRB require the GN to complete a caribou collaring review of statistical design and applicability to environmental assessment and adaptive monitoring within two (2) years. During the Final Hearing, the GN noted it is open to discussing these actions with the KIA but cannot accept them as commitments or obligations on the GN.²⁵²

In its final written submission, the GN also identified several outstanding concerns relating to the detection of ZOI around mines and roads and the appropriateness of Agnico Eagle's assessment conclusions, and also provided a third-party review of Agnico Eagle's calculation of the ZOI in a

²⁴⁹ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

²⁵⁰ Nunavut Tunngavik Inc. and Kivalliq Inuit Association Final Written Submissions, August 14, 2017.

²⁵¹ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

²⁵² S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 406, lines 15-21

supplemental submission.²⁵³ The GN noted that despite a ZOI of approximately 35 km being detected around the Meadowbank Gold Mine site and AWAR in the winter, Agnico Eagle concluded in its supplementary analysis that there was no evidence of sensory disturbance on caribou²³⁹ and predicted there would be no demographic consequences to the caribou populations.²⁴⁰ The GN suggested that interactions with the Project and with other developments may be underestimated because Agnico Eagle's assessment in both the EIS and its supplemental analyses assumed ZOIs for mine sites and roads to be smaller than the ZOI that was actually calculated for Meadowbank and the AWAR (5-15 km vs. 30-35 km). The GN referenced its own ongoing study of caribou-AWAR interactions which indicates road avoidance in fall, decreased winter range use in proximity to the road, delayed crossing times in the spring, and a 36 km ZOI during the fall (the GN submitted its preliminary findings of "The Road Study"²⁵⁴ prior to the Final Hearing in a supplemental submission). The GN also noted that sample size continues to be an issue and that without additional data, potential effects cannot be reliably determined.²⁵⁵

During the Final Hearing, the KIA noted in its technical presentation that while both the Proponent and the GN had conducted preliminary analyses and reviews on the ZOI around the Project, considerable uncertainty remains, in particular with respect to how results from the AWAR translate to the proposed haul road.²⁵⁶ Agnico Eagle provided a list of commitments during the Hearing in response to the GN and the KIA (marked as Exhibits 21 and 22, respectively),^{257,258} which include commitments to collect additional collar data and conduct additional analyses to quantify the ZOI in relation to the Whale Tail Project, haul road, Meadowbank Gold Mine, and the AWAR.

During the Final Hearing, the KIA and Agnico Eagle also noted they had come to an agreement that within one (1) year of the issuance of a Project Certification, Agnico Eagle would conduct a review of the statistical design, statistical power and sample size for caribou collaring as applicable for environmental assessment and adaptive management (see Exhibit 22).²⁵⁹

²⁵³ Boulanger, J. September 2017. *Memorandum: Review of "Meadowbank Gold Mine and All-Weather Access Road Caribou Zone of Influence Assessment"*. Prepared for the Government of Nunavut by Integrated Ecological Research.

²⁵⁴ Kite, R., Boulanger, J., Campbell, M., Harvey, G., Shaw, J., Lee, D. July 2017. Seasonal caribou distributions and movement patterns in relation to a road in the Kivalliq region of Nunavut – DRAFT.

²⁵⁵ Government of Nunavut Final Written Submissions, August 14, 2017.

²⁵⁶ K. Poole, Kivalliq Inuit Association, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 396, 397, lines 1-26, 1

²⁵⁷ Agnico Eagle Mines Ltd., *Agnico Eagle Terrestrial Environment Commitments in response to Government of Nunavut*, Exhibit 21 NIRB Final Hearing File No. 16MN056, September 21, 2017.

²⁵⁸ Agnico Eagle Mines Ltd., *Commitments regarding Terrestrial Environment (With Reference to Kivalliq Inuit Association Final Written Submission Comments)*, Exhibit 22, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017.

²⁵⁹ Agnico Eagle Mines Ltd., *Commitments regarding Terrestrial Environment (With Reference to Kivalliq Inuit Association Final Written Submission Comments)*, Exhibit 22, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017.

Further regarding Agnico Eagle's supplemental cumulative effects analysis,²⁶⁰ the GN stated in its final written submission that the results demonstrate that mean rates of encounter between caribou in the Lorillard herd and sites of development were increased during spring and fall migrations by more than 3- and 4-fold, respectively, due to the presence of the Meadowbank Gold Mine and AWAR relative to encounter rates prior to these developments, and the Whale Tail project would further increase encounter rates by 3- and 4- fold during spring and fall migration (relative to predevelopment). The GN further expressed that encounter rates for the Wager Bay herd would be doubled during migratory seasons by the combined presence of the Meadowbank-AWAR-Whale Tail developments relative to conditions without these sites. The GN identified additional uncertainty in the assessment of herd-level impacts related to encounter rates not being presented by Agnico Eagle as proportions of herds, and also the notable annual variation in mean encounter rates. The GN suggested that the higher encounter rates observed (up to 11 encounters with ZOIs per caribou) should be used when assessing potential effects on caribou movements. The GN concluded in its final written submission that it does not agree with Agnico Eagle's view that there would be no significant effects to caribou migratory movements and range use.²⁶¹

In its response to the GN's final written submission, Agnico Eagle reiterated that the periods with more data (spring and fall) do not show an effect, and that more data would not necessarily show a greater effect. Agnico Eagle also maintained that the numbers of caribou found to encounter development sites is low and that cumulative effects would be limited. Agnico Eagle referenced the TAG as a means for further discussions, including regarding the GN's ongoing study, to improve protection measures as necessary. In response to the GN's supplemental submission ("The Road Study"), Agnico Eagle submitted a memo that acknowledged the preliminary nature of the work and challenges of limited sample sizes and resolution of the telemetry dataset.²⁶² Agnico Eagle's memo stressed that alternative hypotheses should be included in any follow-up analyses to ensure complete and unbiased interpretation. In response to the GN's final submitted comments regarding Agnico Eagle's cumulative effects assessment, as in its response to the KIA and NTI noted above, Agnico Eagle noted that studies at other projects (AREVA's Kiggavik Project and Dominion Diamond's Jay Project) found no significant adverse effects to caribou with higher encounter rates. Agnico Eagle stated that use of the 11 ZOI encounters value would not change the conclusions of Agnico Eagle's cumulative effects summary report.

Regarding mitigation, the KIA and NTI noted in their final written submission that clarity is needed in the proposed mitigation in order to determine whether it would be adequate. Specifically, as Agnico Eagle proposed to remove "non-essential vehicles" when more caribou than the group size threshold are identified within 1.5 km, the KIA and NTI as well as the GN, requested that Agnico Eagle clarify what would be considered "non-essential vehicles." The GN provided additional recommendations for what would be considered non-essential depending on the season and number and distance of caribou observed. In its response, Agnico Eagle clarified

²⁶⁰ Golder Associates Ltd. July 2017. *Cumulative Encounter and Residency Assessment for Caribou. Whale Tail Commitments 9 and 10*. Prepared for Agnico Eagle Mines Ltd.

²⁶¹ Government of Nunavut Final Written Submissions, August 14, 2017.

²⁶² Golder Associates Ltd. September 2017. *Technical Memorandum: Government of Nunavut Caribou-Road Analysis*. Prepared for Agnico Eagle Mines Ltd.

that non-essential vehicles would include those used for mining operations or the hauling of ore and suggested that further details could be finalized during future discussions within the Terrestrial Advisory Group. The KIA and NTI also requested that Agnico Eagle clarify the proposed use of vehicle convoys, including thresholds for the use of convoys at all project areas, maximum number of vehicles in the convoy, and the resultant gaps (hours) left for caribou to cross.²⁶³ In its response to KIA and NTI's final written submissions, Agnico Eagle noted that it would work with the TAG to further discuss convoys and that it would draw upon experiences from its other mining operations.²⁶⁴ During the Final Hearing, the KIA and Agnico Eagle noted they had come to the agreement that details regarding convoys would be provided within a revised TEMP within 1 year of Project certification (see Exhibit 22)²⁴⁸.

During the Final Hearing, the KIA expressed concerns about the proposed threshold of caribou coming within 1.5 km to trigger a Level 3 response in relation to the amount of time it would actually take to implement a shutdown of activities. In response, Agnico Eagle highlighted that it has experience with shutting down roads at Meadowbank, noted that its vehicles have radios and are constantly in communication with each other and dispatch, and estimated it would take three (3) hours to shut down the haul road as that is the time it takes one (1) truck to drive from Meadowbank to Whale Tail. Agnico Eagle also reiterated it would continue to work with the KIA, NTI, and HTO when making decisions about shutdowns, and highlighted that it can start planning and communicating in advance of a potential shutdown based on expected migration.²⁶⁵ In response to a later question from the Baker Lake HTO asking for clarity about shutdown procedures, Agnico Eagle emphasized that the "stoplight" approach (green to yellow to red) to mitigation and monitoring is well understood by all employees.²⁶⁶ During the Final Hearing, NIRB staff also asked for clarity on the timing of a possible shutdown, wondering in particular how quickly a GN conservation officer could be brought to site to help determine when a shutdown might be necessary.²⁶⁷ In reply, Agnico Eagle highlighted the collaborative multi-stakeholder monitoring and review of monitoring programs and data that would occur, including making decisions in real time to ensure the execution of its adaptive monitoring and management decision-tree.

The GN had also raised several concerns in its final written submission regarding Agnico Eagle's proposed monitoring and mitigation measures for caribou and submitted the following recommendations:

- Caribou protection measures: The effectiveness of the proposed caribou monitoring and mitigation methods described in the TEMP should be formally evaluated;
- Seasonal windows for caribou protection measures: The fall migration period identified in the TEMP during which enhanced caribou protection measures would be implemented should be from September 22 to December 15, which would be consistent with the

²⁶³ Nunavut Tunngavik Inc. and Kivalliq Inuit Association Final Written Submissions, August 14, 2017.

²⁶⁴ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

²⁶⁵ J. Quesnel and R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 244- 247

²⁶⁶ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 253-254, lines 17-26, 1-13

²⁶⁷ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 262, lines 6-17

approach presented by Agnico Eagle in its July 2017 supplementary analyses and which is supported by the GN's ongoing analysis of AWAR impacts on caribou;

- Group size thresholds: Agnico Eagle's proposed group size threshold for implementing caribou protection measures should be reduced to achieve the desired protection level since not all caribou can be detected in time (if at all); Group size Thresholds should be set initially 110 (fall), 25 (winter and summer) and 12 (spring); threshold levels may need to be further modified as new data are collected, monitoring intensity modified, and definition of "group" examined; additionally, Agnico Eagle's caribou protection target objective should be increased from 70% to at least 75% of caribou interacting with the Project;
- Monitoring: The proposed monitoring in the TEMP to trigger the implementation of caribou protection measures is too infrequent, short in duration, and limited in spatial extent and should be revised to ensure caribou are detected;
- Adaptive Management Decision Trees: The intensity of caribou monitoring when moving from Level 1 to Level 2 in the monitoring and mitigation trees should be increased (Note: this issue was also commented on by the KIA during the Final Hearing, and Agnico Eagle confirmed during the Hearing it intends to heighten the frequency of monitoring between level 1 and level 2²⁶⁸);
- Blasting: In the absence of specific data related to blasting effects on barren-ground caribou, distance thresholds (buffers) for protecting caribou from blasting should be increased. Further, Agnico Eagle should undertake a study to better understand the effects of blasting on caribou;
- Helicopters: Distance buffers proposed for aircraft in the vicinity of caribou should be made mandatory (subject to safety) and should clearly apply to take-offs and landings as well. Furthermore, helicopter traffic should be documented to allow for effects monitoring programs;
- Road traffic: A traffic monitoring and reporting program should be implemented along the AWAR and Whale Tail haul road and used to verify predicted effects on wildlife;
- Project-tolerant animals: As Agnico Eagle stated that the proposed mitigation activities may be modified where "project-tolerant" animals are observed, a definition of "project-tolerant" should be provided.²⁶⁹

In its response to these comments in the GN's final written submission, Agnico Eagle agreed that the measures within the TEMP would be continually evaluated and modified accordingly and Agnico Eagle would work with the GN and the TAG to do so. Agnico Eagle noted that it has already included input from others in the TEMP, including the proposed group size thresholds to trigger mitigation. Agnico Eagle also agreed to revise the dates of the fall migration period as suggested.²⁷⁰

In addition to concerns regarding caribou mitigation, the GN also stated in its final written submission that it had outstanding concerns regarding proposed mitigation for muskox.

²⁶⁸ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 240, lines 11-21

²⁶⁹ Government of Nunavut Final Written Submissions, August 14, 2017.

²⁷⁰ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

Specifically, the GN noted that Agnico Eagle's TEMP proposes minimal and discretionary mitigation when muskox are present in the vicinity in groups larger than 13.

The GN recommended that Agnico Eagle revise the TEMP with the following additional mitigative provisions:

- Justify group-size thresholds for muskox and amend as necessary;
- Replace discretionary measures for muskox mitigation with automatic measures triggered by group size and distance thresholds;
- Suspend blasting when groups of muskox above the group size threshold are observed within one (1) km;
- Decrease vehicle speeds to 30 km per hour when groups of muskox above the group size threshold are observed within 500 m of Project roads;
- Apply mandatory aircraft flight buffers in proximity to muskox, similar to those applied to caribou (300 m vertically, 1000 m horizontally).²⁷¹

Agnico Eagle agreed to the GN's recommendations and responded it would work with the TAG to review and refine monitoring and mitigation measures for muskox on an ongoing basis.²⁷²

During the Final Hearing, the GN also asked Agnico Eagle to clarify if the mitigation measures proposed in the decision tree triggered by a certain group size or distance threshold are soft or firm actions that would be taken. Agnico Eagle confirmed they are firm actions that Agnico Eagle has committed to, including a shutdown of activities if required.²⁷³

In its final written submission, the Baker Lake HTO expressed concern that monitoring would be conducted by Agnico Eagle and associated mitigative decisions would be triggered by Agnico Eagle without clear participation of the community of Baker Lake. The Baker Lake HTO recommended that Agnico Eagle provide funding to the HTO, or another group, to hire independent wildlife monitors. The Baker Lake HTO also recommended that to ensure that the perspectives of residents of Baker Lake are considered, Agnico Eagle, the KIA, and the Government of Nunavut should form a monitoring committee that includes representatives from local councils and organizations (i.e. Hamlet Council and the HTO) to oversee monitoring and mitigation decisions related to the Project.²⁷⁴

In its response to final written submissions as well as during the Final Hearing, Agnico Eagle confirmed it would hire an HTO representative to assist and support wildlife surveys along the AWAR during sensitive caribou migration and movement periods. Agnico Eagle also noted in its written response it looks forward to working with the Baker Lake HTO through the TAG to review and improve monitoring and mitigation, and emphasized in the Final Hearing that the

²⁷¹ Government of Nunavut Final Written Submissions, August 14, 2017.

²⁷² Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

²⁷³ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 255, lines 14-21.

²⁷⁴ Baker Lake Hunters and Trappers Organization Final Written Submissions, August 14, 2017.

Baker Lake HTO has already been involved in several workshops and discussions to date.²⁷⁵ During the Final Hearing, the Baker Lake HTO noted that while the TAG involves parties, it is an advisory group and not a decision-making body. The Baker Lake HTO requested that the Proponent revise its proposed term and condition to make it clear that it will adhere to the advice of the majority of representatives in the TAG.²⁷⁶ The Baker Lake HTO noted it was adamant about working out the terms of reference for the TAG prior to the conclusion of the Hearing because the Proponent had deferred many [specific mitigation and monitoring] issues to the TAG.²⁷⁷ At the conclusion of the Final Hearing, Agnico Eagle filed a set of terms of reference for the TAG (Exhibit 51) and noted these were agreed to by Agnico Eagle and the GN.²⁷⁸ Agnico Eagle stated that the KIA had requested additional edits to the terms that it (Agnico Eagle) could not agree to, but it hoped that all parties would participate fully in the TAG.²⁷⁹ During its closing remarks, the Baker Lake HTO noted it believed the new terms of reference as presented would ensure Agnico Eagle would adhere to its advice, especially related to measures concerning caribou. Further, the Baker Lake HTO noted that Agnico Eagle and the GN have agreed to provide the HTO with the funding needed to participate meaningfully in the advisory group.²⁸⁰

During its technical presentation at the Final Hearing, the GN stated that through ongoing discussions with the Proponent, outstanding concerns regarding ecosystemic issues had recently been resolved, noting the key role of the Proponent's agreement to form the Terrestrial Advisory Group (TAG) which would include the KIA, the Baker Lake HTO, the GN and Agnico Eagle. The GN stated that it views the TAG will take a majority-based approach to decision-making; however stressed that the outstanding concerns have been resolved on the assumption that the terms of reference of the TAG must be agreed upon by all parties prior to completion of the hearing.²⁸¹

In its final written submission, the Baker Lake HTO noted an outstanding concern regarding the Meadowbank Awar and the Whale Tail Pit haul road. Specifically, the Baker Lake HTO commented that the roads are not properly sloped to allow caribou and snowmobiles to cross. The Baker Lake HTO recommended that Agnico Eagle remodel the Meadowbank and Amaruq access roads to improve the crossings, and that it solicit input from Elders, appointed by the HTO in the selection of sections of the road where slope adjustments are required.²⁸² In its response,

²⁷⁵ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 19, 2017, p. 438, lines 14-28.

²⁷⁶ W. Bernauer, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 421-422, lines 8-26, 1-6

²⁷⁷ W. Bernauer, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 424, lines 2-7

²⁷⁸ Agnico Eagle Mines Ltd. and Government of Nunavut, *Appendix A Terms of Reference – Terrestrial Advisory Group*, Exhibit 51 NIRB Final Hearing File No. 16MN056, September 22, 2017.

²⁷⁹ B. Armstrong, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 750-751, lines 19-26, 1-20

²⁸⁰ R. Aksawnee, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 759-760, lines 15-26 and 2-21.

²⁸¹ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 443, lines 6-26

²⁸² Baker Lake Hunters and Trappers Organization Final Written Submissions, August 14, 2017.

Agnico Eagle noted it has been working with the Baker Lake HTO and Elders to ensure adequate crossings on the Meadowbank AWARD and that it would continue to work with them to modify these as needed and to develop the crossings on the Whale Tail Pit haul road.²⁸³ During the Final Hearing, Agnico Eagle emphasized this as well, providing a timeline of discussions it has had with the KIA and HTO²⁸⁴ as well as a figure showing one of the selected locations and concept designs for a crossing (see Exhibit 2).^{285,286}

During the Final Hearing, the Baker Lake HTO commented on the different caribou herds in the region, noting some herds had become scarce in recent years, that caribou have been seen near Agnico Eagle's project, and that both harvesters and development have a large impact on caribou, stating:

*Here in Baker Lake, we're lucky that we get five herds in -- in around Baker Lake. ... I disagree about the Ahiak. The Ahiak herd last -- last fall, October, they migrated down. They were right behind the community for two weeks right by the gatehouse, by your gate5 house. These herds are intertwining during migration...how many collared caribou there is on the Ahiak herd, but I know there is a lot of impact due to development and also by harvesters. We are the biggest impactors, are the harvesters, but development also impacts the caribou. ... I don't trust those collar data at all. For years, we haven't seen Qamanirjuaq herd. We're lucky we get the Lorillard, the Wager, Ahiak, Beverly, but for years, we haven't seen that herd from Qamanirjuaq, so that's a big impact that we're suffering today here in Baker.*²⁸⁷

The Baker Lake HTO also gave examples of some well-established traditional rules Inuit have to ensure their activities do not impact migration routes, water, and other sensitive habitats, including to never disturb the lead caribou in a group, and asked Agnico Eagle how it has incorporated this type of traditional Inuit knowledge in its mitigation plans. In particular, the HTO asked for clarification of how the group size thresholds protect the lead caribou, commenting that with a group size threshold of 140, mitigation would seem to be triggered only after the first caribou in the herd are disturbed.²⁸⁸ In response, Agnico Eagle confirmed that this traditional knowledge had been shared with it through its Inuit Qaujimajatuqangit sessions. Agnico Eagle also noted that caribou would be given the right-of-way meaning the lead caribou would be protected even if the group size would not yet trigger specific management action.

²⁸³ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

²⁸⁴ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 19, 2017, pp. 64--66, lines 17-26, 1-26, 1-14

²⁸⁵ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 19, 2017, pp. 64--66, lines 17-26, 1-26, 1-14

²⁸⁶ Agnico Eagle Mines Ltd., *Public Participation Presentation*, Exhibit 2, NIRB Final Hearing File No. 16MN056, September 19, 2017.

²⁸⁷ R. Aksawnee, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 248-249, lines 10-26, 1-15

²⁸⁸ W. Bernauer, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 249-251, lines 12-26, 1-22, 10-26

During the Final Hearing, the Baker Lake HTO raised the issue of food security a number of times, noting that caribou is the biggest source of healthy food for many people in the community²⁸⁹ and that little diversions of caribou can have a huge impact on local food security.²⁹⁰ Because of the importance of caribou for food security, the Baker Lake HTO noted it is vital to ensure measures for caribou protection are effective. The Baker Lake HTO also asked the KIA whether, in the opinion of the KIA, the Project could impact caribou in such a way that would impact hunting and food security.²⁹¹ The Baker Lake HTO also asked the GN if it felt that with the right mitigation measures, local food security could be protected.²⁹² The KIA responded that there is no question the Project would have some impact on caribou, but also noted that other environmental effects as well as harvesting also influence caribou distribution. The KIA further noted that while the AWAR has already been open for harvesting for the past ten (10) years, the haul road would be closed for non-mining use and thus impacts may not be as great as if harvesting was associated with the road as well.²⁹³ The Baker Lake HTO asked the KIA whether it felt the proposed mitigation measures were adequate, to which the KIA responded that the TEMP has improved considerably since the first draft, although there are some additional “tweaks” required.²⁹⁴ The GN stated that the proposed mitigation measures, extensive monitoring with the potential to adapt mitigation, and the TAG should together protect local food security, although it cannot be guaranteed there will be no impacts.²⁹⁵

During the Final Hearing, NIRB staff commented that given the proposed Project’s short operational life, opportunities to learn from monitoring and adjust programs to ensure they are effective are limited compared to other projects with a longer life, and thus having confidence in the proposed adaptive management measures is critical to ensure adverse effects can be managed or mitigated at the outset. NIRB staff asked Agnico Eagle to describe the proposed monitoring of caribou beyond the tracking of collared caribou, which would be made available daily from the GN, but noted the data is not supplied in real-time.²⁹⁶ In reply, Agnico Eagle noted its monitoring would include year-round height-of-land surveys, road surveys, incidental wildlife observations by operators on the road, and perhaps cameras. Agnico Eagle acknowledged these techniques are limited in that the human eye can only see so far and would be restricted by darkness, and thus Agnico Eagle is exploring new technologies including with respect to improving the collaring data. NIRB staff then asked Agnico Eagle what specific mitigation

²⁸⁹ W. Bernauer, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 423-424, lines 23-26, 1

²⁹⁰ W. Bernauer, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p.253, lines 4-10

²⁹¹ W. Bernauer, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 400-401, lines 23-26,1

²⁹² W. Bernauer, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 446-447, lines 24-26, 1-3

²⁹³ K. Poole, Kivalliq Inuit Association, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 401-402 lines 2-26, 1-12

²⁹⁴ K. Poole, Kivalliq Inuit Association, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 402-403 lines 26, 1-12

²⁹⁵ S. Pinksen, Government of Nunavut, NIRB Final Hearing File no. 16MN056 Transcript, September 21, 2017 pp. 447, lines 4-17

²⁹⁶ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File no. 16MN056 Transcript, September 20, 2017 pp. 257-258, lines 1-26, 1-9

measure(s) would be informed by the use of cameras, and how would those measures be effectively implemented without the use of cameras.²⁹⁷ Agnico Eagle clarified in response that the cameras would enhance already effective monitoring methods and emphasized the ability of the infrared cameras to detect caribou in the north is uncertain.²⁹⁸

During the Community Roundtable session at the Final Hearing, a community member from Baker Lake noted that other animals - foxes, wolverines, wolves, and grizzlies - always want to gnaw or chew on the cameras, and asked how Agnico Eagle would install the cameras in such a way as to prevent this.²⁹⁹ Agnico Eagle acknowledged some animals will interfere with the cameras by knocking them over and so it plans to have duplicates of the cameras in place.³⁰⁰

During the Final Hearing NIRB staff also noted Agnico Eagle's plans to involve key stakeholders in caribou monitoring and asked Agnico Eagle to clarify how it would address the financial limitations of these other parties such as the HTO or the GN if they are to share in the monitoring responsibilities.³⁰¹ In response, Agnico Eagle described its Memorandum of Understanding (MOU) with the GN. Agnico Eagle noted this MOU has been in effect for many years and has recently been renewed, and commits Agnico Eagle to provide \$150,000 per year in support while providing opportunities for Agnico Eagle to identify specific needs and resources for research. Agnico Eagle also noted it has agreed to provide funding for a full-time field monitor from the Baker Lake HTO.³⁰²

The Board staff also asked Agnico Eagle how relevant the ZOI analysis for the Meadowbank AWAR is to the proposed Whale Tail Pit Project. Further, the Board staff questioned whether, given that the AWAR would continue to operate during the proposed Project's operational lifetime, Agnico Eagle had considered the potential for additive cumulative effects to occur and to affect the ZOI for migrating caribou from both roads being in operation at the same time.³⁰³ Agnico Eagle noted that it is hard to speculate as to the difference in ZOI that might result because both roads will be operating at the same time, especially as there is some uncertainty in the analyses. The Proponent noted in its response that it would be revisiting the ZOI analysis to consider other methods and variables, including environmental variable.³⁰⁴

²⁹⁷ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File no. 16MN056 Transcript, September 20, 2017 pp. 260-261, lines 26, 1-6

²⁹⁸ R. Vanengen, Agnico Eagle Mines Ltd. NIRB Final Hearing File no. 16MN056 Transcript, September 20, 2017 p. 261, lines 7-23

²⁹⁹ E. Elytook, Baker Lake, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 667, lines 14-22

³⁰⁰ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 662-663, lines 23-26, 1-6

³⁰¹ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File no. 16MN056 Transcript, September 20, 2017 pp. 264, lines 11-26

³⁰² J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 265-266, lines 1-26, 1-22

³⁰³ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File no. 16MN056 Transcript, September 20, 2017 pp. 267-268, lines 15-26, 1-5

³⁰⁴ C. De La Mare, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 268, lines 8-21.

During the Community Roundtable sessions at the Final Hearing, a number of community members and community representatives raised questions and concerns regarding terrestrial wildlife. A Community Representative from Chesterfield Inlet requested clarification on how impacts on wildlife are assessed and asked Agnico Eagle:

*...when the wildlife is around your site and the habitat and their food -- do you find out what the caribou meat condition is like? Like, would you -- whether they're being affected by the dust or any of the mine operations. Would you put them to sleep and check their blood and stuff or skin? And how do you do that with caribou to ensure that they're not being affected by the mine?*³⁰⁵

Agnico Eagle responded that it does not do animal testing by putting them to sleep.³⁰⁶ The GN noted that it does do some tissue sampling of animals across Nunavut, and that this is a requirement built into the project certificate of some mining projects, but that normally the samples for this type of analysis are obtained from animals that have been harvested by hunters.³⁰⁷

A Community Representative from Arviat asked the Proponent to comment on how caribou have been affected in the area, wondering in particular if collisions with caribou or other injuries or declines in caribou health have been observed.³⁰⁸ Agnico Eagle replied that it is committed to ensure the protection of caribou but acknowledged there have been some vehicle collisions with caribou in the past. Agnico Eagle noted the last such incident was in 2011 or 2012 and highlighted that the collar data shows caribou only spend 1% of their time within the project area.³⁰⁹ The Community Representative added that wildlife and the land have to be considered for the future and for the youth, and expressed concern that wildlife are declining. The Community Representative asked Agnico Eagle whether its “amber alert” decision-tree approach for caribou mitigation is being used currently at Meadowbank, or whether it would be unique to Whale Tail.³¹⁰ Agnico Eagle replied that it is using a similar approach, but with the start of operations at Whale Tail, it would apply the proposed approach across all of its operations at Meadowbank and Whale Tail, including the haul road and AWA.³¹¹

A community member from Baker Lake emphasized the importance of caribou and caribou crossings and the traditional knowledge and respect the people from Baker Lake have for caribou

³⁰⁵ H. Aggark, Chesterfield Inlet, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 605, lines 3-8.

³⁰⁶ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 607, lines 2-7.

³⁰⁷ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 607-608, lines 19-26, 1.

³⁰⁸ W. Gibbons, Arviat, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 637, lines 26, 13-23

³⁰⁹ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 637-638, lines 26, 1-22

³¹⁰ W. Gibbons, Chesterfield Inlet, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 638-639, lines 26, 1-23

³¹¹ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 639-640, lines 25-26, 1-6

crossings, and noted that biologists have not respected Inuit ways in terms of protection of caribou crossings. The community member noted support for new technologies including the use of drones, and cameras to study caribou as these types of technology would interfere with caribou less than tags, collars, and helicopters.³¹² A Community Representative from Naujaat later commented that she does not support the use collars for caribou.³¹³ The GN replied that collaring is currently the only effective method for monitoring caribou over large areas and emphasized that the number of collars actually used is quite small.³¹⁴

A community member from Baker Lake emphasized the need to consider the big picture - to study caribou across the whole Kivalliq region, not just the Amaruq property, and noted concern with the extrapolation from a small number of collars to thousands of caribou. The community member observed that even four (4) or five (5) years ago there were more caribou around Baker Lake, and noted the many aspects of the Project that could affect caribou including noise, dust, roads and aircraft. The community member also noted the importance of protecting caribou for the future.³¹⁵

A member from the Elders Committee in Baker Lake asked Agnico Eagle whether caribou had been observed to be stopped by the exploration road to Amaruq.³¹⁶ Agnico Eagle responded that caribou have been observed moving through the roadway, and that they also continue to be seen crossing the AWAR to Meadowbank.³¹⁷ The community member also added that the use of the AWAR is a privilege and a blessing, as it has decreased the time needed to access the area for hunting. He noted however that some hunters are shooting the first caribou they see, which goes against traditional Inuit knowledge that requires that the lead caribou be allowed to pass unhindered. He also noted that some harvesters are hunting in no-hunting zones, that hunters are getting careless or letting inexperienced youth hunt, so that the traditional rule of “*one shot, one caribou*” is not being followed, and further that people are chasing caribou on ATVs. The community member stated “*I think we need to be looking very seriously at what we are doing as hunters ourselves in terms of disturbing the caribou*” and asked Agnico Eagle what kind of discussions had been had regarding policing of hunting rules.³¹⁸ A Community Representative from Arviat also acknowledged Inuit hunting is a major cause of caribou decline.³¹⁹ Another community member from Baker Lake noted the recommendation regarding safety on the road to be valid and wondered if safe-hunting practices could be enforced by the Hamlet or

³¹² P. Tapatai, Baker Lake Community Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 656-657, lines 3-26, 1-24

³¹³ M. Tuktudjuk, Naujaat, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 694, lines 13-22

³¹⁴ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 695, lines 1-23.

³¹⁵ P. Kigjugalik Hughson, Baker Lake Community Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 659-660, lines 5-26, 1-19 and pp. 663-664, lines 13-26, 1-4

³¹⁶ D. Simailak, Baker Lake Elders Committee, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 669, lines 7-17.

³¹⁷ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 669-670, lines 22-26, 1-11.

³¹⁸ D. Simailak, Baker Lake Elders Committee, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 668-674, lines 21-26, 1-6, 14-26, 1-12, 1-3, 20-26, and 1-10.

³¹⁹ A. Panigoniak Sr., Arviat, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 735-736, lines 19-26, 1-15

conservation officers.³²⁰ Agnico Eagle noted the AWAR is open to the public on ATVs between Baker Lake to km 85, but is closed beyond that for safety reasons, and that enforcement is managed by Agnico Eagle as well as the GN conservation officers. The Proponent also noted it has recently begun discussions with the Baker Lake HTO to encourage safe practices on the road, and further noted it is attempting to enforce a 1-km safety zone along the road.³²¹ The Board noted the issue is a problem in every community and that the concern with safety and caribou harvesting should be further discussed and dealt with by the conservation officers in each community.³²²

A community member from Arviat later wondered about the term “private” beyond km 85, noting the whole area is Inuit land, and asked Agnico Eagle if there are other “private” areas. Agnico Eagle emphasized that “private” is intended to mean that the haul road is “private” because it is not safe for land users to use due to the heavy mine traffic, but noted that Agnico Eagle is proposing to put in place crossings that would allow users to continue towards Gjoa Haven but be directed around the Project.³²³

A Community Representative from Baker Lake, sitting as a youth representative for the Community Roundtable wanted to offer his perspective as an employee at the Meadowbank Gold Mine. He noted that he helped construct the AWAR and during construction saw thousands of caribou migrating, and they stopped construction to allow the herds to cross the road. This individual emphasized that wildlife is always given the right of way and the road is closed when necessary, and that other than the one (1) vehicle collision with a caribou in 2011 that was mentioned previously during this Hearing, he was not aware of any other problems with traffic and caribou. He also added that caribou come close to the mine site to avoid predators and that a muskox gave birth last year close to the haul road and the females and calves were unaffected from the noise of the haul trucks, noting the muskox female and calves stayed alongside the road for about a month before joining the rest of the herd.³²⁴

A Community Representative from Whale Cove asked the Proponent whether Elders would be included in advisory committees. Agnico Eagle confirmed Elders would be part of its decision-making, for example with regards to caribou as part of the activities of the Terrestrial Advisory Group (TAG).³²⁵

A community member from Baker Lake commented that an Elder had mentioned caribou migration is related to muskox and the community member wondered whether muskox in the

³²⁰ C. Tautuaqjuk, Baker Lake Kivalliq Inuit Association Inuit Impact Benefit Agreement Coordinator, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 698, lines 14-22

³²¹ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 671-672, lines 22-26, 1-16.

³²² E. Copeland, Board Chairperson, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 674-675, lines 17-26, 1-5.

³²³ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 719, lines 5-26

³²⁴ L. Quinangnaq, Baker Lake, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 677-679, lines 15-26, 1-26, 1-12

³²⁵ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 686, lines 6-17

area could be monitored.³²⁶ Agnico Eagle replied that it does monitor muskox near its activities, and the GN monitors muskox at the population level.³²⁷ Another community member noted there are muskox near the proposed Project and wondered how the muskox would be affected by the proposed project.³²⁸ Agnico Eagle replied that the muskox would be protected using the same measures used to protect the caribou.

Another community member from Baker Lake noted that the proposed haul road is not very long – roughly 30 km or 15 miles, and he does not think the project would affect caribou because the caribou would go around the project, as well as due to the protection measures put in place by Agnico Eagle.³²⁹

5.10.3 Views of the Board

The Board acknowledges that throughout the Review of the Whale Tail Project, concerns and uncertainties regarding potential impacts to terrestrial wildlife – in particular, caribou - were shared by many intervening parties and community members. As expressed through technical commenting periods and throughout the Final Hearing, impacts to terrestrial wildlife, particularly caribou, are of growing concern considering the current population levels of barren-ground caribou herds, and the cumulative influences that development, climate change, harvesting pressures, predation, and natural population variability have on wildlife overall. The Board has particular concerns that the proposed levels of traffic on the haul road are much higher than the existing AWAR and this creates significant uncertainty in terms of the extent to which the proposed haul road could have greater potential for adverse impacts on caribou and other wildlife than was predicted in the EIS. Besides the ecological importance of wildlife within natural ecosystems, wildlife are intrinsically linked to the culture, identity, spirituality, and livelihood of Inuit, Nunavummiut, and northern peoples. The Board recognizes this importance, and appreciates the significant contributions made by intervening parties and community members throughout the Review process to ensure that potential impacts from the Project are addressed and that thoughtful consideration is given to whether impacts can be adequately mitigated, monitored, and adaptively managed so that the cumulative effect of the Project on wildlife would not contribute to stresses currently borne by populations of concern.

During the Final Hearing, a number of questions were asked by the Board regarding the Proponent's proposed wildlife monitoring. The Board noted Agnico Eagle's plan to have vehicles travelling the haul road at all times of day and in all seasons, and asked Agnico Eagle to clarify how caribou would be monitored along the road in the dark.³³⁰ A second Board Member highlighted the importance of caribou and other wildlife for Inuit and also asked Agnico Eagle to

³²⁶ C. Tautuaqjuk, Baker Lake – Kivalliq Inuit Association Inuit Impact Benefit Agreement Coordinator, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 698, lines 4-13

³²⁷ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 699, lines 4-13

³²⁸ C. Kaayak, Baker Lake Youth – Grade 11 Class, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 707, lines 14-17.

³²⁹ H. Igkoe, Baker Lake Community Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 701-702, lines 10-26, 1-7.

³³⁰ P. Kadlun, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 89, lines 8-20.

clarify what mitigation measures would be put in place so that caribou and wildlife are not injured or killed along the haul road, particularly in the dark.³³¹ Agnico Eagle replied that caribou monitoring would include the Government of Nunavut's caribou collaring program, which provides data on caribou interactions with the project whether it is light or dark out. Agnico Eagle further noted it is looking into different technology like cameras that could assist in dark conditions. Agnico Eagle stated that dark conditions have not hindered monitoring of caribou at Meadowbank and the same type of mitigation and monitoring will be applied along the haul road for the Whale Tail Pit Project.³³² Agnico Eagle also referred to its adaptive monitoring and mitigation decision-tree framework within the Terrestrial Ecosystem Management Plan (TEMP) for more details (see also Exhibit 5).³³³

The Board noted that the use of drones for monitoring caribou, especially during spring migration, can frighten caribou, and noting certain requirements for helicopters and fixed-wing aircraft to avoid caribou, asked whether Agnico Eagle would also apply similar regulations to the use of drones.³³⁴ Agnico Eagle acknowledged the same concerns had been heard during some Terrestrial Advisory Group (TAG) meetings, and noted that it was only just beginning to consider the use of drones, but would involve the TAG prior to making a decision about their use, and would follow any associated regulations.³³⁵

The Board relayed Traditional Knowledge about caribou, noting that a herd will always follow the lead caribou, and thus one must know in advance of the caribou reaching the area that the caribou are approaching. The Board asked Agnico Eagle what kind of cameras would be used for caribou monitoring and would they be used 365 days a year, or only when caribou are nearby. The Board expressed concern that motion-sensor cameras would likely not be effective.³³⁶ Agnico Eagle replied that it is unsure whether the cameras would be able to detect caribou at a distance, but it would like to try, and noted that they would be operating continuously all day and all year.³³⁷ The Board Member followed up noting that he has no issue with the use of drones because they are small and do not make a lot of sound, and would be a good tool to use.³³⁸ The Board later asked Agnico Eagle how far from the road the cameras would be placed.³³⁹ Agnico Eagle answered that the concept was to use the motion-sensing

³³¹ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 95-96, lines 22-26, 1-4

³³² R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 91, lines 7-22

³³³ Agnico Eagle Mines Ltd., *Terrestrial Environment Presentation*, Exhibit 5, NIRB Final Hearing File No. 16MN056, September 20, 2017.

³³⁴ A. Maghagak, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 271-273, lines 11-26, 1-26, 1-10

³³⁵ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 273-274, lines 11-26, 1-4

³³⁶ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 274-275, lines 7-26, 1-7

³³⁷ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 275-276, lines 10-26, 1-9

³³⁸ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 276, lines 10-18

³³⁹ H. Ohokannoak, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 280, lines 8-15

cameras close to the site, but they could consider putting them at more distant locations as well, noting that details would be discussed among the TAG.³⁴⁰

During the Final Hearing the Board also had questions for Agnico Eagle regarding observations and analysis of caribou-project interactions. The Board asked Agnico Eagle, knowing that the herd is in decline, to justify its statement that the Bathurst caribou herd have not been fragmented by mines in the Northwest Territories.³⁴¹ Agnico Eagle clarified in response that the mines do affect the relative occurrence of density of caribou within the Zone of Influence (ZOI), but the collar data shows animals still move through the area, so the herd is not fragmented.³⁴² The Board later asked if the limited fragmentation observed could be related to the decline in the Bathurst caribou population rather than being evidence of effective mitigation measures at the mines, and noted that it is important to clearly understand the decline of the caribou.³⁴³ Agnico Eagle replied they do shut down roads when large numbers approach and caribou are allowed to move through the area, so mitigation has been effective.

The Board also asked Agnico Eagle to clarify the use of Inuit Qaujimajatuqangit in identifying caribou migration routes and traditional land use areas including harvest sites, and whether there are interactions of harvesting and migration of people and animals within the Whale Tail Project area.³⁴⁴ The Proponent clarified that there are traditional travel routes and hunting and harvesting areas within the Project area.³⁴⁵

The Board also asked Agnico Eagle for clarity regarding its statement that less than 1% of the caribou interact with the Project – specifically what population of caribou that 1% refers to.³⁴⁶ Agnico Eagle replied that that value is in reference to just the collared animals and that the proportion of the total caribou herds this would represent is unknown.³⁴⁷

Regarding caribou mitigation, the Board asked Agnico Eagle about how the thresholds to trigger mitigation would be practically observed or implemented – that is, how strict or firm the group size and distance values are, and would other factors be considered for trigger thresholds.³⁴⁸ Agnico Eagle acknowledged that the group size thresholds noted in its monitoring and mitigation

³⁴⁰ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 280-281, lines 17-26, 1-16

³⁴¹ P. Kadlun, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017 p. 269, lines 5-20

³⁴² J. Virgl, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017 p. 270, lines 7-21

³⁴³ P. Kadlun, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 281-282, lines 22-26, 1-2, 18-25

³⁴⁴ K. Kaluraq, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 276-277, lines 20-26, 1-10

³⁴⁵ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017 p. 277, lines 22-26, 11-26

³⁴⁶ K. Kaluraq, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 278, lines 1-10

³⁴⁷ C. De La Mare, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017 p. 278, lines 11-22

³⁴⁸ K. Kaluraq, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 278-279, lines 25-26, 1-11

decision tree are guidelines rather than a strict number, and that technicians in the field will be relied upon to make a decision as to when to implement mitigation.³⁴⁹

The Board later asked the GN to clarify if the group-size thresholds would be the same for all of the caribou herds.³⁵⁰ The GN responded that the thresholds are project-specific for the herds associated with the Project-area.³⁵¹

During the Final Hearing, the Board asked the Kivalliq Inuit Association (KIA) to clarify if it would work with the Baker Lake HTO and the regional Kivalliq Wildlife Board to monitor the four (4) caribou herds that would interact with the Whale Tail Pit Project and the Meadowbank Project, given that Meadowbank, Vault pit, and Whale Tail are on Inuit Owned Lands managed by the KIA.³⁵² The KIA responded that monitoring at the herd level is more the responsibility of the GN but as regards the mine, it does work with Proponent, the HTO, the Wildlife Board, and other KIA departments to ensure effective caribou monitoring.^{353,354} The GN confirmed it conducts ongoing surveys of all wildlife and caribou herds in Nunavut, and works collaboratively with HTOs and the Kivalliq Wildlife Board, and puts more resources towards areas where resource development is taking place.³⁵⁵

During the Final Hearing, the Board also had questions regarding the role of the Baker Lake HTO. The Board asked the Baker Lake HTO whether it is seeking additional funding to increase participation of people from the community based on Inuit Qaujimajatuqangit, or whether the funding is for technical expertise such as what is provided by other government agencies.³⁵⁶ The HTO's response noted that the funding negotiated with the Proponent to date is for local participation in monitoring, and that additional roles and details are still uncertain. The Board also asked the Baker Lake HTO for clarity regarding how caribou would cross the road, noting the frequency of use of the road: *"the haul trucks are going to be seven minutes apart when they're hauling....travelling every day, 365 days a year"*, and whether the HTO would be part of the monitoring and decision-making.³⁵⁷ The Baker Lake HTO noted discussions are still required with respect to Baker Lake HTO being involved with the monitoring aspect, however it acknowledged that traffic along the haul road would be heavy, but with limited resources, the

³⁴⁹ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 279-280, lines 12-26, 1-5

³⁵⁰ P. Kadlun, Board member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 p. 450, lines 3-7

³⁵¹ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 p. 450, lines 9-14

³⁵² A. Maghagak, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 p. 413, lines 16-26

³⁵³ K. Poole, Kivalliq Inuit Association, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 p. 414, lines 2-19

³⁵⁴ L. Manzo, Kivalliq Inuit Association, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 p. 416, lines 1-18

³⁵⁵ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 p. 415, lines 6-25

³⁵⁶ K. Kaluraq, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 p. 431, lines 13-21

³⁵⁷ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 p. 433, lines 6-18.

Baker Lake HTO is not sure how to address this problem.³⁵⁸ Agnico Eagle clarified that operations of the road would include a calculated shutdown of 28 days per year for caribou as well as blizzards.³⁵⁹ The Board also expressed the importance of using “Inuit Traditional Knowledge”, and noting that the HTOs are frontline workers for wildlife, asked the Baker Lake HTO whether methods other than collaring would be used to monitor caribou.³⁶⁰ The Baker Lake HTO agreed that relying on caribou collars alone is a significant problem, and it has requested Agnico Eagle fund a monitor from the HTO that could help visually observe caribou.³⁶¹

During the Final Hearing, the Board asked the Baker Lake HTO whether it believes the observed decline in caribou is related to mining, or other factors, and has the HTO heard concerns from hunters and fishermen regarding the road, helicopters, or anything else related to mining.³⁶² The Baker Lake HTO responded that it has observed a decline in caribou and that it is related to both project development and Inuit harvesting. The Baker Lake HTO also affirmed that it does get reports from local hunters when it views disturbances such as low-flying aircraft.

The Board also asked the GN whether it had considered alternative methods of monitoring caribou, and whether the GN have been approached on the issue of helicopters disturbing wildlife and what measures have been put in place.³⁶³ The GN replied that it does occasionally get reports of helicopters disturbing wildlife and it encourages anyone who witnesses such harassment to report it. For the proposed Project in particular, the GN noted the issue of helicopters would be discussed further with the Proponent through the TAG. Regarding collars and monitoring, the GN stated that collars are the only effective method available for tracking long-distance movements over large areas, although observations of hunters and others can be used to monitor more localized movements. The GN further added that the number of collars is very low (approximately 50) relative to the number of caribou in the area (approximately 300,000) so the impacts to caribou of collar usage are small.³⁶⁴

Regarding the use of the AWAR and harvesting, the Board asked whether the Proponent, the GN, or the Baker Lake HTO had any statistics about what has been harvested using the AWAR as a transportation route.³⁶⁵ Agnico Eagle referenced its hunter harvest study that collects this

³⁵⁸ R. Aksawnee, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 pp. 433-434, lines 22-26 and 1-3.

³⁵⁹ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 p. 439, lines 1-4.

³⁶⁰ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 p. 434, lines 6-17

³⁶¹ W. Bernauer, Baker Lake Hunters and Trappers Organization. NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 434, lines 21-26

³⁶² E. Copland, Board Chairperson, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 pp. 435-436, lines 20-2, 1-4

³⁶³ E. Copland, Board Chairperson, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 pp. 453-454, lines 26, 1-10

³⁶⁴ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 pp. 454-455, lines 11-26, 1-21.

³⁶⁵ K. Kaluraq, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017 pp. 696 and 697, lines 1-8 and 5-12.

information, and also confirmed it collects statistics of many people when they pass through the gatehouse along the road.³⁶⁶ In a deferred response, Agnico Eagle provided the following numbers, which it noted were available in its Annual Report: 1,456 ATVs passed through the gatehouse and used the Awar in 2012, 1,958 ATVs in 2013, 1,319 ATVs in 2014, 2,366 ATVs in 2015, and 1,504 ATVs in 2016.³⁶⁷

The Final Hearing provided an opportunity for the Board to resolve some of the uncertainties about the potential for impacts on terrestrial wildlife, including caribou. The Board acknowledges the Proponent's proposed mitigation and monitoring as detailed in its TEMP, the efforts of the Proponent throughout the review period to work with parties to further develop the TEMP, and the commitment of the Proponent to continue collaborating and refining this plan. In particular, the Board recognizes the Proponent's commitment to establishing a Terrestrial Advisory Group that would work by consensus to review and refine monitoring, mitigation, and adaptive management.

The Board agrees with comments made during the Final Hearing that Inuit harvesting of caribou influences the local caribou populations, and understands that the Meadowbank Awar does facilitate additional access for harvesters. The Board understands the Proponent has committed to continuing with its Hunter Harvest Survey along the Meadowbank Awar to improve understanding of the impacts of the road on caribou harvests. The Board would like to encourage the Baker Lake Hunters and Trappers Organization to more carefully regulate hunting from the road and to encourage the following of Traditional Knowledge and Inuit Qaujimaningit by the harvesters making use of the Awar.

In recognizing that the Proponent has prepared its mitigation programs for the current state of wildlife populations in the area and given the considerable commentary throughout the review period regarding data limitations, the Board highlights that monitoring and adaptive management protocols need to be comprehensive to identify, respond to, and further monitor unexpected variables that deviate from its existing assessment. To achieve this, the Board stresses the importance of the Proponent's commitment to continue contributing to and collaborating with the GN's caribou collaring program and to conduct additional analysis of the data to better understand and mitigate potential effects and potential cumulative effects. The Board also notes the Proponent's commitments to assess new technologies for monitoring and to hire local wildlife monitors to help mitigate data limitations and ensure Inuit Qaujimaningit is incorporated in a meaningful way. The Board expects Agnico Eagle to continue to develop its TEMP in-line with new research, best practices for management techniques, Traditional Knowledge and Inuit Qaujimaningit to ensure that all impact predictions as presented within the EIS are upheld and monitored throughout the duration of the Project. Should it be revealed that the monitoring and mitigation measures are not effective in limiting impacts to caribou, the Board expects that appropriate adaptive management measures will be employed to prevent further impacts.

³⁶⁶ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 pp. 696-697, lines 10-26, 14-20

³⁶⁷ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017 pp. 747-748, lines 11-26 and 1.

5.10.4 Conclusions and Recommendations of the Board

Given the importance of terrestrial wildlife, and caribou in particular, to the culture, livelihood and health of Inuit in the Region, the Board has assessed the Proponent's proposed monitoring, mitigation and management measures in accordance with the most stringent standard of the precautionary principle and highest expectations for responsive adaptive management. It is imperative that Agnico Eagle operationalizes its "aspirational" target of zero impacts to caribou. On this basis and in consideration of the views of the Proponent and those of parties throughout the assessment of the Project and as outlined above, the Board believes that the Project's potential effects to terrestrial wildlife and wildlife habitat could be appropriately managed through the commitments provided by the Proponent and the application of highly protective mitigation and monitoring measures that take into consideration the various recommendations contained within joint and individual submissions provided by parties to the Board. Specifically, the Board recommends terms and conditions requiring the following (a brief summary of the Board's recommended terms and conditions is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

- Participate in a Technical Advisory Group with the Government of Nunavut, the Baker Lake Hunters and Trappers Organization, the Kivalliq Inuit Association, and other parties as appropriate to continually review and refine mitigation and monitoring details within the Terrestrial Ecosystem Management Plan. Additional caribou collar data, results from associated studies, and other monitoring data as available should be considered for incorporation as appropriate
- Maintain a Terrestrial Ecosystem Management Plan (TEMP) throughout all phases of the Project that includes monitoring, mitigation and adaptive management measures for terrestrial wildlife with details of thresholds and adaptive management measures for wildlife, with consideration for each Project activity predicted to affect wildlife, and with inclusion of specific triggers for mitigation and adaptive management intervention;
- Collect additional caribou collar data, in collaboration with the Government of Nunavut, and conduct analyses of this data to quantify the zone of influence and associated effects of project components on caribou movement for a study area that includes the Whale Tail mine site, the haul road, the Meadowbank Gold Mine and its All-Weather Access Road;
- Collect additional data on caribou group sizes in proximity to the Project, and work with the Terrestrial Advisory Group to refine appropriate caribou group size thresholds that trigger additional mitigation;
- Develop and implement a Road Access Management Plan and maintain traffic monitoring logs along the haul road; demonstrate modifications to proposed wildlife protection measures if traffic exceeds predicted levels;
- Demonstrate consultation with the Baker Lake Hunters and Trappers Organization and other relevant parties to ensure that safety barriers, berms, and designed crossings associated with project infrastructure, including the haul road, are constructed as necessary to allow for the safe passage of caribou and other terrestrial wildlife; and
- Ensure that wildlife incident reports are provided to the appropriate authorities and interested parties including the Government of Nunavut, Environment and Climate

Change Canada, the Kivalliq Inuit Association, and the Baker Lake Hunters and Trappers Organization.

5.11. BIRDS AND BIRD HABITAT

5.11.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) assessed the potential project-related effects on raptors, water birds, and upland breeding birds in Volume 5, Section 5.5 of the Environmental Impact Statement (EIS), and concluded that there would be no significant adverse effects on birds and bird habitat. Supporting baseline information and methods were provided in Volume 5, Appendix 5-C. In Volume 5, Section 5.5 of the EIS, Agnico Eagle also listed several sources of Inuit Qaujimagatuqangit that were incorporated into its baseline study and impact assessment. Mitigation and monitoring details were provided in the Terrestrial Ecosystem Management Plan (TEMP). Following the Pre-hearing Conference (PHC), Agnico Eagle provided a revised TEMP which included Appendix I that provided a description of mitigation and monitoring designed to reduce impacts to bird nests during flooding within a Migratory Bird Mitigation Plan.³⁶⁸ Additionally, Agnico Eagle submitted a Fish-Out Diving Waterbird Protection Plan designed to protect waterbirds from net entanglement during the fish-out.³⁶⁹

To assess impacts to birds and bird habitat, Agnico Eagle considered a circular Local Study Area (LSA) of 28,215 hectares (ha) that encompassed all proposed project facilities including the haul road, plus a buffer of 1.5 kilometres (km). The Regional Study Area (RSA) of its assessment was established as a similar circular area extending out 25 km from project facilities, and included part of the Meadowbank all-weather access road (501,700 ha in total). Temporally, Agnico Eagle considered impacts for the construction, operations, and closure phases.

Agnico Eagle identified the following primary pathways where the Project would likely result in impacts to birds and bird habitat:

- Direct loss and fragmentation of upland bird habitat from Project infrastructure
- Sensory disturbance from vehicles, equipment, human presence, and vibrations affecting upland bird movement and behaviour, and quality of upland bird habitat
- Effects on upland and water bird survival and reproduction due to flooding and destruction of nests from construction activities.

Agnico Eagle's baseline characterization of bird species and habitat present within the study areas was based on field surveys, incidental observations, and habitat suitability mapping in 2014 and 2015. Agnico Eagle noted that two (2) species of raptors found in the area (peregrine falcon and short-eared owl) are federally listed species at risk.

³⁶⁸ Golder Associates Ltd. June 2017. *Migratory Birds Protection Plan*. Prepared for Agnico Eagle Mines Ltd. [Provided as Appendix I in the revised Terrestrial Ecosystem Management Plan, version 4. July 2017 in response to Commitment 17].

³⁶⁹ Golder Associates Ltd., Technical Memorandum: Fish-Out Diving Waterbird Protection Plan, June 22, 2017. [in response to Commitment 5]

In the EIS, Agnico Eagle reported that project baseline data, as well as surveys from the Meadowbank Gold Mine, indicate an average of 1.2 to 1.4 birds per hectare, and thus Agnico Eagle estimated that approximately 1,200 birds would be displaced due to direct habitat loss. Agnico Eagle noted that this loss would include habitat for three (3) species of birds listed as being of Special Concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). In the EIS, Agnico Eagle noted that a compact project footprint would minimize impacts, proposed to minimize vegetation clearing during the migratory bird breeding season where possible, and also to revegetate disturbed areas during closure and post-closure to reduce losses. Agnico Eagle concluded that the impact of direct habitat would be moderate in magnitude, local in geographic extent, and permanent/irreversible in nature.

Agnico Eagle estimated that sensory disturbance would impact approximately 500 (15%) and 5,500 (1%) of upland birds in the LSA and RSA, respectively, which considered the average of 1.2 to 1.4 birds per hectare, and a 200 metre (m) Zone of Influence on either side of the proposed Whale Tail Pit and haul road. Agnico Eagle's proposed mitigation includes managing traffic volumes, enforcing speed limits for vehicles and minimum cruising altitudes for project aircraft, providing wildlife awareness training to all employees, use of site notifications, and giving wildlife the right-of-way on roads, and establishing blasting distance and timing windows (see the Noise Monitoring and Abatement Plan, the Whale Tail Pit Haul Road Management Plan, the Air Quality Monitoring Plan, and the Terrestrial Ecosystem Management Plan, Volume 8, Appendices 8-C.1, Appendix 8-E.1, and Appendix 8-E.7, respectively). Agnico Eagle concluded that the impacts of sensory disturbance would be moderate in magnitude, regional in geographic extent, and reversible in nature.

Using baseline data and surveys from Meadowbank which indicated a density of 0.06 nests per hectare for water birds and 0.05 nests per hectare for upland birds, Agnico Eagle estimated that 10 water bird nests and 88 upland bird nests could be impacted by the flooding expected from planned water diversions during project construction in 2019-2020. Agnico Eagle noted it would discuss potential mitigation activities with Environment and Climate Change Canada such as deterrents or nest removal prior to flooding, and would also use natural drainage patterns to minimize the use of ditches or diversion berms where possible. Agnico Eagle's TEMP also proposes the discouragement of nesting by raptors on pit walls and Project facilities in consultation with the Government of Nunavut (GN), and the development of nest-specific management plans in consultation with and in accordance with the GN and its guidelines to ensure any nests in the vicinity are protected. Agnico Eagle concluded that the impacts of nest destruction and mortality to individual birds due to flooding would be low in magnitude, sensory disturbance to be moderate in magnitude, local in geographic extent (a maximum 176 ha of terrestrial habitat would be lost due to flooding during the nesting period), limited to the short-term, and reversible in nature.

Agnico Eagle concluded that overall impacts on self-sustaining and ecologically effective bird populations from the Project would not be significant. Agnico Eagle committed to monitor and adaptively manage its activities, mitigation measures, and monitoring programs to ensure that adverse effects would be reduced, eliminated, or controlled.

5.11.2 Views and Concerns of Interested Parties

Environment and Climate Change Canada (ECCC) noted in its final written submission, as first expressed in its earlier submission of Technical Comments, uncertainty regarding Agnico Eagle's assessment of the effects of flooding on migratory bird habitat and nests. ECCC identified that limited baseline data was available for the assessment and insufficient mitigation measures were proposed. In its final written submission, ECCC referenced meetings held with Agnico Eagle following the Technical Meeting and PHC. ECCC noted that during these meetings, held on June 2 and June 9, 2017, the two parties discussed a draft of the Proponent's new Migratory Bird Protection Plan and agreed to meet again in early 2018 to evaluate mitigation options. In its final written submission, ECCC noted that uncertainty in Agnico Eagle's impact predictions would remain until additional data is collected, and recommended that the Proponent conduct additional field studies to better characterize the migratory bird and vegetation communities within the predicted flooded area. ECCC also noted it remained concerned about the effectiveness of the use of bird deterrents, and recommended that Agnico Eagle conduct field tests during the 2018 season and/or conduct a thorough literature review prior to actual flooding in order to inform mitigation measures. ECCC also recommended that Agnico Eagle monitor the effectiveness of mitigation measures during flooding, and continue to work with ECCC and other parties on the development and implementation of its Migratory Birds Protection Plan.³⁷⁰ In its response to the final written submissions, Agnico Eagle confirmed its commitment to these recommendations.

During the Final Hearing, ECCC revealed that ten (10) days prior to the hearing, the department had received the Proponent's 2017 terrestrial baseline report that contained results of baseline studies conducted earlier in the year. ECCC added that in a subsequent meeting between ECCC and Agnico Eagle, it was agreed that this new baseline report and results would be discussed in the coming months. ECCC presented a recommended term and condition calling for the Proponent to continue to develop and implement the migratory birds protection plan, with the plan to include the baseline characterization of the flooded area, results of field tests and/or literature review of the effectiveness of the preferred deterrence method, and details regarding monitoring of the effectiveness of mitigation measures during flooding. ECCC concluded that, should the project be approved to proceed with this term and condition, the department considers the issue resolved.³⁷¹

ECCC also expressed concerns within its technical comments during the technical review period regarding the possible use of the Tailings Storage Facility (TSF) by migratory birds and specifically regarding gaps in Agnico Eagle's Terrestrial Ecosystem Management Plan (TEMP) and associated Wildlife Screening Level Risk Assessment Plan (WSLRAP). ECCC recommended that shorebirds be added as a focal bird group in daily monitoring at water management areas, that Semipalmated sandpiper be added as a wildlife receptor of concern to the WSLRAP, and that the WSLRAP be revised to consider risk to wildlife from fugitive dust as well as water or sediment at the TSF. Although Agnico Eagle agreed to these recommendations during the Technical Meeting and PHC (Commitments #14, #15, and #16), in its final written

³⁷⁰ Environment and Climate Change Canada Final Written Submissions, August 14, 2017.

³⁷¹ M. Pinto, Environment and Climate Change Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 pp. 459-462, lines 2-26, 1-26, 1-26, 1-2

submission, ECCC noted that these recommendations had not been adopted into the revised TEMP and WSLRAP.³⁷² In its response to the final written submissions, Agnico Eagle stated that it remains committed to these recommendations and would update the TEMP and WSLRAP to reflect these commitments following issuance of a Project Certificate.³⁷³ During the Final Hearing, ECCC concluded that it considers the issue resolved.³⁷⁴

In its final written submission, ECCC remarked that while reviewing the 2016 Meadowbank Annual Report, the department noted a merganser mortality had occurred during the fish-out of Phaser Lake in September 2016. ECCC noted that although it has management responsibilities for migratory birds pursuant to the *Migratory Birds Convention Act*, it had not been informed of the incident. ECCC also noted that the Fish-Out Diving Waterbird Protection Plan includes ECCC as a contact in the event of such incidents, but the updated TEMP does not. ECCC recommended that Agnico Eagle ensure migratory bird interactions and mortality incidents are reported to ECCC and included in the relevant annual report(s) for review by parties, and that this should be clearly captured in the TEMP.³⁷⁵ In its response to the final written submissions, Agnico Eagle confirmed its commitment to these recommendations and noted that the TEMP would be updated following issuance of a Project Certificate.³⁷⁶ During the Final Hearing, ECCC concluded that it considered the issue resolved.³⁷⁷

In its final written submission, ECCC also acknowledged Agnico Eagle's Fish-Out Diving Waterbird Protection Plan submitted in response to ECCC's concerns brought up during the Technical Commenting period that migratory birds may be adversely impacted during the planned fish-out (see [Section 5.8](#) of this report).³⁶⁹ ECCC noted that it had discussed drafts of this Plan prior to its submission and ECCC has no further concerns.³⁷⁸

In its final written submission, the Government of Nunavut (GN) noted concern with Agnico Eagle's proposed mitigation for raptors as outlined in the TEMP. Specifically, the GN commented that Agnico Eagle's proposal to develop and implement a site-specific response plan for each active nest in proximity to project activities is problematic because of the lack of transparency and clarity of what mitigation would be applied. The GN recommended that Agnico Eagle apply an automatic, minimum no-disturbance buffer to every active raptor nest in proximity to the Project. In the absence of Nunavut-specific guidelines, the GN recommended the use of buffers such as those suggested in the BC Guidelines for Raptor Conservation, which range from 200 to 500 m at a minimum.³⁷⁹ In its response to final written submissions, Agnico Eagle agreed to the GN's recommendation.³⁸⁰

³⁷² Environment and Climate Change Canada Final Written Submissions, August 14, 2017.

³⁷³ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

³⁷⁴ M. Pinto, Environment and Climate Change Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 p. 462, lines 3-24.

³⁷⁵ Environment and Climate Change Canada Final Written Submissions, August 14, 2017.

³⁷⁶ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

³⁷⁷ M. Pinto, Environment and Climate Change Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017 pp. 462-263, lines 25-26, 1-18.

³⁷⁸ Environment and Climate Change Canada Final Written Submissions, August 14, 2017.

³⁷⁹ Government of Nunavut Final Written Submissions, August 14, 2017.

³⁸⁰ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

During the Final Hearing, a Community Representative from Coral Harbour expressed concerns about the ongoing marine shipping by Agnico Eagle potentially affecting the murres located on Coats Island and expressed the need to ensure that wildlife including birds be “*conserved and ensure they are not chased away*.”³⁸¹ Refer to [Section 5.12.2](#) for a response by Agnico Eagle to this and other marine shipping concerns.

5.11.3 Views of the Board

The Board acknowledges the Proponent’s proposed mitigation and monitoring measures for birds and bird habitat within its Terrestrial Ecosystem Management Plan (TEMP), associated Wildlife Screening Level Risk Assessment Plan (WSLRAP) and supplemental protection plans for migratory and diving waterbirds. The Board is supportive of the recommendations put forward by parties to advance the proposed mitigation and monitoring, and acknowledges that the Proponent has made the following additional commitments which will be important to incorporate into the associated respective plans:

- To work with Environment and Climate Change Canada (ECCC) to update the migratory birds protection plan
- To add the Semipalmated sandpiper as a wildlife receptor of concern within the WSLRAP and to have this plan include risk assessments for potential ingestion of water and/or sediment at the Tailings Storage Facility
- To record and report any incidents of bird mortalities associated with project activities to the Government of Nunavut (GN), ECCC, and other interested parties; and
- To follow established guidelines for raptor nest protection buffers.

During the Final Hearing, a Board member noted Agnico Eagle’s collaboration with the Arctic Raptor Group at the University of Alberta, and asked whether or not Agnico Eagle also consulted or involved the GN - Department of Environment in the raptor work.³⁸² Agnico Eagle responded that it works with researchers and also the Government of Nunavut to ensure the protection of raptors and raptor nests within the Project area.³⁸³

The Board believes that a precautionary approach that incorporates local knowledge and scientific guidance should be applied to mitigation, monitoring, and management plans associated with migratory birds. Inuit, Nunavummiut and residents of Canada outside of Nunavut place a great deal of importance on the continued health of many species that breed annually in arctic ecosystems and that are harvested for human consumption. As such, the Board stresses the importance of demonstrating that industrial activities associated with the Project would not adversely affect wildlife that might come in contact with them, and would not lead to the contamination of a food source for local communities.

³⁸¹ P. Pudlat, Coral Harbour, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 650, lines 18-25.

³⁸² P. Kadlun, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 269-270, lines 21-26, 1-6

³⁸³ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 271, lines 1-8

5.11.4 Conclusions and Recommendations of the Board

In considering the views of the Proponent and those of parties throughout the assessment of the Project and as outlined above, the Board believes that the Project's potential effects to birds and bird habitat could be appropriately managed through the commitments provided by the Proponent and the application of key mitigation and monitoring measures. Specifically, the Board recommends terms and conditions requiring the following (a brief summary of the Board's recommended terms and conditions is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

- Maintain a migratory birds protection plan in consultation with Environment and Climate Change Canada and other interested parties. The plan shall include information obtained from baseline characterization of migratory bird and vegetation communities within the predicted flood area; results of field tests and/or the thorough literature review of the effectiveness of preferred deterrence prior to actual flooding; and details regarding monitoring the effectiveness of mitigation measures during flooding
- Ensure that the mitigation and monitoring strategies developed for Species at Risk are updated as necessary to maintain consistency with any applicable status reports, recovery strategies, action plans, and management plans that may become available through the duration of the Project; and
- Contact the Government of Nunavut – Department of Environment prior to any removal or deterrence of raptors.

5.12. MARINE ENVIRONMENT INCLUDING MARINE WILDLIFE AND HABITAT

5.12.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) presented baseline conditions of the marine environment and a summary of its assessment of the effects of the Whale Tail Pit Project (the Project) on marine water quality, and marine wildlife and wildlife habitat in Volume 3, Appendix 3-A of the Environmental Impact Statement (EIS). Inuit Qaujimajatuqangit that informed the assessment was presented in Volume 7, Appendix 7-A of the EIS. Proposed environmental management plans to inform monitoring and mitigation measures for potential project effects to the marine environment, including marine wildlife, were presented in Volume 8 of the EIS. Based on a pathway analysis approach to the effects assessments, and Inuit Qaujimajatuqangit collected, the Proponent did not identify the marine environment as a valued component for the Project. The Proponent indicated that the proposed marine shipping arrangements for the Project would be similar to that already in place for the Meadowbank Gold Mine, and predicted that the Project would not result in significant impacts to the marine environment, including marine wildlife and wildlife habitat.

The Proponent established the spatial boundaries for the assessment of project effects on the marine environment to encompass the Project's marine shipping corridor in the channel of Chesterfield Inlet, Hudson Bay, and Hudson Strait, and established the temporal study boundaries to include the construction, operations, closure, and post-closure phases of the Project.

Agnico Eagle presented the following Inuit Qaujimajatuqangit as relevant to the marine environment in the project study area:

- Coastal communities in the Kivalliq Region, including Whale Cove, Rankin Inlet, Chesterfield Inlet, Naujaat, and Coral Harbour, undertake traditional activities, such as fishing and hunting marine mammals, in marine areas that overlap the marine shipping corridor proposed for the Project.
- Marine wildlife abundance and distribution, breeding areas, and critical habitat features such as walrus haul-out locations.
- Marine wildlife harvesting patterns.

Agnico Eagle presented baseline conditions of physical components of the marine environment in the project study area, including a summary of seasonal ice cover, temperature and salinity profiles, and influences of tidal exchange, wind, and freshwater input. The Proponent also provided a summary of timing of ice freeze-up and ice break-up, seasonal frequency of occurrence of ice, and ice thickness in the Hudson Bay and Hudson Strait.

The Proponent provided a description of baseline conditions of biological components of the marine environment in the study area, including the types, abundance and distribution of marine fish and mammals, marine birds, marine species of concern, and areas of high biological productivity. At least 60 species of fish and 88 species of fish are known to occur in the Hudson Bay and Hudson Strait, respectively. Several of these marine fish, including Arctic char, Greenland cod, and capelin, are targeted by human populations for commercial and subsistence harvesting, including by the coastal communities in the Kivalliq region. In addition, Agnico Eagle noted that at least 11 species of marine mammals may occur in the project study area, including a number of year-round species that support subsistence harvests such as Atlantic walrus, bearded seal, ringed seal, and harbour seal. Various species of marine birds were identified as having ranges that overlap the project study area, including species, such as black guillemot, that are hunted by coastal communities in the Kivalliq region for subsistence purposes.

Agnico Eagle noted that its assessment of project effects on the marine environment was limited to marine activities associated with vessel transportation and ship lightering activities within Hudson Bay, Hudson Strait, and the channel of Chesterfield. The Proponent predicted the following potential effects on the marine environment from the Project:

- Changes to marine water quality from accidental fuel spills.
- Mortality or reduced health of marine fish, mammals and birds, and degradation of marine wildlife habitat due to accidental fuel spills.
- Marine mammal and bird mortality or injury from vessel strikes.
- Changes in behaviour of marine mammals due to underwater noise from marine shipping activities.
- Changes in behaviour of marine birds due to in-air noise and lighting from vessels.

Agnico Eagle indicated that the Project would continue with shipping arrangements already in place for the existing Meadowbank Gold Mine, including limiting shipping activities to the open water season between July and October. The Proponent also predicted that the Project would not result in a net increase in shipping volume or frequency within the Hudson Bay and Hudson Strait from the current baseline conditions.

The Proponent identified a number of measures to mitigate potential effects to the marine environment in the project study area, including the following:

- Implementing management practices and procedures for project-related shipping and lightering activities with a focus on marine navigational safety, and the prevention of accidents, collisions, spills.
- Implementing spill response measures for any spill incidents.
- Managing ballast water onboard vessels.
- Managing waste generated on ships.
- Provision of full-time marine mammal and seabird monitoring onboard project vessels to allow for safe approach distances for marine mammals and marine birds.
- Selection of a shipping route that avoids key marine habitat areas for migratory birds, including migratory bird sanctuaries, to the extent possible.

Agnico Eagle also presented a number of mitigation and monitoring plans to manage potential effects to the marine environment in the project study area, including the following:

- Shipping Management Plan
- Ballast Water Management Plan
- Spill Contingency Plan
- Shipboard Oil Pollution Emergency Plan

Agnico Eagle noted that it applied a conservative approach to the analysis of potential project effects on the marine environment to address a number of uncertainties in the effects assessment, including the adequacy of baseline data of current conditions; prediction of future environmental changes unrelated to the Project, including climate change; understanding of project-related impacts on complex marine ecosystems; knowledge of the effectiveness of environmental design features; and mitigation for reducing or eliminating impacts.

The Proponent concluded that the effects from the Project on the marine environment, including marine wildlife, after implementation of the proposed mitigation measures, are not likely to be significant.

During the Final Hearing, Agnico Eagle discussed its commitment to have full-time marine mammal observers onboard project-related vessels and to continue to consult with potentially impacted communities on measures to improve shipping practices and activities associated with Agnico Eagle's mining operations in the Kivalliq region.³⁸⁴

³⁸⁴ Agnico Eagle Mines Ltd., *Marine Environment Presentation*, Exhibit 12, NIRB Final Hearing File No. 16MN056, September 20, 2017.

5.12.2 Views and Concerns of Interested Parties

Within its final written submission, the Baker Lake Hunters and Trappers Organization (HTO) indicated that ongoing marine shipping operations associated with Agnico Eagle's existing Meadowbank Gold Mine have resulted in disturbance to traditional marine mammal hunting practices in the Kivalliq region. Specifically, the Baker Lake HTO noted that Agnico Eagle's marine shipping activities through Chesterfield Inlet have adversely impacted the marine mammal hunting success of the communities of Baker Lake and Chesterfield Inlet. To address this issue, the Baker Lake HTO recommended that the Proponent and the Kivalliq Inuit Association collaborate to ensure that the Whale Tail Pit Project results in tangible legacy benefits to the affected communities.³⁸⁵ In response to comments on legacy benefits of the Project by the Baker Lake HTO within its final written submission, Agnico Eagle noted that it had committed to allocating \$3 million to a community initiative fund to be established, as part of the Whale Tail Inuit Impact Benefits Agreement.³⁸⁶

During the Final Hearing, the Board staff requested that Agnico Eagle justify its ranking of the likelihood of a potential for an oil spill during marine operations as low, especially considering existing records of such spill incidents during operations of the Meadowbank Gold Mine and Meliadine Mine projects in the Kivalliq region.³⁸⁷ In response, the Proponent indicated that it still considered the likelihood of a spill incident associated with its marine operations to be low due to the controls and procedures it has in place for mine-related marine activities, and also indicated that recorded spill incidents for Meadowbank and Meliadine mine projects were on land.³⁸⁸ The Proponent further clarified that there was one fuel spill incident in 2017 during transfer of fuel from a boat to on-land facilities; however, this fuel spill incident was related to community resupply in Rankin Inlet and not Agnico Eagle's projects in the region.³⁸⁹

During the Final Hearing, the Baker Lake HTO requested that Agnico Eagle clarify its definition of significant impacts on marine mammals and confirm the significance threshold used in its assessment of potential project impacts on marine mammals.³⁹⁰ In response, the Proponent indicated that its prediction of the significance of project impacts on marine mammals was based on its shipping experience with the Meadowbank Gold Mine Project over the past ten (10) years.³⁹¹ In a subsequent clarification, the Proponent stated that it defined the significance threshold or assessment end-point for marine mammals in the EIS as a condition where marine fisheries are self-sustaining and marine mammal populations are stable. The Proponent further

³⁸⁵ Baker Lake Hunters and Trappers Organization Final Written Submissions, August 14, 2017.

³⁸⁶ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

³⁸⁷ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 334-335, lines 14-25, 12-16 and 21-25.

³⁸⁸ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 335, lines 1-9.

³⁸⁹ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 374-376, lines 25-26, 1-6, 15-26, and 1-12.

³⁹⁰ W. Bernauer, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 325, lines 1-10.

³⁹¹ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 325-326, lines 17-25 and 7-8.

noted that based on its assessment of potential project impacts, it had determined that impacts of the Project on marine mammals would not be significant.³⁹²

In a follow-up question, Baker Lake HTO requested that Agnico Eagle confirm whether the communities of Baker Lake, Chesterfield Inlet, and Coral Harbour had expressed concerns regarding marine mammal impacts from ongoing marine shipping associated with the Meadowbank Gold Mine Project, and also that the Proponent describe measures proposed to address any such community concerns.³⁹³ In response, the Proponent confirmed that there was a perception among Kivalliq communities of impacts to marine mammals from the ongoing marine shipping associated with the Meadowbank Gold Mine Project, and that community members had indicated that there was uncertainty about whether the impacts to marine mammals were as a result of climate change or ongoing marine shipping. Agnico Eagle also indicated that it plans to undertake additional community consultation in Chesterfield Inlet to investigate various opportunities to address community concerns.³⁹⁴

During the Final Hearing, Transport Canada (TC) requested that Agnico Eagle provide additional details on proposed modifications to marine shipping lighting contemplated as a mitigation measure for potential impacts to marine wildlife, and whether such lighting modifications would include lighting required for navigation.³⁹⁵ In response, Agnico Eagle confirmed that proposed changes to ship lighting would be limited to lighting systems on ship decks and would conform to regulations administered by TC in terms of lighting required for navigation.³⁹⁶

During the Final Hearing, a member of the Community of Coral Harbour expressed concerns about ongoing marine shipping by Agnico Eagle. Specifically, the community member indicated that the Proponent's present shipping activities in proximity to Coral Harbour may be driving marine mammals, such as walrus, whales, and bearded and harp seals away from the area, adversely impacting marine mammal hunting success for community members. To address this issue, the community member recommended that the Proponent consider changes to the shipping route near Coral Harbour by traversing the southern coast of Coats Island and not travel between the critical habitat near Walrus and Coats islands. In addition, the community member requested that applicable parties at the Final Hearing address persistent community concerns regarding noise generated by marine shipping in general and its impact on traditional hunting of marine mammals in waters near Coral Harbour.³⁹⁷ In response to concerns about mining-related shipping, Agnico Eagle noted that based on consultation in 2016 with the Community of Coral

³⁹² C. De Le Mare, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 377-378, lines 20-26 and 1-12.

³⁹³ W. Bernauer, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 326, lines 11-17.

³⁹⁴ S. LeClair, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 326-327, lines 18-26 and 4-6.

³⁹⁵ S. Sadoway, Transport Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 332, lines 3-9 and 12-18.

³⁹⁶ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 378, lines 13-23.

³⁹⁷ P. Pudlat, Coral Harbour, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 647-651, lines 15-26, 1-26, 1-26, 1-11.

Harbour and with its shipping contractor, it had committed to using the route to the south of Coats Island as the primary shipping route, subject to periodic changes by ship captains due to weather and other hazardous conditions.³⁹⁸ In response to community concerns about general impacts to marine mammals from shipping near Coral Harbour, TC noted that both the Canadian Coast Guard and Transport Canada Marine Safety Division have measures to direct ships away from paths that could lead to accidents and marine pollution, and that these measures may also be protective of marine mammals. TC acknowledged, however, that the lack of detailed information about bathymetry or water depths in the Canadian Arctic remains a challenge and that TC expects ship captains to make navigational decisions with a focus on ensuring the safety of all crew on board the vessels.³⁹⁹ TC also stressed that under the *Fisheries Act* it is prohibited for any person to disturb marine mammals unless authorized to do so or unless one holds Inuit rights to harvest marine mammals.⁴⁰⁰

On a related topic, a Community Representative from Chesterfield Inlet requested that Agnico Eagle clarify whether marine ships would continue to use present shipping routes and whether the Whale Tail Pit Project would result in an increase in the frequency of marine shipping in the region.⁴⁰¹ In response, the Proponent noted that the Whale Tail Pit Project would not result in an increase in marine shipping activities from the current shipping levels associated with the Meadowbank Gold Mine Project.⁴⁰²

During the Final Hearing, a member of the public from Baker Lake asked for confirmation regarding who the operators of the shipping vessels would be, where the vessels originate from, whether the products onboard the vessels were inspected and measures put in place to ensure shipping safety in inclement weather.⁴⁰³ In response, Agnico Eagle noted that the vessels were operated and managed by Desgagnes and they originate from the south shore of Québec, travel south of Coats Island, and then through Chesterfield Inlet to Baker Lake. The Proponent also indicated that ship captains would make final decisions with respect to shipping-related activities in inclement weather based on human and vessel safety considerations.⁴⁰⁴

In closing remarks, the Community Representative from Chesterfield Inlet noted that since the mining company started, the community of Chesterfield Inlet has been affected due to the increase in shipping barges going through the channel, noting that it is “...*something we've been concerned for a long time. Our seals, our fish are being affected. For over ten years now, it's*

³⁹⁸ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 651-652, lines 17-26 and 1-13.

³⁹⁹ S. Sadoway, Transport Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 652-653, lines 17-26 and 1-24.

⁴⁰⁰ M. D'Aguiar, Fisheries and Oceans Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 724, lines 14-25.

⁴⁰¹ H. Aggark, Chesterfield Inlet Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 675, lines 7-13.

⁴⁰² J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 675, lines 15-23.

⁴⁰³ B. Kayavinik, Baker Lake Community Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 708-709, lines 23-26, and 1-14.

⁴⁰⁴ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 709-710, lines 15-23 and 5-12.

been like -- like that, and we don't seem to mind anymore. We can't say anymore. We've already said it enough.” Further, the Community Representative noted that there would be affects to the waters but shipping to Baker Lake would not stop, indicating that the community of Chesterfield requested a deep sea port to alleviate some of the potential effects:

*... we have asked from the beginning, since the mining companies started, to have a deep seaport in our communities because it's really deep around our community, and it would be beneficial to have a deep seaport. Then you'd be able to offload your ships, and even if the ice is there, they'd be able to deliver those things in November and December.*⁴⁰⁵

5.12.3 Views of the Board

Throughout the Review of the Project, the NIRB received commentary from interested parties, including coastal communities in the Kivalliq region, on concerns about potential impacts of mining-related shipping activities to marine wildlife and wildlife habitat, and resulting impacts to traditional hunting success in the marine environment. The Board acknowledges Agnico Eagle's commitment to use lessons learned from its existing Meadowbank Gold Mine operations to mitigate, monitor, and adaptively manage impacts to the marine environment for the duration of the Project, and expects that the Proponent will consult and collaborate with regulators, potentially impacted communities, and other stakeholders as project designs are finalized and project activities, including marine shipping, are undertaken. The Board also requires Agnico Eagle to provide evidence of such consultation and collaboration to the NIRB. The Board is particularly concerned about the potential impacts of marine shipping on traditional hunting activities of the coastal communities in the Kivalliq region, and expects Agnico Eagle to ensure that the preferred shipping route south of Coats Island in Hudson Bay is communicated to shipping contractors associated with the Project to reduce the potential for impacts on marine resources of importance to the coastal communities. As changing climatic conditions have the potential to impact the marine environment in unexpected ways, the Board also stresses the importance of diligent mitigation and rigorous monitoring to ensure that all potential effects are forecasted and adaptively managed. Finally, the Board notes that failure to maintain the integrity of the marine environment throughout the Project lifecycle could result in significant residual impacts to marine fish and marine mammals, and to the traditional way of life of Inuit in the Kivalliq region. For more information on discussions related to climate change see [Section 4.2 Climate and Meteorology](#).

5.12.4 Conclusions and Recommendations of the Board

Following a review of the material presented by Agnico Eagle in the EIS and a consideration of views of Parties, the Board believes that the Project's potential effects related to the marine environment, including marine wildlife and habitat, could be appropriately managed through the adherence to commitments provided by the Proponent and the implementation of proposed mitigation measures. Specifically, the Board recommends terms and conditions requiring the following (a brief summary of the Board's recommended terms and conditions is provided below

⁴⁰⁵ H. Aggark, Chesterfield Inlet, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 741-742, lines 5-12 and 5-25.

for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

- Maintain a Shipping Management Plan in coordination and consultation with applicable regulatory authorities and the Kivalliq Inuit Association, and the Hunters and Trappers Organizations of the Kivalliq communities;
- Ensure that marine shipping activities avoid sensitive wildlife habitat and species along the shipping route and use a routing south of Coats Island as the primary shipping route, subject to vessel and human safety considerations;
- Ensure that marine shipping activities avoid seabirds and marine mammals;
- Ensure that the project avoids vessel collision with and/or disturbance of marine mammals and seabird colonies by developing and implementing a ship-based marine mammal monitoring program, as part of a Marine Mammal Management and Monitoring Plan;
- Report any accidental contact by project vessels with marine mammals or seabird colonies to applicable responsible authorities including Fisheries and Oceans Canada and Environment and Climate Change Canada;
- Ensure that potentially impacted communities are informed about marine shipping activities and can provide feedback to inform project related shipping; and
- Contract only Transport Canada certified shippers to carry cargo for the Project, and ensure shippers are aware of the requirements of the Shipping Management Plan, the Shipboard Oil Pollution Emergency Plan, and the Ballast Water Management Plan.

6. SOCIO-ECONOMIC EFFECTS

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) described its approach used for analyzing potential effects, as well as classifying and determining the environmental significance of impacts from the Project on the biophysical and socio-economic environments, in Volume 3 of the Environmental Impact Statement (EIS). The assessment approach was based on ecological, cultural, and socio-economic principles and environmental best practice. Further discussion on Agnico Eagle's approach used to select valued components (VC) can be found in [Section 5](#) of this report. VCs were used by Agnico Eagle to assess effects on the human environment from the extension of the Meadowbank Gold Mine, through development of the Whale Tail Pit and Haul Road. The following cultural VCs were identified by Agnico Eagle:

- Heritage Resources
- Traditional Land and Resource Use
 - Wildlife harvesting
 - Fishing
 - Plant Harvesting
 - Use of Culturally Important Sites
- Economic Development
- Employment and Training
- Individual and Community Wellbeing
- Infrastructure and Services

As part of its effects assessment, Agnico Eagle conducted a pathway analysis to identify linkages between the Project and traditional land and resource use. Agnico Eagle noted that pathways determined to have no linkage, or those that were considered secondary, are not predicted to result in significant effects on Traditional Land and Resource Use, while primary pathways were identified as project effects that would likely result in measurable change to indicators relative to baseline conditions and were carried forward in its assessment.

6.1. ECONOMIC DEVELOPMENT AND BUSINESS OPPORTUNITIES

6.1.1 *Views of the Proponent*

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) discussed its assessment related to Economic Activity and Business Development within Volume 7, Section 7.4 – Socio-Economics of the Environmental Impact Statement (EIS). Results of the Proponent's socio-economic baseline studies were provided within Volume 7, Appendix 7-B. Agnico Eagle's proposed mitigation, benefit enhancement, and monitoring measures related to socio-economics were provided within Volume 8, Appendix 8-E.6 – Socio Economic Management and Monitoring Plan. Agnico Eagle concluded that overall, the Project would have a positive and significant effect on the Gross Domestic Product (GDP) of Nunavut, government revenue, and local business development and contracting.

Agnico Eagle assessed local effects - those within the Kivalliq region, and in particular Baker Lake - and regional effects - those expected to occur at a territorial level. Agnico Eagle also stated that should the Project proceed, the potential effects would be dependent on Project start date in relation to the timing of closure and operations of Agnico Eagle's Meadowbank and Meliadine projects in the region. As such, Agnico Eagle's description and classification of potential effects related to employment, education, and training were focused on the scenario where the Project would proceed according to the proposed start of operations in 2019, and sometimes referencing an alternative scenario where the Project is delayed by a year.

Agnico Eagle discussed the Meadowbank Gold Mine's contract expenditures, noting that the relative proportion of expenditures in Nunavut has remained at approximately 50% since operations. Contract expenditures with businesses registered in Baker Lake totalled \$38 million in 2014, while those with businesses registered in other parts of Nunavut totalled \$67 million. Agnico Eagle noted that contract expenditures at the Meadowbank Gold Mine have fallen since 2012 in absolute dollar terms although expenditures on Inuit-owned businesses have increased in relative terms, representing 37% of total contract expenditures in 2014.

Agnico Eagle identified that in 2015, Nunavut had a GDP of \$2.1 billion, and that between 2010 and 2014 contributions by the mining and construction industries to GDP increased from \$298 million to \$366 million, which accounted for 70% of the territorial GDP growth. Agnico Eagle indicated that since the Meadowbank Gold Mine's operations phase, Nunavut's GDP has been increasing, in the range of \$127 million to \$388 million, and that Meadowbank has been the driver of Nunavut's high rates of GDP growth.

Agnico Eagle discussed the predicted territorial budget for the 2016-2017 operating year, noting that approximately 83% (\$1.5 billion) comes from federal transfer payments, with the remaining generated from tax revenue, third-party contributions, recovery of revenue from previous years, restoration of territorial funding, net cost of goods sold, and other government sources. Agnico Eagle added that Meadowbank Gold Mine employment taxes provide an average of \$30 million per year to the federal government, \$3 million per year to the Government of Nunavut (GN), and that property taxes paid to the GN by Agnico Eagle average \$1.1 million per year. Agnico Eagle indicated that it has provided \$11.8 million to Nunavut Tunngavik Inc. and the Kivalliq Inuit Association (KIA) since 2007.

As part of its assessment of project effects on economic activity and business development, Agnico Eagle identified three (3) primary pathways including: continued territorial economic activity; continued contributions to government revenue; and continued local economic activity. Indicators associated with the above noted pathways included project expenditures, procurement in the territory, contribution to GDP, royalty payments, taxes, local procurement, and contracting of Inuit-owned businesses.

Territorial Economic Activity

Agnico Eagle predicted that the Project's positive GDP effect would be over 10% of the current GDP of Nunavut, and that the effect would persist through operations to 2022 to bridge the gap in territorial GDP that would otherwise occur in 2019 between the closure of the Meadowbank Gold Mine and the commencement of operations of the Meliadine Gold Project. Agnico Eagle

therefore concluded that the effect would be of high magnitude, regional in context, medium-term in duration, and that overall the Project's effect would be positive and significant on the GDP of Nunavut.

Government Revenues

Agnico Eagle predicted that project-related tax generation and royalties paid would amount to approximately 4% of the territory's annual budgeted revenue and that following transfer payment deductions, project-related revenues to government would be approximately equivalent to a quarter of Nunavut's total own-source budgeted revenue. Agnico Eagle predicted that this effect would occur through operations to closure, and would serve to bridge the gap between the closure of the Meadowbank Gold Mine and the commencement of operations at the Meliadine Gold Project. Agnico Eagle concluded that the effect would be of high magnitude, regional in extent, medium-term in duration, and that overall the Project's effect would be positive and significant on government revenue in Nunavut.

Following the Pre-hearing Conference, and prior to the Final Hearing, Agnico Eagle provided a breakdown of the projected project-generated revenues to the Government of Nunavut and projected project-generated fuel tax and payroll tax specific to the Government of Nunavut.⁴⁰⁶

During the Final Hearing, Agnico Eagle clarified that fiscal benefits in the form of royalties highlighted in Table 7.4-3 of the EIS would be paid to the KIA and Nunavut Tunngavik Incorporated, and not the Government of Nunavut.⁴⁰⁷

Local Business Development and Contracting

Agnico Eagle predicted that procurement of goods and services would be substantial during both construction and operations, and that the cumulative impact of construction would be expected to result in approximately \$58 million in spending with Nunavut-registered businesses. Agnico Eagle added that 80% of this spending would be concentrated in businesses registered in Baker Lake. During operations, Agnico Eagle noted that the Project's demand for goods and services would be slightly higher than the current Meadowbank Gold Mine operations, with \$118 million procured from Nunavut-registered companies, \$27 million of which would be through Baker Lake-registered businesses. Agnico Eagle noted that closure would result in a drop-off of procurement of this scale. Agnico Eagle concluded that the Project's effect would be of high magnitude, local to regional in extent, medium term in duration, and that overall the Project's effect would be positive and significant on local business development and contracting.

During the Final Hearing, Agnico Eagle also discussed how the Project's Inuit Impact Benefit Agreement would increase business opportunities through annual information sessions, prequalification processes for registered Inuit businesses, preferential contract opportunities for Inuit businesses, business development workshops for young Inuit firms, and contract tailoring.⁴⁰⁸

⁴⁰⁶ Agnico Eagle Mines Ltd., July 2017. *Fiscal Impacts to Government*. Whale Tail Commitment 38.

⁴⁰⁷ S. LeClair, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 300, lines 5-15.

⁴⁰⁸ S. LeClair, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 300-301, lines 16-26 and 1-15.

Should project development be delayed by a year, Agnico Eagle indicated that the predicted effects would be less pronounced, as the Project would not function as a bridge between the Meadowbank and Meliadine operations. Agnico Eagle added that similar effects from a project delay would occur on territorial economic activity, government revenue, local business development and contracting, and employment.

During the Final Hearing, Agnico Eagle further discussed its commitments to monitor the effectiveness of its mitigation and adaptive management collaboratively with the KIA using various implementation committees. Some areas of monitoring include:

- Annual labour market analysis,
- Inuit impact benefit review,
- Annual language report, and
- Post-operations socioeconomic planning.

Further, if the Project is approved to proceed, Agnico Eagle committed to developing a conceptual post-closure socioeconomic plan one (1) year after the issuance of a Whale Tail Project Certificate, and a final closure plan one (1) year prior to the expected closure.⁴⁰⁹

6.1.2 Views and Concerns of Interested Parties

In its final written submission on the EIS, the Government of Nunavut (GN) commented on the Proponent's response to Commitment 78 from the Nunavut Impact Review Board (NIRB)'s Pre-hearing Conference Decision Report regarding fiscal impacts to the Government. Although the GN indicated that estimates within the memo provided by Agnico Eagle were reasonable, it noted concerns regarding two (2) figures as presented, including the projected total for non-renewable resource revenue and projected total for fuel tax. The GN identified that the projected total for non-renewable resource revenue of \$46.5 million during the operations phase is incorrect, as the GN does not receive any non-renewable resource revenues from resource development, and that the projected total for fuel tax of \$22 million during the operations phase seemed high relative to the proposed scale of operations. The GN recommended that the Proponent address the discrepancies, and that the Proponent commit to sharing non-confidential financial data related to the Whale Tail Pit Project at regular intervals.⁴¹⁰ In its response to final written submissions, Agnico Eagle indicated that its response to the GN met the requirements of its commitment and provides sufficient information to form a conclusion on the impacts of the Project. Agnico Eagle further noted that it would continue to engage with the GN and respond to requests for financial information as appropriate.⁴¹¹ During the Final Hearing the GN indicated that its concerns related to socio-economics had been addressed through ongoing discussions with the Proponent, and that should the Project be approved, it would continue to work with the Proponent to ensure that all terms and conditions and commitments are fulfilled.⁴¹²

⁴⁰⁹ S. LeClair, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 303, lines 13-22.

⁴¹⁰ Government of Nunavut Final Written Submissions, August 14, 2017.

⁴¹¹ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

⁴¹² S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 442-443, lines 23-26 and 1-5.

In their respective final written submission, the GN and Indigenous and Northern Affairs Canada commented on socio-economic monitoring, and their expectations of Agnico Eagle should the Project be approved. For additional discussions related to socio-economic monitoring, see [Section 6.2: Employment, Education and Training](#).

Within its final written submission, the Baker Lake Hunters and Trappers Organization (HTO) discussed outstanding concerns related to the need for legacy benefits for the community of Baker Lake from the Project. The Baker Lake HTO noted concerns that the majority of economic benefits from the Meadowbank Gold Mine, including business and contracting opportunities, employment opportunities, and taxes and royalties, are flowing out of Baker Lake, while the community is left to inherit negative social and environmental impacts such as:

- Strains of families and community relationships from rotational work schedules;
- Disruptions in community services from loss of service staff capacity;
- Road dust;
- Disturbance to caribou hunting from mine operations;
- Disturbance to marine mammal hunting from seasonal shipping activities through Chesterfield Inlet; and
- Disturbance to heritage resources from the construction of the access road to the Amaruq exploration site.

The Baker Lake HTO stressed the importance of collaboratively exploring options to create significant legacy benefits for the community of Baker Lake, including options for housing and infrastructure improvements.⁴¹³ In response, Agnico Eagle indicated that it has committed to providing \$3 million in the Whale Tail Inuit Impact Benefit Agreement (IIBA), which would be placed by the Kivalliq Inuit Association (KIA) into a community initiative fund. Agnico Eagle also indicated that funds were released to the KIA as part of the Meadowbank IIBA Post Closure Wellness Fund, which were earmarked for a Baker Lake Community Project, and recommended that the Baker Lake HTO provide input to the KIA regarding IIBA expenditures if it had not already done so. Agnico Eagle noted that it was looking forward to working with the Hamlet of Baker Lake and the Baker Lake HTO on providing support for environmental sustainability projects that would directly benefit the Hamlet.⁴¹⁴

During the Final Hearing, the Baker Lake HTO requested that Agnico Eagle clarify a figure within its presentation regarding the royalty payments to the KIA and Nunavut Tunngavik Incorporated, specifically what the 400 million dollars represented.⁴¹⁵ In response, Agnico Eagle indicated that royalties paid to the organizations would total \$400 million for the Meliadine and Whale Tail projects when taken together.⁴¹⁶ The Baker Lake HTO reiterated its concern regarding negative impacts to the community from Agnico Eagle projects, and the lack of legacy

⁴¹³ Baker Lake Hunters and Trappers Organization Final Written Submissions, August 14, 2017.

⁴¹⁴ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

⁴¹⁵ R. Aksawnee, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 403, lines 15-23.

⁴¹⁶ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 403 and 404, lines 25-26 and line 1.

benefits for the community. The Baker Lake HTO further noted the increased difficulties in harvesting caribou and fish, and questioned the KIA on whether the royalties would be distributed within the region. In response, the KIA clarified that it does not agree with the \$400 million dollar figure as it is speculative and is based on Agnico Eagle's inputs, and further noted that these monies would not be fully directed to the KIA. The KIA added, however, that it had recently initiated a series of community consultations for the purpose of determining how monies received by the KIA should be spent at the community level. The KIA encouraged community and organization involvement in the community consultations, and further encouraged participation in the socio-economic monitoring committees to address and mitigate community issues and impacts.⁴¹⁷

During the Final Hearing, a Community Representative from Arviat requested further clarification on the payment of royalties to the respective parties. The Community Representative suggested that at one point in time, the previous Meadowbank Gold Mine Project Developer promised the communities that royalties would be paid to individual households in Baker Lake as part of the development of the Meadowbank Project, but that these payments never happened.⁴¹⁸ In response, Agnico Eagle deferred the question to the KIA, while noting that the IIBA that may be in question would have been signed by Cumberland during their ownership of the property, prior to Agnico Eagle's involvement in the Meadowbank Project.⁴¹⁹ The KIA indicated in response that it does not have records of royalties delivered to households, and further discussed how royalty figures can fluctuate based on commodity prices, and how consultation would supplement its allocation of royalty funds to the respective communities.⁴²⁰

During the Final Hearing, a member of the public questioned Agnico Eagle on how much revenue it has generated over its ten (10) years of operations, and where its profits are allocated.⁴²¹ In response, Agnico Eagle noted that as a public business, all financial information is available to the public and offered to provide its latest financial report. Agnico Eagle further discussed its finances in 2013, where it reported a \$600 million loss.⁴²² During closing remarks at the Final Hearing, the KIA noted that it

...will receive monies under the Inuit Impact and Benefit Agreement, and we will encourage -- we encourage community members and organizations to participate in the ongoing community consultations being conducted by the Kivalliq Inuit Association. We welcome input on how the monies should be spent. We will be

⁴¹⁷ K. Gilson, Kivalliq Inuit Association, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 27-28, lines 24-26 and 1-25.

⁴¹⁸ W. Gibbons, Arviat, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 640, lines 8-22.

⁴¹⁹ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 641, lines 19-26.

⁴²⁰ L. Manzo, Kivalliq Inuit Association, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 642-643, lines 6-26 and 1.

⁴²¹ M. Hickes, Rankin Inlet, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 716, lines 15-17.

⁴²² J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 716-717, lines 20-26 and 1-3.

*giving notice in the upcoming months about the date of the next round of community consultations on this topic.*⁴²³

During the Final Hearing, a community member from Baker Lake expressed support for the Whale Tail project, noting:

*...had the mine not been here, the people here would have had nothing, had no jobs. I would like to see that the company be given approval to open the Whale Tail Pit Project... It's even good to see that just by one company alone being here has helped our community a great deal. It's very good to see for those of us that have our own businesses.*⁴²⁴

During closing remarks at the Final Hearing, the GN noted its support for responsible development of mineral resources in a manner that benefits all Nunavummiut, and suggested that the economic benefits of the Whale Tail Project would be substantial.⁴²⁵

6.1.3 Views of the Board

The Board finds that the information provided by Agnico Eagle with respect to economic development and opportunities generally represents a fair assessment of the baseline conditions and represents a comprehensive assessment of potential effects. The Board agrees with Agnico Eagle's conclusions that the Project could result in economic growth, diversity, and performance. The Board further acknowledges that Agnico Eagle has been operating the Meadowbank Gold Mine and has commenced construction at the Meliadine Gold Mine and that the Whale Tail Pit Project proposal has been proposed as a temporary bridge between operations at Meadowbank and Meliadine. However, the strict timeline for the life cycle of the Whale Tail mine and approvals and the decrease in the benefits of the Project should there be a delay is of a concern. Further, with ongoing exploration in and around the Amaruq area the Board believes there are ways to maximize the financial impacts of the Project not only to the residents of Baker Lake but to all residents of the Kivalliq region.

During the Final Hearing the Board requested that Agnico Eagle clarify the percentage of contract bids that it receives from Inuit-owned businesses compared to contractor bids from outside Nunavut.⁴²⁶ In response, Agnico Eagle noted that at the moment approximately 56% of Meadowbank's procurement is generated from Nunavut or Northwest Territories businesses, and that there is no ceiling on that value. Further, Agnico Eagle highlighted that it is striving to have increased local capacity so that sourcing from within the Kivalliq region can improve, and that bidding points are given to local businesses as a competitive advantage over southern-based businesses. Agnico Eagle added the procurement process under the Project's Inuit Impact

⁴²³ R. Ningeocheak, Kivalliq Inuit Association, , NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 757-758, lines 3-26 and 1-5.

⁴²⁴ P. Tapatai, Baker Lake Community Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 654, lines 18-25.

⁴²⁵ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 761-763, lines 23-26, 1-26, and 1-3.

⁴²⁶ A. Maghagak, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 343-344, lines 21-26 and 1-5.

Benefit Agreement includes an annual information sessions for businesses as well as prequalification process for Inuit-registered businesses which provides extra points during the tendering process for Inuit firms.⁴²⁷

During the Final Hearing the Board commented on the importance of effective contract advertising to the public, noting the importance of creating opportunities for smaller businesses and youth. The Board further stressed the importance of effective advertising to ensure that the public is informed of all potential business opportunities.⁴²⁸

The Board also encourages the continuation of the working relationships with Regulatory Authorities (e.g., Government of Nunavut and the Kivalliq Inuit Association) that have been established through the Meadowbank and Meliadine socio-economic programs. Further, it is encouraged that the Kivalliq Inuit Association, the Hamlet of Baker Lake and all people in the Region work together to look into ways of accessing the community initiative fund to establish long-term economic benefits.

6.1.4 Conclusions and Recommendations of the Board

In considering the views of the Proponent and those of parties throughout the assessment of the Project as outlined above, the Board believes that the Project's potential effects to economic development and opportunity could be appropriately managed through the commitments provided by the Proponent and the application of key mitigation measures such as updating the proposed amendment to the Meadowbank Socio-Economic Management Plan and completing an analysis of the risk of temporary mine closure, and implications to local communities.

The Board recognizes the value of the work proposed to be undertaken by Agnico Eagle and other parties through the formation of a project-specific working group and a smooth transition as monitoring moves from the Meadowbank Mine to Whale Tail Pit and ultimately to the Meliadine Mine. As previously expressed in other decisions, the Board believes that this type of working group will be useful for the monitoring and mitigation of several socio-economic factors, not only those related to economic development. Reflecting these recommendations, the Board has included terms and conditions encouraging the Proponent to undertake the following (a brief summary of these recommendations is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions):

- Continued participation and coordination with the Kivalliq Socio-Economic Monitoring Committee along with other agencies and the communities of the Kivalliq region to identify mutual interests and socio-economic priorities for the Project and the Kivalliq region;
- Establishing a Whale Tail Socio-Economic Monitoring Committee for the Project to develop and oversee the Whale Tail Socio-Economic Monitoring Program, in collaboration with other socio-economic stakeholders (e.g., the Kivalliq Inuit

⁴²⁷ S. LeClair, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 344-345, lines 8-26 and 1-8.

⁴²⁸ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 348-349, lines 14-26 and 1-7.

Association, the Government of Nunavut, Indigenous and Northern Affairs Canada, and communities of the Kivalliq region); and

- Developing, in collaboration with relevant stakeholders, a Project-specific Whale Tail Socio-Economic Monitoring Program to monitor, adaptively manage and mitigate project-induced socio-economic effects.

To specifically address the Board's concerns about the potential for adverse effects on the region if the mine does not begin operations as predicted, the Board has also included terms and conditions as follows (a brief summary of these recommendations is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions):

- Identify risks and potential effects of temporary mine closures on the Kivalliq region.
- Update its Socio-Economic Management Plan to include defined measures to address the risks and mitigate the potential effects of temporary closure.

6.2. EMPLOYMENT, EDUCATION AND TRAINING

6.2.1 Views of the Proponent

Agnico Eagle Mines Ltd.'s (Agnico Eagle or the Proponent) assessment of employment, education, and training was provided in Section 7.4.3.2 of the Environmental Impact Statement (EIS). Supporting baseline information was provided in Volume 7, Appendix 7-B. Meadowbank Gold Mine Socio-Economic Monitoring Report to Agnico Eagle's proposed mitigation, benefit enhancement, and monitoring measures related to socio-economics were provided within Volume 8, Appendix 8-E.6 – Socio Economic Management and Monitoring Plan. Agnico Eagle concluded that overall, the Project would have significant, beneficial impacts in that it would promote educational attainment and increase labour force capacity in the Kivalliq region, provide additional high-paying employment opportunities for Nunavummiut, and also extend high-paying jobs for the existing Meadowbank Gold Mine workforce.

As part of its assessment, Agnico Eagle considered local effects – those within the Kivalliq region, and in particular Baker Lake – and regional effects – those expected to occur at a territorial level. The effects assessment considered construction, operations, and closure of the proposed Whale Tail Pit and Haul Road but noted that closure represents an end to most economic and employment effects. Agnico Eagle also stated that should the Project proceed, the potential effects would be dependent on the project start date in relation to the timing of closure and operations of Agnico Eagle's Meadowbank and Meliadine projects in the region. As such, Agnico Eagle's description and classification of potential effects related to employment, education, and training were focused on the scenario where the Project would proceed according to the proposed start of operations in 2019, and sometimes referencing an alternative scenario where the Project is delayed by a year.

Agnico Eagle's baseline description of employment, education, and training was informed by data from Statistics Canada, the Nunavut Bureau of Statistics, the Government of Nunavut, the Kivalliq Socio-Economic Monitoring Committee, reports such as the 2014 Meadowbank Gold Mine Socio-economic Monitoring Report, and from Agnico Eagle's community consultations.

In describing the existing employment conditions, Agnico Eagle highlighted that construction of the Meadowbank Gold Mine was associated with the majority of employment growth in the Kivalliq region between 2006 and 2011, but noted that labour force expansion during the same period resulted in an overall increase in regional unemployment rates. Agnico Eagle also remarked that Nunavummiut have consistently represented approximately one-third of the total operational workforce at the Meadowbank Gold Mine, and Inuit represent 95% of temporary workers at Meadowbank. Agnico Eagle also reported that over half of Nunavummiut employed at Meadowbank are residents of Baker Lake, and due to relatively high salaries at Meadowbank, Baker Lake's median annual income surpassed the regional average in 2013.

Agnico Eagle's description of the existing education and training environment in the Kivalliq region noted that the majority of the regional population 15 years and over have no certificate, diploma, or degree but that educational attainment is improving; in Baker Lake, more residents are graduating from high school, but fewer are acquiring diplomas or degrees. Agnico Eagle noted that various educational programs are available in Baker Lake and the Kivalliq region and highlighted that it has made contributions of approximately \$284,000 per year to school-based initiatives, and nearly \$4 million per year for externally-delivered training programs in the past three (3) years – particularly to the Kivalliq Mine Training Society. Agnico Eagle also noted that in-house training and apprenticeships programs have been made available at Meadowbank as requested / as needed.

Agnico Eagle identified the following primary pathways of potential project-related impacts related to employment and education:

- Continued direct, indirect, and induced employment;
- Continued direct, indirect, and induced incomes; and
- Provision of workforce training and support for community education.

Agnico Eagle defined direct effects as those generated by the Project itself during construction and operations, indirect effects as secondary business transactions prompted by the demand for goods and services from suppliers, and induced effects as direct and indirect incomes associated with the Project are spent in the economy.

Employment

Agnico Eagle predicted that Project construction would generate 500 direct and 83 indirect and induced employment opportunities at its peak. Specifically, Agnico Eagle predicted that three-quarters (75%) of the direct and 80% of the indirect construction workforce would be filled by specialized professionals and specialized goods and services from southern Canada, with remaining positions, goods and services sourced locally, likely by the existing Meadowbank Gold Mine workforce and suppliers as that project enters closure.

Agnico Eagle predicted that during each of the three (3) years of Project operations, 931 direct jobs would be available and 392 (42%) of these would be filled by Nunavummiut - approximately 292 filled by current employees at Meadowbank, and 100 that would be new employees. Agnico Eagle also predicted that, depending on the year, 212 to 421 indirect jobs

would be produced, 20% of which would be filled by Nunavummiut, and 67 to 135 induced jobs would be produced, with approximately 100% filled by Nunavummiut.

At the Final Hearing, Agnico Eagle emphasized that overall it is targeting a minimum 50% Inuit employment overall as was specified in the Inuit Impact Benefit Agreement signed in June 2017 with the Kivalliq Inuit Association.⁴²⁹

Agnico Eagle noted in the EIS that in the event of a delay in Project development, employees at Meadowbank would experience a period where they are not employed by Agnico Eagle and may relocate elsewhere in search of employment or rely on Employment Insurance. However, if the Project proceeds as per the proposed timeline (construction starting in 2018 and operations in 2019), Agnico Eagle concluded that the effect on employment would be of high magnitude, local to regional in extent, and medium-term duration. Overall, Agnico Eagle assessed the effect as significant.

With respect to incomes, Agnico Eagle noted that incomes paid by the Project (normally ranging from \$50,000 to \$100,000 annually) would be high relative to local and territorial incomes. Agnico Eagle predicted \$39 million in direct, indirect, and induced incomes combined during the peak year of construction (\$9.2 million of which would be income in Nunavut). During the first year of operations, Agnico Eagle predicted that the combined direct, indirect, and induced incomes would be \$86.5 million, and would peak the following year at \$181.4 million (\$56.5 million of which would be income in Nunavut). Agnico Eagle concluded that the effect on incomes would be of high magnitude, local to regional in extent, and medium-term duration. Overall, Agnico Eagle assessed the effect as positive and significant.

Education and Training

In the EIS, Agnico Eagle noted that it would continue the in-house workforce training and apprenticeship programs in place at the Meadowbank Gold Mine, which have remained at about 30 hours per year for each non-Inuit employee and at about 50 hours per year for each Inuit employee. Agnico Eagle also stated that it would also continue to support educational attainment in communities, noting it has made contributions of approximately \$284,000 per year to a variety of school-based initiatives and has provided a total of \$6.8 million in cash and in-kind support to the Kivalliq Mine Training Society. As detailed in its Socio Economic Management and Monitoring Plan and highlighted during the Final Hearing (see Exhibit 13),⁴³⁰ some of the specific programs supported by or provided by Agnico Eagle include financial literacy training, a Work Readiness and a Site Readiness program, cross-cultural training, apprenticeship and pre-apprenticeship programs, a role model program, and a leadership development program.

Agnico Eagle emphasized in the EIS that through the Project, Nunavummiut would be able to continue to achieve further training and education to help them attain more skilled positions as they arise, and noted that much of the training and education would be transferrable, allowing

⁴²⁹ S. LeClair, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 299-300, lines 17-26, 1-4.

⁴³⁰ Agnico Eagle Mines Ltd., *Human Environment and Socio-Economics*, Exhibit 13, NIRB Final Hearing File No. 16MN056, September 19, 2017.

individuals access to other employment opportunities following project operations. Agnico Eagle concluded in the EIS that the effect on education and training would be of moderate magnitude, local to regional in extent, and long-term duration. Overall, Agnico Eagle assessed the effect as positive and significant.

Following the Pre-hearing Conference, and prior to the Final Hearing, Agnico Eagle provided additional information regarding the labour force analyses, employment demand forecast, and, employment forecast and future labour supply information as committed to during the Technical Meeting for the file.⁴³¹

6.2.2 Views and Concerns of Interested Parties

In its final written submission, the Government of Nunavut (GN) expressed concern that while Agnico Eagle has committed to source employment locally and has predicted that 42% of employees during operations would be from Nunavut, the majority of these jobs would be entry-level and semi-skilled positions. The GN recommended that Agnico Eagle provide a detailed staff schedule for each of the project phases showing the number of forecasted positions, categorized by department and division, and listed with the associated National Occupational Classification codes along with information on transferable skills required for, or gained from each position.⁴³² In response, Agnico Eagle expressed its belief that the conditions of both Meadowbank and Whale Tail Inuit Impact Benefit Agreement (IIBA), as well as the Socio-Economic Monitoring Plan (SEMP), are established mechanisms for managing and monitoring the labour force, noting associated working groups and reporting requirements.⁴³³ However, Exhibit 17 submitted during the Final Hearing contains a mutually agreed on, jointly submitted term and condition that demonstrates Agnico Eagle's commitment to, or at least consideration for the GN's original recommendation.⁴³⁴

Within its final written submissions, the GN also commented on the importance of socio-economic monitoring associated with the Project. The GN commented on the proposed SEMP, as well as the Proponent's willingness to continue its work and consultation with communities throughout the development and operations of the Project and its involvement in the Kivalliq Socio-Economic Monitoring Committee (SEMC). To ensure effective monitoring of the socio-economic impacts of the Project, the GN recommended that the Proponent create a working group dedicated to monitoring project-specific socio-economic indicators to assess the Project's impacts and benefits. The GN added that this group would oversee the Project's SEMP, and would include members from the territorial government, federal government, and the Kivalliq Inuit Association (KIA) to ensure collaboration.⁴³⁵ In its response to the GN's final written submission, Agnico Eagle indicated it agreed with the spirit of the recommendation, but instead proposed a multi-project working group – that is, one that would develop and oversee a socio-economic monitoring program for all of Agnico Eagle's projects within the Kivalliq region.⁴³⁶

⁴³¹ Agnico Eagle Mines Ltd. July 2017. *Labour Force Analysis Forecast*. Whale Tail Commitment 26.

⁴³² Government of Nunavut Final Written Submissions, August 14, 2017.

⁴³³ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

⁴³⁴ Agnico Eagle Mines Ltd. and Government of Nunavut Joint Submission, Exhibit 17, NIRB Final Hearing File No. 16MN056, September 19, 2017.

⁴³⁵ Government of Nunavut Final Written Submissions, August 14, 2017.

⁴³⁶ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

During the Final Hearing, the GN noted that through ongoing discussions with the Proponent, it had resolved all of its concerns relating to socio-economics and had developed agreed-upon wording for various socio-economic terms and conditions and commitments.⁴³⁷

In its final written submission, Indigenous and Northern Affairs Canada (INAC) recognized the Proponent's commitments related to socio-economic monitoring and involvement in the SEMC, however, INAC stressed the importance of monitoring socio-economic factors that were not adequately characterized in relation to the Project, such as identifying and overcoming barriers to Kivalliq workforce maximization. In this regard, INAC recognized the importance of the proposed Labour Market Analysis and Inuit Worker Barrier Study for the Project, noting that if the Project is approved to proceed, project-specific and cumulative effects on employment, labour pool needs and capacity, workforce and family well-being and quality of life issues, must all become a more structured aspect of a joint monitoring committee for Agnico Eagle projects. Based on the concerns discussed, INAC suggested three (3) terms and conditions related to suggested measures for socio-economic monitoring including participation in the SEMC; the development of a project-specific socio-economic working group to develop and oversee a joint Meadowbank-Whale Tail-Meliadine Agnico Eagle Socio-Economic Monitoring Program; and commitments to work with other parties as a function of the joint committee to monitor predicted impacts in the respective environmental impact statements for each of these projects, adaptively managing unanticipated impacts, and addressing concerns identified by the SEMC.⁴³⁸ In its response to final written submissions, Agnico Eagle agreed with the recommendations provided by both the GN and INAC, and proposed slightly modified terms and conditions, consistent with the recommendations, to ensure clarity regarding the region of focus and parties.⁴³⁹ INAC noted during the Final Hearing that in discussions with the Proponent since the start of the hearing, the Proponent had confirmed its commitment to all three (3) of INAC's recommendations and INAC concluded its concerns have been satisfied.⁴⁴⁰

In its final written submission, INAC also expressed outstanding concerns about how workers at the Project would be supported once operations cease, or in the event of temporary closure. INAC indicated that given that the operations phase is predicted to be only three (3) years in length, and that the Meadowbank Gold Mine would also be closing soon, Agnico Eagle should identify detailed actions to manage socio-economic concerns at closure early-on. INAC indicated that the high-level response provided by Agnico Eagle following the Technical Review period (see Commitment #24, July 2017) was insufficient and within its final written submission, included a recommendation that Agnico Eagle provide a revised interim closure plan within one (1) year of issuance of a Project Certificate that:

- Links the socio-economic closure plans for Meadowbank and Whale Tail;
- Identifies regular update and multi-party review requirements;

⁴³⁷ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 442-443, lines 23-26, 1-5

⁴³⁸ Indigenous and Northern Affairs Canada Final Written Submissions, August 14, 2017.

⁴³⁹ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

⁴⁴⁰ R. Theoret-Gosselin, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 532-535, lines 14-26, 1-26, 1-6.

- Shows evidence of consideration of socio-economic lessons learned from other northern mine closure experiences;
- Includes evidence of consultation with Kivalliq communities and governance bodies on socio-economic objectives/goals related to closure planning;
- Emphasizes plans, policies and programs to increase transferable skills of Inuit workers, including into trades and other skilled positions;
- Includes all plans, policies and programs related to socioeconomic factors in a temporary closure situation; and
- Identifies and addresses anticipated adverse socio-economic effects of closure to the Kivalliq region and communities related to loss of employment and income in the event of planned or unplanned, permanent or temporary, closure.

INAC also recommended that prior to the Final Hearing, Agnico Eagle clarify its expectations and workforce transition plans for the Inuit workers at its various operations.⁴⁴¹

In its response to final written submissions, Agnico Eagle indicated that it would provide a Final Closure Plan one (1) year ahead of closure. Agnico Eagle discussed its plan to work with the Kivalliq SEMC and associated Working Group to inform its Final Closure Plan. Agnico Eagle also noted that the IIBA would provide workforce oversight and would inform workforce management, and that the IIBA would be modified as necessary to ensure that it is applicable post-operations.⁴⁴² During the Final Hearing, INAC noted that the Proponent's Final Closure Plan would be regulated by the Nunavut Water Board and, as such, would not be required to have a socio-economic component, and further, the Proponent had not clarified its plans for workforce transition. Revised suggested terms and conditions, agreed upon by INAC and Agnico Eagle were submitted in Exhibit 41 that address INAC's concerns and INAC noted during its technical presentation that the issues have been resolved.^{443,444}

In its final written submission, the Baker Lake Hunters and Trappers Organization (HTO) expressed concern that Agnico Eagle has been unable to achieve a majority-Inuit workforce at the Meadowbank Gold Mine, that Inuit mostly fill low-paying, entry-level positions, and that Agnico Eagle predicts the Whale Tail project would only achieve 42% Inuit employment.⁴⁴⁵ During the Final Hearing, the Baker Lake HTO noted that Inuit employment levels at Meadowbank and predicted levels of Inuit employment at Whale Tail are relatively good compared to other projects that have operated in Nunavut to date, but suggested there is still room for improvement.⁴⁴⁶ The Baker Lake HTO recommended in its final written submission, and also at the Final Hearing, that the NIRB consider whether or not a lack of necessary

⁴⁴¹ Indigenous and Northern Affairs Canada Final Written Submissions, August 14, 2017.

⁴⁴² Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

⁴⁴³ R. Theoret-Gosselin, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 511 and 530-532, lines 6-10, 3-26, 1-26 and 1-13.

⁴⁴⁴ Agnico Eagle Mines Ltd. and Indigenous and Northern Affairs Canada Joint Submission, Exhibit 41 NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017.

⁴⁴⁵ Baker Lake Hunters and Trappers Organization Final Written Submissions, August 14, 2017.

⁴⁴⁶ R. Aksawnee, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 424-427, lines 8-26, 1-26, 1-26, 1-5

government services may be causing barriers to employment for Kivalliq Inuit and further that the NIRB, in its Final Hearing report, consider making recommendations to federal and territorial governments regarding barriers to employment.⁴⁴⁷ Agnico Eagle's response to final written submissions noted that it agrees that the recommendations be made directly to the federal and territorial governments.⁴⁴⁸ During the Final Hearing, NIRB staff asked the Baker Lake HTO if it felt comfortable that its current resources are sufficient to participate at the level being proposed.⁴⁴⁹ The Baker Lake HTO noted in response that the Proponent had agreed to fund additional staff for monitoring, but whether or not those staff will have the full technical expertise required to participate in all the discussions is not completely certain at this time⁴⁵⁰

During the Final Hearing, the Baker Lake HTO concluded it supports for the Project, noting its belief that the Project will have net benefits for the community and region – in particular, the employment opportunities.^{451,452}

During the Final Hearing, NIRB staff asked Agnico Eagle to clarify the proposed Project's timing in relation to operations at the Meliadine Project, and how employees from the Proposed Whale Tail Pit Project - including those that transferred from Meadowbank - might then transition to operations at Meliadine.⁴⁵³ Earlier in the Hearing Agnico Eagle had acknowledged there would be a production gap of a few months between the end of mining operations at Meadowbank in the third quarter of 2018, and the start of operations at Whale Tail in 2019 due to time needed for construction at Whale Tail.⁴⁵⁴ In response to the NIRB's question, Agnico Eagle noted however that this gap would only impact about 10% of the current workforce, mainly positions related to the mill operation, and Agnico Eagle is considering ways to limit impacts such as by using those employees to support construction works at Whale Tail. Agnico Eagle added that employees at Meadowbank will be automatically transferred to Whale Tail. Agnico Eagle further commented that Meliadine construction is underway and that there will be opportunities for about 150 employees at Meadowbank to transfer to Meliadine over the next 18 months, noting that about ten (10) employees at Meadowbank have already been granted transfers. Agnico Eagle also confirmed it will aim to provide opportunities for transfer to

⁴⁴⁷ R. Aksawnee, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 424-427, lines 8-26, 1-26, 1-26, 1-5

⁴⁴⁸ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

⁴⁴⁹ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 430, lines 9-17

⁴⁵⁰ R. Aksawnee, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 430-431, lines 20-26, 1

⁴⁵¹ R. Aksawnee, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 419, lines 2-10.

⁴⁵² R. Aksawnee, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 761, lines 2-4.

⁴⁵³ R. Barry, Nunavut Impact Review board, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 336-337, lines 6-17 and 24-26, 1-5 and 10-19

⁴⁵⁴ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 85, lines 10-17

Meliadine to the estimated 150 new employees that would be hired on at Whale Tail once operations at Whale Tail end.⁴⁵⁵

During the Community Roundtable sessions at the Final Hearing, a representative from Chesterfield Inlet expressed gratitude for the employment and training opportunities at Meadowbank and asked what will happen to the workers at Meadowbank that are doing on-the-job training when Meadowbank closes.⁴⁵⁶ Agnico Eagle responded that all employees at Meadowbank would be transferred to Whale Tail, and if the Project is not approved, then those employees would have priority for opportunities at the Meliadine Mine. Agnico Eagle added that it expects to have the same training programs at Whale Tail as at Meadowbank.⁴⁵⁷

A second Community Representative from Chesterfield Inlet noted the gratitude and satisfaction of local workers at Meadowbank and expressed pride that young people have trained and successfully attained certifications at Meadowbank that would be recognized outside the Meadowbank Mine and anywhere in Canada. The Representative noted however that some people from the community that apply to work at the mine do not get hired, likely due to limited levels of education – that is, less than Grade 12.⁴⁵⁸ Agnico Eagle replied that Grade 12 education is not a minimum requirement for working at the mine.⁴⁵⁹

A Community Representative from Baker Lake remarked he has noticed Agnico Eagle's involvement in the local high school in the past couple of years and if the Project goes ahead he believes this will continue, and that the youth will have employment opportunities when they graduate. This individual added that mining projects in the region provide needed employment to cover food, housing, and other costs.⁴⁶⁰

A Community Representative from Whale Cove expressed appreciation for the Work Readiness program offered by Agnico Eagle, and wondered if principles of Inuit Qaujimajatuqangit are included and are being taught by those who truly understand them.⁴⁶¹ Agnico Eagle confirmed that the Work Readiness program was designed in part with the Nunavut Literacy Council, and so Inuit Qaujimajatuqangit was incorporated. Agnico Eagle added that the instructors are

⁴⁵⁵ K. Mayrand, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 337-340

⁴⁵⁶ P. Aggark, Chesterfield Inlet, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 643-344, lines 19-26, 1-16

⁴⁵⁷ G. Bigue, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 644-645, lines 17-26, 1-8

⁴⁵⁸ E. Kimmaliardjuk, Chesterfield Inlet, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 645-646, lines 11-26, 1-26

⁴⁵⁹ G. Bigue, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 647, lines 10-12

⁴⁶⁰ L. Quinangnaq, Baker Lake, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 676-677, lines 25-26, 1-13 and p. 680, lines 2-23

⁴⁶¹ A. Poksiak Turner, Whale Cove, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 686-687, lines 18-26, 1-3

currently First Nations representatives from Québec and northern Ontario but they have had Inuit teachers in the past as well.⁴⁶²

The Representative from Whale Cove also noted concerns that employees at Meadowbank from Whale Cove and Arviat have been fired because of missing their flight to site due to problems with being able to rely on local taxi services. Agnico Eagle acknowledged that it has had some difficulties getting people to planes, especially in communities like Whale Cove and Coral Harbour where it is a long distance to the airport, and it is trying to find a solution with the Hamlets.⁴⁶³

In response to a community member's questions about training and advancement, Agnico Eagle noted that it funds some paid-work opportunities for students at the mine in the summer, and this is open to all students in the Kivalliq region. Agnico Eagle further noted that a minimum of 75 positions at Whale Tail would be open for local workers, and that its career path program provides opportunities for employees to grow inside their positions.⁴⁶⁴ Another community member later asked about other opportunities for youth to work at the mine and Agnico Eagle noted 18 is the minimum age for employment at Meadowbank.⁴⁶⁵

A Community Representative from Arviat commented that he worked for many years as a labourer and as a blaster alongside southerners and that he began to feel used. He asked Agnico Eagle to ensure workers are treated properly by their supervisor.⁴⁶⁶ Agnico Eagle responded that respect and family are core values and it investigates any serious incidents or accusations that are brought to its attention and that it has provided Inuit Human Resources (HR) agents to whom individuals may bring up issues, and there are also committees established to facilitate Inuit and southern workers being able to sit and discuss issues.⁴⁶⁷

A community member from Baker Lake as a business owner expressed his support for the Whale Tail Pit Project noting that Meadowbank has helped businesses due to the contracts received, and that many community members are employed through different opportunities associated with the mine, including having 160 community members working directly at the mine site.⁴⁶⁸

In closing statements, the majority of Community Representatives from Arviat noted they do not support the Project:

⁴⁶² C. Ramcharan, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 687, lines 4-13

⁴⁶³ K. Yip, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 689, lines 4-9

⁴⁶⁴ G. Bigue, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 689-690, lines 26, 1-22

⁴⁶⁵ C. Ramcharan, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 707, lines 7-12

⁴⁶⁶ L. Issumatarjuak, Arviat, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 692-693, lines 3-26, 1-11

⁴⁶⁷ C. Ramcharan, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 693-694, lines 14-26, 1-8

⁴⁶⁸ P. Tapatai, Baker Lake Community Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 654, lines 5-26.

*From the beginning when Cumberland started up to today, it's – there's problems in our community. Our workers that work at the mine, they are not treated properly... and us, the people that live in the communities, are not informed of what's happening....That's why we don't feel this should be approved.*⁴⁶⁹

Conversely, multiple Community Representatives, including those from Coral Harbour, Naujaat, Chesterfield Inlet, and Baker Lake, expressed support for the Project due to potential for employment, education, and training opportunities:

*I know there is going to be training and education. There's no doubt. When the mining companies are no longer here and – you can't just leave us in the lurch... we have to have education.... It's okay, I approve.*⁴⁷⁰

*I'd like to say thank you for the mining companies....a lot of our community members in Naujaat go to work there, and we see them. They really help their families, and we are in favour.... they help people that probably would never have been able to purchase a Honda or snowmobile, but they are able to now. I'd like to say thank you because one of my family members works at the mine and they buy stuff for their hunting practices.*⁴⁷¹

*...our youth wouldn't have a job today if they didn't open up. They are getting employed, and the training that they're getting that they wouldn't get.... And we do have educated people with Red Seal now in our community, what they would never have had if he had stayed home. I would like to say thank you to the mining company for that.... We want our youth to work and our grandchildren, great-grandchildren that we leave behind. We can't survive on just wildlife anymore...As I said, our youth are given employment...Chesterfield Inlet is in approval.*⁴⁷²

People from Baker Lake are affected. People that work at 159 from Baker Lake. If they weren't working at Meadowbank, what would they be doing today? They'd just be waiting for jobs to arrive. 321 are Inuit from other communities: Rankin, Arviat, Coral, Naujaat, and Whale Cove. Over 20 years, the people of Baker Lake were going through a hard time. Half of them are under 24. There was a lot of youth. 71 percent were unemployed in Baker Lake from Elders down to the youth. If there's 10, only 3 people are working. If there's 100 people, only 30 people would be working. Right now there's 159 that are working...They buy

⁴⁶⁹ W. Gibbons, Arviat, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 737-738, lines 21-26, 1-6

⁴⁷⁰ P. Pudlat, Coral Harbour, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 737, lines 10-16

⁴⁷¹ A. Nanordluk, Naujaat, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 740, lines 5-21

⁴⁷² H. Aggark, Chesterfield Inlet, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 741-744, lines 13-26, 1-4, 23-25, 2-3.

*hunting equipment, Hondas, snowmobiles....We are in support...not everybody's going to be happy, but at least some of us have a job.*⁴⁷³

Further, the Representative from Whale Cove did not feel comfortable making a concluding statement for or against the Project, but expressed gratitude that the Proponent is employing youth from the community:

*I really thank them that they are making our youth have jobs and are employed. I'm very thankful.... We do hear complaints every now and again, but they are employing our youth....*⁴⁷⁴

6.2.3 Views of the Board

During the Final Hearing, the Board asked Agnico Eagle whether the miners and haul truck drivers employed at the Project would be from the Meadowbank Gold Mine.⁴⁷⁵ Agnico Eagle confirmed that haul truck drivers in the open-pit location at the Project would be transferred from Meadowbank, but that new employees would be hired as drivers along the haul road.⁴⁷⁶

The Board also asked Agnico Eagle to confirm that the number of employees at the Project over and above the 440 employees working at Meadowbank would be 210. Further, if there are Inuit that would like to take part in that workforce, would Agnico Eagle be prepared to train them so they can be part of that additional workforce?⁴⁷⁷ In response, Agnico Eagle confirmed there would be 440 employees at Meadowbank, and 150 new positions at Whale Tail, with 210 employees on site at any given time. Agnico Eagle expressed its expectation that at least 75 of those 150 new positions would be filled by Inuit, and that in the mid- to long-term, with training, it is Agnico Eagle's aim that all 150 including the skilled positions be filled by locals.⁴⁷⁸

The Board followed-up by asking Agnico Eagle whether the number of employees [at Meadowbank] from Baker Lake is growing, or if it has remained the same as when the project started ten (10) years ago.⁴⁷⁹ Agnico Eagle affirmed that it has trained many people, and its workforce from Baker Lake has grown - that it is at least double the number it was since the beginning of operations. Agnico Eagle further noted that the volume of labour from Baker Lake

⁴⁷³ L. Tapatai, Baker Lake, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 744 and 746, lines 10-25 and 5-11.

⁴⁷⁴ A. Poksiak Turner, Whale Cove, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 738, lines 9-22

⁴⁷⁵ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 95, lines 19-21

⁴⁷⁶ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 96, lines 13-22

⁴⁷⁷ A. Maghagak, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 97-98, lines 23-26, 1-14

⁴⁷⁸ K. Mayrand, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 99-100, lines 4-26, 1-8

⁴⁷⁹ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 101, lines 13-24

has been stable for the last year or year and a half, and has probably reached a plateau without new initiatives from Agnico Eagle.⁴⁸⁰

During the Final Hearing, Agnico Eagle was also asked by the Board whether trades certificates acquired by employees at the mine could be use outside mining.⁴⁸¹ Agnico Eagle replied that it supports apprenticeships so employees would finish their programs with a Red Seal, which is a national certification recognized everywhere in Canada. Agnico Eagle also noted that its in-house training programs provide transferrable skills as well, although do not come with a formal certification. Agnico Eagle commented that it would like to work with the Government of Nunavut to have the in-house programs recognized as industry standards so employees can attain formal certification.⁴⁸² Later in the Hearing, the Board followed up, asking Agnico Eagle to elaborate on what it has done and what it plans to do to make its non-accredited training programs accredited programs.⁴⁸³ Agnico Eagle replied that it has met with representatives of the GN to discuss training and certification, and while for the past two (2) years the focus has been on expanding and improving access to the apprenticeship programs, Agnico Eagle noted it will meet with the GN again in the next year and focus on getting the certifications in place for non-apprenticeship programs.

The Board also asked Agnico Eagle whether employees that are transferred from Meadowbank to Meliadine could also include Inuit employees that were in training. Agnico Eagle responded that it will accommodate as many transfers as possible between Whale Tail and Meliadine at the end of the life of the mine at Whale Tail, including for example, apprentices under a trade program, and noted the start of open-pit mining at Meliadine in 2022 would work well with the timing of the proposed Whale Tail Pit Project.⁴⁸⁴

Agnico Eagle was also asked during the Final Hearing for clarity on its financial literacy program, specifically what benefits were provided to the course participants and whether the program is still running.⁴⁸⁵ Agnico Eagle replied that the financial literacy program was something that the community of Baker Lake decided was a priority. Agnico Eagle clarified that it delivered the program this year at the high school in Baker Lake, at Meadowbank, and in the community of Baker Lake, and has committed to do more of these training sessions in the future as well.⁴⁸⁶

⁴⁸⁰ K. Mayrand, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 102, lines 1-17

⁴⁸¹ E. Copland, Board Chairperson, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 102, lines 20-23

⁴⁸² K. Mayrand, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017 pp. 102-103, lines 25-26, 1-14.

⁴⁸³ K. Kaviq, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017 p. 349, lines 11-24

⁴⁸⁴ K. Mayrand, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017 pp. 342-343, lines 23-26, 1-17

⁴⁸⁵ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017 p. 345, lines 11-22

⁴⁸⁶ S. LeClair, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017 pp. 345-346, lines 24-26, 1-8

The issue of language in the workplace was also raised by the Board during the Final Hearing. The Board noted that Inuit are not supposed to use their language on site for safety reasons, but noted that Inuit have complained about the number of French speakers on site, and that Inuit cannot understand them. The Board asked whether Agnico Eagle had also heard this complaint.⁴⁸⁷ Agnico Eagle responded that it recognises language is a challenge it has to deal with at both of its operations, and one it is taking very seriously. Agnico Eagle noted that it has changed its hiring process to ensure employees can meet required levels of English, it is also targeting English-speaking labour pools now, and is working to ensure even specialized contractors can meet the expected levels of English.⁴⁸⁸

The Board also noted concerns raised by community members that Inuit employees are fired when they complain about working conditions, and asked the Proponent why people would not be given a chance to be understood or receive help. The Board added that additional concerns have been noted in the communities that Inuit employees are not treated well by their supervisors and are not kept informed of where they can go to make complaints.⁴⁸⁹ Agnico Eagle replied that an employee should never be fired for complaining. Agnico Eagle also highlighted the avenues it has for workers to file a complaint, including an Inuit HR agent, speaking with their supervisor, or placing a call anonymously through the “Speak Up” program.⁴⁹⁰ NIRB staff and Board followed up, asking how these complaint policies extend to contractors and sub-contractors. Agnico Eagle noted they have many contractors on site, and all its policies apply to contractors as well, although the challenge is Agnico Eagle may not always hear about incidents with contractors.⁴⁹¹

The Board recognizes Agnico Eagle’s considerable activity in the region and agrees that the Project will provide new employment opportunities as well as continued opportunities for employees from its Meadowbank Mine project. This Project is unique in that the Board expects the Proponent to apply the lessons learned during its operation of the Meadowbank Mine to the Project as regards language and cultural policies and practices. In particular, the Board remains concerned that it appears that Inuit employees have not always been treated fairly and the Board believes that Agnico Eagle’s complaint process needs to be restructured or better advertised to employees. As discussed in [Section 6.7](#) of this report (Individual and Community Wellness), the Board expects the Proponent to increase its presence in the communities, particularly in Baker Lake, in order to make it easier for employees and families to engage with the company and seek information and assistance.

The Board understands that socioeconomic barriers to employment remain a concern. The Board agrees with INAC’s comments that project-specific and regional cumulative effects on

⁴⁸⁷ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017 p. 346, lines 11-23

⁴⁸⁸ K. Mayrand, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017 pp. 346-348, lines 24-26, 1-26, 1-5

⁴⁸⁹ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017 pp. 712-713, lines 17-26, 1-7, and p. 714, lines 6-26

⁴⁹⁰ C. Ramcharan, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017 pp. 713-714, lines 10-26, 1-5

⁴⁹¹ C. Ramcharan, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017 pp. 715-716, lines 25-26, 1-11

employment, labour pool needs and capacity, workforce and family well-being and quality of life issues must be monitored carefully to ensure opportunities are maximized. The Board appreciates the commitments of the Proponent to develop a Whale Tail – Meadowbank – Meliadine socio-economic monitoring group and to engage with the Kivalliq Socio-Economic Monitoring Committee, the GN, and the KIA to share data, opportunities, concerns, and develop solutions. The Board also understands the Proponent has committed to revising its closure plan to address issues of employment post-closure.

The Board recognizes the contributions of the Proponent to local and regional education and training programs throughout its operations at Meadowbank and acknowledges the commitment of the Proponent to continue these contributions. The Board notes the GN's role in developing and providing access to various training programs and opportunities and recognizes the importance of institutions receiving applicable updated information for planning purposes and acknowledges commitments made by Agnico Eagle for further communication with the GN.

6.2.4 Conclusions and Recommendations of the Board

In considering the views of the Proponent and those of parties throughout the assessment of the Project and as outlined above, the Board recognizes the Project's potential opportunities for employment, education and training. The Board recommends the following terms and conditions, which in conjunction with commitments made by the Proponent, will ensure appropriate planning, management, and monitoring (a brief summary of the Board's recommended terms and conditions is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

- Prepare and submit to the Nunavut Impact Review Board and the Government of Nunavut detailed staff schedule information (e.g., type and quantity of positions for each Phase of the Project and skills required for or gained by each position);
- Prepare and submit to the Nunavut Impact Review Board and the Government of Nunavut a list of all trades, occupations, journeypersons, and apprentices working with the Project;
- Keep the Government of Nunavut informed of hiring procedures and policies, opportunities for advancement, training, and issues regarding employee recruitment and retention; and
- Develop and maintain an easily referenced listing of formal certificates and licences that may be acquired via on-site training or training during project employment that can be transferred.

6.3. POPULATION DEMOGRAPHICS

6.3.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) discussed its assessment related to Population Demographics within Volume 7 – Human Environment of the Environmental Impact Statement (EIS). In Section 7.4.1, Agnico Eagle listed the sources of Inuit Qaujimajatuqangit it included within its assessment of socio-economics, which included the Whale Tail Traditional

Knowledge Workshop, the Environmental Impact Statement Guidelines for the Meadowbank Project, community consultation and public information meeting reports, results from subsequent consultation conducted in Baker Lake, and information from the Kivalliq Socio-Economic Monitoring Committee. Results of the Proponent's socio-economic baseline studies were provided within Volume 7, Appendix 7-B, which were noted to be supplemented with additional information from community consultations conducted in 2016. Agnico Eagle's proposed mitigation, benefit enhancement, and monitoring measures related to socio-economics were provided within Volume 8, Appendix 8-E.6 – Socio Economic Management and Monitoring Plan. Agnico Eagle concluded that population demographics would not be materially changed by the Project, and therefore it was not carried forward as a valued component in its effects assessment.

Agnico Eagle assessed local effects - those within the Kivalliq region, and in particular Baker Lake, and regional effects - those expected to occur at a territorial level. Agnico Eagle also stated that should the Project proceed, the potential effects would be dependent on Project start date in relation to the timing of closure and operations of Agnico Eagle's Meadowbank and Meliadine projects in the region. As such, Agnico Eagle's description and classification of potential effects related to employment, education, and training were focused on the scenario where the Project would proceed according to the proposed start of operations in 2019, and sometimes referencing an alternative scenario where the Project is delayed by a year.

Agnico Eagle identified that both the Kivalliq region and Baker Lake had experienced population growth between 2% and 3% annually between 2006 and 2013, with populations increasing from 8,722 and 1,807, respectively, to 10,187 and 2,117. Agnico Eagle further noted that during this period population composition also changed, where male and non-Inuit populations grew faster than female and Inuit populations, as did the proportional representation of the working-age population. Agnico Eagle noted that the influx of working-age population to the Kivalliq region and Baker Lake coincided with an increase in the representation of Kivalliq workers at the Meadowbank Gold Mine, which increased by 40% (100 workers), between 2010 and 2011 and that the mine may have influenced in-migration of persons to Baker Lake.

In Section 7.4.3.1 of the EIS, Agnico Eagle predicted that population demographics would not materially change from the Project as recruitment practices would not change from current practices such as pick-up points in Kivalliq communities and residents having priority for positions. As such, population demographics was not carried forward in its assessment as no associated primary effects pathways were identified.

During the Final Hearing, Agnico Eagle noted that it has in place part-time community coordinators in each of the Kivalliq communities that assist with disseminating information in each of their communities, including information related to the labour-pool process.⁴⁹² In addition, Agnico Eagle discussed its addition of 75 new employment opportunities for Inuit at the mine above the 300 current Inuit employees at the Meadowbank Mine.⁴⁹³ Further, Agnico

⁴⁹² S. LeClair, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 53, lines 3-17.

⁴⁹³ S. LeClair, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 296-297, lines 18-26 and 1-6.

Eagle stated its commitment to work with community and government to monitor the effectiveness of its mitigation and adaptive management outlined in its social management and monitoring plan found in Volume 8, Appendix 8 (e) (6).⁴⁹⁴

6.3.2 Views and Concerns of Interested Parties

In its final written submission, the Government of Nunavut (GN) commented on the Proponent's conclusions that the Project would not have an impact on population demographics or household structures in Baker Lake and that, as a result, these factors were not carried forward in its assessment, and that poor housing conditions in the region and in Baker Lake specifically are primarily due to overcrowding. The GN discussed findings related to health and wellness issues associated with overcrowding and emphasized the importance of addressing possible adverse effects of the Project on housing demand. The GN expressed concern that the Project would increase demand on the region's social housing stock as a result of direct-project employment, project-induced in-migration, and population increase within the Local Study Area, and recommended that Agnico Eagle establish a collaborative monitoring and reporting mechanism to identify migration trends and effects as a result of the Project.⁴⁹⁵ In its response to final written submissions, Agnico Eagle noted that it was supportive of this initiative and that it would collaborate with the GN to ensure appropriate data is made available that does not infringe on the private lives of its employees.⁴⁹⁶ For additional discussions related to housing see [Section 6.8: Community Infrastructure and Public Services](#).

No additional concerns were raised regarding population demographics during the Final Hearing.

6.3.3 Views of the Board

The Board acknowledges that Agnico Eagle has an established Socio-economics Management and Monitoring Plan from the Meadowbank project with an Addendum that outlines the approach to minimizing adverse residual effects at the local and regional levels as well as maximizing the potential benefits. This plan has been evolving since 2006 and many parts of the plan have been established as routine for Agnico Eagle. The Board notes specifically that planning and consultation have become an important component contributing to improvements of the plan as Agnico Eagle has grown over the years. Agnico Eagle has committed to including:

- Maintaining Project offices in Baker Lake and Rankin Inlet with a Human Resources Agent responsible for facilitating not only job applications and expressions of business interests, but also meeting workers' needs for assistance as they transition between home and work;
- Communicating hiring and recruitment policies to ensure that workers are not encouraged to move to Baker Lake without a confirmed job or contract;
- Using the existing exploration camp plus the Whale Tail Camp to house all workers while on rotation, and providing return transportation to home communities; and

⁴⁹⁴ S. LeClair, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 297, lines 14-18.

⁴⁹⁵ Government of Nunavut Final Written Submissions, August 14, 2017.

⁴⁹⁶ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

- Establishing fly-in, fly-out schedules that see employees removed from the mine site to their home communities with any necessary restrictions placed on transport services to minimize worker presence in Baker Lake.⁴⁹⁷

Further, the Board acknowledges the working relationships that the Proponent has established specifically with the Government of Nunavut as well as the Kivalliq Inuit Association and looks forward to the continuation of a collaborative approach to monitoring and reporting. However, as Agnico Eagle has noted in its Socio-Economic Plan, it remains unclear whether the type of information currently collected is sufficient to identify potential project effects and adequacy of related mitigation measures with regards to potential project-induced migration between Kivalliq communities. In this regard, the Board notes that Agnico Eagle is willing to engage with other participants but it remains unclear whether employees would be willing to actively participate, including contributing the personal information regarding their home communities and possible reasons for relocating that would be necessary to assess this type of potentially project-induced effect.

6.3.4 Conclusions and Recommendations of the Board

In considering the views of the Proponent and those of parties throughout the assessment of the Project and as outlined above, the Board believes that the Project's potential effects to population demographics could be appropriately managed through the commitments provided by the Proponent and application of key mitigation measures associated with the planned participation in the Kivalliq Socio-Economic Monitoring Committee and monitoring of demographic changes affecting the communities of the Kivalliq region.

The Board has noted the community of Baker Lake's concern in the lack of an Agnico Eagle office in Baker Lake and recommends that Agnico Eagle follow through on the commitment noted in its Socio-Economic Management and Monitoring Plan⁴⁹⁷ for the Whale Tail Pit project proposal that Agnico Eagle maintain an office in Baker Lake with a Human Resources Agent responsible for facilitating not only job applications and expressions of business interests, but who can also make themselves available to meet workers' needs for assistance as they transition between home and work.

The Board acknowledges the challenges which may be faced by the Proponent in monitoring certain socio-economic indicators independently, and has consequently provided recommendations in [Section 6.1: Economic Development and Business Opportunities](#) regarding the Proponent's participation in the Kivalliq Socio-Economic Monitoring Committee (K-SEMC). Further to this, the Board sets forth the following for the consideration of the K-SEMC and its membership in an effort to ensure that the monitoring of demographic changes affecting the communities of the Kivalliq region sufficiently captures any changes that may be the result of the Whale Tail Gold Mine Project (the following provides a summary of the recommended term and condition for convenience; the full text of the term and condition is provided in [Section 9: Recommended Project Specific Terms and Conditions](#)):

- Encourage the collection and sharing of project-specific information concerning the home community of employees and the number of employees that may have relocated to work

⁴⁹⁷ EIS, Volume Appendix 8-E.6. Page 16 of the *Socio-economics Management and Monitoring Plan*.

at the mine, to the extent that sharing this information is acquired voluntarily from employees and is consistent with and not limited by any Inuit Impact Benefit Agreement with the Kivalliq Inuit Association.

6.4. TRADITIONAL ACTIVITY AND KNOWLEDGE

6.4.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) discussed its assessment of Traditional Land and Resource Use/Inuit Qaujimajatuqangit in Volume 7, Section 7.3 of the Environmental Impact Statement (EIS). Results of Agnico Eagle's Inuit Qaujimajatuqangit and socio-economic baseline studies were provided in Volume 7, Appendix 7-A – Inuit Qaujimajatuqangit Baseline Report and Volume 7, Appendix 7-B – Socio-economic Baseline, respectively. Agnico Eagle assessed impacts to four (4) primary components as part of its assessment of Traditional Land Use and Resource Use, which included wildlife harvesting, fishing, plant harvesting, and use of culturally important sites. Agnico Eagle concluded as part of its assessment of Traditional Land and Resource Use/Inuit Qaujimajatuqangit that residual project impacts on continued opportunities for traditional wildlife harvesting, fishing, plant harvesting, and opportunities for the use of culturally important sites, were considered to be not significant. The following section provides a discussion on traditional activity and knowledge while [Section 6.6](#) provides a detailed discussion on heritage resources.

Agnico Eagle noted that its Traditional Land and Resource Use assessment of continued opportunities for traditional wildlife harvesting and traditional plant harvesting considered the terrestrial study areas used for wildlife and vegetation, which consisted of the following boundaries:

- Local Study Area (LSA) – included a 1.5 kilometre (km) buffer around project facilities, for a total assessment area of approximately 28,215 hectares (ha); and
- Regional Study Area (RSA) – included a 25 km buffer around project facilities, for a total assessment area of approximately 501,700 ha.

The Traditional Land and Resource Use assessment of continued opportunities for traditional fishing considered the freshwater study areas used for fish species, which consisted of the following:

- Local Study Area – included areas of direct physical disturbance from project activities and facilities, as well as the boundaries of local watersheds and the spatial extent of potential direct and indirect changes from the Project to the physical and biological properties of hydrology, surface water quality, and fish. The LSA included headwater lakes and streams near the Whale Tail Pit in the upper sections of watershed A watersheds (i.e. where Whale Tail Lake (Lake A17) and Mammoth Lake (Lake A16) are located), and watershed C (i.e. where Nemo Lake (Lake C38) is located), and a 200 metre (m) corridor along with proposed road alignment; and
- Regional Study Area – divided by assessment areas to reflect the potential number of fishery (or population) units that may be affected by the Project and included waterbodies and watercourses within subsections of the A and C watersheds of the Meadowbank

River Watershed, and considered stream connections (i.e. barriers to fish passage) within each watershed.

The temporal study boundaries for the assessment of Project effects on traditional land and resource use were set to include a one (1) year construction phase, a three (3) to four (4) year operations phase, and up to seven (7) years for the closure phase

Within Section 7.3.1 of the EIS, Agnico Eagle presented details related to its collection of baseline information on Inuit Qaujimajatuqangit, traditional land use, as well as related project-specific concerns and issues raised through community consultation sessions conducted in Baker Lake in 2014 through 2016, as well as field programs. Agnico Eagle also noted that concerns, recommendations, or requests for mitigation related to Traditional Land and Resource Use and Inuit Qaujimajatuqangit raised during consultation meetings, Traditional Knowledge workshops, or group discussions between 2014 and 2016 for the Amaruq Exploration Access Road and for the Project were integrated into its assessment where appropriate. During the Final Hearing, Agnico Eagle provided additional details on how Traditional Knowledge and Inuit Qaujimajatuqangit were collected and incorporated into its effects assessment for the Project.²⁸⁶

Agnico Eagle noted that it considered both direct and indirect effects on traditional land and resource use as part of its assessment, which included factors such as changes in access to traditional land use areas or disturbance to areas resulting in the loss of land for traditional activities (direct), and factors related to residual adverse effects on other aspects of the environment, such as changes in the quantity or abundance and distribution of vegetation, wildlife, and fish resources, and changes in the quality of these resources (indirect). As such, as part of its assessment on continued opportunities for traditional land and resource use, Agnico Eagle considered the effects of the project on related valued components such as wildlife and wildlife habitat, fish and fish habitat, vegetation, heritage resources, noise and vibration (see [Section 5.3](#) [Noise and Vibration], [Section 5.8](#) [Freshwater Aquatic Environment], [Section 5.9](#) [Vegetation], [Section 5.10](#) [Terrestrial Wildlife and Wildlife Habitat], and [Section 6.6](#) [Heritage Resources]). Agnico Eagle also considered intangible aspects of traditional land and resource use it described as patterns of traditional land and resource use and Inuit Qaujimajatuqangit principles and values.

Agnico Eagle considered four (4) primary pathways in its assessment, which included the potential for project activities to affect continued opportunities for the following:

- Traditional wildlife harvesting;
- Traditional fishing;
- Traditional plant harvesting; and
- The use of culturally important sites.

Indicators used in the assessment of these pathways include:

- Disturbance to preferred traditional wildlife harvesting areas, fishing areas, plant harvesting areas, land use and cultural areas;
- Changes in the availability of traditionally harvested wildlife resources, fish resources, plant resources, and important cultural or historic sites or features; and

- Changes to social and economic factors affecting participation in traditional land and resource use activities.

Traditional Wildlife Harvesting

Agnico Eagle concluded that because preferred harvesting sites were not identified in the project study areas, and waterfowl and geese would continue to be available for harvesting in areas close to the community, harvesters in the community of Baker Lake would be able to continue to hunt and rely on waterfowl and geese as an alternate source of food and their ability to harvest would not be significantly affected by the effects of the Project.

However, the Proponent identified that measurable changes in the distribution and movement patterns of caribou due to the effects of the Project were predicted to influence the potential availability of caribou resources for traditional harvesting in certain preferred harvesting areas. These effects were noted to be the result of direct loss and fragmentation of caribou habitat due to project activities, and indirect habitat loss due to sensory disturbance and adverse effects from barriers to migration. Direct loss and fragmentation of caribou habitat was described as expected, but “not likely to have a continuous effect on caribou populations”⁴⁹⁸, while the impacts from sensory disturbance and barriers to migration were predicted to be regional in scale, continuous, but medium-term and reversible following closure. Residual effects of the Project on continued opportunities for traditional wildlife harvesting of caribou were predicted to be moderate in magnitude and regional in extent as caribou availability was predicted to potentially decrease in certain preferred harvesting areas, and some community members would face barriers to participation in hunting activities as a result of employment through the Project. Agnico Eagle added that this effect would be expected to be limited as the regional area contains high proportions of undisturbed caribou habitat, and caribou survival is not expected to be affected due to the Project. Further, Agnico Eagle added that preferred harvesting areas would still be available, the all-weather access road (AWAR) would continue to facilitate access to harvesting locations, that new economic opportunities would increase opportunities for traditional wildlife harvesting and associated Traditional Knowledge teaching opportunities, and that the Project would not present barriers in accessing areas further north of the mine site.

Agnico Eagle concluded that “the community’s ability to continue to practice subsistence activities, and to hunt and rely on caribou as a primary food source will not be significantly affected”⁴⁹⁹, and that the magnitude of cumulative effects from the Project and other developments on caribou is predicted to range from low to moderate.

Traditional Fishing

Agnico Eagle noted that although lakes closest to the Project have not been commonly used for traditional purposes, measurable changes in the fish and fish habitat for the lakes are anticipated, including changes in the abundance and distribution of fish species which would result in direct loss or alteration of fish habitat and mortality of fish (see [Section 5.8: Freshwater Aquatic Environment](#)). Lakes and rivers along the haul road were identified as being culturally significant as past land-use areas, but were not identified as preferred fishing grounds due to

⁴⁹⁸ EIS, Volume 7, p. 7-33

⁴⁹⁹ EIS, Volume 7, p. 7-34

limited present use. Agnico Eagle concluded that based on the results of the fish and fish habitat and traditional land use patterns, the residual effects of the Project on traditional fishing opportunities would be low to moderate in magnitude, local to regional in geographic extent, short- to long-term in duration, and reversible. Further, it concluded that the resilience of the local fishery would be maintained through the implementation of environmental design features and mitigation measures, and that the community's ability to continue to practice traditional fishing would not be significantly affected.

During the Final Hearing, Agnico Eagle noted that the Baker Lake Hunters and Trappers Organization (HTO) would be participating in the proposed fish-out operations at Whale Tail Lake, and would assist with distributing fish to the community in instances where transfer to the south basin is not possible.⁵⁰⁰ Agnico Eagle further highlighted its expectation that the fish-out and offsetting plans, developed with guidance from Fisheries and Oceans Canada, the Kivalliq Inuit Association and the Baker Lake HTO, would offset the loss of fish habitat during operations and closure.⁵⁰¹

Traditional Plant Harvesting

Agnico Eagle determined that although measurable changes in vegetation would be anticipated due to the Project, which could affect the availability of plant resources for traditional harvesting in the project area, impacts would be restricted to the project footprint, and vegetation populations and communities are well represented throughout the terrestrial LSA and RSA. Agnico Eagle noted that preferred traditional plant harvesting areas were not identified in the project area, and that community concerns related to high quality caribou habitat effects and dust deposition would be mitigated through project design and mitigation measures, and would be localised in nature.

Agnico Eagle concluded that based on the results of the vegetation assessment and traditional land use patterns, residual effects of the Project on traditional plant harvesting would be low in magnitude, local in geographic extent, medium to long-term in duration, and reversible. Further, it concluded that the community's ability to continue to gather traditional plants would not be significantly affected.

Agnico Eagle provided a summary of its cumulative effects assessment for the residual effects identified for Traditional Land and Resource Use. In its assessment, Agnico Eagle predicted that foreseeable future developments in the Kivalliq region that have the potential to interact with the Project would not be expected to result in changes in the availability of traditional resources for fishing, plant harvesting or culturally important sites, as residual effects for these pathways would be confined to the LSA, and all developments would be located outside of the RSA for vegetation and heritage resources, and the assessment area used for fish and fish habitat. Agnico Eagle identified that localised cumulative effects may occur for traditional wildlife harvesting due to changes in the availability of furbearers, waterfowl, and geese. Further, based on the potential interaction of eight (8) potential future projects with the caribou herds that occur within

⁵⁰⁰ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 183, lines 14-25.

⁵⁰¹ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 250-251, lines 25-26 and 1-6.

the Kivalliq region and are used by harvesters in Baker Lake, Agnico Eagle concluded that cumulative effects to traditional wildlife harvesting due to changes in the availability of caribou and opportunities to harvest them may occur. Agnico Eagle also discussed the potential for increased access to traditional land use areas through site infrastructure to offset cumulative effects changes in availability, however, noted that increased access could also lead to increased harvesting and competition amongst hunters, which could lead to decreased availability of caribou.

In Section 7.3.5 of the EIS Agnico Eagle discussed factors of uncertainty it considered within its assessment of significance of traditional land use effects, which included factors such as the incorporation of other valued component assessments; lack of thresholds or standards for most traditional land and resource use indicators; inherent uncertainty in the assignment of criteria and potential for occurrence; reliance on outdated literature to inform Inuit Qaujimajatuqangit baseline information resulting in data gaps; and the lack of clarity around the effects of climate change on traditional land and resource use. Agnico Eagle indicated that it addressed uncertainty in its assessment by applying conservative estimates of effects in its residual impact classification and determination of significance, and by incorporating publicly available information from literature, information directly from Baker Lake Elders, hunters and other land users, and information from using past experience in similar areas including the experiences at Meadowbank Gold Mine. Agnico Eagle noted that uncertainty would be further minimized through monitoring, adaptive management, and ongoing consultation with community members.

Agnico Eagle identified mitigation, monitoring, and adaptive management measures it would employ to reduce and manage impacts to Traditional Land and Resource Use throughout and following operations of the Project. See [Section 5.1](#) [Air Quality], [Section 5.3](#) [Noise and Vibration], [Section 5.8](#) [Freshwater Aquatic Environment], [Section 5.9](#) [Vegetation], [Section 5.10](#) [Terrestrial Wildlife and Wildlife Habitat], and [Section 6.6](#) [Heritage Resources]) for additional discussions and references to specific mitigation, monitoring, and management plans submitted as part of the EIS.

During the Final Hearing, Agnico Eagle further discussed its commitments to monitor the effectiveness of its mitigation and adaptive management plans through the use of Inuit Qaujimajatuqangit and Traditional Knowledge, and through collaboration with the Kivalliq Inuit Association, the Government of Nunavut, the Baker Lake Hunters and Trappers Organization, and Elders. Agnico Eagle also committed to hiring local field technicians, one of which would be a Baker Lake Hunters and Trappers Organization representative.⁵⁰²

6.4.2 Views and Concerns of Interested Parties

Within their joint final written submission, Nunavut Tunngavik Inc. (NTI) and the Kivalliq Inuit Association (KIA) commented on potential effects to caribou from the proposed operation of the haul road, noting that conclusions drawn by the Proponent based on experience with the Meadowbank AWAR do not present sufficient analysis to support the Proponent's conclusions. NTI and KIA commented that estimates of traffic rates, or hunting trips, along the AWAR are

⁵⁰² R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017 pp. 233-234, lines 20-26, and 1-2.

not available, which resulted in a lack of context to interpret caribou avoidance of the AWAR as a predictive model for the haul road. NTI and the KIA also referenced a finding in the EIS that Elders and Baker Lake hunters suggest that caribou recently shifted their distribution further from Baker Lake and north of the Meadowbank Gold Mine.⁵⁰³ For further details on this discussion, please refer to [Section 5.10](#) of this report.

Within a supplemental submission, the Government of Nunavut (GN) submitted a report which discussed seasonal caribou distributions and movement patterns in relation to the AWAR. Among the factors noted to potentially influence seasonal caribou path selection along the AWAR, including dust and associated sensory effects, obstruction of visibility from physical characteristics, and high traffic volumes, the report noted that increased vulnerability to harvest could be an influencing factor.²⁴³ In response, Agnico Eagle submitted a technical memorandum, which discussed challenges in the analysis presented in the report due to low sample size, lack of consideration for alternative hypotheses, potential misinterpretation of weak trends in data, and lack of discussion of assumptions and uncertainty in the predictions.²⁶² For additional discussions related to the supplemental submission and Agnico Eagle's responses, see [Section 5.10](#) (Terrestrial Wildlife and Wildlife Habitat). During the Final Hearing the GN indicated that its concerns related to these issues had been addressed based on commitments the promise of ongoing future discussions with Agnico Eagle.⁵⁰⁴

Within its final written submission, the Baker Lake Hunters and Trappers Organization (HTO) expressed concerns related to the proposed Project, including disturbance to caribou and marine mammal hunting as a result of Meadowbank Gold Mine operations and seasonal shipping through Chesterfield Inlet. The Baker Lake HTO noted that its members have observed a change in caribou migration, as well as negative impacts to marine mammal hunting, and raised concerns regarding legacy benefits for the community of Baker Lake in recognition of these impacts. The Baker Lake HTO also expressed concerns regarding the Meadowbank AWAR and the Amaruq haul road, noting that the roads are not properly sloped to allow caribou and snowmobile crossing, which affects caribou migration and hunters' equipment and the movement of hunters through the area. The Baker Lake HTO recommended that Agnico Eagle remodel the roads to allow for improved crossing by caribou and snowmobiles, and that the sections where adjustments are required should be identified by Elders appointed by the Baker Lake HTO.⁵⁰⁵ In response, Agnico Eagle highlighted work it had undertaken with the Baker Lake HTO and Elders to ensure that approved crossings along the AWAR were adequately sloped, located, and maintained, and that the Baker Lake HTO recently approved traditional land use crossing locations on the haul road between the Meadowbank Mine and the proposed Whale Tail Pit. Agnico Eagle committed to continuing its work with the Baker Lake HTO and other stakeholders to address slopes of the AWAR and haul road to allow safe caribou crossing.⁵⁰⁶

The Baker Lake HTO also expressed concerns within its final written submission on the lack of consideration for Inuit Qaujimajatuqangit in its adaptive management plans for dust

⁵⁰³ Nunavut Tunngavik Inc. and Kivalliq Inuit Association Final Written Submissions, August 14, 2017.

⁵⁰⁴ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 444-445, lines 23-26 and 1-8

⁵⁰⁵ Baker Lake Hunters and Trappers Organization Final Written Submissions, August 14, 2017.

⁵⁰⁶ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

management, and concerns related to the reliance on collar data and staff monitors to trigger mitigation measures for caribou, such as road shutdowns. The Baker Lake HTO recommended that Agnico Eagle:

- Provide funding for an independent dust-fall monitoring study which emphasises Baker Lake residents' perspectives on dust and would be used to determine whether dust suppressant is required;
- Provide funding for the Baker Lake HTO or another group to hire independent wildlife monitors not directly employed by Agnico Eagle; and
- Establish a monitoring committee in collaboration with the KIA and the GN that includes representatives from local councils and organizations to oversee monitoring and decisions related to mitigation.⁵⁰⁷

In its response, Agnico Eagle agreed with the Baker Lake HTO's recommendation to hire an independent consultant to conduct a dustfall monitoring study in 2018. However, the Proponent suggested that the KIA conducted third-party and independent reviews of monitoring studies and results at the Meadowbank Gold Mine and suggested that the review by the KIA should be assessed by the HTO as it may meet the needs and scope recommended by the Baker Lake HTO. Agnico Eagle also agreed to hire a Baker Lake HTO representative to assist and support wildlife surveys along the AWAR during sensitive caribou migration and movement periods. Regarding the recommended creation of a monitoring committee, Agnico Eagle interpreted the recommendation to be related to the Terrestrial Advisory Group, which it noted involves collaboration with the Baker Lake HTO, and highlighted various initiatives it undertakes to review and improve monitoring and mitigation measures for the terrestrial environment.⁵⁰⁸

During the Final Hearing, the Baker Lake HTO requested that Agnico Eagle clarify its commitment to the Baker Lake HTO's request that Agnico Eagle fund an independent dustfall study that focuses on Inuit Qaujimagatuqangit, specifically Inuit perspectives on dustfall. In response, Agnico Eagle confirmed that it was in agreement with the proposed approach and that it was in the process of defining the scope of work with the Baker Lake HTO and the selection of the researcher to conduct the study.⁵⁰⁹ The Baker Lake HTO questioned Agnico Eagle regarding its use of Inuit Qaujimagatuqangit studies in its proposed dust monitoring programs along the AWAR. In response, Agnico Eagle noted that Inuit Qaujimagatuqangit was incorporated in its decision-making process, primarily associated with the placement of monitoring stations along the road routing.⁵¹⁰

During the Final Hearing a Community Representative commented on how the Meadowbank AWAR has increased access to hunting areas within the region, and noted that prior to the road, access to hunting areas was only possible through the Thelon River, with subsequent travel on foot, or by all-terrain vehicle. The Community Representative noted that using the AWAR, it

⁵⁰⁷ Baker Lake Hunters and Trappers Organization Final Written Submissions, August 14, 2017.

⁵⁰⁸ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

⁵⁰⁹ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 148, lines 5-12.

⁵¹⁰ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 147, lines 5-10.

takes less than a day to access hunting areas, and expressed concerns that some hunters are hunting in areas that should be “no hunting zones”. The Community Representative questioned whether there are discussions between parties and the Proponent, including the Baker Lake HTO, to police the AWAR when used for hunting purposes. In response, Agnico Eagle noted that the portion of the AWAR beyond kilometre (km) 85 is closed to public due to safety reasons, and that harvesting within that area is managed by the Proponent as well as GN conservation officers. Agnico Eagle added that it is the GN’s mandate to manage harvesting, so it collaborates with the GN by providing access to the AWAR. Agnico Eagle further discussed safety measures it encourages in collaboration with other parties for safe practices on the AWAR.⁵¹¹ The Community Representative further added:

*...I've seen where people are getting careless where the herds are coming through, and there's a lot of hunters up there at the same time...is there some way that that can be policed more? We're quick to blame the mine traffic, the helicopters, and everything else when it comes to disturbing caribou, forgetting what we ourselves are doing to the caribou..."one shot, one caribou", is what our Elders told us. Today, we're almost like having machine guns. So we're getting very careless...I think we need to be looking very seriously at what we are doing as hunters ourselves in terms of disturbing the caribou.*⁵¹²

Similarly, a member of the public supported the Community Representative’s comments, suggesting that staff should be trained to provide information on safe hunting practices along roads. Agnico Eagle reiterated that it continues to work with the Baker Lake HTO to address safety issues along the road and it would continue to do this work as part of the Project.⁵¹³ A Community Representative also expressed concern regarding the portion of the AWAR beyond km 85 as being private, noting:

*It's sort of almost like an area where people shouldn't go. To me, the word "private" is -- it's very -- it's like almost a word taboo. Because we don't speak in those types of terms. The land belongs to everyone. We don't -- we know what "private" means. It's almost -- we can't access that and is there going to be another area?*⁵¹⁴

In response, Agnico Eagle clarified that “private” (in reference to the haul road between the Meadowbank Mine and the proposed Whale Tail Pit Mine) is meant to warn that the area is not safe for land users and traditional activities due to the high volume of traffic. Agnico Eagle further clarified that the land in the area is open for traditional land use, and that it proposed traditional land use crossings on the haul road based on Inuit Qaujimajatuqangit workshops that were held.⁵¹⁵ During the Final Hearing, Agnico Eagle provided a joint submission with the GN

⁵¹¹ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 671-672, lines 16-26 and 1-16.

⁵¹² D. Simailak, Baker Lake Elders Committee, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 672-674, lines 18-26, 1-26 and 1-16.

⁵¹³ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 699, lines 14-23.

⁵¹⁴ W.L. Gibbons, Arviat, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, September 22, 2017, pp. 718-719, lines 14-26 and 1-2.

⁵¹⁵ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 FINAL Transcript, September 22, 2017, p. 719, lines 5-26.

which contained commitments related to the development of a traffic monitoring program and the use of traffic composition or rates data to supplement its adaptive management protocols related to wildlife protection measures.⁵¹⁶

For additional discussions related to dust and caribou monitoring and mitigation, see [Section 5.1](#) (Air Quality) and [Section 5.10](#) (Terrestrial Wildlife and Wildlife Habitat).

During the Final Hearing, NIRB staff requested that Agnico Eagle clarify its approach to community engagement in relation to project planning, and how feedback received regarding the haul road have contributed to its proposed operational management plans.⁵¹⁷ In response, Agnico Eagle noted that there are no important distinctions between the AWAR and the haul road, but that the AWAR is available to the public up to km 85, after which it is closed to public traffic. Based on its experience with public traffic and that of land users, Agnico Eagle noted that for the safety of traditional land users, the haul road would not be accessible. Agnico Eagle illustrated that it incorporated Inuit Qaujimajatuqangit in the identification of crossing points, but that access limitations to hunters and traditional land users would be in place as a safety precaution given the anticipated high volumes of traffic on the haul road.⁵¹⁸

During the Final Hearing, the Baker Lake HTO commented on the state of caribou herds, noting that harvesting, as well as development, affect caribou. The Baker Lake HTO discussed the use of caribou collaring as a means of caribou monitoring, and noted that the community of Baker Lake is seeing fewer caribou from nearby herds in the area.⁵¹⁹ The Baker Lake HTO further discussed a study done on Inuit Qaujimajatuqangit related to the protection of caribou migration routes, water, and other sensitive habitats. The Baker Lake HTO discussed findings from the study regarding traditional land use protection measures and questioned Agnico Eagle on whether it incorporated these types of findings in its management plans. In response, Agnico Eagle confirmed that these types of studies and workshop findings were considered in the development of its mitigation and management plans.⁵²⁰

The Baker Lake HTO also requested that Agnico Eagle clarify its assessment of potential impacts on traditional land use, noting that Agnico Eagle's presentation seemed to focus on direct impacts from project infrastructure on Inuit use of the land. The Baker Lake HTO requested that Agnico Eagle clarify whether it considered indirect impacts due to changes in the distribution of caribou and marine mammals within its assessment.⁵²¹ In response, Agnico Eagle

⁵¹⁶ Agnico Eagle Mines Ltd., *Terrestrial Environment Commitments in Response to Government of Nunavut*, Exhibit 21, NIRB Final Hearing File No. 16MN056, September 21, 2017.

⁵¹⁷ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 157-158, lines 22-26 and 1-19.

⁵¹⁸ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 158-159, lines 21-26 and 1-24.

⁵¹⁹ R. Aksawnee, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 248-249, lines 11-26 and 1-14.

⁵²⁰ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 252, lines 1-12.

⁵²¹ W. Bernauer, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 328, lines 9-15 and 19-26.

noted that the Project would not occur in an area noted to be active for traditional land use at the moment, and that it would not be expected to impact traditional land use activities.⁵²²

During the Final Hearing, the Baker Lake HTO questioned the KIA on whether the Project could affect caribou in a way that would impact hunting and food security if mitigation measures are not properly implemented. In response, the KIA noted that given the scale and volume of the proposed operations, the Project would have some impacts on caribou; however, the KIA added that many facets of impacts to caribou affect distribution, and as a result, access to harvesting by Inuit. The KIA acknowledged that impacts from mining activities can be mitigated to a large extent, but that harvesting also affects distribution. The KIA discussed the likelihood of impacts to caribou distribution from harvesting access from the AWAR, and suggested that if the haul road is closed to non-mining activities, impacts to caribou would likely be diminished.⁵²³ In follow up, the Baker Lake HTO requested that the KIA clarify whether it considers the proposed caribou group size thresholds to trigger mitigation and monitoring measures sufficient to protect local food security. In response, the KIA noted that although the terrestrial management plans still require some refinements, progress had been made. The KIA suggested that through further collaboration with the KIA, the GN, and the Baker Lake HTO, adequate monitoring and mitigation measures could be achieved.⁵²⁴

Similarly, during the Final Hearing the Baker Lake HTO requested that the GN confirm its interpretation of the GN's assessment of the Project as the GN noted that there is potential for harm to local food security, but that this harm could be mitigated to protect local food security. In response, the GN confirmed this conclusion that the potential for harm could be mitigated based on the correct application of the mitigation measures developed through collaboration with parties, and the proper functioning of the Terrestrial Advisory Group. The GN added that there is always uncertainty related to impacts, but that it had collaborated on extensive monitoring and adaptive management protocols to respond to potential changes in this regard.⁵²⁵

A Community Representative also discussed the importance of caribou as a food source and identified hunting and predation as influences affecting caribou populations:

*I hear that the caribou population is declining. Inuit is and Dene using the caribou as a source of food. And some of river systems that are up north are probably being contaminated. It's not the companies that are -- that are not killing the caribou. It's -- it's because of us hunting them...I know for a fact that caribou or wolves are part of the problem. They -- they do they're predators...*⁵²⁶

⁵²² S. LeClair, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 328, lines 5-7.

⁵²³ K. Poole, Kivalliq Inuit Association, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 401-402, lines 2-26 and 1-12.

⁵²⁴ K. Poole, Kivalliq Inuit Association, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 402-403, lines 26 and 1-12.

⁵²⁵ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 415, lines 6-24.

⁵²⁶ A. Panigoniak Sr., Arviat, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 735-736, lines 21-26 and 1-5.

In a written submission provided during the Final Hearing, a community member from Baker Lake also expressed concern regarding impacts to wildlife for hunting, and questioned whether Inuit would lose access to wildlife and traditional and social structures before territorial and federal authorities take action to ensure healthy environments for the Inuit of Nunavut.⁵²⁷

During the Final Hearing, a Community Representative from Coral Harbour commented on the impacts to marine wildlife that have been observed by hunters, noting that marine wildlife that are hunted traditionally are moving further away from the community due to vessel traffic near Coral Harbour. The representative discussed instances that are assumed to have impacted the abundance of wildlife in the area, in particular around Coats Island, and questioned whether the proposed shipping route could be changed to avoid sensitive areas around Coats Island.⁵²⁸ Refer to [Section 5.12.2](#) for a response by Agnico Eagle and Transport Canada to this and other marine shipping concerns. Through an additional deferred response, Fisheries and Oceans Canada noted that under the marine animal protections of the *Fisheries Act*, no person shall disturb a marine mammal except when the harvest of the animals is authorized under the regulations.⁵²⁹

During the Final Hearing, a community member from Baker Lake commented on the value of Inuit Qaujimajatuqangit holders and the lack of compensation for Elders to share their knowledge. The community member commented on impacts to caribou that have been observed from past monitoring methods, such as tagging, and suggested that modern monitoring methods, such as drones, should be used to study caribou as these methods may cause less disturbance to the herds. The community member added:

*We need to learn to be innovative. We should be opening our eyes to these kinds of technologies to improve so that more studies can be done for our caribou... as Inuit, we got to learn to also adapt and use these things so that the caribou that everybody want to study is studied in a safe manner.*⁵³⁰

The Community Representative from Whale Cove also had a similar statement about the value of Elders as holders of Inuit Qaujimajatuqangit:

...I had requested that the Elders be included because they are the ones that knows about what's going on on the land, but they are our strength, our background. They have survived out on the land with nothing, practically nothing. They created knives,...they created a way of hunting with bow and arrow...it's the history. I mention this because it was changed from their way of their traditional way of life...to me they're already a

⁵²⁷ M. Kaluraq, Baker Lake Community Member, Exhibit 49, NIRB Final Hearing File No. 16MN056, September 22, 2017.

⁵²⁸ P. Pudlat, Coral Harbour, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 647-651, lines 16-26, 1-26, 1-26, and 1-11.

⁵²⁹ M. D'Aguiar, Fisheries and Oceans Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 724, lines 15-25.

⁵³⁰ P. Tapatai, Baker Lake Community Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 657, lines 8-24.

*known geologist, anthropologist, whatever you call them. They have unwritten rules. They have unwritten education...*⁵³¹

Similarly, the Baker Lake HTO commented on the importance of utilizing new wildlife monitoring methods as well as Inuit Qaujimajatuqangit, noting:

*Over the past weeks, we've been discussing Inuit Qaujimajatuqangit, traditional land use, as well as modern technology. It's good that we have the best of both worlds...please consider that Inuit Qaujimajatuqangit is very important to us Inuit.*⁵³²

During the Final Hearing, a member from the public expressed concerns regarding the lack of traditional place names used in the EIS, noting that when areas or features are given new names: “...we're disassociated with the place because it's not the name that we know... That's just one way of making people not know where things are happening in a way...”⁵³³

During the Final Hearing, a Community Representative questioned Agnico Eagle on whether Elders would be included in its advisory committees.⁵³⁴ In response, Agnico Eagle confirmed that Elders would be part of the decision-making process on its committees, and highlighted Elder representation on the existing terrestrial advisory group.⁵³⁵ The Community Representative further requested clarification on whether Inuit Qaujimajatuqangit principles would be taught as part of the worker orientation, and if they would be taught by Elders. In response, Agnico Eagle confirmed that its work readiness program was designed in part with the Nunavut Literacy Council and that Inuit Qaujimajatuqangit principles were incorporated. Agnico Eagle added that the program is currently being taught by First Nations representatives from Québec and Ontario, and that Inuit teachers have also been instructors in the past.⁵³⁶ A Community Representative also commented on Agnico Eagle's Traditional Knowledge policies and noted that Chesterfield Inlet was not included in one of its programs. In response Agnico Eagle noted that Chesterfield Inlet would have “family days” as part of the Inuit Impact Benefit Agreement.⁵³⁷

During the Final Hearing, a member of the public expressed concern regarding ongoing development on lands used traditionally by ancestors and noted:

⁵³¹ A. Poksiak Turner, Whale Cove, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 685, lines 3-24.

⁵³² R. Aksawnee, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 635-636, lines 7-26 and 1-15.

⁵³³ P. Kigjugalik Hughson, Baker Lake Community Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 661, lines 2-17.

⁵³⁴ A. Poksiak Turner, Whale Cove, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 686, lines 1-5.

⁵³⁵ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 686, lines 8-17.

⁵³⁶ C. Ramcharan, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 687, lines 4-13.

⁵³⁷ C. Ramcharan, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 717, lines 17-23.

*I went to go see the land where our grandparents used to walk on, and it really tore me up inside. Our grandparents where they treaded on once again it's going to be impacted. We will not -- we will not see even \$50 that we could maybe use. I think that would be a lot for us, even if we were given \$50, that would mean a lot.*⁵³⁸

In their closing remarks, a Community Representative from Rankin Inlet commented on the importance of animal habitats, noting:

*...The Inuit will not want animal habitats to be disturbed. This is our livelihood. If the Whale Tail project proceeds the people have have to travel further inland...*⁵³⁹

The Community Representative further suggested that should the Project proceed, the Proponent should work closely with the local hunters and trappers organizations, Elders, and hamlets to ensure to concerns are addressed. Similarly, during the closing remarks at the Final Hearing a Community Representative from Baker Lake commented on the importance of caribou as staple of the Inuit diet.⁵⁴⁰

During the Final Hearing and in its closing remarks, the Baker Lake HTO expressed its support for the Project while stressing the importance of effective monitoring, mitigation, and environmental protection measures to ensure net benefits from the Project, and minimized impacts to caribou, wildlife harvesting, and food security.^{541,542}

6.4.3 Views of the Board

During the Final Hearing, the Board requested that Agnico Eagle clarify the use of Inuit Qaujimaqatuqangit studies in its maps displaying traditional harvesting sites within the Project area, as it appeared that there were areas of exclusion as no interactions for harvesting and migration of people and animals were shown in the Whale Tail Project Area.⁵⁴³ Agnico Eagle clarified that the map was intended to describe the information collected related to caribou migrations rather than where activities occurred and the maps were made to show that there was an area in the centre of the Project area that hunting occurred.⁵⁴⁴

⁵³⁸ R. Oosuaq, Baker Lake Community Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 7-18, lines 1-10.

⁵³⁹ M. Hickes, Rankin Inlet, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 739, lines 5-24.

⁵⁴⁰ L. Tapatai, Baker Lake, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 744-745, lines 23-26 and 1-14.

⁵⁴¹ R. Aksawnee, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 759-761, lines 9-26, 1-26, and 1-6.

⁵⁴² Baker Lake Hunters and Trappers Organization, Exhibit 20, NIRB Final Hearing File No. 16MN056, September 21, 2017

⁵⁴³ K. Kaluraq, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 276-277, lines 22-26 and 1-9.

⁵⁴⁴ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 277, lines 12-26

During the Final Hearing, the Board requested that the Baker Lake Hunters and Trappers Organization (HTO) clarify whether it is seeking additional funding to increase community participation in project monitoring based on Inuit Qaujimajatuqangit, or for technical expertise provided by other agencies.⁵⁴⁵ In response, the Baker Lake HTO indicated that it sought funding to hire a local representative to participate in the monitoring program, but that participation in the Terrestrial Advisory Group as proposed by the GN and the Proponent, may require further technical advice and funding support. The Baker Lake HTO further added that it is seeking opportunities to train and encourage participation of local people, particularly youth, in monitoring programs.^{546,547}

During the Final Hearing the Board stressed the importance of using Inuit Traditional Knowledge as part of monitoring measures, and requested that the Baker Lake HTO discuss alternative measures of caribou monitoring outside of caribou collars.⁵⁴⁸ In response the Baker Lake HTO discussed its request for funding a road monitor as a mechanism for partly addressing this concern, and agreed that there are issues with relying on collar data.⁵⁴⁹

During the Final Hearing the Board asked the Baker Lake HTO to comment on whether it receives comments from hunters or fishermen with concerns related to roads, helicopters, or any activities related to mining.⁵⁵⁰ In response, the Baker Lake HTO noted that it does receive reports from local hunters when low-flying aircraft are observed, or any other disturbances. The Baker Lake HTO added that this information is reported internally, and it collaborates with the local game officer to investigate reported incidents.⁵⁵¹

During the Final Hearing, the Board posed a question to Agnico Eagle, the Government of Nunavut (GN), and the Baker Lake HTO on whether there are any statistics on the use of the AWAR for harvesting, and on what has been harvested using the AWAR as a transportation route from the community.⁵⁵² In response, Agnico Eagle noted that it is a requirement under the Meadowbank Project Certificate to conduct a harvest study and that data is collected from harvesters in Baker Lake. Agnico Eagle noted that over the last ten (10) years, participation in the collection of data has declined, but it looks to develop more collaboration with the GN along

⁵⁴⁵ K. Kaluraq, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp.431, lines 13-21.

⁵⁴⁶ W. Bernauer, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 431-432, lines 23-26 and 1-6.

⁵⁴⁷ H. Nateela, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 432-433, lines 7-26 and 1.

⁵⁴⁸ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 434, lines 6-17.

⁵⁴⁹ W. Bernauer, Baker Lake Hunters and Trappers Organization NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 434, lines 21-26.

⁵⁵⁰ E. Copland, Board Chairperson, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp.435-436, lines 21-26 and 1-3.

⁵⁵¹ R. Aksawnee, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 436, lines 8-19.

⁵⁵² K. Kaluraq, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 696, lines 1-7.

with its ongoing work through the Baker Lake HTO to develop a more holistic approach.⁵⁵³ The Board further questioned Agnico Eagle on whether there are statistics on harvesters passing through the AWAR's gatehouse.⁵⁵⁴ Agnico Eagle responded that it does collect this data, along with statistics on harvester sub-samples of harvest, and that it could provide this information to the NIRB and Final Hearing participants.⁵⁵⁵ Through a deferred response Agnico Eagle provided a summary of all-terrain vehicle traffic recorded along the AWAR by the Agnico Eagle gatekeeper nearest to Baker Lake.⁵⁵⁶

During the Final Hearing the Board requested that Agnico Eagle elaborate on areas identified in a map presented which detailed a haunted or spiritual area within the region.⁵⁵⁷ In response, Agnico Eagle noted that it was detailed on the map as it was information provided to them during their meetings in the communities and the definition of "haunted" or "spiritual areas" was as defined by the community members providing them with this information.⁵⁵⁸

The Board notes Agnico Eagle's assessment of traditional land use and use of Inuit Qaujimaqatugangit and the inclusion of lessons learned from both the operations of the Meadowbank Gold Mine and the planning and approval of the Meliadine Gold Mine in the assessment of the Project. The Board also understands the challenges or uncertainty in assessing traditional land use which includes the incorporation of assessment results of other valued components and that currently there are no established thresholds of standards for most measurement indicators.

Throughout the Final Hearing, the Board emphasized the incorporation of Inuit Qaujimaqatugangit into all phases of project development (predevelopment to closure) and discussed issues in each of the valued components and noted comments on monitoring (e.g., Terrestrial Wildlife, Vegetation, Marine Mammals).

The Board acknowledges the importance of incorporation of Inuit Qaujimaqatugangit into monitoring as identified in comments raised by Community Representatives and the Baker Lake Hunters and Trappers Organization during the Board's review of the Project. The Board appreciates Agnico Eagle's commitment to cooperate with the Kivalliq Inuit Association, Inuit stakeholders, and local Hunters and Trappers Organizations to continue incorporating Inuit Qaujimaqatugangit into each version of the monitoring documents. The Board encourages the selection of indicators and/or thresholds into monitoring frameworks to ensure that to the Proponent can identify project-induced disturbances or changes to preferred

⁵⁵³ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 696-697, lines 10-26 and 1-2.

⁵⁵⁴ K. Kaluraq, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 697, lines 5-12.

⁵⁵⁵ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 697, lines 14-20.

⁵⁵⁶ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 747-748, lines 11-26 and 1-2.

⁵⁵⁷ E. Copland, Board Chairperson, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 730-731, lines 25-26 and 1-2.

⁵⁵⁸ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 731, lines 3-7.

hunting/fishing/plant harvesting areas as well as the enjoyment of the land and cultural areas. Further, if there are project-induced changes acknowledged by Agnico Eagle to the traditional lifestyle of Inuit, triggers and adaptive management measures should be identified to ensure that Agnico Eagle can minimize the potential for adverse effects on the participation of Inuit in traditional land and resource use activities.

6.4.4 Conclusions and Recommendations of the Board

Agnico Eagle has worked hard with a number of agencies including the Kivalliq Inuit Association (KIA), the Baker Lake Hunters and Trappers Organization, as well as Elders and community members at various meetings held throughout the Kivalliq region to collect and incorporate Inuit Qaujimaningit from land users into the planning of the Project. The Board encourages the Proponent to continue the involvement of Elders and community members in the further revision of its monitoring and mitigative plans, and urges the parties to ensure that this consultation is ongoing and consistent. On this basis, the Board recommends (the following summaries of the Board's recommended terms and conditions are provided for ease of reference, the full text of the terms and conditions is provided in [Section 9: Recommended Project Specific Terms and Conditions](#)):

- Ensure that the development of all project monitoring plans and associated reporting and updates are undertaken with active engagement of Kivalliq communities, land users, and harvesters. The Proponent should work with the Kivalliq Inuit Association and the Kivalliq Socio-Economic Monitoring Committee to report on the collection and integration of Inuit Qaujimaningit through its monitoring programs for the Project.

The Board heard multiple concerns that the Project could result in negative socio-economic impacts, specifically with regards to food security from potential negative project effects to caribou herds in the Region. In addition to the terms and conditions recommended by the Board to address the potential for impacts to caribou under [Section 5.10.4 \(Terrestrial Wildlife and Wildlife Habitat\)](#) of this report, the Board recommends the adoption of the Proponent's commitments made during the project Review to cooperate with various Regulatory agencies.

6.5. NON-TRADITIONAL LAND USE AND RESOURCE USE

6.5.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) discussed non-traditional land use and resource use within Volume 7, Section 4 – Socio-Economics of the Environmental Impact Statement (EIS). Agnico Eagle noted that although non-traditional land use was not identified as a valued component within the Meadowbank project's Final Environmental Impact Statement (EIS), it was considered as part of the EIS for the Whale Tail Pit Project proposal. In Section 7.4.1, Agnico Eagle listed the sources of Inuit Qaujimajatuqangit it included within its assessment of socio-economics, which included the Whale Tail Traditional Knowledge Workshop, the Environmental Impact Statement Guidelines for the Meadowbank project, community consultation and public information meeting reports, results from subsequent consultations conducted in Baker Lake, and information from the Kivalliq Socio-Economic Monitoring Committee. Results of the Proponent's socio-economic baseline studies were provided within Volume 7, Appendix 7-B, which were noted to be supplemented with additional

information from community consultations conducted in 2016. Agnico Eagle's proposed mitigation, benefit enhancement, and monitoring measures related to socio-economics were provided within Volume 8, Appendix 8-E.6 – Socio Economic Management and Monitoring Plan.

Agnico Eagle identified that no commercial fishing operations, guiding, or outfitting camps are known to exist within the vicinity of the Project. Further, Agnico Eagle noted that camping at the Inuujaarvik Territorial Park and canoeing on the Thelon River would not be disrupted by project construction or operations given their distance from the proposed mine site. As such, Agnico Eagle concluded that the Project is not expected to interfere with non-traditional land use in its vicinity, or near Baker Lake, and that non-traditional land use was not carried forward in its effects assessment as no associated primary pathways were identified.

During the Final Hearing, Agnico Eagle further discussed its conclusion that the Project should not have a significant adverse impact on the non-traditional use of marine resources in the region.⁵⁵⁹

6.5.2 Views and Concerns of Interested Parties

While the GN noted that, as per its mandate, it is charged with ensuring the responsible development of the territory's renewable and non-renewable resources so as to benefit all Nunavummiut,⁵⁶⁰ no party raised concerns regarding the potential for project-induced effects on non-traditional land use and resource use.

6.5.3 Views of the Board

The Board notes that parties did not raise any concerns with respect to the potential for effects on non-traditional land use and resource use attributed to the Whale Tail Pit Project during the Review of this proposal or at the Final Hearing.

6.5.4 Conclusions and Recommendations of the Board

In considering the views of the Proponent and those of parties throughout the assessment of the Project and as outlined above, the Board does not have any recommendations regarding terms and conditions required to address the potential for project-induced effects on non-traditional land use and resource use.

6.6. HERITAGE RESOURCES

6.6.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) discussed its assessment of the effects of the Whale Tail Pit Project (the Project) on heritage resources in Volume 7, Section 7 of the Environmental Impact Statement (EIS). Inuit Qaujimajatuqangit that informed the assessment is

⁵⁵⁹ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 292-293, lines 22-26 and 1-21.

⁵⁶⁰ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 441, lines 2-11.

presented in Volume 7, Appendix 7-A of the EIS. Proposed management plans to inform monitoring and mitigation measures for potential project effects to heritage resources are presented in Volume 8 of the EIS. Based on a pathway analysis approach to effects assessments, and Inuit Qaujimajatuqangit collected, the Proponent identified heritage resources as a valued component, and predicted that the Project would not result in significant impacts to heritage resources.

Agnico Eagle indicated that its assessment of culturally important sites considered effects on cultural sites and features, and effects on the acoustic environment, which were identified as being related to heritage resources and noise and disturbances. As such, Agnico Eagle's assessment of continued opportunities for the use of culturally important sites considered the study areas for heritage resources, as well as noise and disturbance, which consisted of the following:

- Heritage Resources
 - Local Study Area – included the footprint of various site facilities (e.g., Whale Tail pit, Waste Rock Storage Facility, ore stockpile facility, camps, dikes), a 50 m corridor along the proposed haul road, and associated infrastructure (e.g., borrow locations adjacent to the haul road).
 - Agnico Eagle determined there would be no expected direct effects to heritage resources outside the LSA and therefore did not define a Regional Study Area for this valued component.
- Noise and Disturbance
 - Local Study Area – included a 5 km buffer around the project footprint (e.g., Whale Tail pit, waste piles, power plant, ore crushing facility, water treatment plant, haul road); and
 - Regional Study Area – included a 7 km buffer around the project footprint.

The temporal study boundaries for the assessment of project effects on heritage resources were set to include a one (1) year construction phase, a three (3) to four (4) year operations phase, and up to seven (7) years for the closure phase.

Agnico Eagle noted that, the effects assessment for heritage resources, including proposed mitigation measures, was informed by field surveys and by Inuit Qaujimajatuqangit related to known archaeological sites in the project area based on consultation with community stakeholders in the Kivalliq region, including Hunters and Trappers Organizations.

The Proponent identified 19 heritage resource sites within or in proximity to the Local Study Area, with four (4) of these sites located within the project footprint. The 19 heritage resources identified included campsites, caches, blinds, a marker, and a gravesite. Agnico Eagle assessed the potential for proposed project activities to disturb cultural deposits and features, damage artifacts, hinder, or increase access to archaeological deposits, and destroy essential features required to provide contextual information about heritage resources. The Proponent concluded that impacts would be limited to construction activities disturbing the four (4) heritage resources sites within the proposed project footprint: two (2) campsites, a blind, and a marker.

Agnico Eagle identified a number of measures to mitigate potential effects to heritage resources in the project study area, including the following:

- The marker site within the project footprint will be recorded and documented prior to disturbance to allow for construction activities; this measure will only be implemented after approval by the Government of Nunavut Department of Culture and Heritage.
- The two (2) campsites and the blind will be mitigated through systematic data recovery measures including detailed site mapping, collection of artefacts, archaeological excavation, and community consultation on the systematic data recovery procedures.
- Alternative borrow sources have been identified in the project area to avoid disturbance to archaeological sites.

Agnico Eagle also presented a number of mitigation and monitoring plans to manage potential effects to heritage resources in the project study area, including the following:

- Archaeological Management Plan
- Amaruq Exploration Access Road Management Plan

Agnico Eagle discussed uncertainties in its assessment of project effects on heritage resources by noting that possible future changes to components or configuration of the Project may result in changes to the established project footprint and may cause impacts to archaeological sites. To address these uncertainties, the Proponent indicated that additional desktop and field studies would be conducted by a qualified archaeologist, supported by stakeholder consultation, to assess potential impacts to heritage resources and develop additional mitigation measures, if such a scenario were to occur.

The Proponent concluded that, based on its pathway approach to the assessment, residual effects from the Project on heritage resources, following implementation of the proposed mitigation measures, would not be significant relative to baseline conditions. Further, Agnico Eagle concluded that residual effects of the Project on the use of culturally important sites would be low in magnitude, local in geographic extent, and permanent in duration. Further, it concluded that the community's ability to continue to use culturally important sites in the project area would not be not be significantly affected.

6.6.2 Views and Concerns of Interested Parties

Within its final written submission, the Baker Lake Hunters and Trappers Organization (HTO) indicated that Agnico Eagle's existing mining operations near the community of Baker Lake had resulted in the disturbance to heritage resources in the area. Specifically, the Baker Lake HTO stated that the construction of the access road to the Amaruq exploration site had impacted heritage resources along the route. To address this issue, the Baker Lake HTO recommended that the Proponent and the Kivalliq Inuit Association collaborate on the Whale Tail Pit project proposal to ensure that Baker Lake receives tangible legacy benefits from the Project.⁵⁶¹ In response to comments on legacy benefits of the Project by the Baker Lake HTO, Agnico Eagle noted that it had committed to allocating \$3 million to a community initiative fund established as

⁵⁶¹ Baker Lake Hunters and Trappers Organization Final Written Submissions, August 14, 2017.

part of the Whale Tail Inuit Impact Benefits Agreement in support of community-based programs in the Kivalliq region.⁵⁶²

During the Final Hearing, the Government of Nunavut indicated that all its outstanding issues with respect to socio-economics, including cultural and heritage resources, had been resolved with the Proponent, and that both parties collaborated in the development of socio-economic-related terms and conditions recommended to the NIRB and commitments made by Agnico Eagle.⁵⁶³

During the Final Hearing, a member of the community of Baker Lake requested that Agnico Eagle clarify whether the gravesite in proximity to the Whale Tail Pit Project would be disturbed by mining-related activities.⁵⁶⁴ In response, the Proponent confirmed that the identified gravesite would not be disturbed during mining activities.⁵⁶⁵

6.6.3 Views of the Board

During the Final Hearing, the Board requested that Agnico Eagle clarify how it distinguished between cultural sites and archaeological sites identified at or in proximity to the project area.⁵⁶⁶ In response, the Proponent indicated that the designation of identified sites as cultural or archaeological was informed by Inuit Qaujimajatuqangit from workshops and meetings with stakeholders, including hunters and trappers and Elders groups in the Kivalliq region, and by professional archaeologists.⁵⁶⁷

The Board also requested that Agnico Eagle confirm whether the professional archaeologists involved in the identification of cultural and archaeological resources in the project area were Government of Nunavut archaeologists.⁵⁶⁸ In response, the Proponent noted that the company relied on consulting archaeologists to support the identification of cultural and archaeological resources, and that any identified historical sites in the project area were discussed with the Government of Nunavut.⁵⁶⁹

The Board acknowledges Agnico Eagle's commitment to mitigate, monitor, and adaptively manage impacts to heritage resources for the duration of the Project, and expects that the Proponent will consult and collaborate with regulators and stakeholders, including potentially

⁵⁶² Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

⁵⁶³ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 442-443, lines 23-26 and 1-5.

⁵⁶⁴ J. Ukpatiku, Baker Lake Youth – Grade 11 Class, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 705, lines 20-24.

⁵⁶⁵ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 706, lines 6-12.

⁵⁶⁶ P. Kadlun, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 90-91, lines 24-26 and 1-13.

⁵⁶⁷ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 91-92, lines 14-26 and 1-15.

⁵⁶⁸ P. Kadlun, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 92, lines 16-23.

⁵⁶⁹ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 92-93, lines 24-26 and 1-7.

impacted Kivalliq communities, as construction designs are finalized and project activities associated with land disturbance are undertaken. As changes to the proposed project footprint have the potential to impact identified and unidentified heritage resources, the Board stresses the importance of pre-construction archaeological surveys, diligent mitigation and rigorous monitoring to ensure that all potential effects to heritage resources are forecasted and adaptively managed. The Board notes that failure to prevent, or adequately mitigate, disturbance to cultural and archaeological sites within or in proximity to the project site could result in significant residual impacts to heritage resources in the area.

6.6.4 Conclusions and Recommendations of the Board

Following a review of the material presented by Agnico Eagle in the EIS and a consideration of views of Parties, the Board believes that the Project's potential effects related to heritage resources could be appropriately managed through the adherence to commitments provided by the Proponent and the implementation of proposed mitigation measures. Specifically, the Board recommends terms and conditions requiring the following (a brief summary of the Board's recommended terms and conditions is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

- Conduct archaeological surveys prior to land disturbance related to the Project;
- Report any archaeological site discovered during the construction, operation, and closure phases to the Government of Nunavut – Department of Culture and Heritage and the Kivalliq Inuit Association; and
- Provide periodic inspection reports related to the status of archaeological sites within or in proximity to the Project footprint to the Government of Nunavut – Department of Culture and Heritage.

6.7. INDIVIDUAL AND COMMUNITY WELLNESS

6.7.1 Views of the Proponent

In its assessment of individual and community wellness, Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) considered various factors that can impact wellbeing, including the ability to participate in traditional activities and maintain traditional culture, access to nutritious food, access to education, and assurance of safety and security. Agnico Eagle concluded that, overall, the Project would have both positive and negative impacts on wellbeing; with fiscal investment in the community having positive effects, including positive benefits on worker and public health and safety. The Proponent also noted, however, there would be significant potential for accidents and emergencies as well as the potential for significant negative impacts on family and community cohesion. The assessment is found in Volume 7, Section 7.4.2.5 of the Environmental Impact Statement (EIS), preceded by a discussion of current conditions in the Kivalliq region of Nunavut with reference to scholarly information originally gathered for the Meadowbank baseline studies, information from Statistics Canada, as well as various community engagement/information sessions and Traditional Knowledge workshops completed in 2014 through 2016 for the Whale Tail Pit Project as well as for the Amaruq exploration access road/haul road. Agnico Eagle's proposed mitigation, benefit enhancement, and monitoring

measures related to socio-economics were provided within Volume 8, Appendix 8-E.6 – Socio Economic Management and Monitoring Plan.

Agnico Eagle assessed local effects - those within the Kivalliq region, and in particular Baker Lake - and regional effects - those expected to occur at a territorial level. The effects assessment considered construction, operations, and closure of the proposed Whale Tail Pit and Haul Road, but Agnico Eagle noted that closure represents an end to most economic and employment effects. Agnico Eagle also stated that should the Project proceed, the potential effects would be dependent on project start date in relation to the timing of closure and operations of Agnico Eagle's Meadowbank and Meliadine projects in the region. As such, Agnico Eagle's description and classification of potential effects related to individual and community wellness were focused on the scenario where the Project would proceed according to the proposed start of operations in 2019, sometimes referencing an alternative scenario where the Project is delayed by a year.

Agnico Eagle described Baker Lake as a community with strong ties to the land, with the majority of residents practicing traditional harvesting activities on a regular basis. Agnico Eagle noted that not only do these activities provide an emotional and spiritual connection to the land, they also offset high food costs at stores. Agnico Eagle noted that individuals have enjoyed easier access to the land due to the Meadowbank all-weather access road, and also individuals can afford more supplies due to increases in income arising from employment at the mine. However, Agnico Eagle also reported that Baker Lake residents have expressed concerns about the impact of the Project on caribou, the decreased time available for individuals to pursue traditional activities, and increased use of alcohol, drugs, and time spent gambling due to higher incomes, a two-week rotational schedule, and overcrowding in community housing. Agnico Eagle reported that the two-week rotational schedule has also caused relationship stress and may lead to an increase in domestic abuse. As well, Agnico Eagle noted that crime rates in Baker Lake have increased significantly in recent years.

Agnico Eagle identified the following primary pathways of potential project-related impacts related to individual and community wellbeing:

- Continued community investment
- Improved worker and public health and safety
- Potential for project-related accidents and emergencies
- Changes in family and community cohesion.

Agnico Eagle discussed the expected benefits of the Project with respect to community investment and development, noting that Agnico Eagle would continue to provide financial support for educational programs (see [Section 6.2](#) for further details), and would continue to offer engagement activities such as community clean-ups, feasts, trade shows, and sporting events. In the Final Hearing, Agnico Eagle also mentioned a “festival by the lake” held in Baker Lake in August, 2017 and a fund for the community to invest in community-based activities to enrich the well-being of the community.⁵⁷⁰ Agnico Eagle also noted in the EIS that it would continue to offer a Work Readiness Program and an Employee and Family Assistance Program

⁵⁷⁰ S. LeClair, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 19, 2017, p. 53, lines 18-26

that would ensure community members are able to access, manage, and maintain high incomes from working at the mine, in turn increasing household access to community goods and services. Agnico Eagle also committed to ensuring that the Meadowbank Inuit Impacts Benefit Agreement with the Kivalliq Inuit Association is updated and sustained for the Project. Agnico Eagle concluded in the EIS that the Project's positive effect on wellbeing related to community investment, and as a means to help lift families out of poverty, is significant.

Agnico Eagle's EIS also discussed the expected gains in worker and public health and safety due to the provision of training (e.g., first-aid, safe driving, occupational health and safety programs), on-site health services, and public communication and education programs regarding safe and healthy lifestyles, potential project-related environmental impacts and risks, and expected road traffic and shipment schedules. These measures are elaborated on in Volume 8, Appendix 8-E.6 of the EIS. Although acknowledging there is uncertainty associated with how individuals will take-up or respond to these measures, Agnico Eagle classified the effect on health and safety as moderate in magnitude, local to regional in extent, and long-term in nature as benefits would continue post-closure. Agnico Eagle concluded the effect would be positive and significant.

Despite expecting an overall positive effect on worker and public health and safety and the implementation of training and risk management and emergency response planning, Agnico Eagle acknowledged that there is still a risk for accidents and emergencies, creating potentially significant impacts at the individual level. Agnico Eagle noted there is uncertainty whether an accident or emergency will happen, and to what extent, limiting the ability to conduct a full classification of residual effects. However, Agnico Eagle concluded that if an accident or emergency does occur, it can be conservatively assumed that the effect on an individual or community may be adverse and potentially catastrophic, and, therefore, significant.

Agnico Eagle also remarked that despite the many positives associated with employment and regular income, family and community cohesion may be negatively impacted (see discussion of current concerns and challenges above). Agnico Eagle described best practices it would incorporate to minimize the likelihood of these potential impacts, including but not limited to the following (see Appendix 8-E.6 of the EIS for more details):

- Maintaining a dry camp and having a zero tolerance policy towards drug and alcohol abuse;
- Preventing employees from contacting other communities while in transit to/from the site [to minimize access to drugs and alcohol];
- Providing training and counselling programs to support money management, conflict resolution, and making positive lifestyle choices; and
- Providing Inuit workers with access to guidance from Elders through an on-site Elder Visitation Program.

Although acknowledging there is uncertainty associated with how individuals would respond to the stresses of employment at a mine on a two-week rotational schedule and with access to high incomes, Agnico Eagle noted that any erosion of traditional values and family cohesion would persist into the future (post-closure). Agnico Eagle classified this potential impact as moderate in magnitude, local to regional in extent, long-term in nature, and significant overall.

6.7.2 Views and Concerns of Interested Parties

In its final written submission, the Government of Nunavut (GN) reported that the transmission of sexually transmitted infections (STIs) is an issue at the existing Meadowbank Gold Mine and recommended that Agnico Eagle include further sexual health and well-being information in its employee orientation programming in order to reduce the likelihood of employees engaging in unsafe sexual behaviours onsite.⁵⁷¹ Agnico Eagle agreed with this recommendation. With respect to health more broadly, the GN noted that mining in the region has anecdotally led to more demand for health care services at the Baker Lake Health Centre. The GN recommended that Agnico Eagle undertake an education program to inform workers of the range of health services available onsite, to increase provision of onsite health services, and to engage with the GN to ensure employees treated at the mine site and requiring ongoing care are appropriately accommodated in a timely manner. Agnico Eagle agreed to educate workers about the health services available onsite and to work with the GN to ensure appropriate continuing care, but did not commit to providing additional health services on-site. Rather, Agnico Eagle suggested specific recommendations for additional services could be discussed through the Kivalliq Socio-Economic Monitoring Committee with contributions from the Kivalliq Inuit Association.⁵⁷² During the Final Hearing, the Proponent and the GN jointly submitted proposed terms and conditions that commit Agnico Eagle to work with the GN to address health programs and services and ongoing care in the communities.⁵⁷³

In its final written submission, the Baker Lake Hunters and Trappers Organization (HTO) expressed concern about the two-week rotational schedules, referencing a recent study showing negative impacts of this schedule on many family relationships in Baker Lake.⁵⁷⁴ The Baker Lake HTO also highlighted the lack of healing and mental health services in the community to deal with the stresses associated with a lack of housing and a history of social trauma among Inuit, and noted that mental health, educational attainment, crime, and [accessing/maintaining] employment (see [Section 6.2](#) for additional information) are serious problems in Nunavut.⁵⁷⁵

During the Final Hearing, a Community Representative from Whale Cove asked the Proponent whether it had hired counsellors to work with employees, and Agnico Eagle confirmed it has a confidential employee support program, an on-site registered nurse, and that Elders are brought to site to meet with employees as well.⁵⁷⁶ The Representative later noted the importance of having a translator available because it can be hard for people who have been traumatized and may be suicidal to trust others and to express themselves.⁵⁷⁷

⁵⁷¹ Government of Nunavut Final Written Submissions, August 14, 2017.

⁵⁷² Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

⁵⁷³ Agnico Eagle Mines Ltd. and Government of Nunavut, *Joint Submission on Commitments [sic] by Agnico Eagle Mines Ltd. and the Government of Nunavut*, Exhibit 17, September 20, 2017.

⁵⁷⁴ Czyzewski K., Tester, F., Aaruaq, N., Blangy, S. 2014. *The Impact of Resource Extraction on Inuit Women and Families in Qamani'tuaq, Nunavut Territory*. Prepared for the Canadian Women's Foundation. Pauktuutit - Inuit Women of Canada

⁵⁷⁵ Baker Lake Hunters and Trappers Organization Final Written Submissions, August 14, 2017.

⁵⁷⁶ G. Bigue, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 688, lines 5-14

⁵⁷⁷ A. Poksiak Turner, Whale Cove, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 731-732, lines 12-26, 1-5

A community member from Baker Lake expressed appreciation for Agnico Eagle's management of the land, indicating the Proponent was keeping the area clean, and noted that there is funding available from both the territorial and federal governments to keep communities safe and clean.⁵⁷⁸

A Community Representative from Arviat noted during the Hearing that rents increase for employees of the mine because of their higher income, and it then becomes harder for them to provide for their families.⁵⁷⁹

In its response to a written comment from a community member that could not attend the hearing (see Exhibit 49)⁵²⁷, Agnico Eagle noted community wellness and health are essential to good mining in the long run and referred to its recent memorandum of understanding with the GN to work on ten (10) priority areas including housing, health, education, economic development, infrastructure, and protection of wildlife.⁵⁸⁰

6.7.3 Views of the Board

During the Final Hearing, the Board asked the Government of Nunavut (GN) if it had seen an increased demand for government services in Baker Lake and other Kivalliq communities in relation to the Meadowbank Project or other projects of Agnico Eagle's in the region.⁵⁸¹ In a deferred response, the GN confirmed that there has been an increase in demands on the Health Centre in Baker Lake over time with the start-up and ramp-up of the Meadowbank Gold Mine, and at the same time, a decrease in demand for social assistance.⁵⁸²

The Board also asked the Proponent to clarify its practice of having Elders available for counselling.⁵⁸³ Agnico Eagle responded that Elders are brought to site about once per quarter. Agnico Eagle also noted that there is a registered nurse trained to assess some mental health issues on site 24-hours a day, and that there is also the employee assistance program, which is a 24-hour helpline.⁵⁸⁴

The Board commented on the impact to workers and their families of a two-week in/ two-week out rotational work schedule, and noted the families will need help coping with social problems that may arise from the separation. The question posed to the Proponent was whether there would be professional mental health workers at site or in the communities to address the mental

⁵⁷⁸ S. Amrniq, Baker Lake, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 682, lines 2-20

⁵⁷⁹ J. Pingushat, Arviat, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 684, lines 3-20

⁵⁸⁰ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 748-749, lines 23-26, 1-15

⁵⁸¹ K. Kaluraq, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 453, lines 2-12

⁵⁸² S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 723, lines 6-22

⁵⁸³ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 713, lines 19-26

⁵⁸⁴ C. Ramcharan, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017 p. 712, lines 1-15

health issues that may arise from being away from home for such a long period of time.⁵⁸⁵ In response, Agnico Eagle described its “Making It Work” program which deals specifically with coping with fly-in/fly-outs: it brings the spouses of employees to the Meadowbank Gold Mine site so they can better understand what their spouse is doing when away from home and also helps create peer support groups in the communities for the spouses. Agnico Eagle also noted it provides frontline coordinators in the communities that can refer people for additional help, and on-site it also has peer counsellors, Inuit Human Resources (HR) agents, and occasional visits from Elders and clergy from Baker Lake.⁵⁸⁶

The Board followed-up by asking if Agnico Eagle works with the GN, noting perhaps the GN could establish mental health workers in each community.⁵⁸⁷ Agnico Eagle replied that the Kivalliq Inuit Association and the Nunavut Literacy Council were involved in establishing its “Making It Work” program, and that onsite, it promotes GN’s existing services. Agnico Eagle also stated that it discusses issues with the GN through the socioeconomic monitoring committee, and that just two (2) days ago it signed a memorandum of understanding with the GN to tackle ten (10) priority areas including health, infrastructure, and community well-being.⁵⁸⁸ The GN added that it is responsible for the delivery of health and social services in all Nunavut communities and that every community has a health centre that can provide access to mental health services. The GN further added that support services for families and children are offered by the department of family services in various communities, including in Baker Lake.⁵⁸⁹

The Hearing clarified for the Board the Proponent’s proposed mitigation and monitoring plans, and the Board acknowledges the Proponent has made the following commitments:

- Provide an Employee Assistance Program (a 24-hour helpline);
- Provide a “Making It Work” program which deals specifically with coping with fly-in/fly-outs by bringing spouses of new employees to site and creating peer support groups in communities for families;
- Periodically bring Elders and clergy to site;
- Provide a registered nurse on-site;
- Provide Inuit Human Resources agents on-site;
- Provide coordinators in communities that can refer people for other assistance;
- Work with the GN to tackle wellness issues in communities;
- Expand the range of health services it would provide on-site, ensure workers are made aware of these services, and include sexual and well-being information in its employee orientation programming.

⁵⁸⁵ P. Kadlun, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017 p. 727, lines 1-22

⁵⁸⁶ C. Ramcharan, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017 p. 727-728, lines 25-26, 1-25

⁵⁸⁷ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 729, lines 4-14

⁵⁸⁸ C. Ramcharan, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017 p. 729-730, lines 20-26, 1-10

⁵⁸⁹ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 730, lines 14-22

- Engage with the Kivalliq Socio-Economic Monitoring Committee, the GN, and the Kivalliq Inuit Association to share data, opportunities, concerns, and develop solutions.

The Board understands that the Project has the potential to result in positive impacts to the communities but that there are significant concerns for negative impacts to individual and family wellness, in particular because of the two (2) week on / two (2) week off rotational work schedules. The Board has concerns that the Employee Assistance Program is apparently underutilized at Meadowbank, and does not consider Elders to be a replacement for professional mental health workers. The Board is also concerned that the Proponent's presences in the community of Baker Lake has recently decreased, making it difficult for employees and families to connect with Agnico Eagle. The Board expects the Proponent to increase its presence in the communities.

6.7.4 Conclusions and Recommendations of the Board

In considering the views of the Proponent and those of parties throughout the assessment of the Project and as outlined above, the Board believes that the Project's potential effects to individual and community wellness could be appropriately managed through the commitments provided by the Proponent and the application of key mitigation and monitoring measures. Specifically, the Board recommends terms and conditions requiring the following (a brief summary of the Board's recommended terms and conditions is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

- Provide educational materials on sexual health and wellbeing in employee orientation materials, and ensure employees are aware of the range of health services available on and off-site, including the employee assistance program helpline.
- Engage with the Government of Nunavut to discuss health issues such as programs and services to address sexually transmitted infections and also to ensure any conditions first treated at the mine site and requiring ongoing care are appropriately accommodated in a timely manner at the community health centre as required.
- Demonstrate and encourage consideration for Inuit culture and Inuit Qaujimajatuqangit on site, for example through the provision of cross cultural training for both Inuit and non-Inuit employees.

6.8. COMMUNITY INFRASTRUCTURE AND PUBLIC SERVICES

6.8.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) presented a summary of its assessment of the effects of the Whale Tail Pit Project (the Project) on community infrastructure and services as part of its assessment of socio-economic components in Volume 7 of the Environmental Impact Statement (EIS). A detailed discussion on baseline conditions of the socio-economic environment in the project area is presented in Volume 7, Appendix 7-B of the EIS. The Proponent selected community infrastructure and services as a valued component (VC) for the assessment and predicted that, based on a pathway analysis approach to effects

assessments, the Project would not materially change baseline conditions for community infrastructure and services.

The Proponent set the spatial boundaries for the assessment of project effects on community housing, infrastructure and public services to encompass either the local area, that is, the Kivalliq region, or the regional area, that is, territory-wide, and set the temporal study boundaries to include the construction, operations, closure, and post-closure phases of the Project.

Agnico Eagle indicated that most residents in communities in the Kivalliq region live in subsidized rental units maintained by the Nunavut Housing Corporation, and noted that housing shortage, and resulting overcrowding, is a challenge in the Kivalliq and other regions in Nunavut. The Proponent stated that a large portion of the population in the Kivalliq region remain on housing waiting lists, and that Baker Lake, the closest community to the proposed Project, ranks 23rd out of the 25 communities in Nunavut with respect to a public housing shortage.

The Proponent noted that all movement of goods between communities in the Kivalliq region is either by air or marine shipping due to the lack of road connections between the communities, and indicated that it proposes to use part of the community infrastructure in the Kivalliq region, specifically the Baker Lake airport, and other public airports in Nunavut for approximately 400 passenger trips per year in support of the Project.

Agnico Eagle indicated that other typical service infrastructure in communities in the Kivalliq region include Royal Canadian Mounted Police detachments, fire stations, water treatment plants, and waste water treatment facilities. The Proponent noted that health centres in Kivalliq communities are generally managed and staffed by nurses, with support from non-resident health practitioners (doctors, psychiatrists, dentists etc.) who periodically fly into the communities to provide health care. Agnico Eagle also indicated that per capita visits to health centres have remained relatively steady in Kivalliq communities, except in Chesterfield Inlet and Baker Lake where visits have increased in recent years.

Agnico Eagle indicated in its assessment of socio-economic impacts that, based on its pathway analysis approach, the community infrastructure and services VC had no associated primary pathway with respect to project effects and, therefore, was not carried forward in its assessment of socio-economic components. The Proponent predicted that the Project will not materially change baseline conditions for community infrastructure and services.

Following the Pre-hearing Conference, and prior to the Final Hearing, Agnico Eagle provided additional clarifications regarding the methods used in the assessment of project effects on community infrastructure and public services.⁵⁹⁰ Specifically, the Proponent noted that its prediction of effects of the Project on community infrastructure and services was informed by a review of environmental impact assessments conducted for similar projects in Nunavut (Meliadine Gold Mine Project and Back River Gold Mine Project) and on the assumption that the Project will not result in a change in the population in the Kivalliq region (see [Section 6.3: Population Demographics](#)).

⁵⁹⁰ Agnico Eagle Mines Ltd. July 2017. *Socio-economics Addendum*. Whale Tail Commitment 24.

6.8.2 Views and Concerns of Interested Parties

Within its final written submission, the Government of Nunavut (GN) indicated that Nunavut Housing Corporation (NHC), the territorial government agency responsible for the delivery of public housing in communities in Nunavut, believes that socio-economic changes associated with the Project, such as direct-project employment, project-induced in-migration, and population increase in communities in proximity to the project site, would increase demand on the Kivalliq region's social housing stock. To address this issue, the GN recommended that Agnico Eagle establish a monitoring and reporting mechanism to identify migration trends and effects that may result from the Project, and collaborate with the GN, NHC and other applicable agencies and groups to identify measures to manage and mitigate related adverse impacts on employees and communities in the Kivalliq region. In addition, the GN recommended that the Proponent pursue collaboration with the GN, NHC and other applicable agencies and groups to identify measures to enhance employee access to housing in the communities. The GN proposed a recommended term and condition to address this issue.⁵⁹¹ In response to the GN's comments, Agnico Eagle indicated that it would work with the GN to ensure appropriate data on migration trends associated with the Project is made available, but noted that it would not collect information that infringes on people's right to privacy. In addition, Agnico Eagle indicated that it was already developing employee-focused programs, such as a financial literacy program, to inform employees' financial planning and personal budgeting in support of potential home ownership. Agnico Eagle also recommended that the NIRB consider applying the same terms and conditions to the Project Certificate for the Whale Tail Pit Project as were applied to the Meadowbank Gold Mine since the labour force at both mines would be managed holistically.⁵⁹²

Concerning community health services, the GN noted in its final written submission that anecdotal evidence from health care professionals in Baker Lake indicated a trend of increasing demand for health care services at the Baker Lake Health Centre following establishment of the Meadowbank Gold Mine in the Kivalliq region. To address demands on community health care facilities from the proposed Whale Tail Pit Project, the GN recommended that the Proponent commit to the following: undertake an education program to inform its workers of health services available on the mine site; increase health care services on-site to meet mine employee demands; and engage with the GN to develop a process to ensure conditions first treated at the mine site and requiring ongoing care at community health centres are accommodated promptly.⁵⁹³ In response to the GN's comments concerning community health services, Agnico Eagle committed to undertaking an education program to inform its employees of the range of health services to be made available onsite and to engaging with the GN to develop processes to support ongoing care for its employees in the communities, when required. The Proponent also suggested that any additional on-site health service needs identified by parties could be discussed at the Kivalliq Socio-Economic Monitoring Committee. The concerns of the GN related to community health services are also outlined in [Section 6.7](#) of this report (Individual and Community Wellness).⁵⁹⁴

⁵⁹¹ Government of Nunavut Final Written Submissions, August 14, 2017.

⁵⁹² Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

⁵⁹³ Government of Nunavut Final Written Submissions, August 14, 2017.

⁵⁹⁴ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

Within its final written submission, the Baker Lake Hunters and Trappers Organization (HTO) indicated that Agnico Eagle's existing Meadowbank Gold Mine near the community of Baker Lake had resulted in disruption of some services in the community. Specifically, the Baker Lake HTO indicated that the attractive remuneration offered at the Meadowbank Gold Mine had affected retention of staff by the Hamlet, particularly sewage and water truck drivers and had adversely impacted the delivery of community services. In addition, the Baker Lake HTO noted that the community of Baker Lake had not experienced an improvement to infrastructure and housing stock once the Proponent's operation of the Meadowbank Gold Mine commenced. To address this issue, the Baker Lake HTO recommended that the Proponent and the Kivalliq Inuit Association (KIA) collaborate to ensure that the Whale Tail Pit Project results in tangible legacy benefits in the form of infrastructure and housing in Baker Lake.⁵⁹⁵ In response to comments on legacy benefits of the Project by the Baker Lake HTO within its final written submission, Agnico Eagle noted that it had committed to allocating \$3 million to a community initiative fund established, as part of the Whale Tail Inuit Impact Benefits Agreement (IIBA), in support of community-based programs in the Kivalliq region. Agnico Eagle also recommended that the Baker Lake HTO provide input into the expenditure of IIBA revenues by the KIA. In addition, the Proponent indicated that it was willing to collaborate with the Baker Lake HTO and the Hamlet of Baker Lake on providing direct community benefits through support for environmental sustainability projects such as the Baker Lake sewage lagoon restoration or culvert replacement project in the Hamlet of Baker Lake.⁵⁹⁶

The Baker Lake HTO also noted that inadequate community infrastructure and services, such as housing and health delivery, are barriers to employment for some Kivalliq Inuit. To address this issue, the Baker Lake HTO recommended that both the GN and the federal government take a lead role in addressing community infrastructure and service needs, and that the NIRB consider including this recommendation in its Final Hearing report for the Project.⁵⁹⁷ In response to Baker Lake HTO's request that the NIRB consider making specific recommendations regarding barriers to employment and government services in its final report on the Project, Agnico Eagle noted that, based on its assessment of potential impacts of the Project, no employment-driven in migration or population change was predicted as a result of the Project. Agnico Eagle also noted that any recommendations on community employment and government services should be directed to the federal and territorial government, and that it does not believe the NIRB's Final Hearing report on the Project should include terms and conditions specific to Agnico Eagle on this subject.⁵⁹⁸ The concerns of the Baker Lake HTO related to community services are also addressed in [Section 6.2](#) of this report (Employment, Education and Training).

During the Final Hearing, the Baker Lake HTO reiterated its belief that the lack of adequate social services, such as healing, mental health, addiction services, in the Kivalliq communities is a major barrier to Inuit participation in employment opportunities, and noted that it is the responsibility of federal, territorial, and Inuit governments to ensure that these inadequacies are

⁵⁹⁵ Baker Lake Hunters and Trappers Organization Final Written Submissions, August 14, 2017.

⁵⁹⁶ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

⁵⁹⁷ Baker Lake Hunters and Trappers Organization Final Written Submissions, August 14, 2017.

⁵⁹⁸ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

addressed.⁵⁹⁹ In response to Baker Lake HTO's comments, Indigenous and Northern Affairs Canada questioned the perceived broadening of Baker Lake HTO's mandate with respect to socio-economic issues, since under the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)*, Hunters and Trappers Organizations are to focus on harvesting, allocation, and enforcement of community basic needs related to harvesting.⁶⁰⁰

On a related topic, in a written submission provided during the Final Hearing, a community member from Baker Lake submitted a general statement regarding high rental costs for housing in the community and the resulting overcrowding in housing units. The community member noted that the ongoing issue regarding community access to affordable housing has implications on human health and family financial stability.⁵²⁷

6.8.3 Views of the Board

During the Final Hearing, the Board expressed concerns to the Government of Nunavut (GN) about challenges of Inuit to securing housing at market rates within communities once they transitioned from social housing following gainful employment, and that the disparity in rent between social housing and housing at market rates was an ongoing barrier to Inuit employment.⁶⁰¹ In response, the GN acknowledged that social housing continues to be an income-based program due to the cost of building and maintaining housing infrastructure, and that the Board's concerns would be relayed to decision making bodies at the GN for consideration.⁶⁰² In a follow-up question, the Board requested that the GN confirm whether it had recorded an increase in demand for government services in Baker Lake and other Kivalliq region communities as a result of Agnico Eagles existing Meadowbank Gold Mine Project.⁶⁰³ In response, the GN confirmed that there has been an increase in the demand for health care services in Baker Lake since the commencement of the Meadowbank Gold Mine Project, but that it could not confirm whether there have been similar increases in demand for other government services in the region.⁶⁰⁴ The GN also noted that it is responsible for health and social services delivery in all communities in Nunavut.⁶⁰⁵

The Board acknowledges Agnico Eagle's commitment to mitigate, monitor, and adaptively manage impacts to community infrastructure and public services for the duration of the Project, including the implementation of an Inuit Impact Benefits Agreement with the Kivalliq Inuit

⁵⁹⁹ W. Bernauer, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 424-426, lines 8-26, 1-26 and 1-23.

⁶⁰⁰ K. Costello, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 428, lines 2-16.

⁶⁰¹ G. Alikut, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 450-451, lines 18-26 and 1-7.

⁶⁰² S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 451, lines 8-26.

⁶⁰³ K. Kaluraq, Board Member, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 453, lines 2-12.

⁶⁰⁴ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 453, lines 13-24.

⁶⁰⁵ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 730, lines 12-22.

Association to address a broad range of potential socio-economic impacts of the Project. The Board acknowledges public perception about the lack of tangible community benefits from Agnico Eagle's existing Meadowbank Gold Mine operations in the Kivalliq region, particularly in Baker Lake, the most likely impacted community, and also acknowledges the important role of both the Government of Nunavut and the federal government in addressing community infrastructure and service needs in the region, and expects that the Proponent would consult and collaborate with regulators and stakeholders, including Inuit, territorial, and federal governments to ensure that these community concerns are addressed in the execution of the Project. The Board also notes that failure to establish and implement measures throughout the Project to limit project-related pressures on existing facilities and public services in Kivalliq communities could result in significant residual impacts to community infrastructure and public services.

6.8.4 Conclusions and Recommendations of the Board

Following a review of the material presented by Agnico Eagle in the EIS and a consideration of views of Parties, the Board believes that the Project's potential effects related to community infrastructure and public services could be appropriately managed through the adherence to commitments provided by the Proponent and the implementation of proposed mitigation measures. Specifically, the Board recommends terms and conditions requiring the following (a brief summary of the Board's recommended terms and conditions is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

- Work collaboratively with the Government of Nunavut Department of Health to monitor the impacts of the Project on health services within the potentially impacted communities and particularly, Baker Lake;
- Investigate measures and programs designed to assist Project employees with pursuing home ownership or accessing affordable housing options;
- Work with the Government of Nunavut to develop an effects monitoring program that captures increased Project-related pressures to community infrastructure in the potentially impacted communities and to airport infrastructure in all point-of-hire communities and in Baker Lake;
- Develop a process to ensure that any conditions first treated at the mine site and requiring ongoing care is appropriately accommodated in a timely manner at the community health centre as required.
- Participate in the Kivalliq Socio-Economic Monitoring Committee along with other agencies and the communities of the Kivalliq region to identify and mitigate Project impacts on community infrastructure and public services in the region; and
- Provide periodic reports on adverse effects and benefits of the Project with respect to community infrastructure and public services in the Kivalliq region to applicable agencies.

7. OTHERS MATTERS TAKEN INTO ACCOUNT

7.1. COMMUNITY CONSULTATION

7.1.1 *Views of the Proponent*

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) noted within the Environmental Impact Statement (EIS) that a key goal of Agnico Eagle's public consultation and engagement program has been to ensure the company obtains a "social licence to operate", by securing the support the majority of residents from potentially impacted local communities.⁶⁰⁶ Agnico Eagle indicated that since operations of Meadowbank Gold Mine began, it has continued public consultation by annually meeting with the community and local stakeholders within the Kivalliq region, regulatory agencies and local employees. These meetings have, in Agnico Eagle's opinion, allowed a better general understanding of the rights, interests, values, aspirations, and concerns of the potentially affected stakeholders, with particular reference to the local community of interest, Baker Lake. Agnico Eagle indicated that it has consulted with local stakeholders and regulators regarding the current Amaruq exploration activities and the proposed Whale Tail Pit Project (the Project), as an extension to the Meadowbank Gold Mine. Volume 2, Appendix 2-G provides a summary of the consultation conducted to date related to the Project. Agnico Eagle documented the location, purpose, and how the information collected from participants were used. Agnico Eagle noted that in general, most parties have voiced concerns over aspects of the Project and suggested mitigations; however, it has noted that the Baker Lake Hunters and Trappers Organization (HTO) has vocally opposed the exploration road and potential haul road in various meetings.

Following the Pre-hearing Conference, Agnico Eagle provided additional details on consultation efforts undertaken by Agnico Eagle for the EIS for Whale Tail Pit Project.⁶⁰⁷

During the Final Hearing, Agnico Eagle further discussed its commitments to Indigenous people engagement and its commitment to work in partnership with Indigenous people ensuring effective two-way communication and consultation.⁶⁰⁸

7.1.2 *Views and Concerns of Interested Parties*

Within its final written submissions, Indigenous and Northern Affairs Canada (INAC) commented on Agnico Eagle's public consultation and incorporation of concerns within the EIS. INAC indicated that there was minimal evidence in the Proponent's filings that community consultation adequately captured or meaningfully dealt with concerns related specifically to the Whale Tail Pit development. Additionally, INAC noted that it was unclear if valued socio-economic components, baseline data, impact characterization or estimation of significance had been adequately informed by consultation, nor how socio-economic concerns raised through consultation have been used to inform the project. In addition, INAC further noted that the

⁶⁰⁶ EIS, Volume 1, pp. 1-iii

⁶⁰⁷ Agnico Eagle Mines Ltd. July 2017. *Additional Details on Consultation Efforts for Whale Tail Pit Version 2*. Whale Tail Commitment 27.

⁶⁰⁸ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 19, 2017, p. 34, lines 6-12.

effectiveness of information sharing and issue resolution through the Community Liaison system remained unproven. INAC indicated that there is a need for improved consultation methods, recording and dissipation of results, and monitoring of the effectiveness of the community engagement programs. Consequently, INAC recommended that the Proponent record issues identified through their Community Liaison Committee.⁶⁰⁹ During its technical presentation, INAC noted that Agnico Eagle fulfilled various commitments and provided additional information after the Pre-Hearing Conference. Following review of the information provided, INAC concluded that:

“...public consultation occurred regarding this particular project but the sessions were largely information-provision and baseline data-gathering exercises. Consultation events focusing on impact determination, mitigation and monitoring programs required by the community, or validation of assessments done by the proponent would have improved the incorporation of public input into the project. Additionally, the monitoring of community concerns and the way that they are addressed by the proponent remains unclear. Minimal information was available to confirm the effectiveness of the community liaison system.”⁶¹⁰

INAC recommended a specific term and condition to address this concern within its final written submissions and re-iterated this request during the Final Hearing, noting the Proponent has agreed to this recommendation.⁶¹¹

Following INAC’s technical presentation at the Final Hearing, the Baker Lake HTO noted the frustrations and challenges associated with acquiring meaningful consultation without the availability of participant funding and asked for INAC’s *“thoughts ...on how the outcome of this hearing would have been if there was participant funding available to the HTO’s...”*⁶¹² In response, INAC noted that the department does not have a formal program for participant funding but could discuss other funding options with the HTO outside of the Nunavut Impact Review Board (NIRB) hearings. With respect to the outcome of the hearing if participant funding was available, INAC could not speculate but noted that everyone has benefitted from the HTO’s active participation.⁶¹³ The Baker Lake HTO further noted that the community members are not informed by the regulators on the inspections and monitoring that is completed and requested if regulators would consider conducting follow-up meetings with community members with respect to the results of the inspections to keep the community informed on the project.⁶¹⁴ In response, INAC noted the importance of reporting to the community on its findings, on its

⁶⁰⁹ Indigenous and Northern Affairs Canada Final Written Submissions, August 14, 2017.

⁶¹⁰ R. Theoret-Gosselin, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 528-530, lines 5-26, 1-26 and 102.

⁶¹¹ R. Theoret-Gosselin, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 528-530, lines 5-26, 1-26 and 102.

⁶¹² H. Nateela, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 537, lines 2-10.

⁶¹³ K. Costello, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 537-538, lines 14-26 and 1-10.

⁶¹⁴ H. Nateela, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 538-539, lines 12-26 and 1-4.

inspections and the monitoring that has been conducted and will take the concern raised by the Baker Lake HTO back to its department for consideration.⁶¹⁵

A Community Representative from Baker Lake voiced concern related to the community requiring information from the company to be able to understand the Project and the plans as Agnico Eagle conducts the work at the site.⁶¹⁶

In closing remarks, the Community Representative from Rankin Inlet emphasized that wildlife are the livelihood of Inuit and that if the Project proceeds it would be supported only if the Proponent consults with the community members and organizations - including Elders, the HTOs, and the Hamlet – and that Agnico Eagle follow their advice to minimize impacts.⁶¹⁷

7.1.3 Views of the Board

The Board acknowledges Agnico Eagle's engagement-related commitment to work in a partnership with Inuit that is mutually beneficial and a productive relationship. However, the Board notes that there appears to be lack of information on how concerns raised through consultation have been used to inform the project proposal. Further, community members have repeatedly indicated frustrations in the ability to provide meaningful comments on Agnico Eagle's projects due to the lack of community consultation conducted. Similar concerns have been raised by parties in relation to how Inuit Qaujimajatuqangit is incorporated within the project (see [Section 6.4.2](#) of this report). In addition, the Board heard that the regulators of the Project have also not ensured that the communities are informed as to how the existing Meadowbank Gold Mine Project has been regulated and how regulators have conducted compliance-assurance activities over the past 10 years.

7.1.4 Conclusions and Recommendations

In considering the views of the Proponent and those of parties throughout the assessment of the Project and as outlined above, the Board notes that there was minimal evidence in the Proponent's Environmental Impact Assessment (EIS) that the results of community consultations were adequately captured or that the concerns raised by community members were meaningfully addressed within Agnico Eagle's plans for the Whale Tail Pit development. The Board strongly encourages the Proponent to improve upon its future collection of community concerns and demonstrate the integration of measures to address community concerns through its monitoring programs for the Project. The Board has also made recommendations to regulators regarding their involvement as regulators of the Project specifically in [Section 9.8](#).

⁶¹⁵ K. Costello, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 539, lines 8-23.

⁶¹⁶ L. Tapatai, Baker Lake, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 610-611, lines 23-26 and 1-2.

⁶¹⁷ M. Hickes, Rankin Inlet, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 739, lines 5-25.

7.2. HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT

7.2.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) presented the results of its Human Health and Ecological Risk Assessment (HHERA) in Volume 3, Appendix 3-B which summarizes the potential risk to human health and the environment as a result of the Whale Tail Pit Project (the Project) and the haul road. Agnico Eagle determined that no residual impacts were identified for human health or wildlife, but residual impacts were identified for aquatic life. Specifically, Agnico Eagle noted that the hazard quotients for aluminum and chromium for aquatic life were greater than the target hazard quotient of one for Whale Tail Lake during post-closure. Therefore, these chemicals of potential concern (COPCs) were considered further in the residual impact classification.

Agnico Eagle noted that the HHERA adhered to the basic principles of risk assessment frameworks established within guidance provided by Health Canada, the Canadian Council of Ministers of the Environment (CCME), and the United States Environmental Protection Agency. In broad terms, changes to environmental quality as predicted by other disciplines were quantitatively evaluated by Agnico Eagle for each of the valued components as described for human health, wildlife, and aquatic life in the Environmental Impact Statement (EIS). Agnico Eagle identified three (3) measurement indicators with associated primary pathways in its evaluation of the Project effects on human health, wildlife, and aquatic life: changes to air quality, changes to water quality, and changes to noise. Further, the potential risks to human health and wildlife as a result of changes to soil quality (metals) due to dust deposition from the ongoing Meadowbank operations were also considered in the risk assessment where applicable. To complete the effects assessment for the measurement indicators, Agnico Eagle also assessed environmental media with respect to potential changes to environmental quality that may have an effect on human health, wildlife and aquatic life:

- Air quality, which was predicted for receptor locations in the local study area (LSA) by the air quality discipline;
- Soil quality, which was calculated based upon predicted deposition rates;
- Country food quality, which was calculated based upon changes to soil (and vegetation) quality;
- Water quality, which was predicted for waterbodies in the LSA by the water quality discipline; and
- Fish tissue quality, which was calculated based upon changes to water quality.

Human Health

Agnico Eagle developed a conceptual site model for human health based upon the primary pathways identified, the exposure pathways between project activities, intermediate residency media (i.e. the aspects of the environment that that may experience a change in quality due to project activities/emissions), and receptors shown to be either complete or incomplete. Where pathways were incomplete, Agnico Eagle did not conduct a quantitative assessment as environmental quality was not anticipated to change as a result of the Project. A brief summary of the complete exposure pathways was provided by Agnico Eagle for Inuit and non-Inuit

members of the public and was summarized as:

- Inhalation of air;
- Incidental ingestion and dermal contact with soil;
- Ingestion and dermal contact with surface water; and
- Consumption of country foods (e.g., caribou, fish).

For air quality, Agnico Eagle noted that the problem formulation consisted of the identification of receptors, pathways, and COPCs. Effects on human health from air quality were evaluated based on the traditional use of the area. Locations that were identified as part of the Inuit Qaujimajatuqangit Baseline Study that was conducted by Agnico Eagle in 2014 were identified as human receptor locations for the purposes of predicting changes to air quality. Agnico Eagle identified sixteen receptor locations and the predicted concentrations for chemicals in air (i.e. criteria air contaminants and metals) were compared to the health-based thresholds for the relevant averaging period (i.e. 1-hour, 24-hour and annual) from the Government of Nunavut, Department of Environment (GN-DoE). Agnico Eagle noted that if a threshold was not available from the GN-DoE, the most conservative (i.e. protective) of the available health-based thresholds was selected from different agencies as noted in the EIS. Once the COPCs were determined, Agnico Eagle conducted a toxicity assessment that involved the determination of the dose to which a receptor could be exposed without experiencing adverse health effects, and an exposure assessment to consider the amount of time members of the public could spend at the receptor locations with identified COPCs. Agnico Eagle followed the approach described by Health Canada to calculate hazard quotients (HQs) for air quality and for the risk characterization. Based on the conceptual model, toxicity and exposure assessment, and using the appropriate target for the HQ, health risks to members of the public were considered to be negligible, and as a result Agnico Eagle did not retain COPCs for further analysis in the residual impact classification.

Agnico Eagle noted that predicted concentrations of chemicals in soil were screened against the CCME *Canadian Soil Quality Guidelines for the Protection of Environment and Human Health* (for residential land use) and the U.S. EPA Regional Screening Levels for residential soils. If predicted concentrations for chemicals in soil were greater than the screening values and maximum baseline concentrations plus 10%, Agnico Eagle identified the chemical as a COPC. However, Agnico Eagle noted that all concentrations in soil met their respective screening values and/or baseline plus 10%; as a result, no COPCs were retained in soil and no residual impacts due to changes to soil quality were identified.

Given that no COPCs were identified in soil by Agnico Eagle, concentrations of chemicals in country foods (i.e. plants and animals consumed by people) were not anticipated to change in country foods. As a result, country foods were not assessed further with respect to potential human health effects by Agnico Eagle and no residual impacts due to changes to country food quality were identified.

In its assessment of water quality, Agnico Eagle noted that effects on human health were evaluated based on the traditional use of the area and waterbodies expected to be affected by discharges from the Project. Based on the screening process identified by Agnico Eagle, only

arsenic and manganese were identified as COPC for water quality. Once the COPCs were determined, Agnico Eagle applied toxicity reference values for these two (2) parameters and the most protective of the available toxicity reference values were used in the assessment. For the exposure assessment, Agnico Eagle considered the amount of time members of the public could rely on surface water as a potable water source at the locations identified COPCs. For the risk characterization, Agnico Eagle used the approach described by Health Canada to calculate health risks for contaminated water and using a target HQ of 0.2 and target incremental lifetime cancer risk (ILCR) of 1E-05 (or 1 in 100,000). Agnico Eagle HQs and ILCRs were calculated for each location and COPC. Based on the conceptual model, all calculated HQs and ILCRs were less than their targets of 0.2 and 1E-05, respectively. As such, Agnico Eagle noted that health risks were not expected for members of the public that may rely on Mammoth Lake, Lake A15 (downstream of Mammoth Lake), and Lake A12 (downstream of Lake A15) as their potable water supply, should these receptors spend time in the area. Agnico Eagle identified as part of its assessment of fish that health risks were not expected for members of the public that may rely on Mammoth Lake, Lake A15, and Lake A12 for fish, should these receptors spend time in the area. However, Agnico Eagle noted that given that the calculated risks are equal to the target, restrictions on fishing may be considered in follow-up monitoring and maintenance should the measured fish tissue concentrations be higher than those predicted in the assessment.

No residual impacts were identified for human health.

Wildlife

Consistent with its assessment of human health, Agnico Eagle developed a conceptual site model for wildlife receptors that was based upon the primary pathways identified, the exposure pathways between project activities, intermediate residency media (i.e. the aspects of the environment that that may experience a change in quality due to project activities/emissions), and receptors shown to be either complete or incomplete. Where pathways were incomplete, Agnico Eagle did not conduct a quantitative assessment as environmental quality was not anticipated to change as a result of the Project. A brief summary of the complete exposure pathways was provided by Agnico Eagle for wildlife and was summarized as:

- Incidental ingestion of soil;
- Ingestion of surface water; and
- Consumption of plants and animals as prey.

Agnico Eagle did not identify direct effects to wildlife as a result of changes to air quality as a primary pathway in its assessment. However, indirect effects due to particulate deposition onto soils and changes in soil quality were assessed further by Agnico Eagle.

As part of its assessment of soil quality and the protection of wildlife, Agnico Eagle screened the concentrations of chemicals in soil against the CCME *Canadian Soil Quality Guidelines for the Protection of Environment and Human Health* (for residential land use) and the U.S. EPA Ecological Soil Screening Levels. If predicted concentrations for chemicals in soil were greater than the screening values and maximum baseline concentrations plus 10%, Agnico Eagle identified the chemical as a COPC. Agnico Eagle noted that all concentrations in soil met their respective screening values and/or baseline plus 10%; as a result, no COPCs were retained in soil

and no residual impacts due to changes to soil quality were identified. Further, Agnico Eagle indicated that given that no COPCs were identified for soil, no residual impacts to vegetation quality were identified. Furthermore, as no COPCs were identified in soil, Agnico Eagle predicted that concentrations of chemicals in prey items (i.e. plants and animals consumed as prey) would not change, and as a result, prey items were not assessed further with respect to potential wildlife health effects and no residual health impacts due to changes to prey item quality were identified.

Consistent with its assessment of human health, Agnico Eagle evaluated effects on wildlife health based on the waterbodies expected to be affected by discharges from the Project. Locations that were identified by the water quality effects assessment were assessed in the HHERA and the concentrations of the COPCs identified by Agnico Eagle were based upon comparison to screening values that are protective of human health and aquatic life. Agnico Eagle identified that all predicted concentrations were less than the derived screening values and as a result, no COPCs in water and as a result for fish were identified for evaluation of effects to wildlife, and no residual impacts due to changes in water and fish quality were identified.

No residual impacts were identified for wildlife.

Aquatic Life

Agnico Eagle's problem formulation for aquatic life focussed on the understanding of how potential changes to environmental quality might affect aquatic life near the Project. Receptors selected for the effects assessment included algae, aquatic plants, aquatic invertebrates and fish. Agnico Eagle considered the exposure pathway in the effects assessment, as the identified aquatic receptors could come in contact with, or be exposed to, chemicals in surface water by direct contact with surface water. Agnico Eagle selected arsenic, lithium, strontium, fluoride, and chromium as COPCs for the aquatic receptors for each modelled location and project phase based on its screening process.

Consistent with human health and wildlife, Agnico Eagle developed a conceptual site model for aquatic life based upon the primary pathways and considered the direct contact with surface water by algae, aquatic plants, aquatic invertebrates, and fish. Agnico Eagle noted that the exposure assessment determined the amount of COPC to which each of the receptors would be exposed via each complete exposure pathway, and the exposure was expressed as the concentrations of the COPCs in the media to which the receptor is exposed. Agnico Eagle's toxicity assessment characterized the potential effects associated with COPCs and provided a basis for evaluating what was an acceptable exposure and what level of exposure may adversely affect the receptors. For aquatic life, Agnico Eagle noted that this involved determining concentrations that receptors can be exposed to without adverse effects and referred to this value as the toxicity benchmark. These values were used as thresholds for comparison with exposure concentrations during risk characterization.

Agnico Eagle indicated that risks to aquatic receptors were assessed on a quantitative basis by calculating HQs. The HQ for aquatic receptors was defined as the ratio of the estimated exposure concentration from the exposure assessment (i.e. predicted concentration of COPC in surface water) to the chronic toxicity benchmark developed in the toxicity assessment. Agnico

Eagle used a target HQ of one (1) in its assessment, consistent with current CCME guidance. An HQ of less than one (1) indicated that risks to aquatic life were not expected. An HQ of greater than one (1) indicated the potential for risks to aquatic life and COPCs with HQs greater than one (1) were considered further in the residual impact classification. Agnico Eagle noted that the results for HQs for fluoride, arsenic, iron, lithium and strontium were less than one (1) for all modelled locations and project phases, indicating that risks to aquatic life from these COPCs would be negligible. The results for the HQs for aluminum and chromium were less than one (1) for all modelled locations and project phases with the exception of the HQs for Whale Tail Lake during post-closure. HQs of 3.7 for aluminum and 1.8 for chromium were predicted for Whale Tail Lake water quality post-closure.

Agnico Eagle conducted a residual impact classification for aluminum and chromium in Whale Tail Lake during post-closure, which indicated that impacts to aquatic life resulting from aluminum or chromium would not be significant when all the criteria are considered.

For the cumulative effects assessment associated with the HHERA, Agnico Eagle noted that as the cumulative effects to air quality and surface water quality would be negligible, the subsequent effects to human health, wildlife and aquatic life would also be negligible.

7.2.2 Views and Concerns of Interested Parties

Within its final written submission, Health Canada noted concern that methylmercury concentrations in the aquatic environment including fish tissue are anticipated to increase during operations as presented by the Azimuth study.⁶¹⁸ Health Canada stressed the importance of knowing the potential risks to human health associated with the presence of methylmercury and the consumption of fish, and suggested that Agnico Eagle conduct a dietary survey. Health Canada noted within its final written submission that the preferred approach for assessing potential risks from consumption of fish containing methylmercury would be the calculation of hazard quotients. The results of the assessment of risk would then influence the decision respecting whether there is a need to identify risk management measures (e.g., food consumption limits).⁶¹⁹ In response to the final written submissions, Agnico Eagle agreed that the hazard quotients are a useful tool for presenting risk estimates in many cases. However, Agnico Eagle indicated that the report by Azimuth was not intended as a risk assessment. Agnico Eagle further noted that lakes such as Whale Tail Lake were not commonly used for fishing making it difficult to derive hazard quotients. Instead, Agnico Eagle indicated that it used Health Canada's guidance to calculate the number of meals that could be consumed per month without exceeding Health Canada's tolerable daily intake.⁶²⁰

In its final written submissions, Health Canada noted that Agnico Eagle did not meet one of the commitments as listed within the Pre-hearing Conference Report (Appendix E: List of

⁶¹⁸ Azimuth (Azimuth Consulting Group Partnership). 2017. *Whale Tail Pit Project: Predicted changes in Fish Mercury Concentrations in the Flooded Area of Whale Tail Lake (South Basin)*. Prepared for Agnico Eagle Mines Ltd., Meadowbank Division. February 2017.

⁶¹⁹ Health Canada Final Written Submissions, August 14, 2017.

⁶²⁰ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

Commitments)⁶²¹ and did not integrate the mercury-related monitoring within the Whale Tail Pit – Fisheries and Offsetting Monitoring Plan and as such Health Canada could not provide any comments on the adequacy of its contents.⁶²² Agnico Eagle did not provide a response to this comment.

7.2.3 Views of the Board

The Board notes concerns by both Health Canada (HC) and Community Representatives regarding the potential for health risks associated with consumption of country foods that could potentially be impacted by mining development.

Based on the input provided by parties, Community Representatives, and the Proponent throughout the Review of the Project the Board is confident that the potential risk from project operations on human health, particularly dust deposition and associated impacts to wildlife can be mitigated, provided that the Proponent fully implements the mitigation and monitoring measures proposed in various management plans.

7.2.4 Conclusions and Recommendations of the Board

In considering the views of the Proponent and those of parties throughout the assessment of the Project and as outlined above, the Board is satisfied with the Proponent's effects assessment related to human health and environmental risk assessment, and the mitigation and monitoring measures proposed during the NIRB's Review process and committed to throughout subsequent collaboration. However, the Board is specifically, the Board recommends terms and conditions requiring the following (a brief summary of the Board's recommended terms and conditions is provided below for ease of reference only; see [Section 9: Recommended Project Specific Terms and Conditions](#) for the complete wording of the recommended terms and conditions for this section):

- Conduct additional studies as part of its freshwater aquatic effects analyses to ensure that methylmercury concentrations anticipated to increase during operations in the aquatic environment and potentially accumulating in fish tissue do not exceed regulatory requirements.

7.3. ACCIDENTS AND MALFUNCTIONS

7.3.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) presented the potential accidents and malfunctions related to the marine environment including marine wildlife and habitat in Volume 3, Sections 3.A-8.1, 3.A-8.2 and 3.A-8.3 of the Environmental Impact Statement (EIS), and this is summarized in [Section 5.12](#) of this report. The potential accidents and malfunctions related to individual and community wellness are discussed in Volume 7 of the EIS and summarized in [Section 6.7](#) of this report. Agnico Eagle further discussed its Emergency Response Plan in Volume 8, Section 8.3.4.4 and its Spill Contingency Plan in Volume 8, Section 8.3.4.8.

⁶²¹ NIRB Pre-hearing Conference Decision Concerning the Whale Tail Pit Project, File No. 16MN056, June 8, 2017.

⁶²² Health Canada Final Written Submissions, August 14, 2017.

Agnico Eagle noted that the Emergency Response Plan was developed to be activated when an operations-related emergency, accident, or malfunction occurs, or if such an incident is foreseeable. Agnico Eagle further noted that accidental spills have the potential to occur throughout the life of the Project. Spills could be minor fuel spills such as those resulting from leaks from on-board equipment or fuel containers (e.g. fuel drums); or major fuel spills resulting from a malfunction during fuel transfer activities or as a result of a vessel accident, such as sinking, running aground, collisions with other ships, or an on-board fire or explosion.

During the Final Hearing, Agnico Eagle further discussed its commitments to monitor the effectiveness of its mitigation and adaptive management associated with protecting marine habitat areas for migratory birds, migratory bird sanctuaries and known important bird areas with the implementation of the shipboard oil pollution emergency plan. Agnico Eagle further noted that it has minor diesel spill procedures and major diesel spill procedures in place.⁶²³

7.3.2 Views and Concerns of Interested Parties

As noted in [Section 5.12.2](#) of this report, the Board staff requested during the Final Hearing that Agnico Eagle justify its ranking of the likelihood of a potential for an oil spill during marine operations as low, especially considering existing records of such spill incidents during operations of the Meadowbank Gold Mine and Meliadine Mine projects in the Kivalliq region.⁶²⁴ In response, the Proponent indicated that it still considered the likelihood of a spill incident associated with its marine operations to be low due to the controls and procedures it has in place for mine-related marine activities.^{625,626}

A member from the Elders committee in Baker Lake voiced concern with respect to safety in terms of hunting along the all-weather access road (AWAR) due to an increase being observed in hunting and hunters being careless and not following the safety rules. The community member asked Agnico Eagle what kind of discussions have been had regarding policing of hunting rules and whether there is “*something that we can do more to make that road safer and the corridors on either side of it safer for hunters.*”⁶²⁷ In response, Agnico Eagle noted it has recently begun discussions with the Baker Lake HTO to encourage safe practices on the road, and further noted it is attempting to enforce a one (1) kilometre safety zone along the road while working with the Government of Nunavut Conservation Officers.⁶²⁸

⁶²³ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 291, lines 2-10.

⁶²⁴ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 334-335, lines 14-25, 12-16 and 21-25.

⁶²⁵ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 335, lines 1-9.

⁶²⁶ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 375-376, lines 23-26 and 1 and 12.

⁶²⁷ D. Simailak, Baker Lake Elders Committee, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 671-674, lines 3-12 and 4-25.

⁶²⁸ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 672, lines 8-16.

A member of the public from Baker Lake expressed concern regarding potential accidents and spills, noting that drivers hauling fuel to the site drive too fast along the road with no regards to potential accidents or potential malfunctions that could occur and requested the company consider mitigation measures such as speedometers.⁶²⁹ In response, Agnico Eagle noted that all trucks along the AWAR are tracked through dispatch to ensure the trucks follow the speed-limits along the roads. Agnico Eagle noted that this would also occur for the proposed hauling of ore from the Whale Tail Pit to Meadowbank via the haul road.⁶³⁰

Another member of the public from Baker Lake requested clarification on who is responsible for cleaning up spills that are related to project shipping and asked how to contact the responsible authority when accidental spills are observed in the lake when barges are offloading and whether there are any Coast Guard ships available to monitor the ships and barges.⁶³¹ In response, Agnico Eagle noted that the Baker Lake office could be contacted to determine if the spill is occurring from its ship or if Agnico Eagle could provide assistance. In addition, Agnico Eagle noted that it conducts ongoing spill training that involves the Baker Lake Hamlet and the fire department.⁶³² Fisheries and Oceans Canada (DFO) provided further clarification on behalf of the department and on behalf of Transport Canada with respect to who is responsible for spills. In the event that a spill would occur during transfer from the vessel to the oil handling facility, Agnico Eagle and the vessel would be responsible for clean-up. If there is no connection to the shore, than the vessel is responsible for the clean-up of any spills. DFO further noted that the

*Canadian Coast Guard with DFO would monitor the responses of ship-to-source marine pollution in the Arctic. If the polluter is unwilling or unable to respond or it is unknown who the polluter is, the Canadian Coast Guard would take the lead in responding to ship-to-source pollution on behalf of Government of Canada. Transport Canada conducts the compliance inspections and will take appropriate actions based on those results.*⁶³³

7.3.3 Views of the Board

The Board appreciates Agnico Eagle's commitments to ensuring safe Arctic shipping, transportation of fuel and equipment, safe practices on the access roads and a safe environment at the mine site. However, the Board expects Agnico Eagle to maintain a precautionary approach by continuously reviewing and improving management plans and procedures to ensure potential risks are identified and mitigated.

⁶²⁹ S. Amrniq, Baker Lake Community Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 681, lines 2-23.

⁶³⁰ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 683, lines 1-20.

⁶³¹ H. Igkoe, Baker Lake Community Member, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 702-704, lines 11-26, 1-26 and 1-7.

⁶³² J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 721-722, lines 20-26 and 1-12.

⁶³³ M. D'Aguiar, Fisheries and Oceans Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 723-74, lines 10-26 and 1-4.

7.3.4 Conclusions and Recommendations of the Board

Following a review of the information provided by Agnico Eagle in the EIS, as well as the views of Parties based on Agnico Eagle's commitments, the Board believes that the Project's potential effects related to Accidents and Malfunctions could be appropriately managed through the commitments provided by the Proponent and application of mitigation measures. In addition, the Board has previously recommended terms and conditions to mitigate the potential impacts from accidents and malfunctions in the amended Project Certificate No. 004⁶³⁴ with provisions that apply to the existing infrastructure in Baker Lake that is used to support the Meadowbank Gold Mine and that will be used to support project-shipping for the Whale Tail Pit project proposal. The Board notes, that as outlined in [Section 9.5.12](#) that these terms and conditions which will continue to govern the shipping for the Project, even after the closure and reclamation of the developed pits at the Meadowbank Gold Mine site

7.4. ALTERNATIVE ANALYSIS

7.4.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) provided the alternative analysis and conclusions in Volume 1, Section 1.10 of the Environmental Impact Statement (EIS). Agnico Eagle noted that the alternatives that shaped the overall Project included the Project Go/No-Go decision, deposit, mining method, and production rate, processed ore containment and tailing storage, overburden and waste rock disposal, water management, transportation access and quarry development, and infrastructure support.

The Proponent noted that the project alternatives were considered during all stages of Project design and that consultation and regulatory engagement discussions were considered as part of the alternatives assessment. The project alternatives were evaluated by Agnico Eagle, according to the following criteria:

- Environmental - potential impacts to the environment, project footprint, reclamation
- Engineering and Viability – best engineering practices, technology, permitting, risk, and flexibility;
- Economy – cost implications, construction capital, operating costs, maintenance cost for reclamation; and
- Society – community acceptance or preference, traditional knowledge, health and safety, quality of life, employment, and socio economic effects.

In this analysis of the “Go/No-Go” alternatives, the Proponent concluded that the no-go alternative would result in a substantial lost opportunity and that delays in the Project associated with permitting may affect the long-term economic viability of the Project. Agnico Eagle noted that to reduce economic and environmental liability for the proposed Project and existing Meadowbank Gold Mine, Agnico Eagle's key objective is to minimize the “gap” in time

⁶³⁴ The NIRB issued the amendment 002 of the Project Certificate to Agnico Eagle Mines Limited on August 12, 2016 following the approval by the Minister of Indigenous and Northern Affairs for the Vault Pit Expansion Project.

between Meadowbank closure due to lack of resources and the mining/processing of additional resources from the Project.

7.4.2 Views and Concerns of Interested Parties

Within their joint final written submission, Nunavut Tunngavik Inc. and the Kivalliq Inuit Association requested that that Agnico Eagle reanalyze the extent and magnitude of the Zone of Influence around the existing Meadowbank Gold Mine and all-weather access road using the collared caribou by using an alternative analysis method that does not rely on comparison with pre-development collar data. For further details on this discussion, please refer to [Section 5.10: Terrestrial Wildlife and Wildlife Habitat](#) of this report.

Within its final written submission, Environment and Climate Change Canada recommended that the Proponent conduct an alternatives analysis of the pit design with and without the north wall pushback scenario, in order to assess the potential risks and benefits to the aquatic receiving environment. The alternatives analysis should consider the entire life of mine through to post-closure. For further details on this discussion, please refer to [Section 5.7: Surface Water Hydrology, Surface Water Quality and Sediment Quality](#) of this report.

Within its final written submission, Indigenous and Northern Affairs Canada noted concern with respect to the alternative of long-term water treatment of water to ensure that the quality of the back-flooded pit/lake is maintained during post closure. INAC noted that long-term water treatment is generally not an acceptable closure alternative, particularly for remote northern sites. For further details on this discussion, please refer to [Section 5.4.2: Terrestrial Environment \(Geology and Geochemistry\)](#) of this report.

A Community Representative from Rankin Inlet questioned Agnico Eagle on the project components and asked:

*When you start up the Whale Tail Project, will you be shutting down Meadowbank operation? Or will they both be running? And will you be building another road besides the road you have now? Will the proponent be working with the Hamlet -- i.e. location, gravel, and so on? And haul trucks, are they the same as the ones that are used at Meadowbank?*⁶³⁵

In response, Agnico Eagle noted that if the Whale Tail Project were to be approved, all operations at Meadowbank would continue with the exception of mining/extraction at Meadowbank. Agnico Eagle further noted that the exploration access road connecting Meadowbank to the Whale Tail/Amaruq area has been completed but noted that the current proposal is for the expansion of the access road from 6.5 m width to 9.0 m width to accommodate haul trucks. Any other roads would link the project components such as a road from the pit to the camp at Whale Tail. With respect to the question regarding working with the Hamlet, Agnico Eagle noted that it already has licences in place to extract gravel from eskers along the road to Whale Tail. With respect to the question on haul trucks, Agnico Eagle noted that the haul trucks currently being

⁶³⁵ M. Hickes, Rankin Inlet, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 608, lines 14-21.

used for mining would be moved to Whale Tail for the removal of the ore from the pit to the surface. Once on the surface these haul trucks would transfer the ore to the new proposed trucks which would transport the ore along the haul road.⁶³⁶

A community member from Baker Lake requested clarification on what would happen to the all-weather access road if the Whale Tail Pit Project proposal was not approved.⁶³⁷ In response, Agnico Eagle noted that the Meadowbank Gold Mine would go into closure if the project proposal was not approved and near the end of closure the road would be decommissioned.⁶³⁸

During the Final Hearing, parties noted support for the Project proceeding with the preferred alternatives as proposed by Agnico Eagle.⁶³⁹ Further, as noted by the GN in its technical presentation, the GN believes “that through collaborative and comprehensive mitigation and monitoring plans, the potential impacts associated with this project can be effectively managed.”⁶⁴⁰

7.4.3 Views of the Board

With respect to the fundamental question of alternatives to the Project, the Board recognizes that the Project has the potential to deliver lasting positive economic benefits in the region, Nunavut but that these potential effects must be balanced against the potential for negative ecosystemic and socio-economic effects in these areas as well. As detailed in several sections of the report, the Board has now concluded that the potential for the Project to have significant adverse ecosystemic and socio-economic effects can be addressed through the Proponent’s compliance with the commitments made throughout the Board’s review, as well as compliance with the Board’s recommended terms and conditions.

7.4.1 Conclusions and Recommendations of the Board

In considering this issue, the NIRB acknowledges that Agnico Eagle’s preferred means of developing the Project is appropriate, as the no-go alternative would result in lost opportunity and closure of the Meadowbank Gold Mine site. On the assumption that the Project is carried out in compliance with Agnico Eagle’s commitments and the Board’s recommended terms and

⁶³⁶ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 608-610, lines 1, 1-26 and 1-10.

⁶³⁷ C. Kaayak, Baker Lake Youth – Grade 11 Class, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 706, lines 15-17.

⁶³⁸ R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, pp. 706-707, lines 19-26 and 1-2

⁶³⁹ See for example: S. Attungala, Baker Lake Hamlet Council (Deputy Mayor), NIRB Final Hearing File No. 16MN056 Transcript, September 19, 2017, pp. 10-11, lines 22-26, 1-4; R. Aksawnee, Baker Lake Hunters and Trappers Organization, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 419, lines 2-10; K. Costello, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 535-536, lines 23-26 and 1; A. Nanordluk, Naujaat, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 740, lines 8-9; P. Pudlat, Coral Harbour, NIRB Final Hearing File No. 16MN056 Transcript, September 22, 2017, p. 737, line 16.

⁶⁴⁰ Government of Nunavut, *Agnico Eagle Mines’ “Whale Tail Pit” Project Government of Nunavut: Technical Session Presentation*, Exhibit 26, NIRB Final Hearing File No. 16MN056, September 21, 2017.

conditions, the Board does not have any recommendations regarding alternative means of carrying out the Project or any of the specific Project components.

7.5. CUMULATIVE EFFECTS

An assessment of the potential for the Project to result in cumulative effects is required by Article 12, Section 12.5.2 of the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada (Nunavut Agreement)* and s. 103(1)(f) of the *Nunavut Planning and Project Assessment Act (NuPPAA)*. For this Review specifically, the responsible Ministers expressly highlighted the importance of cumulative effects assessment for this Project in their correspondence of September 2, 2016 when directing the Board to undertake a review of the Project proposal pursuant to s. 94(1)(a)(iv) of the *NuPPAA*:

Given the current and increasing levels of mineral development in the Kivalliq Region, the Whale Tail Pit Project proposal has the potential for cumulative ecosystemic and socio-economic impacts which warrant special consideration; therefore, a thorough cumulative impacts assessment will be very important for the review. However, when assessing these impacts, I urge the Board to focus its cumulative effects assessment on impacts from reasonably foreseeable mine and transportation infrastructure developments.⁶⁴¹

Reflecting these requirements, the NIRB ensured that the application that was submitted to the Board in May 2016 included an assessment of the potential for cumulative effects to occur when the residual effects of the Project overlap and interact with the ecosystemic or socio-economic effects of other past, existing or reasonable foreseeable projects or activities prior to accepting the proposal as an Environmental Impact Statement.

7.5.1 Views of the Proponent

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) presented a discussion on the approach to cumulative effects within Volume 3, Section 3.5.2 of the Environmental Impact Statement (EIS) and the cumulative effects study area and the reasonably foreseeable future developments used in the assessment in Volume 3, Appendix 3-D. Cumulative effects assessment includes other human activities that overlap with the spatial and temporal distribution of a valued component (VC), and had the potential to substantially affect the environment, including past, present, and reasonably foreseeable future development. The Proponent noted that not every VC required an analysis of cumulative effects. For the VCs that required cumulative effects analysis, the concept of assessment cases was applied to the associated spatial boundary (effects study area) to estimate the incremental and cumulative effects from the Project and other developments. The approach used by Agnico Eagle incorporated the temporal boundary for analyzing the effects from previous, existing, and reasonably foreseeable developments before, during, and after the anticipated life of the Project. Agnico Eagle identified broad cumulative effects categories as follows in its effects study area:

⁶⁴¹ S. Van Dine, Assistant Deputy Minister, Northern Affairs, Decision Re: Agnico Eagle Mines Ltd.'s Whale Tail Pit Project proposal, NIRB File No. 16MN056, September 2, 2016.

- Effects to Caribou
- Effects to Terrestrial Environment
- Effects to Marine Wildlife
- Effects to Aquatic Resources (Water and Fish)
- Effects to Traditional Land Use
- Effects to Socio-economics

Cumulative effects from past and present development on caribou were considered within the Ahiak, Lorillard, and Wager Bay herd ranges. Agnico Eagle noted that communities and hunting camps are the largest sources of direct mortality to caribou, while other developments are likely to lead to only negligible caribou mortality. Considering habitat loss (direct and indirect), communities, and mineral exploration camps are likely the largest sources of anthropogenic disturbance to caribou. However, the level of this type of disturbance within the range of the three (3) herds considered remains very low. While there may be local effects to abundance and distribution of caribou near communities and the single operating mine, anthropogenic disturbance is unlikely to be affecting the abundance and distribution of caribou at the population level.

For the consideration of the other components of the terrestrial environment (such as other wildlife, vegetation, soils, and landscape features), Agnico Eagle indicated that the Meadowbank Gold Mine and access road was the only other development identified within the terrestrial study area. The Proponent stated that environmental monitoring and mitigation at the Meadowbank Gold Mine would help to reduce impacts from this development, reducing cumulative effects between the Meadowbank Gold Mine and the Project.

The cumulative effects on marine wildlife from the past, present, and reasonably foreseeable future developments within the study area (Chesterfield Inlet, Hudson Bay, and Hudson Strait) were considered by Agnico Eagle for marine wildlife. Agnico Eagle pointed out that most marine shipping is for domestic supply to existing communities and that shipping specifically for mining and mineral extraction (including mines in Québec) accounts for approximately 15% of the shipping traffic, and approximately 10% of all shipping traffic is for the Meadowbank Gold Mine. The Project would utilize existing shipping arrangements for the Meadowbank Gold Mine and Agnico Eagle does not expect the Project to cause an increase in shipping volume within Hudson Bay and Hudson Strait or a change in shipping procedures. Further, Agnico Eagle noted that considering the seasonality and low volume of shipping, the proposed mitigation and the limited impact of marine transportation to marine wildlife to date, the Project was not anticipated to lead to significant cumulative effects to marine wildlife.

Cumulative effects to aquatic resources (including water and fish) were considered by estimating the number of past and present projects in the water management area crossed by the Baker Lake, Thelon, Quoiich, or Back River water management areas. Agnico Eagle noted that currently, the number of developments within these water management areas is low and the regional effect of any effluent emissions remains negligible. Few of the developments identified would trigger a Type “A” Water Licence with the possible exception being the Baker Lake water management area, which includes the Meadowbank Gold Mine and the community of Baker

Lake. Water treatment and aquatic monitoring at the Meadowbank Gold Mine are anticipated by Agnico Eagle to prevent regional effects of the mine to the aquatic environment.

Effects to traditional land use were also considered by Agnico Eagle and these were measured by the number of developments within the Kivalliq region. Agnico Eagle noted that very few Kivalliq residents still hunt full time or almost full time anymore, but that most people continue to go out on the land in the area. Agnico Eagle indicated that traditional land use has likely been augmented around the existing Meadowbank Gold Mine and road. Agnico Eagle stated that because the level of development within the Kivalliq region remains very low, caribou and other wildlife continue to follow traditional movements and natural population cycles; therefore, development does not significantly hinder resident's continued ability to use and enjoy the landscape in the Kivalliq region.

Finally, Agnico Eagle noted that the effects to socio-economics were measured by the number of developments within the Kivalliq region. Agnico Eagle indicated that currently there is only one operating mine in the region, but there is the likelihood that the Meliadine Mine may soon open. Mineral exploration and tourism is also a source of employment, although seasonal for the area. The Project is anticipated to contribute to regional employment through permanent and seasonal jobs and contracts to local business. Agnico Eagle expects that the Project would contribute to the local wage economy and have minimal effect on the traditional economy, although there may be social impacts of the shift work often associated with remote camps.

Cumulative effects to each Project VC were also considered as part of the residual effects assessment for each VC and are further discussed in this report in [Chapter 5: Ecosystemic Effects](#).

During the Final Hearing, Agnico Eagle further discussed its commitments to monitor the effectiveness of its mitigation and adaptive management programs where the potential for cumulative effects exist. For example, in the discussion of air quality and dust associated with the existing all weather access road coupled with the proposed haul road to service the Whale Tail Pit Project proposal, Agnico Eagle noted:

A key finding based on our evaluation found that: (as read)

Cumulative results to date indicate that, without dust suppressant application, average rates of dustfall decline below Alberta guidelines for recreational areas within 100 metres of the all-weather access road and haul road and meet the range of background rates within 200 metres.

*Future monitoring and data analysis will inform the adaptive management plan related to dust.*⁶⁴²

⁶⁴² R. Vanengen, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 107-108, lines 19-26, 1-3.

7.5.2 Views and Concerns of Interested Parties

Within their joint final written submission, Nunavut Tunngavik Inc. (NTI) and the Kivalliq Inuit Association (KIA) noted concern about the evidence for Agnico Eagle's conclusion that the magnitude of the cumulative effects of habitat loss to wildlife is low, and that the magnitude of cumulative effect to caribou migration is low. The NTI and KIA indicated that Agnico Eagle only based its cumulative effects analysis on the annual and seasonal frequency of the exposure of the collared caribou and that their conclusions from the analyses are highly uncertain given the low number of collars. The NTI and KIA further noted concern that despite the trend for increased exposure and residency time, cumulative impact assessment of the costs to caribou is not available. This appears to be a consequence of the limited approach to cumulative impacts assessment restricted only to the use of the data from collared caribou. Given uncertainty about the cumulative effects assessment for the project, the NTI and KIA recommended that the magnitude of the cumulative effects on migration should be characterized as moderate.⁶⁴³ As part of its technical presentation during the Final Hearing, KIA noted concern with respect to the uncertainty related to cumulative effects on caribou and would need to be addressed further in analysis.⁶⁴⁴

The KIA also noted concern about the magnitude of the cumulative effects of habitat loss and possible changed distribution of caribou and harvesting opportunities and recommended that the adaptive mitigation and monitoring at the herd level be strengthened through completion and implementation of Government of Nunavut's caribou strategy framework.⁶⁴⁵ The Government of Nunavut (GN) noted similar concern with respect to cumulative effects, noting that there is a growing body of evidence to suggest that the existing mine operation at the Meadowbank Gold Mine has had effects on caribou range use and migration. The GN noted that to understand the full extent of these effects would require additional data; data that are not available for the current Project review.⁶⁴⁶ For further details on the discussion on caribou and cumulative effects, please refer to [Section 5.10: Terrestrial Wildlife and Wildlife Habitat](#) of this report.

In response to the final written submissions, Agnico Eagle noted that the conclusions from the encounter and residency assessment⁶⁴⁷ completed by Golder Associated Ltd. remains valid and the Project would result in no measurable changes to the energetic state of Ahiak, Beverly, Lorillard and Wager Bay caribou, and therefore they stand by the conclusions in the assessment that there are no demographic consequences to the populations. Agnico Eagle also indicated that the Proponent stands by the conclusions in the original assessment that the magnitude of the cumulative effects on migration should be low.⁶⁴⁷

7.5.3 Views of the Board

The Board generally accepts the positions of the Proponent and the parties that the potential for cumulative effects on all valued components other than caribou can be effectively managed by

⁶⁴³ Nunavut Tunngavik Inc. and Kivalliq Inuit Association Final Written Submissions, August 14, 2017.

⁶⁴⁴ K. Poole, Kivalliq Inuit Association, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, pp. 396-397, lines 8-17 and 1.

⁶⁴⁵ Nunavut Tunngavik Inc. and Kivalliq Inuit Association Final Written Submissions, August 14, 2017.

⁶⁴⁶ Government of Nunavut Final Written Submissions, August 14, 2017.

⁶⁴⁷ Agnico Eagle Mines Ltd. Response to Final Written Submissions, August 28, 2017.

implementing the mitigation, monitoring and adaptive management measures proposed by the Proponent.

With respect to caribou, the Board focused not only on the potential for cumulative effects from an additional open pit mine at the Whale Tail Pit, but also questioned whether the combination of the continued operation of the existing all-weather access road combined with the proposed haul road poses the potential for cumulative effects on caribou. As indicated at the Final Hearing:

*... given that the all-weather access road would continue to operate throughout the life of the proposed Whale Tail Pit Project, I'm wondering if Agnico Eagle can comment on the potential for additive cumulative effects to occur and to affect the zone of influence for migrating caribou from both roads being in operation at the same time.*⁶⁴⁸

The Proponent responded with a commitment to additional investigations in future as follows:

Pretty hard to speculate right now what the difference in a ZOI might be with the Whale Tail and the AOR [sic AWAR All Weather Access Road] functioning. However, as we said earlier, there is some uncertainty in that analysis that's been raised through our TAG meetings with the GN and the KIA and the HTO, and -- and one of our commitments right now is to further investigate that zone-of-influence analysis, perhaps, looking at different methods and definitely including a couple other variables, including environmental variables as such.

*So this is something that we're going to be looking at in the near future and definitely to look at what that potential could be.*⁶⁴⁹

Given the uncertainty with respect to the potential for cumulative effects on caribou at this point in the assessment of the Project and recognizing both the importance of caribou for all Inuit in the Kivalliq, and the existing significant pressures on caribou populations in Nunavut from many sources, in the Board's view it is appropriate to adopt the most stringent version of the precautionary approach to the monitoring, mitigation and adaptive management of potential project-induced effects (including cumulative effects) on caribou.

The Board also inquired into the overlap and potential cumulative effects in terms of Agnico Eagle's existing labour force demand associated with the existing Meadowbank Gold Mine, the already-approved Meliadine Gold Mine combined with the proposed Whale Tail Pit Project if it were to be approved by the Board.⁶⁵⁰ As stated at the Final Hearing:

⁶⁴⁸ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 267-268, lines 24-26 and 1-5.

⁶⁴⁹ C. De La Mare, Nunavut Impact Review Board, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 268, lines 9-21.

⁶⁵⁰ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 337.

*The 150 new positions related to ore transport that would be created through the Whale Tail Pit Project, when the Whale Tail Pit concludes, would those positions have any potential to transfer to Meliadine, and what would the timing of that be in the Meliadine development schedule?*⁶⁵¹

In response, the Proponent indicated:

So first we are anticipating a gap of -- operational gap that will last -- that will be limited to only a few months between the end of operation of the Meadowbank Gold Mine scheduled for the end of the third quarter 2018 and the beginning of 2019. This gap will most likely happen and will be limited also to a few specific position mainly related to the mill operation. So we're talking about 10 percent of the current workforce that could be impacted by this gap.

However, we already have measures that we've developed to secure full-time jobs and pay for the employees, so the impacts should be very limited, or there should not be any impacts. One of these measures is to use these employees to help support construction works for the Whale Tail.

*...There's already one transfer window completed where there's about ten employees of Meadowbank that were granted transfers to Meliadine, and this will be continued over the next 18 months, where about 150 new opportunities for Meliadine will be made available first to our employees of Meadowbank.*⁶⁵²

On this basis, the Board understands that the proposed project forms a part of the Agnico Eagle's phased development plans that would act to fill the "gap" to keep the Meadowbank Gold Mine infrastructure in use and mine personnel employed while future development plans are pursued. The Board recognizes that as Agnico Eagle continues its mining and milling program the Proponent also intends to actively pursue its exploration program and may consider bringing forward additional proposed projects to further extend the mine life of the Meadowbank Gold Mine. Such future proposals will need to be assessed by the NIRB as they are brought forward. The Board notes that the phased approach to development that is typical of the way the Meadowbank project and most contemporary mining projects are developed highlights the need for, and importance of thorough cumulative effects assessments being provided to the Board. In particular, the Board considered whether the potential for these effects in respect of the Whale Tail Pit Project proposal was informed by concerns expressed by the parties and public about the potential ecosystemic and socioeconomic cumulative effects.

In addition, the Board considered whether, for those potential cumulative effects where there was uncertainty, whether mitigation, adaptive management and monitoring measures proposed by Agnico Eagle were reflective of the monitoring data and experience gained by the Proponent while carrying out the original Meadowbank Gold Mine project.

⁶⁵¹ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, p. 339, lines 18-24.

⁶⁵² K. Mayrand, Agnico Eagle Mines Ltd. NIRB Final Hearing File No. 16MN056 Transcript, September 20, 2017, pp. 337-338, lines 23-26, 1-12 and 8-13 ,

7.5.4 Conclusions and Recommendations of the Board

Recognizing the challenges that phased development can create in terms of ensuring all potential cumulative effects associated with ongoing exploration and possible future phases of development are adequately and fully assessed, the Board has recommended that the Proponent provide detailed updates to the Board on the status of ongoing exploration programs associated with the Property.

In addition, as outlined in greater detail in the sections addressing potential impacts to caribou and other terrestrial wildlife (see [Section 5.10.4](#) of the report) and in respect of the potential for cumulative effects on the regional labour force, as discussed extensively in [Section 6.2.4](#) of the report, the Board has provided more general recommendations that will result in reduced potential for project-induced effects, including cumulative effects.

7.6. PERFORMANCE BONDING

As established under Article 12, Section 12.5.5 (f), of the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada (Nunavut Agreement)* and s. 103(1)(n) of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 103(1)(n) the NIRB shall, when reviewing any project proposal, take into account all matters that are relevant to its mandate, including whether the Board should require the posting of performance bonds. In assessing the extent to which performance bonding is required, the Board considers the Proponent's current financial capacity, prior mine development, and in the case of Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent), prior mine operating experience at the existing Meadowbank Gold Mine, the costs of developing and reclaiming the Project under review and the jurisdiction and requirements of regulatory authorities, mineral tenure holders and landowners involved in the subsequent permitting phase of project development to secure an amount (through various instruments such as the water licence, offsetting plans, land and production leases) to cover the ultimate costs of reclaiming the Project.

Although the Board typically expects that the detailed assessment of the Proponent's reclamation security estimates would be conducted sometime after the NIRB Review is completed and the Project, if approved to proceed, is being considered by the Nunavut Water Board (NWB) during the water licensing process, under the coordinated process applicable to this Project, there was more detailed financial and reclamation security information available during the NIRB process than is normally the case, which is outlined by the Board in the sections that follow.

7.6.1 Views of the Proponent

In attachment Appendix 1-A to Volume 1 of the Environmental Impact Statement, Agnico Eagle provided the Board and parties information regarding the financial capacity of the Proponent in the form of audited Financial Statements for Agnico Eagle for a three (3) year period ending May 31, 2013.⁶⁵³ In general, and as presented at the Final Hearing, Agnico Eagle is a senior Canadian gold mining company that has produced precious metals since 1957. The Proponent currently has eight (8) active mines located in Canada, Finland and Mexico, with exploration and

⁶⁵³ FEIS, Volume 1, Appendix 1-A, Agnico Eagle Audited Financial Statements.

development activities in Canada, Finland, Mexico as well as in the United States and Sweden.⁶⁵⁴ The most recent annual public filing for Agnico Eagle Mines Limited (NYSE: AEM, TSX: AEM) with the United States Securities Exchange Commission indicates that Agnico Eagle Mines Ltd. is an established gold producer, producing over 1.66 million ounces of gold in 2016.⁶⁵⁵

Agnico Eagle also provided a discussion on its financial responsibility and security in Volume 2, Section 2.5 of the Environmental Impact Statement (EIS) noting that the Amaruq property is 100% owned by Agnico Eagle with all rights, title, interests, liabilities, and obligations for the Project resting with Agnico Eagle. Agnico Eagle estimated that the capital cost to construct and bring the proposed Whale Tail Pit into production would be approximately \$233 million.⁶⁵⁶ The construction workforce is expected to be up to 500 persons per year during dewatering and the average operational workforce would be 931 persons (rotational work basis with approximately 50% on site at any given time). Agnico Eagle indicated that the Project would extend employment opportunities at Meadowbank Gold Mine, which currently has around 700 staff and will create around 200 new direct employment opportunities.

Agnico Eagle noted that it strongly believes that taking into account its past performance and the current feasibility assessment for the Project, the company is financially able to complete the undertaking as presented in the EIS, to mitigate any adverse impact, and to satisfactorily maintain and restore the proposed site in the event of closure or abandonment of the Project.

Agnico Eagle indicated within the EIS that it funds its reclamation and water licence financial security liability for its Meadowbank operations through guaranteed letters of credit issued by one of the five major Canadian based banks. The total value of these letters of credit are in the range of \$100 million pledged for reclamation liability, fish habitat compensation initiatives and various other forms of security (third party liability for the Baker Lake fuel tank farm, land use lease security, etc.). Currently under the Type “A” Water Licence the estimated reclamation liability for the Meadowbank Gold Mine is \$86.5 million, which Agnico Eagle noted was reviewed and agreed to by Agnico Eagle, Indigenous and Northern Affairs Canada, and the Kivalliq Inuit Association (KIA) through the Type “A” Water Licence renewal process completed in 2015. Currently under the Meadowbank Type “A” Water Licence, Agnico Eagle has posted security for water related reclamation in the amount of \$71.7 million. Agnico Eagle further noted that it has also posted an additional \$86.5 million in security for land reclamation with the KIA under the Meadowbank KIA production land use lease. Agnico Eagle indicated that it has provided a standalone mine reclamation and liability estimate of \$19,831,405 for consideration by the NWB solely for the reclamation of Whale Tail Pit operations and the associated haul road.

Agnico Eagle noted that it is confident that it has the financial capacity to meet the requirements for reclamation and security should the Whale Tail Pit project proposal be approved to proceed.

⁶⁵⁴ Agnico Eagle Mines Ltd., *Introduction and Overview Presentation*, Exhibit 1, NIRB Final Hearing File No. 16MN056, September 19, 2017, at pp. 1-2.

⁶⁵⁵ Agnico Eagle Mines Limited, United States SEC, Form 40-F Annual Report filed by a Foreign Issuer, filed March 27, 2017 for the year ended December 31, 2016, at p. 11.

⁶⁵⁶ FEIS, Volume 1, Meadowbank Gold Mine – Whale Tail Pit Fact Sheet, at p. 1-xii.

As noted at the Final Hearing, Agnico Eagle and the landowners of the lands affected by the Project, the KIA and the Federal Crown, represented by Indigenous and Northern Affairs Canada, propose to address reclamation security for the Project by way of a Security Management Agreement negotiated between Agnico Eagle, Indigenous and Northern Affairs Canada and the KIA. As indicated at the Final Hearing by all three (3) parties, the final steps of concluding the Security Management Agreement were imminent at the time of the NIRB Final Hearing, with the expectation that the final Agreement would be presented at the subsequent NWB Public Hearing in respect of the water licence applications required for the Project:

*And, also, just dealing with the closure, Agnico Eagle and Indigenous and Northern Affairs and Kivalliq Inuit Association, we have finalized our security costs related to Whale Tail and also finalized the security management agreement, and we're just waiting for a final signature by the Kivalliq Inuit Association.*⁶⁵⁷

7.6.2 Views and Concerns of Interested Parties

None of the Intervenor, Community Representatives or members of the public participating in the NIRB's Review of the Project and making representations at the Final Hearing requested that the Board require the Proponent to post a performance bond as part of the NIRB assessment. The Kivalliq Inuit Association confirmed that the parties had agreed upon the total cost of reclamation for the Project in the context of the Security Management Agreement as follows at the Final Hearing:

*And the security deposit, Environment and AEM and Indian [sic] and Northern Affairs Canada and KIA finally agreed to a total cost of reclamation. Also, we signed a secure management agreement, attached to that particular total amount of cost of security that we will presented [sic] during the Nunavut Water Board hearings next week.*⁶⁵⁸

At the Final Hearing, Indigenous and Northern Affairs Canada also confirmed their position that the agreed upon security amount was reflective of all contingencies:

Indigenous and Northern Affairs Canada considered some of the uncertainties when determining its reclamation cost estimate. We also worked with our colleagues at Kivalliq Inuit Association to reach agreement on a security management agreement once we -- everyone agreed on a reclamation cost estimate.

⁶⁵⁷ J. Quesnel, Agnico Eagle Mines Ltd., NIRB Final Hearing File No. 16MN056 Transcript, Sept. 19, p. 46, lines 2-7.

⁶⁵⁸ L. Manzo, Kivalliq Inuit Association, NIRB Final Hearing File No. 16MN056 Transcript, Sept. 21, p. 400, lines 3-9.

*The reclamation cost estimate accounts -- it does include contingencies for additional monitoring during the closure and post-closure phase, as well as the potential for treatment should it be required.*⁶⁵⁹

7.6.3 Views of the Board

As with all Reviews, the Board shares the expectation of all participants that Agnico Eagle will have in place at the outset of project development the financial capacity to meet all of the obligations and commitments made by the Proponent during this Review. In addition, the Board also expects that this financial capacity will be maintained beyond the active operational period of the mine and will extend over the entire course of the Project's lifecycle, including not only ensuring current financial capacity, but also ensuring that adequate security is in place during all phases of the Project to ensure full reclamation of all project works, undertakings and activities when operations cease.

In considering questions of the Proponent's financial capacity to carry out the Project and provide adequate security, the Board recognizes that Agnico Eagle is one of few Proponents who has more than a decade of operating experience in Nunavut, and with the closure of pits at the Meadowbank. Agnico Eagle is also learning firsthand about the unique issues associated with open pit reclamation and closure in Nunavut. With a proven track record and practical reclamation experience in Nunavut, the Board, and as was apparent from the agreements reached with the landowners, the Kivalliq Inuit Association and Indigenous and Northern Affairs Canada, has increased confidence that Agnico Eagle's reclamation security plans and cost estimates are realistic, and adequate to plan for and secure the future reclamation liability associated with the Project.

7.6.4 Conclusions and Recommendations of the Board

In light of these factors, and having considered Agnico Eagle's current financial capacity, history of operations in Nunavut and the submissions of the key parties, the Kivalliq Inuit Association and Indigenous and Northern Affairs Canada on this point, the Board has concluded that no recommendations regarding performance bonding requirements are required at this time. The NIRB is satisfied that the discussion of security management arrangements between the key parties can be deferred to the NWB's subsequent licensing process.

8. RECOMMENDATION TO THE MINISTER

The NIRB provides this Final Report to the Responsible Ministers as required under Article 12, Sections 12.5.6 and 12.5.7 of the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada (Nunavut Agreement)* and s. 104(1) of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (NuPPAA). Following the NIRB's assessment of the potential ecosystemic and socio-economic effects of Agnico Eagle Ltd.'s Whale Tail Pit Project proposal (the Project), the NIRB has concluded that:

⁶⁵⁹ K. Costello, Indigenous and Northern Affairs Canada, NIRB Final Hearing File No. 16MN056 Transcript, September 21, 2017, p. 543, lines 8-17.

After due consideration of all information provided throughout the Board's assessment of the Project, and in accordance with the process and primary objectives of the *Nunavut Agreement* and the *NuPPAA*, the Board has recommended that the Project should be allowed to proceed in accordance with this Final Hearing Report and the associated recommendations.

9. RECOMMENDED PROJECT SPECIFIC TERMS AND CONDITIONS

9.1. THE EFFECT OF TERMS AND CONDITIONS OF THE MEADOWBANK PROJECT CERTIFICATE APPLYING TO THE WHALE TAIL PIT PROJECT

With respect to the NIRB's regulatory process and outcomes, the Whale Tail Pit project proposal (the Project) is unique. As Agnico Eagle Mines Ltd. plans to use some of the existing gold processing and accommodations infrastructure at the existing Meadowbank Gold Mine site, including some waste rock storage, the mill and tailings facility and the camp and kitchen structures to support the new mining operations at the Whale Tail Pit, there are some terms and conditions in the existing Meadowbank NIRB Project Certificate (No. 004, as amended) that will continue to apply to that infrastructure after the Meadowbank Gold Mine may cease operations, but while this infrastructure continues to be used by the operations at the Whale Tail Pit. Specifically, the Board has identified that aspects of the following existing terms and conditions in the amended Project Certificate No. 004⁴⁶ will continue to apply to the Project infrastructure associated with the Meadowbank Gold Mine site, even after the closure and reclamation of the developed pits at the Meadowbank Gold Mine site:

- General Monitoring Commitments and Regulatory Requirements, Terms and Conditions 2-4 and 6, 7, 21 and 23;
- Water Quality and Waste Management, Terms and Conditions 8-14, 18, 19, 25-28;
- Project Alternatives and Planned Changes, Term and Condition 29;
- All-Weather Access Road, Terms and Conditions 32, 34 and 35;
- Marine Environment, Terms and Conditions 36-38 and 40-45;
- Fish and Fish Habitat, Terms and Conditions 46, 47, 50-52;
- Wildlife and Terrestrial Environment, Terms and Conditions 54 and 56-61;
- Noise, Term and Condition 62;
- Socio-Economics, Terms and Conditions 63-65;
- Human Health, Term and Condition 68;
- Archaeology, Terms and Conditions 69 and 70;
- Air Quality, Terms and Conditions 71-74;
- Accidents and Malfunctions, Term and Condition 75;
- Abandonment and Reclamation, Terms and conditions 78-80; and
- Other, Terms and Conditions 81-84.

If the responsible Minister(s) approve the Project proceeding and the NIRB convenes a Project Certificate workshop for the Project, the Proponent and parties will be expected to discuss the continued applicability of these existing terms and conditions in the Meadowbank Project

Certificate No.: 004, including whether changes to the existing terms and conditions may be necessary when the Meadowbank Mine ceases operation and the Project requires that these terms and conditions extend beyond the end of operations at the Meadowbank Mine.

9.2. THE ENFORCEABILITY OF TERMS AND CONDITIONS IN THE NEW PROJECT CERTIFICATE APPLYING TO THE WHALE TAIL PIT PROJECT

In addition, the Project is also unique because it is the first project proposal (not handled by the Board as a modification of an existing Project proposal) that was received after the coming into force of the *Nunavut Planning and Project Assessment Act*.⁶⁶⁰ As a result, if the Minister agrees with the Board that the Project can proceed to the regulatory phase in accordance with the NIRB's recommended terms and conditions and the Board issues a project certificate, the combined effect of ss. 74(g) and 219 of the *NuPPAA* is that Agnico Eagle would be required to carry out the Project in accordance with the terms and conditions of the project certificate. Failing to meet the requirements of the terms and conditions in a project certificate issued under *NuPPAA* is an offence. In contrast to existing project certificates where enforceability of the terms and conditions is reliant on specific terms and conditions being brought forward into the permits, licences and other approvals issued for a project, if a NIRB project certificate is issued for the Whale Tail Pit project proposal the terms and conditions in the project certificate will be independently enforceable. As a result, the NIRB's recommended terms and conditions for this Project have been drafted in a manner that considers enforceability and may have been modified from the drafts of terms and conditions suggested by the Proponent and Intervenors to reflect these circumstances.

9.3. THE NIRB'S MONITORING PROGRAM

As set out in Article 12, Sections 12.7.1 and 12.7.2 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)*, the Nunavut Impact Review Board (NIRB) has the jurisdiction to establish a project-specific monitoring program to: measure the ecosystemic and socioeconomic effects of a project; assess whether the project is in compliance with the prescribed project terms and conditions; share information with regulatory agencies to support the enforcement of land, water or resource use approvals and agreements; and to assess the accuracy of predictions contained in the environmental impact statements. Given the Board's application of the precautionary approach to several aspects of this Project, in the Board's view project-specific monitoring will play a crucial role in addressing the uncertainty regarding project effects and enabling all parties to adapt mitigation measures on an ongoing basis to ensure the Project's negative effects are prevented or limited to the extent possible.

The role of the Board with respect to the establishment of monitoring programs is to focus the terms and conditions in relation to the Project. With respect to existing or future general regional and territorial monitoring programs that may include some of the same monitoring parameters/indicators as the project-specific monitoring program, the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut*

⁶⁶⁰ S.C. 2013, c. 14, s. 2, came into force on July 9, 2015.

Agreement) and *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*) also directs the NIRB to avoid duplication but facilitate co-ordination and integration between the project-specific monitoring programs required by the NIRB and more general programs such as the Nunavut General Monitoring Program. Where the requirements of regional or territorial programs are more extensive or substantively different than those established through the project certificate, at all times the Proponent must ensure compliance with the project certificate terms and conditions.

In order to co-ordinate, integrate and avoid duplication with other monitoring programs, but also to ensure that the NIRB's project-specific monitoring program yields the information required to measure effects and adequately assess compliance with terms, conditions, regulatory instruments and agreements, the NIRB's monitoring program is developed after consultation with responsible authorities, the resource and land owners and the proponent following a Regulators' Meeting that typically occurs within several weeks after the responsible Minister has issued a decision that the Project can proceed to obtain regulatory authorizations and providing the Minister's direction regarding recommended terms and conditions. A short time after the Regulators' Meeting, the NIRB issues the project certificate, but the project-specific monitoring program, which is usually issued as an Appendix to the project certificate may not be issued in final form until some months after key regulatory authorizations, including land use permits, water licences, mineral leases, etc. are issued so that the monitoring program supplements and supports, and does not duplicate, the monitoring requirements in regulatory and land use instruments.

It is important to remember that the NIRB's monitoring program will have varying requirements over the course of the Project lifecycle, and that monitoring requirements will apply from construction to eventual abandonment and reclamation. In areas where there may be a need for flexibility in relation to the terms and conditions of the project certificate or their application, the NIRB has endeavoured to reflect this in the associated language and/or acknowledge that objectives may be achieved through various means. In addition, in the event that the monitoring program needs to be modified to better achieve its purpose, the Board, the Proponent, the Designated Inuit Organization or other interested parties may cause the Board, under Section 12.8.2 of the *Nunavut Agreement* to revisit the monitoring program, or any other terms and conditions in the NIRB project certificate. However, the NIRB wishes to clearly state that the Board has every expectation that Agnico Eagle Mines Ltd. will fulfill all commitments made during the both the Final Hearing, within its Environmental Impact Statement and supporting documentation submitted during the Review, not just those commitments that have been incorporated into the Terms and Conditions recommended by the Board in this report.

9.4. FORMAT OF RECOMMENDATIONS

In advance of, and during the Final Hearing for the Project, Agnico Eagle Mines Ltd. and several of the intervenors worked to provide the NIRB with agreed upon wording for various suggested terms and conditions.⁶⁶¹ The Board appreciates the considerable efforts of all parties to provide this very useful guidance. In some cases, the Board has accepted the suggestions of the parties. In other cases, to maintain consistency with the Board's existing approaches to Project

⁶⁶¹ See for example Exhibits 17, 18, 21, 22, 28 and 41, NIRB Final Hearing File No. 16MN056, September 19-22, 2017.

Certificate terms and conditions and recognizing that the recommended terms and conditions in a new Project Certificate will be enforceable under the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*) the NIRB has modified, added or deleted suggested terms and conditions as the Board considered necessary. The format of the recommended terms and conditions is intended to provide all parties with clear direction on the intended application, objectives and reporting requirements associated with each term and condition.

9.4.1 General Provisions

The NIRB retains the ability to give additional clarification or direction, on an ongoing basis through its Monitoring Officer, with respect to compliance requirements for the Project. Upon request by the Proponent or other parties, the NIRB can provide additional clarification or direction regarding implementation of project certificate terms and conditions.

Where the objective of a project certificate term or condition can be achieved through more efficient alternate means, the Proponent is encouraged to consult with the NIRB (and other parties as required) to seek acceptance of proposed alternatives.

Where not specified, the NIRB recognizes and respects the role of other licensing and permitting processes yet to be completed. The NIRB strongly encourages the coordination of monitoring and reporting requirements in order to reduce duplication.

9.5. ECOSYSTEMIC TERMS AND CONDITIONS

9.5.1 Air Quality

Term and Condition No.	1.
Category:	Air Quality – Air Quality Mitigation and Adaptive Management
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To ensure that impacts of the project on air quality are identified, effectively mitigated and adaptively managed throughout the Project.
Term or Condition:	<p>The Proponent shall:</p> <ul style="list-style-type: none"> a) Develop and implement an Air Quality Monitoring and Management Plan that includes clear objectives and that specifies air quality monitoring thresholds that will trigger adaptive management responses and actions; b) In the implementation of the Plan, the Proponent shall demonstrate through active and passive monitoring of dustfall, for criteria air contaminant concentrations, incinerator stack testing, and vegetation, soil and snow chemistry sampling that

	<p>dustfall and emissions of carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), sulphur dioxide (SO₂), suspended particulate matter, mercury, dioxins and furans, and other chemicals remain within predicted levels and, where applicable, within levels or limits established by all applicable guidelines and regulations;</p> <p>c) If exceedances occur, the Proponent shall provide an explanation for the exceedance, a description of planned mitigation, and shall conduct additional monitoring to evaluate the effectiveness of mitigative measures; and</p> <p>d) The Proponent shall also develop, implement, and report on the quality assurance and quality control protocols used to ensure data reliability and proper functioning of equipment.</p>
Reporting Requirements:	The Plan should be submitted to the Nunavut Impact Review Board (NIRB) 30 days prior to commencement of construction, and the Proponent shall report on its development and implementation of this Plan and associated monitoring results annually to the NIRB.

Term and Condition No.	2.
Category:	Air Quality – Dust suppression
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To ensure that mitigation and adaptive management measures effectively mitigate dust impacts on Project roads.
Term or Condition:	<p>Prior to commencing construction activities the Proponent shall update the existing Dust Management and Monitoring Plan for the Meadowbank Mine site to address and/or include the following additional items:</p> <ul style="list-style-type: none"> ▪ Align plan requirements with commitments made in the FEIS and during the Final Hearing to monitor dust along the existing all-weather access road, the Amaruq haul road and any other roads and trails associated with the Project. ▪ Verify commitments to the utilization of dust suppressants along the all-weather access road, the Amaruq haul road and any other roads and trails associated with the Project, including a description of the type of suppressant to be utilized and the frequency and timing of applications to be made throughout the various seasons of road use. ▪ Outline the specific triggers, thresholds, and adaptive management measures that will apply if monitoring indicates that dust deposition is higher than predicted.
Reporting	The Proponent shall report annually to the Nunavut Impact Review

Requirements:	Board with a summary of its dust management activities.
---------------	---

9.5.2 Climate and Meteorology

Term and Condition No.	3.
Category:	Climate and Meteorology – Greenhouse Gas Reduction Plan
Responsible Parties:	The Proponent
Project Phase:	Construction, Operations, Temporary Closure/Care and Maintenance, and Closure
Objective:	To monitor and reduce greenhouse gas emissions produced by the Project.
Term or Condition:	<p>The Proponent shall maintain a Greenhouse Gas Emissions (GHG) Reduction Plan which includes:</p> <ul style="list-style-type: none"> ▪ An estimate of the Project’s GHG baseline emissions; ▪ A description of monitoring measures to be undertaken, including the methods, frequency, parameters, and a description the analysis that will be carried out on the monitoring data generated; and ▪ A description of mitigative and adaptive strategies planned, and taken, to reduce project-related greenhouse gas emissions over the Project lifecycle.
Reporting Requirements:	The Plan should be submitted to the Nunavut Impact Review Board (NIRB) 30 days prior to commencement of operations, with results submitted annually thereafter or as may otherwise be required by the NIRB.

9.5.3 Noise and Vibration

Term and Condition No.	4.
Category:	Noise and Vibration – Noise Reduction
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction
Objective:	To ensure worker health and safety.
Term or Condition:	The Proponent shall demonstrate consideration for noise reduction when siting and constructing the camp and other project infrastructure.
Reporting Requirements:	Site design plans with reference to noise dispersion modelling shall be submitted to the Nunavut Impact Review Board prior to the commencement of construction activities.

Term and Condition No.	5.
Category:	Noise and Vibration – Noise Reduction

Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations
Objective:	To minimize sensory disturbance to humans and wildlife
Term or Condition:	<p>The Proponent shall:</p> <ul style="list-style-type: none"> a) Conduct noise monitoring at least once during each phase of the Project at four (4) locations in the vicinity of the Whale Tail Pit Project and at two (2) locations along the haul road to demonstrate that noise levels remain within predicted levels for all Project areas; and b) If monitoring identifies an exceedance, the Proponent shall provide an explanation for the exceedance, a description of planned mitigation, and shall conduct additional monitoring to evaluate the effectiveness of mitigative measures.
Reporting Requirements:	Results of all noise monitoring undertaken by the Proponent for the Project shall be provided to the Nunavut Impact Review Board on an annual basis.

9.5.4 Terrestrial Environment (Geology and Geochemistry)

Term and Condition No.	6.
Category:	Mine Contact Water Quality
Responsible Parties:	The Proponent
Project Phase:	Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To ensure mine contact water quality is maintained and to require that the Proponent conduct monitoring and implement adaptive management measures to mitigate potential impacts to the receiving environment from mine contact water.
Term or Condition:	<p>The Proponent shall:</p> <ul style="list-style-type: none"> a) Conduct detailed hydrodynamic modelling during operations and closure to evaluate the mixing of the Waste Rock Storage Facility seepage into Mammoth Lake post-closure; and b) Based on the results of the modelling implement monitoring programs and adaptive management strategies that minimize the need for active intervention, including long-term treatment of mine contact water.
Reporting Requirements:	The Proponent shall provide a summary of activities undertaken to address the requirements of this term and condition in annual reports to the Nunavut Impact Review Board.

Term and Condition No.	7.
Category:	Mine Waste Rock and Tailings Management Plan
Responsible Parties:	The Proponent
Project Phase:	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To minimize the potential for impacts associated with the Tailings Storage Facility and the Waste Rock Storage Facility.
Term or Condition:	<p>Prior to commencement of mining of the Whale Tail deposit, and in consultation with applicable regulatory agencies, including Natural Resources Canada, the Proponent shall as part of a Mine Waste Rock and Tailings Management Plan that reflects site-specific geological and geochemical conditions:</p> <ul style="list-style-type: none"> a) Develop and implement monitoring programs for the Tailings Storage Facility and the Waste Rock Storage Facility at the Whale Tail Pit; b) Establish thresholds that will trigger the requirement for the Proponent to implement adaptive management strategies to minimize the potential for impacts from these Facilities; and c) Identify the adaptive management strategies that will be used by the Proponent to minimize the potential for impacts from these Facilities.
Reporting Requirements:	The Plan should be submitted to the Nunavut Impact Review Board (NIRB) at least 90 days prior to the start of construction of these facilities, with subsequent updates or revisions to the Plan submitted annually thereafter or as may otherwise be required by the NIRB for the life of the Project.

Term and Condition No.	8.
Category:	Acid Rock Drainage and Metal Leaching Management Plan
Responsible Parties:	The Proponent
Project Phase:	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To address potential impacts from acid rock drainage and metal leaching.
Term or Condition:	<p>The Proponent shall submit a detailed Acid Rock Drainage and Metal Leaching Management Plan that includes the following items:</p> <ul style="list-style-type: none"> ▪ Waste rock segregation and testing, ▪ Thermal monitoring of waste rock; ▪ Seepage management and monitoring;

	<ul style="list-style-type: none"> ▪ A schedule for reporting of results and periodic updating of predictions for the WRSF pond quality; ▪ Planning for optimal cover conditions; ▪ Contingency measures that may be implemented if required; ▪ Plans for comparing monitoring results from receiving waters to model predictions; and ▪ The identification of thresholds that will trigger management actions if trends analysis indicates water quality objectives may be exceeded.
Reporting Requirements:	The Plan should be submitted to the Nunavut Impact Review Board (NIRB) at least 90 days prior to the start of construction, with subsequent updates or revisions to the Plan submitted annually thereafter or as may otherwise be required by the NIRB for the life of the Project.

9.5.5 Geological Features, Soils and Permafrost

Term and Condition No.	9.
Category:	Site-specific Geotechnical Studies
Responsible Parties:	The Proponent
Project Phase:	Pre-construction
Objective:	To prevent potential impacts to sensitive land features.
Term or Condition:	The Proponent shall undertake the additional site-specific geotechnical investigations required to identify sensitive land features and to inform final engineering design prior to the construction of project components such as the waste rock storage facility and quarries.
Reporting Requirements:	Results from these studies should be submitted to the Nunavut Impact Review Board at least 90 days prior to the start of construction of these facilities, with results or updates submitted annually thereafter as applicable.

Term and Condition No.	10.
Category:	Site-specific Permafrost Monitoring, Mapping and Thermal Analysis
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To prevent or limit project impacts to pre-existing permafrost and seasonal ground ice conditions and to ensure integrity of site infrastructure is maintained.
Term or Condition:	In consultation with applicable regulatory agencies such as Indigenous and Northern Affairs Canada and Natural Resources Canada, the

	<p>Proponent shall undertake additional site-specific permafrost monitoring, mapping and thermal analysis to:</p> <ul style="list-style-type: none"> ▪ Document permafrost conditions, including seasonal thaw and amount of ground ice; ▪ Inform the detailed design of project infrastructure such as the Whale Tail pit, water management structures, mine site and haul roads, waste rock storage facility, tailings storage facility; and ▪ Ensure the integrity of such infrastructure is maintained after construction.
Reporting Requirements:	Results of these studies should be submitted to the Nunavut Impact Review Board at least 90 days prior to the start of construction of these facilities, with subsequent updates submitted annually thereafter.

Term and Condition No.	11.
Category:	Erosion Management Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To ensure management of erosion from land disturbance.
Term or Condition:	The Proponent shall develop and implement an Erosion Management Plan to prevent or minimize erosion and its resulting effects from project-related land disturbance.
Reporting Requirements:	The Plan should be submitted to the Nunavut Impact Review Board (NIRB) at least 30 days prior to the start of construction, with updates submitted annually thereafter or as may otherwise be required by the NIRB.

Term and Condition No.	12.
Category:	Closure and Reclamation Plan –Progressive Reclamation and Restoration Reflecting Natural Aesthetics and Community Aesthetic Values
Responsible Parties:	The Proponent
Project Phase:	Operations, Temporary Closure/Care and Maintenance, and Closure
Objective:	To ensure that disturbed land parcels no longer required for operations are progressively reclaimed with the natural aesthetics restored to the extent practicable, and in a manner that considers community aesthetic values.
Term or Condition:	As part of the Closure and Reclamation Plan, the Proponent shall develop and implement a program to:

	<p>a) Progressively reclaim disturbed areas within the project footprint, with an emphasis on restoring the natural aesthetics of the area through re-contouring to the extent practicable; and</p> <p>b) In a manner that demonstrates that the Proponent has considered the aesthetic values of local communities (e.g. information regarding the acceptability of the topography and landscape of the project areas following progressive reclamation efforts).</p>
Reporting Requirements:	The Proponent shall provide a summary of its progressive reclamation efforts and associated feedback received from communities with respect to aesthetic values solicited by the Proponent as part of its public engagement processes in its annual reporting to the Nunavut Impact Review Board.

Term and Condition No.	13.
Category:	Closure and Reclamation Plan – Topsoil Management
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, and Closure
Objective:	To ensure that disturbed land can support revegetation on closure.
Term or Condition:	The Proponent shall explore the feasibility of topsoil/organic matter salvage as part of project development and provide updates to the Closure and Reclamation Plan based on this investigation.
Reporting Requirements:	The Proponent shall provide a summary of its management of topsoil in annual reports to the Nunavut Impact Review Board.

9.5.6 Hydrogeology and Groundwater Quantity and Quality

Term and Condition No.	14.
Category:	Talik Distribution and Flow
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To provide information on potential project impacts on talik distribution and flow.
Term or Condition:	The Proponent shall develop and implement a Thermal Monitoring Plan to identify potential changes in talik distribution and flow paths that may result from the development of project infrastructure, including the Whale Tail pit, dikes, and water impoundments.
Reporting Requirements:	The Plan should be submitted to the Nunavut Impact Review Board (NIRB) at least 90 days prior to the start of construction, with

	subsequent updates submitted annually thereafter or as may otherwise be required by the NIRB.
--	---

Term and Condition No.	15.
Category:	Groundwater Monitoring Plan – Hydraulic Conditions
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To understand potential project effects on site-specific hydrogeological conditions, and better understand the potential effects of the existing environment on the project.
Term or Condition:	<p>Subject to the additional direction and requirements of the Nunavut Water Board, the Proponent shall prepare and implement a Groundwater Monitoring Plan that, at a minimum includes:</p> <ul style="list-style-type: none"> ▪ The collection of additional site-specific hydraulic data (e.g., from new monitoring wells) in key areas during the pre-development, construction and operation phases; ▪ Definition of vertical and horizontal groundwater flows in the project development areas; ▪ Delineates monitoring plans for both vertical and horizontal ground water; and ▪ Thresholds that will trigger the implementation of adaptive management strategies that reflect site-specific conditions encountered at the project site.
Reporting Requirements:	The required Groundwater Monitoring Plan should be submitted to the Nunavut Impact Review Board at least 90 days prior to the start of construction, with subsequent plan revisions or updates submitted annually thereafter.

Term and Condition No.	16.
Category:	Groundwater Monitoring Plan – Hydrogeological Characterization and Mine Closure
Responsible Parties:	The Proponent
Project Phase:	Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To assess the potential for arsenic diffusion from the walls of the Whale Tail Pit.
Term or Condition:	<p>Within two years of commencing operations, the Proponent shall:</p> <ul style="list-style-type: none"> a) Conduct additional analyses to determine the approximate fill time for the Whale Tail Pit at closure;

	<ul style="list-style-type: none"> b) Undertake a hydrogeological characterization study to assess the potential for arsenic and phosphorous diffusion from submerged Whale Tail pit walls; c) If the results of the characterization study indicate a moderate to high potential for arsenic and/or phosphorous diffusion, perform detailed hydrodynamic modelling of the flooded pit lake prior to closure to evaluate meromictic conditions and flooded pit water quality; and d) Add these required activities to the site Groundwater Monitoring Plan.
Reporting Requirements:	An updated Groundwater Monitoring Plan that outlines the Proponent's plans to fulfill this term and condition should be submitted to the Nunavut Impact Review Board at least 90 days prior to the start of construction, with subsequent plan revisions or updates submitted annually thereafter.

9.5.7 Surface Water Hydrology, Surface Water Quality and Sediment Quality

Term and Condition No.	17.
Category:	Surface Water Hydrology, Surface Water Quality, Sediment Quality and Freshwater Aquatic Environment – Core Receiving Environment Monitoring Program and Water Quality and Flow Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To mitigate potential impacts to surface waters.
Term or Condition:	<p>The Proponent shall:</p> <ul style="list-style-type: none"> a) Monitor the effects of project activities and infrastructure on surface water quality conditions; b) Ensure the monitoring data is sufficient to compare the impact predictions in the EIS for the Project with actual monitoring results; c) Ensure that the sampling locations and frequency of monitoring is consistent with and reflects the requirements of the Water Quality and Flow Plan and the Core Receiving Environmental Monitoring Program; and d) On an annual basis, the Proponent will compare monitoring results with the impact assessment predictions in the EIS and will identify any significant discrepancies between impact predictions and monitoring results.
Reporting	The plan should be submitted to the Nunavut Impact Review Board at

Requirements:	least 90 days prior to the start of construction, with results submitted annually thereafter.
---------------	---

Term and Condition No.	18.
Category:	Groundwater and Surface Water Quality; and Hydrological Features and Hydrogeology – Site Water Monitoring and Management Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure/Care and Maintenance and Closure and Post-Closure Monitoring
Objective:	To minimize the use of natural waters as practicable and limit potential impacts to the receiving environment from contact (site) water.
Term or Condition:	<p>The Proponent shall, reflecting any direction from the Nunavut Water Board, maintain a Site Water Monitoring and Management Plan designed to:</p> <ul style="list-style-type: none"> ▪ Minimize the amount of water that contacts mine ore and wastes; ▪ Appropriately manage all contact water and discharges to protect local aquatic resources; and ▪ Implement water conservation and recycling to maximize water reuse and minimize the use of natural waters. <p>The Plan should include monitoring that demonstrates contact water (runoff and shallow groundwater) from the ore storage and waste rock storage areas is captured and managed, as per the Waste Rock Facility Management Plan.</p>
Reporting Requirements:	The plan should be submitted to the Nunavut Impact Review Board at least 90 days prior to the start of construction, with results submitted annually thereafter.

Term and Condition No.	19.
Category:	Groundwater and Surface Water Quality, Sediment Quality and Freshwater Aquatic Environment – Core Receiving Environmental Monitoring Program
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To mitigate potential impacts to groundwater, surface waters and freshwater aquatic environment.
Term or Condition:	The Proponent shall, reflecting any direction from responsible authorities such as the Nunavut Water Board, Fisheries and Oceans Canada and Environment and Climate Change Canada, maintain a Core Receiving Environment Monitoring Program (CREMP) designed

	<p>to:</p> <ul style="list-style-type: none"> ▪ Determine the short and long-term effects in the aquatic environment resulting from the Project; ▪ Evaluate the accuracy of Project effect predictions; ▪ Assess the effectiveness of mitigation and management measures on Project effects; ▪ Identify additional mitigation measures to avert or reduce environmental effects due to Project activities; ▪ Comply with Metal Mining Effluent Regulations requirements, should an Environmental Effects Monitoring program be triggered; ▪ Reflect site-specific water quality conditions; ▪ Include details comparing the watershed features in the Whale Tail watershed to those watersheds used as reference lakes; and ▪ Evaluate the mixing and non-mixing portion of the pit. <p>The CREMP should include sufficient sampling and monitoring programs to appropriately characterize the receiving environment to ensure that adequate data is available to assess impact predictions made within the Environmental Impact Statement for the Whale Tail Pit Project.</p>
Reporting Requirements:	The updated plan should be submitted to the Nunavut Impact Review Board at least 90 days prior to the start of construction, with results submitted annually thereafter.

9.5.8 Freshwater Aquatic Environment

Term and Condition No.	20.
Category:	Freshwater Aquatic Environment – Setbacks
Responsible Parties:	The Proponent
Project Phase:	Construction, Operations, Temporary Closure/Care and Maintenance and Closure
Objective:	To mitigate impacts of runoff/sedimentation from project quarries and borrow pits into freshwater aquatic habitat.
Term or Condition:	Unless otherwise authorized, the Proponent shall maintain an appropriate setback distance between project quarries and borrow pits from fish-bearing or permanent waterbodies as required to prevent acid rock drainage or metal leaching into such waterbodies.
Reporting Requirements:	To be determined following approval of the Project by the Minister.

Term and Condition No.	21.
Category:	Freshwater Aquatic Environment – Watercourses
Responsible Parties:	The Proponent
Project Phase:	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To prevent blockages or restrictions to fish passages.
Term or Condition:	The Proponent shall ensure that all project infrastructures in watercourses are designed and constructed in such a manner that they do not unduly prevent or limit the movement of water or fish species in fish bearing streams and rivers, unless otherwise authorized by Fisheries and Oceans Canada.
Reporting Requirements:	To be determined following approval of the Project by the Minister.

Term and Condition No.	22.
Category:	Freshwater Aquatic Environment – Blasting
Responsible Parties:	The Proponent, Fisheries and Oceans Canada
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure/Care and Maintenance and Closure.
Objective:	To mitigate impacts of explosives use on fish and fish habitat.
Term or Condition:	The Proponent shall engage with Fisheries and Oceans Canada to develop project specific thresholds, mitigation and monitoring for any blasting activities that would exceed the requirements of Fisheries and Oceans Canada's <i>Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters</i> .
Reporting Requirements:	If project-specific thresholds, mitigation and monitoring requirements are developed, the Proponent shall identify these requirements in the annual report provided to the Nunavut Impact Review Board.

Term and Condition No.	23.
Category:	Freshwater Aquatic Environment – Trophic Status
Responsible Parties:	The Proponent, Environment and Climate Change Canada, Fisheries and Oceans Canada
Project Phase:	Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize potential project impacts to freshwater ecosystem productivity.
Term or Condition:	The Proponent shall, reflecting any direction from Environment and Climate Change Canada and Fisheries and Oceans Canada:

	<p>a) Conduct additional analysis to support the conclusions that a change in trophic status in Mammoth Lake would not impact fish productivity;</p> <p>b) Undertake additional site-specific studies to assess the predicted trophic change on lake ecosystem productivity to monitor potential changes to downstream environments; and</p> <p>c) Monitor actual loadings/concentrations in the receiving environment, identify trends in downstream chemistry and productivity, and track trophic status of Mammoth Lake.</p>
Reporting Requirements:	The Plan should be submitted to the Nunavut Impact Review Board (NIRB) at least 30 days prior to closure, with updates submitted annually thereafter or as may otherwise be required by the NIRB.

Term and Condition No.	24.
Category:	Freshwater Aquatic Environment – Fisheries Habitat Offsetting Plan
Responsible Parties:	The Proponent, Fisheries and Oceans Canada
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To determine the viability of the flooded south basin of Whale Tail Lake as an effective offset for habitat losses.
Term or Condition:	<p>The Proponent shall engage Fisheries and Oceans Canada, and other interested parties to further assess:</p> <ul style="list-style-type: none"> ▪ Whether the increased surface area of Whale Tail Lake is a viable offset to habitat losses resulting from development of the Project; and ▪ Whether Whale Tail end pit would support fish in the post closure scenario. <p>Results of this assessment should be incorporated into the Habitat Compensation Plan and/or the Conceptual Fisheries Offsetting Plan as appropriate.</p>
Reporting Requirements:	The updated information should be submitted to the Nunavut Impact Review Board at least 90 days prior to the start of construction of the Whale Tail Pit.

9.5.9 Vegetation

Term and Condition No.	25.
Category:	Vegetation – Invasive Species
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring

Objective:	To prevent the introduction of invasive species.
Term or Condition:	<p>The Proponent shall:</p> <ul style="list-style-type: none"> a) Ensure that equipment and supplies brought to the project sites are clean and free of soils that could contain plant seeds or organic matter not naturally occurring in the area b) Ensure that vehicle tires and treads are inspected prior to initial use in project areas; c) Incorporate protocols for monitoring for the potential introduction of invasive vegetation species (e.g. surveys of plant populations in previously disturbed areas) into relevant monitoring and management plans for the terrestrial environment; and d) Ensure any introductions of non-indigenous plant species must be promptly reported to the Government of Nunavut Department of Environment.
Reporting Requirements:	To be determined following approval of the Project by the Minister.

Term and Condition No.	26.
Category:	Vegetation – Mine Closure and Reclamation Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To encourage re-establishment of vegetation in disturbed areas as part of progressive reclamation efforts.
Term or Condition:	The Proponent shall include revegetation strategies within its Mine Closure and Reclamation Plan that support progressive reclamation, and promote natural revegetation and recovery of disturbed areas compatible with the surrounding natural environment. These strategies should include exploration of the feasibility and practicality of topsoil/organic matter salvage through Project development. Consideration for the results of similar reclamation efforts at other northern projects, including the Meadowbank Gold Mine Project, must be demonstrated.
Reporting Requirements:	To be determined following approval of the Project by the Minister.

9.5.10 Terrestrial Wildlife and Wildlife Habitat

Term and Condition No.	27.
Category:	Wildlife and Wildlife Habitat –Terrestrial Advisory Group

Responsible Parties:	The Proponent, Government of Nunavut, Kivalliq Inuit Association and Baker Lake Hunters and Trappers Organization
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To establish an advisory group to provide technical oversight on the Project's mitigation, monitoring, and adaptive management measures related to the protection of wildlife.
Term or Condition:	The Proponent shall participate in a Terrestrial Advisory Group with the Government of Nunavut, the Baker Lake Hunters and Trappers Organization, the Kivalliq Inuit Association, and other parties as appropriate to continually review and refine mitigation and monitoring details within the Terrestrial Ecosystem Management Plan. Additional caribou collar data, results from associated studies, and other monitoring data as available should be considered for incorporation as appropriate.
Reporting Requirements:	Finalized Terms of Reference for the Terrestrial Advisory Group shall be provided to the Nunavut Impact Review Board (NIRB) within 6 months of issuance of the Project Certificate. A summary of outcomes from Terrestrial Advisory Group meetings shall be provided to the NIRB on an annual basis.

Term and Condition No.	28.
Category:	Wildlife and Wildlife Habitat – Terrestrial Ecosystem Monitoring Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To mitigate, monitor, and adaptively manage potential impacts to wildlife.
Term or Condition:	<p>The Proponent shall maintain a Terrestrial Ecosystem Management Plan (TEMP) throughout all phases of the Project. The Plan shall include detailed monitoring, mitigation, and adaptive management measures for wildlife, with consideration for each Project activity predicted to affect wildlife, and with inclusion of specific triggers for mitigation and adaptive management intervention. The TEMP shall demonstrate consideration for all relevant commitments made by the Proponent throughout the Nunavut Impact Review Board's review of the Project.</p> <p>Updates to the TEMP may be required when there are significant changes in project development plans, monitoring results indicating biologically-meaningful changes, significant updates to the scientific understanding of management methods relevant to wildlife at the project site, Inuit Qaujimajatuqangit, Traditional Knowledge, changes in climatic conditions that might subject wildlife to unexpected</p>

	impacts, or as otherwise necessary.
Reporting Requirement	The Proponent shall submit a revised TEMP to the Nunavut Impact Review Board (NIRB) within 1 year of issuance of the Project Certificate, with subsequent versions provided as appropriate. Results of the TEMP shall be reported to the NIRB annually.

Term and Condition No.	29.
Category:	Wildlife and Wildlife Habitat – Caribou Data and Analyses
Responsible Parties:	The Proponent, the Government of Nunavut
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance,
Objective:	To reduce uncertainty associated with the potential impacts of the Project, including the haul road, as well as of the Meadowbank Gold Mine and its All-Weather Access Road on caribou and thereby improve caribou protection measures.
Term or Condition:	The Proponent shall, in collaboration with the Government of Nunavut, collect additional caribou collar data and conduct analyses of this data to quantify the zone of influence and associated effects of project components on caribou movement for a study area that includes the Whale Tail mine site, the haul road, the Meadowbank Gold Mine and its All-Weather Access Road.
Reporting Requirements:	To be determined following approval of the Project by the Minister.

Term and Condition No.	30.
Category:	Wildlife and Wildlife Habitat – Caribou Data and Analyses
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, and Operations,
Objective:	To verify the effectiveness of the caribou protection measures within the Terrestrial Environment Management Plan.
Term or Condition:	The Proponent shall collect additional data on caribou group sizes in proximity to the Project, and shall work with the Terrestrial Advisory Group to refine appropriate caribou group size thresholds that trigger additional mitigation. Initially, the group size thresholds should be set at 110 (fall), 25 (winter and summer), and 12 (spring).
Reporting Requirements:	The Proponent shall ensure modifications to the group size thresholds are incorporated into the Terrestrial Ecosystem Management Plan and that this Plan along with a summary of consultation with the Terrestrial Advisory Group are submitted to the Nunavut Impact Review Board on an annual basis or as thresholds are otherwise modified.

Term and Condition No.	31.
Category:	Wildlife and Wildlife Habitat – Road traffic management
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To minimize impacts to caribou and other terrestrial wildlife from road traffic.
Term or Condition:	The Proponent shall develop and implement a Road Access Management Plan and maintain traffic monitoring logs along the haul road between the Whale Tail Pit mine and the Meadowbank mine. Where traffic exceeds levels predicted within the Environmental Impact Statement, the Proponent shall develop and implement appropriate modifications to its wildlife protection measures.
Reporting Requirements:	The Road Access Management Plan shall be provided to the Nunavut Impact Review Board (NIRB) 90 days prior to operations commencing. An annual summary of the monthly maximum, minimum and average traffic levels shall be provided to the NIRB in the Proponent's annual report.

Term and Condition No.	32.
Category:	Wildlife and Wildlife Habitat – Wildlife mitigation
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To minimize impacts to caribou from roads
Term or Condition:	The Proponent shall engage with the Baker Lake Hunters and Trappers Organization and other relevant parties to ensure that safety barriers, berms, and designed crossings associated with project infrastructure, including the haul road, are constructed and operated as necessary to allow for the safe passage of caribou and other terrestrial wildlife.
Reporting Requirements:	Summaries of engagement with the Baker Lake Hunters and Trappers Organization regarding implementation of this condition shall be provided to the Nunavut Impact Review Board along with details of the selected crossings.

Term and Condition No.	33.
Category:	Wildlife and Wildlife Habitat – Monitoring and Mitigation
Responsible Parties:	The Proponent

Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To provide the information base necessary to analyze, understand and appropriately manage project interactions with wildlife.
Term or Condition:	<p>The Proponent shall provide wildlife incident reports to the appropriate authorities in a timely fashion. Wildlife incident reports should include the following information:</p> <ul style="list-style-type: none"> a) Locations (i.e., latitude and longitude), species, number of animals, a description of the animal activity, and a description of the gender and age of animals if possible; b) Prior to conducting project activities, the Proponent should map the location of any sensitive wildlife sites such as denning sites, calving areas, caribou crossing sites, and raptor nests in the project area, and identify the timing of critical life history events (i.e., calving, mating, denning and nesting); and c) Additionally, the Proponent should indicate potential impacts from the project, and ensure that operational activities are managed and modified to avoid impacts on wildlife and sensitive sites
Reporting Requirements:	To be determined following approval of the Project by the Minister.

9.5.11 Birds and Bird Habitat

Term and Condition No.	34.
Category:	Birds and Bird Habitat – Mitigation, Monitoring, and Adaptive Management for Migratory Birds
Responsible Parties:	The Proponent, Environment and Climate Change Canada
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To develop and implement appropriate mitigation and monitoring measures for migratory birds
Term or Condition:	<p>The Proponent will maintain a Migratory Birds Protection Plan for the Project in consultation with Environment and Climate Change Canada and other interested parties. The plan should include and/or demonstrate that the Proponent give consideration to the following:</p> <ul style="list-style-type: none"> ▪ Information obtained from baseline characterization of migratory bird and vegetation communities within the predicted flood area; ▪ Results of field tests and/or the thorough literature review of the effectiveness of preferred deterrence prior to actual flooding; and ▪ Details regarding monitoring the effectiveness of mitigation

	measures during flooding.
Reporting Requirements:	Results of implementation of the Migratory Birds Protection Plan shall be reported to the Nunavut Impact Review Board on an annual basis.

Term and Condition No.	35.
Category:	Birds and Bird Habitat – Mitigation and Monitoring Measures for Species at Risk
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To mitigate and monitor potential impacts to Species at Risk.
Term or Condition:	The Proponent shall ensure that the mitigation and monitoring strategies developed for Species at Risk are updated as necessary to maintain consistency with any applicable status reports, recovery strategies, action plans, and management plans that may become available through the duration of the Project.
Reporting Requirements:	To be determined following approval of the Project by the Minister.

Term and Condition No.	36.
Category:	Birds and Bird Habitat – Raptor Mitigation Measures
Responsible Parties:	The Proponent, the Government of Nunavut – Department of Environment
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To mitigate potential impacts to raptors from project operations.
Term or Condition:	Prior to removal or deterrence of raptors, the Proponent will contact the Government of Nunavut – Department of Environment to discuss proposed mitigation options and, if required, will obtain the necessary permits.
Reporting Requirements:	To be determined following approval of the Project by the Minister.

9.5.12 Marine Environment including Marine Wildlife and Habitat

Term and Condition No.	37.
Category:	Shipping Management Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care

	and Maintenance, Closure and Post-Closure
Objective:	To ensure that parties are provided with information on how potential impacts from project-related shipping activities will be mitigated.
Term or Condition:	The Proponent shall maintain a Shipping Management Plan in coordination and consultation with applicable regulatory authorities and the Kivalliq Inuit Association, and the Hunters and Trappers Organizations of the Kivalliq communities.
Reporting Requirements:	The updated plan should be submitted to the Nunavut Impact Review Board at least 90 days prior to the start to commencement of shipping activities, with subsequent updates submitted annually thereafter.

Term and Condition No.	38.
Category:	Marine Shipping Route
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations
Objective:	To ensure that marine shipping activities avoid sensitive wildlife habitat and disruption of Inuit harvesting activities.
Term or Condition:	The Proponent shall ensure that marine shipping activities avoid sensitive wildlife habitat and species along the shipping route and use a routing south of Coats Island as the primary shipping route, subject to vessel and human safety considerations.
Reporting Requirements:	Confirmation that the requirements of this term and condition are being effectively implemented by shipping companies contracted by the Proponent should be submitted as part of annual reporting to the Nunavut Impact Review Board.

Term and Condition No.	39.
Category:	Marine Shipping – Seabird Colonies
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To ensure that marine shipping activities avoid seabirds and marine mammals.
Term or Condition:	The Proponent shall ensure that, subject to vessel safety requirements, a setback distance of at least 500 metres is maintained from colonies and aggregations of seabirds and marine mammals during Project shipping transiting through Hudson Strait, Hudson Bay, and Chesterfield Inlet.
Reporting Requirements:	Confirmation that the requirements of this term and condition are being effectively implemented by shipping companies contracted by

	the Proponent should be submitted as part of annual reporting to the Nunavut Impact Review Board.
--	---

Term and Condition No.	40.
Category:	Ship-based Marine Mammal Monitoring Program
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations
Objective:	To ensure that the project avoids vessel collision with and/or disturbance of marine mammals and seabird colonies.
Term or Condition:	The Proponent shall develop and implement a ship-based marine mammal monitoring program, as part of a Marine Mammal Management and Monitoring Plan, in consultation with Fisheries and Oceans Canada, communities, and other interested parties. The Proponent shall report any accidental contact by project vessels with marine mammals or seabird colonies to applicable responsible authorities including Fisheries and Oceans Canada and Environment and Climate Change Canada.
Reporting Requirements:	The Plan should be submitted to the Nunavut Impact Review Board at least 90 days prior to commencement of shipping activities, with subsequent updates submitted annually thereafter. Confirmation that the requirements of the Plan are being effectively implemented by shipping companies contracted by the Proponent should be provided with annual reporting.

Term and Condition No.	41.
Category:	Marine Shipping – Public Engagement
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations
Objective:	To ensure that potential impacted communities are informed about marine shipping activities.
Term or Condition:	The Proponent shall provide notification to communities regarding scheduled ship transits throughout the regional study area, including Hudson Bay and Chesterfield Inlet.
Reporting Requirements:	The Proponent shall provide a summary of public consultation undertaken to address this term and condition in annual reports to the Nunavut Impact Review Board.

Term and Condition No.	42.
Category:	Marine Shipping – Public Engagement

Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations
Objective:	To ensure that potentially impacted communities are informed about marine shipping activities and can provide feedback to inform project related shipping.
Term or Condition:	The Proponent shall design monitoring programs to ensure that local users of the marine area along the shipping route have the opportunity to provide feedback and input in relation to monitoring and evaluating potential project-induced impacts and changes in marine mammal distributions. The Proponent shall demonstrate how feedback received from community consultations has been incorporated into the most appropriate mitigation or management plans.
Reporting Requirements:	The Proponent shall provide a summary of public consultation undertaken to address this term and condition in annual reports to the Nunavut Impact Review Board.

Term and Condition No.	43.
Category:	Marine Shipping Contractors
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To ensure that marine shipping contractors meet all applicable regulatory requirements.
Term or Condition:	The Proponent shall contract only Transport Canada certified shippers to carry cargo for the Project, and shall ensure shippers are aware of the requirements of the Shipping Management Plan, and the Shipboard Oil Pollution Emergency Plan.
Reporting Requirements:	Evidence of meeting the requirements of this term and condition should be submitted as part of annual reporting to the Nunavut Impact Review Board.

9.6. SOCIO-ECONOMIC TERMS AND CONDITIONS

9.6.1 *Economic Development and Business Opportunities*

Term and Condition No.	44.
Category:	Economic Development and Opportunities – Socio-Economic Monitoring and Kivalliq Socio-Economic Monitoring Committee
Responsible Parties:	The Proponent and Kivalliq Socio-Economic Monitoring Committee
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure, and Post-Closure Monitoring

Objective:	Encourages continued participation with the Kivalliq Socio-Economic Monitoring Committee along with other agencies and the communities of the Kivalliq region;
Term or Condition:	The Proponent is strongly encouraged to continue to participate in the work of the Kivalliq Socio-Economic Monitoring Committee along with other agencies and the communities of the Kivalliq region, and to identify areas of mutual interest and priority for inclusion into a collaborative monitoring framework that includes socio-economic priorities related to the Project, communities, and the Kivalliq region as a whole.
Reporting Requirements:	To be determined following approval of the Project by the Minister.

Term and Condition No.	45.
Category:	Economic Development and Opportunities – Socio-Economic Monitoring
Responsible Parties:	The Proponent, Kivalliq Inuit Association, Government of Nunavut, Indigenous and Northern Affairs Canada, and Kivalliq communities
Project Phase:	Pre-Construction, Operations, Temporary Closure/Care and Maintenance, Closure, and Post-Closure Monitoring
Objective:	Development and establishment of a project specific Whale Tail Pit Socio-Economic Monitoring Committee to oversee the project-specific monitoring program.
Term or Condition:	<p>The Proponent shall work in collaboration with other socio-economic stakeholders including, the Government of Nunavut, Indigenous and Northern Affairs Canada, the Kivalliq Inuit Association, and communities of the Kivalliq region, to establish a socio-economic working group for the Project to develop and oversee a Kivalliq Projects AEM Socio-Economic Monitoring Program. The working group will develop a Terms of Reference, which outlines each member's roles and responsibilities with regards to, where applicable, project specific socio-economic monitoring throughout the life of the projects.</p> <p>The Proponent shall work with the other parties to use the updated Kivalliq Projects Socio-Economic Monitoring Program to monitor the predicted impacts outlined in the projects' respective EIS' as well as regional concerns identified by the Kivalliq Socio-Economic Monitoring Committee. The Proponent shall work in collaboration with all other socio-economic stakeholders such as the Government of Nunavut, Indigenous and Northern Affairs Canada, Kivalliq Inuit Association, and the communities of the Kivalliq region in developing this program, which should include a process for adaptive management and mitigation in the event unanticipated impacts are identified.</p>

Reporting Requirements:	<p>The Terms of Reference for this multi-party, multi-project Working Group are to be provided to the Nunavut Impact Review Board upon completion, and within one year of issuance of the Project Certificate.</p> <p>The Proponent shall produce annual joint “AEM Kivalliq Projects” Socio-Economic Monitoring reports throughout the life of the Projects that are submitted to the Nunavut Impact Review Board and discussed with the wider Kivalliq Socio-Economic Monitoring Committee. Details of the Kivalliq Projects Socio-Economic Monitoring Program are to be provided to the Nunavut Impact Review Board upon finalization, and within one year of issuance of the Project Certificate.</p>
-------------------------	---

Term and Condition No.	46.
Category:	Economic Development and Opportunities – Socio-Economic Monitoring
Responsible Parties:	The Proponent, Kivalliq Socio-Economic Monitoring Committee, Kivalliq Inuit Association, Government of Nunavut, Indigenous and Northern Affairs Canada, and Kivalliq communities
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure, and Post-Closure Monitoring
Objective:	Development of the project-specific socio-economic monitoring program and on-going monitoring of project-related socio-economic effects.
Term or Condition:	<p>The Proponent should develop a Project-specific Whale Tail Pit Socio-Economic Monitoring Program designed to:</p> <ul style="list-style-type: none"> ▪ Monitor for project-induced effects, including the impacts predicted in the Environmental Impact Statement through indicators presented in the Whale Tail Pit Socio-Economic Monitoring Plan; ▪ Reflect regional socio-economic concerns identified by the Kivalliq Socio-Economic Monitoring Committee (KivSEMC); ▪ Work in collaboration with all other socio-economic stakeholders such as the Kivalliq Inuit Association, the Government of Nunavut, and Indigenous and Northern Affairs Canada, and the communities of the Kivalliq region to develop the program; and ▪ Include a process for adaptive management and mitigation to respond if unanticipated impacts are identified.
Reporting Requirements:	Details of the Whale Tail Pit Socio-Economic Monitoring Program should be submitted to the Nunavut Impact Review Board (NIRB) within one (1) year of issuance of the Project Certificate. The Proponent should produce annual Whale Tail Pit socio-economic monitoring reports throughout the life of the Project that are submitted

	to the NIRB and shared with the wider KivSEMC.
--	--

Term and Condition No.	47.
Category:	Economic Development and Opportunities – Socio-Economic Monitoring and Kivalliq Socio-Economic Monitoring Committee
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure, and Post-Closure Monitoring
Objective:	To identify risks and potential effects of temporary mine closures on communities and develop appropriate offsetting measures.
Term or Condition:	The Proponent should undertake an analysis of the risk of temporary mine closure, giving particular consideration to how communities in the Kivalliq region may be affected by temporary closure of the mine, including consideration of the measures that can be taken to mitigate the potential for adverse effects (e.g. development of programs that provide transferable skills, identification of employment options that can include transfers amongst Agnico Eagle operations, etc.) This analysis is required to be updated as necessary to reflect significant changes to the Project or the socio-economic conditions in the region that may increase the risks and potential effects of temporary mine closures.
Reporting Requirements:	This initial results of the Proponent's analysis should be provided to the Nunavut Impact Review Board (NIRB) within six (6) months of the issuance of the Project Certificate. Any updates to the analyses should be provided to the NIRB as completed by the Proponent.

9.6.2 Employment, Education and Training

Term and Condition No.	48.
Category:	Employment – Staff Schedule
Responsible Parties:	The Proponent
Project Phase:	Construction, Operation, Temporary Closure/Care and Maintenance, Closure
Objective:	To produce accurate labour market information regarding available Project employment and skill requirements for the Project to support economic and employment forecasting.
Term or Condition:	<p>The Proponent is strongly encouraged to submit staff schedule forecasts that should, at a minimum, include the following:</p> <ul style="list-style-type: none"> ▪ Title of positions required by department and division; ▪ Quantity of positions available by project phase and year; ▪ Transferable skills, both certified and uncertified which may be

	<p>required for, or gained during, employment within each position;</p> <ul style="list-style-type: none"> ▪ The National Occupational Classification code for each individual position. <p>The Proponent should also identify and register all trades occupations, journeypersons, and apprentices working with the Project and make this information available to the Government of Nunavut to assist in delivery of training initiatives and programs.</p>
Reporting Requirements:	The Staff Schedule should be submitted to the Nunavut Impact Review Board six (6) months prior to each phase of the Project (construction, operations, closure).

Term and Condition No.	49.
Category:	Employment
Responsible Parties:	The Proponent
Project Phase:	Construction, Operation, Temporary Closure/Care and Maintenance, Closure
Objective:	To ensure long-term success for employment and training of Nunavummiut.
Term or Condition:	<p>The Proponent shall make best efforts to collaborate with the Government of Nunavut's Career Development Officer, Regional Manager of Career Development, and Director of Career Development. Semi-annual calls, at a minimum, should be initiated by the Proponent to address:</p> <ul style="list-style-type: none"> ▪ Hiring procedures and policies ▪ Issues regarding employee recruitment and retention ▪ AEM policies regarding career pathways and opportunities for advancement ▪ Internal and/or partnered training and development of employees ▪ Long-term labour market plans to facilitate training in communities
Reporting Requirements:	To be determined following approval of the Project by the Minister.

Term and Condition No.	50.
Category:	Employment
Responsible Parties:	The Proponent
Project Phase:	Construction, Operation, Temporary Closure/Care and Maintenance, Closure

Objective:	Objectives to be included within the Socio-Economic Monitoring Plan
Term or Condition:	<p>The Proponent will report the results of its Labour Market Analysis (LMA) and Inuit Work Barrier Study (WBS) to the Kivalliq Socio-Economic Monitoring Committee upon completion in 2018, which should integrate the findings into its ongoing work identifying gaps between the Kivalliq labour market and mining market needs, and how to activate latent labour pool in the Kivalliq region to maximize labour “capture” from mining for the region. The Proponent shall report the results and implications of the LMA and WBS within its first year’s Annual Report to the Nunavut Impact Review Board (NIRB), and show how the results have been integrated into an updated Socio-Economic Monitoring Plan for the Whale Tail Pit Project.</p> <p>The Proponent will participate in the work of the Kivalliq Socio-Economic Monitoring Committee along with other agencies and the communities of the Kivalliq region and to identify areas of mutual interest and priority for incorporation into a collaborative monitoring framework that includes socio-economic priorities related to the Project, communities, and the Kivalliq region as a whole.</p> <p>The Proponent will work in collaboration with other socio-economic stakeholders including, the Government of Nunavut, Indigenous and Northern Affairs Canada, the Kivalliq Inuit Association, and communities of the Kivalliq region to establish a socio-economic working group for the Project to develop and oversee a Kivalliq Projects AEM Socio-Economic Monitoring Program. The working group should develop a Terms of Reference which outlines each member’s roles and responsibilities with regards to, where applicable, project-specific socio-economic monitoring throughout the life of the Projects. The Terms of Reference for this multi-party, multi-project Working Group are to be provided to the Nunavut Impact Review board upon completion, and within one year of issuance of the Project Certificate.</p> <p>The Proponent will work with the other parties to use the updated Kivalliq Projects Socio-Economic Monitoring Program to monitor the predicted impacts in the Projects’ respective EIS’ as well as regional concerns identified by the Kivalliq Socio-Economic Monitoring Committee. The Proponent is encouraged to work in collaboration with all other socio-economic stakeholders such as the Government of Nunavut, Indigenous and Northern Affairs Canada, Kivalliq Inuit Association, and the communities of the Kivalliq region in developing this program, which should include a process for adaptive management and mitigation in the even unanticipated impacts are identified. The Proponent shall produce annual joint “AEM Kivalliq Projects” Socio-Economic Monitoring reports throughout the life of the Projects that</p>

	are submitted to the Nunavut Impact Review board and discussed with the wider Kivalliq Socio-Economic Monitoring Committee. Details of the Kivalliq Projects Socio-Economic Monitoring Program are to be provided to the NIRB upon finalization, and within one year of issuance of the Project Certificate.
Reporting Requirements:	To be determined following approval of the Project by the Minister.

Term and Condition No.	51.
Category:	Employment – socioeconomic closure planning
Responsible Parties:	The Proponent
Project Phase:	Construction, Operation, Temporary Closure/Care and Maintenance, Closure
Objective:	To ensure workers at the Project would be supported once operations cease, or in the event of temporary closure.
Term or Condition:	<p>The Proponent shall develop a conceptual Socio-economic Closure Plan that:</p> <ul style="list-style-type: none"> ▪ Links the socio-economic closure plans for Meadowbank and Whale Tail; ▪ Identifies regular update and multi-party review requirements; ▪ Shows evidence of consideration of socio-economic lessons learned from other northern mine closure experiences; ▪ Includes evidence of consultation with Kivalliq communities and governance bodies on socio-economic objectives/goals related to closure planning; ▪ Emphasizes plans, policies, and programs to increase transferable skills of Inuit workers, including into trades and other skilled positions; and ▪ Includes all plans, policies and programs related to socioeconomic factors in a temporary closure situation.
Reporting Requirements:	The conceptual socio-economic closure plan will be provided to the Nunavut Impact Review Board within one year of issuance of the Project Certificate, and updated as needed prior to closure.

Term and Condition No.	52.
Category:	Education and Training—Transferable Skills and Certifications
Responsible Parties:	The Proponent, Government of Nunavut, Training Organizations
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure, and Post-Closure Monitoring

Objective:	Ensuring that the Project maximizes opportunities for the regional workforce to obtain transferable skills and certifications.
Term or Condition:	The Proponent should develop and maintain an easily referenced listing of formal certificates and licences that may be acquired via on-site training or training during project employment. The listing shall indicate which of these certifications and licences would be transferable to a similar job site within Nunavut.
Reporting Requirements:	The initial listing should be provided to the Nunavut Impact Review Board within six (6) months of the Project Certificate being issued. Updates to the list should be included in the Proponent's annual reports submitted to the Nunavut Impact Review Board and shared with the wider Kivalliq Socio-Economic Monitoring Committee throughout the life of the Project.

9.6.3 Population Demographics

Term and Condition No.	53.
Category:	Population Demographics – Monitoring Demographic Changes
Responsible Parties:	The Proponent and the Kivalliq Socio-Economic Monitoring Committee
Project Phase:	Pre-Construction, Construction, Operation, Temporary Closure/Care and Maintenance, Closure, and Post-Closure Monitoring
Objective:	Monitoring demographic changes affecting the Kivalliq communities and the territory as a whole is important to understand and evaluate the Proponent's predictions with regards to population demographics and whether any trends are identified which may be correlated with the Project.
Term or Condition:	Provided the collection and sharing of such information is consistent with and not limited by any Inuit Impact and Benefit Agreement with the Kivalliq Inuit Association and that employees are willing to voluntarily provide this information, the Proponent should collect and provide project-specific data concerning employee community of residence and number of employees that relocated from the year prior (where available, to and from, for Arviat, Baker Lake, Chesterfield Inlet, Coral Harbour, Nauyasat, Rankin Inlet and Whale Cove). The details of this process will be captured in the terms of reference for the project specific Whale Tail Pit Socio-Economic Monitoring Committee.
Reporting Requirements:	Summaries of this information should be included in the annual Whale Tail Pit socio-economic monitoring reports submitted to the Nunavut Impact Review Board and shared with the wider Kivalliq Socio-Economic Monitoring Committee throughout the life of the Project.

9.6.4 Traditional Activity and Knowledge

Term and Condition No.	54.
Category:	Traditional Activity and Knowledge
Responsible Parties:	The Proponent
Project Phase:	Construction, Operations, and Post-Closure Monitoring
Objective:	To demonstrate the incorporation of Inuit Qaujimaningit in its Monitoring Plans
Term or Condition:	The Proponent should ensure that the development of all project monitoring plans and associated reporting and updates are undertaken with active engagement of Kivalliq communities, land users, and harvesters. The Proponent should work with the Kivalliq Inuit Association, the local Hunters and Trappers Organizations and the Kivalliq Socio-Economic Monitoring Committee to report on the collection and integration of Inuit Qaujimaningit through its monitoring programs for the Project.
Reporting Requirements:	To be determined following approval of the Minister.

9.6.5 Non-traditional Land Use and Resource Use

In considering this issue, the NIRB is not recommending any specific terms and conditions with respect to Non-traditional Land Use and Resource Use.

9.6.6 Heritage Resources

Term and Condition No.	55.
Category:	Archaeological Surveys
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations
Objective:	To provide parties with updated information on the status of heritage resources in the project footprint.
Term or Condition:	The Proponent shall conduct archaeological surveys prior to land disturbance related to the Project and report survey results to applicable parties, including the Government of Nunavut – Department of Culture and Heritage.
Reporting Requirements:	Evidence of meeting the requirements of this term and condition should be submitted as part of annual reporting to the Nunavut Impact Review Board.

Term and Condition No.	56.
Category:	Archaeological Discoveries
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To ensure that any archaeological sites encountered are reported to appropriate regulatory authorities.
Term or Condition:	<p>The Proponent shall report any archaeological site discovered during the construction, operation, and closure phases to the Government of Nunavut – Department of Culture and Heritage and the Kivalliq Inuit Association.</p> <p>Upon discovering an archeological site, the Proponent shall:</p> <ol style="list-style-type: none"> Take all reasonable precautions necessary to protect the site until further direction is received from the Government of Nunavut – Department of Culture and Heritage; and If it becomes necessary to disturb an archaeological site, the Proponent shall consult with the Government of Nunavut – Department of Culture and Heritage, the Kivalliq Inuit Association, and potential impacted communities to establish a site specific mitigation plan, and obtain all necessary authorizations and comply with all applicable laws.
Reporting Requirements:	Evidence of meeting the requirements of this term and condition should be submitted as part of annual reporting to the Nunavut Impact Review Board.

9.6.7 Individual and Community Wellness

Term and Condition No.	57.
Category:	Individual and Community Wellness
Responsible Parties:	The Proponent
Project Phase:	Operations
Objective:	To promote employee health and well-being.
Term or Condition:	The Proponent shall update its Occupational Health and Safety Plan to include sexual health and well-being information in its employee orientation programming. In addition, the Proponent shall undertake an education program to inform workers of the range of health services available onsite.
Reporting Requirements:	To be completed following approval of the Project by the Minister.

Term and Condition No.	58.
Category:	Individual and Community Wellness
Responsible Parties:	The Proponent, the Government of Nunavut
Project Phase:	Operations
Objective:	To ensure effective coordination between the health services provided by the Project and those provided by local communities through the Government of Nunavut.
Term or Condition:	The Proponent is encouraged to form a subcommittee which includes Government of Nunavut representatives to reach consensus decisions on health related issues that the Proponent or the Government of Nunavut bring forward (e.g. programs and services to address sexually transmitted infections, a process for the treatment and transport of workers that may require medical services beyond that which the mine provides, monitoring and reporting on the impacts of the Project on health services within the potentially impacted communities and particularly, Baker Lake. etc.)
Reporting Requirements:	To be determined following approval of the Project by the Minister.

Term and Condition No.	59.
Category:	Health and Wellbeing – Cross-cultural Awareness
Responsible Parties:	The Proponent, the Kivalliq Inuit Association
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure, and Post-Closure Monitoring
Objective:	To support the elimination of cultural barriers and promote recognition for Inuit Qaujimajatuqangit to establish a healthy workplace for all Project employees.
Term or Condition:	<p>The Proponent is encouraged to work with the Kivalliq Inuit Association to establish cross-cultural training initiatives, which promote respect and consideration for the importance of Inuit Qaujimajatuqangit to the Inuit identity and to make this training available to Project employees and on-site sub-contractors. The Proponent should actively monitor the implementation of these initiatives, including the following items:</p> <ul style="list-style-type: none"> ▪ Descriptions of the goals of each program offered; ▪ Language of instruction; ▪ Schedules and location(s) of when each program was offered; ▪ Uptake by employees and/or family members where relevant, noting Inuit and non-Inuit participation rates; and ▪ Completion rates for enrolled participants, noting Inuit and

	non-Inuit participation rates.
Reporting Requirements:	To be determined following approval of the Project by the Minister.

9.6.8 Community Infrastructure and Public Services

Term and Condition No.	60.
Category:	Community Infrastructure and Services – Impacts to Health Services
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To identify trends and provide understanding of potential Project-specific impacts to local health services.
Term or Condition:	The Proponent shall engage with the Government of Nunavut to develop a process to ensure that any conditions first treated at the mine site and requiring ongoing care is appropriately accommodated in a timely manner at community health centres as required.
Reporting Requirements:	Evidence of meeting the requirements of this term and condition should be submitted as part of the Proponent's annual reporting to the Nunavut Impact Review Board.

Term and Condition No.	61.
Category:	Community Infrastructure – Access to Housing
Responsible Parties:	The Proponent, the Government of Nunavut and the Nunavut Housing Corporation
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To ensure that Project benefits include improvement in access to housing in potentially impacted communities.
Term or Condition:	The Proponent, in collaboration with the Government of Nunavut and the Nunavut Housing Corporation, is encouraged to investigate measures and programs designed to assist Project employees with pursuing home ownership or accessing affordable housing options in the Kivalliq region. The Proponent should provide access to financial literacy, financial planning, and personal budgeting as part of the regular Life Skills Training and/or Career Path Program.
Reporting Requirements:	Evidence of meeting the requirements of this term and condition should be submitted as part of the Proponent's annual reporting to the Nunavut Impact Review Board.

Term and Condition No.	62.
Category:	Community Infrastructure and Services – Impacts to Infrastructure
Responsible Parties:	The Proponent and the Government of Nunavut
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To address potential Project-related impacts to community infrastructure within the Local and Regional Study Areas.
Term or Condition:	The Proponent should work with the Government of Nunavut to develop an effects monitoring program that identifies Project-related pressures to community infrastructure such as airport and transportation infrastructure, policing, health and social services, in Baker Lake and all the point-of-hire communities of the Kivalliq Region.
Reporting Requirements:	Evidence of meeting the requirements of this term and condition should be submitted as part of the Proponent's annual reporting to the Nunavut Impact Review Board.

9.7. OTHER TERMS AND CONDITIONS

9.7.1 Community Consultation

In considering this issue, the NIRB is not recommending any specific terms and conditions with respect to Community Consultation, but does include a community consultation recommendation in [Section 9.8: Recommendations for Regulatory Agencies and Landowners](#).

9.7.2 Human Health and Ecological Risk Assessment

Term and Condition No.	63.
Category:	Assessment of Risks from Consumption of Fish and Freshwater Aquatic Environment
Responsible Parties:	The Proponent
Project Phase:	Construction, Operation, and Care and Maintenance
Objective:	To minimize the potential risks from consumption of fish containing methylmercury.
Term or Condition:	The Proponent shall conduct additional studies as part of its freshwater aquatic effects analyses to ensure that methylmercury concentrations anticipated to increase during operations in the aquatic environment (including in fish tissue) do not exceed regulatory requirements. In addition, the Proponent shall consider assessing potential risks from consumption of fish containing methylmercury by using Health Canada's hazard quotients as a descriptive tool.

Reporting Requirements:	To be determined following approval of the Project by the Minister.
-------------------------	---

9.7.3 Accidents and Malfunctions

In considering this issue, the NIRB is not recommending any specific terms and conditions with respect to Accidents and Malfunctions.

9.7.4 Alternative Analysis

In considering this issue, the NIRB is not recommending any specific terms and conditions with respect to Alternative Analysis.

9.7.5 Cumulative Effects

Term and Condition No.	64.
Category:	Cumulative Effects
Responsible Parties:	The Proponent
Project Phase:	Construction, Operation, and Care and Maintenance
Objective:	To assist in the identification and management of potential cumulative effects associated with ongoing exploration and possible future phases of development.
Term or Condition:	Within its annual reporting, the Proponent is encouraged to include detailed updates on the status of ongoing exploration programs associated with the Project and associated implications for future phase developments of the Amaruk property.
Reporting Requirements:	To be included in the Proponent's annual reporting to the Nunavut Impact Review Board.

9.7.6 Performance Bonding

In considering this issue, the NIRB is not recommending any specific terms and conditions with respect to Performance Bonding.

9.8. RECOMMENDATIONS FOR REGULATORY AGENCIES AND LANDOWNERS

In the course of the Board's review of the Project, Elders, students, the Baker Lake Hunters and Trappers Organization and community representatives from the Kivalliq communities potentially affected by the Project shared not only their perspectives with respect to the Project, but also with respect to the essential role of regulatory agencies and landowners (Nunavut Tunngavik Inc. and the Kivalliq Inuit Association for Inuit-Owned Lands and Indigenous and Northern Affairs Canada for Crown lands) in determining how the Project should be regulated. Although referenced in the discussions of specific topics throughout this report, the Board wishes to provide specific recommendations to these parties in respect of three key areas.

As noted in [Section 5.1: Air Quality](#) a lack of Nunavut-specific guidance regarding air quality criteria creates uncertainty in terms of whether criteria developed for other jurisdictions such as Alberta are sufficiently protective to be applied in Nunavut where the background circumstances and meteorology may be very different. Consequently, the Board has identified this concern for the consideration of the Government of Nunavut – Department of Environment in the hope that the GN may either contemplate the development of Nunavut-specific air quality guidance or may alternatively consider providing clarification as to the applicability of standards from other jurisdictions.

As noted in [Section 5.10: Terrestrial Wildlife and Wildlife Habitat](#), several key monitoring and mitigation measures designed to limit the potential for effects on caribou and other terrestrial wildlife are being designed under the auspices of a Terrestrial Advisory Group. It is expected that the involvement of the Kivalliq Inuit Association, Baker Lake Hunters and Trappers Organization (HTO) and the KIA's and HTO's consultation with individual Elders and harvesters will be essential in ensuring that the advice provided by this Group is respectful of, and incorporates Inuit Qaujimajatuqangit in a meaningful way. However, the Board also heard that the Baker Lake HTO and individual Elders and local harvesters do not currently have access to adequate funding to support their active participation with this Group. While the Board recognizes the commitment of the Proponent to providing some support to ensure the effective operation of this Group, the Board also notes that access to sustainable and secure funding for these kinds of activities for the HTO and individual participants would be preferable so that communities can be assured that human and financial resource constraints will not hinder full and active participation in this important work.

Finally, as discussed in [Section 7.1](#), community members have identified to the Board that they are often not kept informed by the regulators responsible for inspecting, monitoring and enforcing project approvals about the inspections or other actions that they are taking in respect of a given project. The Board has observed in past reviews that when communities do not have ready access to this information they are left to wonder whether Proponents are truly being held accountable for meeting the requirements of their project approvals, or whether approvals are simply "rubber stamps". While the Board has no doubt that the proponents and regulators in Nunavut's regulatory system are committed to ensuring compliance with project development approvals and implementing the commitments they provide during project assessment and approval processes, without access to the information that demonstrates how regulators are fulfilling their assessment, approval and enforcement mandates, communities can question the extent to which the promises and commitments of all the parties provided are actually being fulfilled. Consequently, the Board recommends that regulatory agencies with responsibility for the Project consider conducting follow-up meetings with community members during subsequent permitting processes, and also consider making community visits to communicate the results of regulatory inspections, monitoring activities, and enforcement actions a priority.

Appendix A: Record of Proceedings

Project Proponent:	Agnico Eagle Mines Ltd. Meadowbank Division PO Box 540 Baker Lake, NU X0C 0A0
Date Project Description Received:	May 25, 2016
Positive Conformity Determination Received from the Nunavut Planning Commission:	June 17, 2016
Dates of Hearings:	Day 1: September 19, 2017, Baker Lake, NU Day 2: September 20, 2017, Baker Lake, NU Day 3: September 21, 2017, Baker Lake, NU Day 4: September 22, 2017, Baker Lake, NU
Board Members Present:	Elizabeth Copland, Chairperson Guy Alikut, Member Philip (Omingmakyok) Kadlun, Member Marjorie Kaviq Kaluraq, Member Henry Ohokannoak, Member Allen Maghagak, Member
NIRB Board Staff:	R. Barry, Executive Director S. Granchinho, Manager, Impact Assessment S. Taptuna, Outreach Coordinator T. Maksagak, Junior Technical Advisor J. Tucktoo, Interpreter/Translator W. Nicoll, Environmental Technologist
NWB Board Staff:	K. Kharatyan, Acting Manager, Licensing
Assistant to Board Staff:	S. Nagyougalik J. Iqqaat
Board Legal Counsel:	T. Meadows, Meadows Law
Interpreters:	J. Tucktoo, Interpreter/Translator (NIRB) L. Taparti C. Qaqimat
Court Reporters:	S. Anderson, CSR(A), Dicta Court Reporting E. Royal, CSR(A), Dicta Court Reporting

Appendix A: Record of Proceedings

Sound Technician:

W. Nicoll, Environmental Technologist
(NIRB)

PARTIES:

Proponent:

Agnico Eagle Mines Ltd.

J. Quesnel, Environmental Superintendent
L. Grondin, Senior Vice President,
Environmental Sustainable Development
and People
D. Gerard, Vice President, Nunavut
B. Paradis, Director Project Evaluations,
Nunavut
R. Vanengen, Environment Superintendent –
Permitting and Regulatory Affairs, Nunavut
S. LeClair, Superintendent Committee Affairs,
Nunavut
K. Mayrand, Human Resources
Superintendent, Nunavut
F. Pertrucci, Whale Tail Study Manager,
Mining
E. Voyer, General Supervisor, Principal
Geotechnical Engineer
M. Groleau, Geotechnical Coordinator
C. Ramcharan, Senior Community Affairs
Coordinator, IIBA
C. Squires, Community Relations
I. Joey, Meadowbank Trainer
K. Yip, Community Affairs Coordinator
G. Bigue, Human Resource Coordinator
I. Amarook, Meadowbank Employee
C. De La Mare, Consultant (Golder Associates
Ltd.)
J. Virgl, Consultant (Golder Associates Ltd.)
V. Bertrand, Consultant (Golder Associates
Ltd.)
J. Range, Consultant (Golder Associates Ltd.)
C. Prather, Consultant (Golder Associates Ltd.)
B. Armstrong, Legal Counsel (Lawson
Lundell)
C. Kowbel, Legal Counsel (Lawson Lundell)

Appendix A: Record of Proceedings

Interveners:

Kivalliq Inuit Association:

G. Garlik, Executive Director
L. Manzo, Director of Lands
J. Hart, Land and Water Inspector, Baker Lake
J. Tulugak, Land and Water Inspector, Rankin
Inlet
A. Sexton, Geology Consultant
K. Poole, Biology Consultant
K. Gilson, Legal Counsel (Duboff Edwards
Haight & Schacter)

Baker Lake Hunters and Trappers Organization

R. Aksawnee, Chairperson
Hugh Nateela, Manager
W. Bernauer, Consultant

Government of Nunavut

S. Pinksen, Assistant Deputy Minister,
Department of Environment
E. Stockley, Legal counsel
E. Zell, Avatiliriniq Coordinator
A. Robinson, Manager, Land Use Planning and
Environmental Assessment, Department of
Environment
L. Perrin, Project Manager, Impact
Assessment, Department of Environment
K. Johnson, Environmental Assessment
Coordinator, Department of Economic
Development and Transportation
S. Atkinson, Wildlife Consultant

Department of Justice (Canada):

S. Gruda-Dolbec, Legal Counsel

Northern Project Management Office:

L. Jonart, Project Manager

Environment and Climate Change Canada:

M. Pinto, Environmental Assessment
Coordinator
B. Asher, Air Quality Analyst
T. Auser, Project Officer – Water Quality

Fisheries and Oceans Canada:

M. D'Aguiar, A/Senior Fisheries Protection
Biologist
B. Ross, Senior Science Advisor
L. Watkinson, Fisheries Protection Biologist

Appendix A: Record of Proceedings

Indigenous and Northern Affairs Canada:	K. Costello, Director Resource Management J. Neary, Resource Management Officer J. Prokopick, Environmental Assessment Coordinator R. Theoret-Gosselin, Senior Environmental Assessment Coordinator A. Belanger, Water Resources Analyst I. Parsons, Manager, Water Resources T. Brown, Consultant (Arcadis) R. Knapp, Consultant
Natural Resources Canada:	R. Besner, Senior Environmental Assessment Officer
Transport Canada	S. Sadoway, Manager, Transport Canada Centre, Marine Safety
<i>Community Representatives:</i>	
Arviat	W. Gibbons L. Issumatarjuak A. Panigoniak Sr. J. Pingushat
Baker Lake	J. Kalluk L. Quinangnaq L. Tapatai
Chesterfield Inlet	H. Aggark P. Aggark E. Kimmaliardjuk J. Krako R. Kreelak Qiyuk
Coral Harbour	P. Pudlat
Naujaat	R. Angotealuk Jr. L. Mablik Nakoolak A. Nanordluk M. Tuktudjuk
Rankin Inlet	M. Hickes C. Tartak I. Tattuinee J. Tattuinee

Appendix A: Record of Proceedings

Whale Cove

A. Poksiak Turner

Other:

Nunavut Surface Rights Tribunal

A. Tautu, Director

Appendix B: Table of Commitments from the Final Hearing

The following table provides a listing of commitments confirmed by the parties at the Whale Tail Pit Project Final Hearing. Although some of these commitments have provided the basis for the Board's recommended terms and conditions, others, due to various reasons, such as limits on the Board's jurisdiction, are not expressly included as terms and conditions or recommendations to the parties. However, even for those commitments that have not become recommendations or recommended terms and conditions, it is the Board's expectation that all parties will make best efforts to fulfill all commitments included in the attached Table of Commitments. The Board notes the reliance of the parties and the Board on the commitments provided to come to resolution of outstanding issues during the technical review of the Whale Tail Pit Project and at the Final Hearing. Consequently, the Board recognizes the importance of honouring commitments to the credibility of the Board's assessment process and expects that these commitments will be fulfilled by the Proponent.

No.	Subject	Commitment	Issue Raised by (Date of Commitment)	Project Phase/Timing
Terrestrial Environment Commitments				
1	Caribou Protection Measures	The Proponent shall conduct an evaluation of caribou protection measures employed by the Project. The components of this evaluation shall include the following: (a) Tests of the monitoring methods that are used to detect caribou near the Project in order to quantify: (i) the probability of detecting groups; (ii) the effective range of detection; and (iii) the spatial extent of detection capacity relative to the mitigation distance buffers; (b) The collection of additional data on caribou group sizes to confirm the relevance of group size thresholds used in mitigation; (c) Collection and analyses of collar data to quantify the Zone-of-Influence (ZOI) associated with the Whale Tail Project, its haul road and the existing Meadowbank mine (and all-weather-access-road [AWAR]); (d) Collection and analyses of collar data to quantify the effects of the Whale Tail Project, its haul road and the existing Meadowbank mine (and AWAR) on the movements of caribou, in particular during migratory periods; (e) Collection of accurate records documenting the detection of caribou and the subsequent implementation of mitigation measures; and (f) Analyses of collar	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> ▪ Construction and Active Phases ▪ To be completed within 5 years of commencement ▪ If active mining life span extended, the evaluation should be updated every 5 years

No.	Subject	Commitment	Issue Raised by (Date of Commitment)	Project Phase/Timing
		data comparing the movements of individuals that were and were not subject to the implementation of mitigation measures. The scope of this evaluation shall include the following: (a) A study area or areas that encompass the Whale Tail mine site, haul road, Meadowbank mine and all-weather-access-road (including all activities utilizing this infrastructure including on-going exploration), all of which are integral components of the Project; (b) The use of accepted scientific methods and experimental designs to provide quantitative information; (c) The engagement of recognized subject matter experts in each area of the evaluation; (d) Collection of data with sufficient statistical power to detect potential impacts; (e) Guidance on study designs, analyses and interpretation from the Project's Terrestrial Advisory Group (TAG); (f) The collection of data during both the construction and active mining phases of the Project; (g) Completion of the evaluation within 5 years of Project commencement (beginning with construction) to ensure that any adverse effects or deficiencies in caribou protection measures are revealed prior to potential extensions in the use of Project infrastructure; (h) A technical report, as noted above in (g), for the evaluation to be submitted to NIRB; and If the Project's active mining life span is extended beyond that currently proposed (i.e. 2022), including extended use of the haul road to support other projects, the evaluation should be updated every 5 years.		
2	Seasonal Windows	The Proponent shall revise the Terrestrial Ecosystem Management Plan (TEMP) to define the fall caribou migration season as the period from September 22 to December 15 for the purposes of applying caribou protection measures, as detailed in the Project's TEMP. All caribou protection measures that are applied to the period from September 22 to November 7 in the current version of the TEMP (figures 6 to 9 of version 4) shall be applied to this revised period.	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> September 22 – December 15 for the duration of the Terrestrial Ecosystem Management Plan
4	Caribou	The Proponent shall collect additional data on caribou group-sizes	Government of	<ul style="list-style-type: none"> Within five years

No.	Subject	Commitment	Issue Raised by (Date of Commitment)	Project Phase/Timing
	Group Size Thresholds – data collection	in proximity to the Project (including the haul road) to assess the relevance of the proposed group size thresholds. These data shall be collected using the same definition of caribou 'group' used to trigger caribou protection measures in the TEMP. The TAG shall be directly involved in this assessment. This shall occur within five years of the Project's start.	Nunavut (September 21, 2017)	of the project's start
5	Monitoring for CPM - Frequencies	Within 1 year of Project certification, the Proponent shall revise the TEMP to increase the frequencies of height-of-land, road and ground surveys for caribou compared to the current levels in the TEMP (v.4.0). Thereafter, further revisions may be made annually within the TEMP, taking into account ongoing project monitoring. The revisions shall adhere to advice provided by the TAG, as per the terms of reference.	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> ▪ Within 1 year of project certification ▪ Annually thereafter
6	Monitoring for CPM – Height of Land and Road Surveys coverage	Within 1 year of Project certification, the Proponent shall revise the number of proposed height-of-land and road-side survey points to provide sufficient line-of-sight coverage to detect caribou within 4 km of the Project (including haul road and pit) with greatest coverage at known road crossing points (as determined from IQ, collar data and other observations, and reviewed by the TAG). Thereafter, further revisions may be made annually within the TEMP, taking into account ongoing project monitoring. The revisions shall adhere to advice provided by the TAG, as per the terms of reference.	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> ▪ Within 1 year of project certification ▪ Annually thereafter
7	Monitoring for CPM – Caribou GST	Within 1 year of Project certification, the Proponent shall revise caribou group-size thresholds for adaptive management, taking into account the frequency of monitoring effort, spatial coverage of monitoring and likelihood of detecting groups of caribou, in order to ensure a majority (70%) of caribou are subject to enhanced mitigation (i.e. levels 1 through 3 of mitigation and monitoring as illustrated in figures 6 through 9 of the Terrestrial Ecosystem Monitoring Plan (TEMP), v4.0). Thereafter, further revisions may be made annually within the TEMP, taking into account ongoing	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> ▪ Within 1 year of project certification ▪ Annually thereafter

No.	Subject	Commitment	Issue Raised by (Date of Commitment)	Project Phase/Timing
		project monitoring. The revisions shall adhere to advice provided by the TAG, as per the terms of reference.		
8	Monitoring for CPM – alternatives research	The Proponent shall actively engage in research to develop alternative monitoring methods that may revise monitoring range, spatial coverage, frequency and detection probabilities.	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> ▪ All phases
9	Caribou Monitor – Level 2	The Project’s TEMP shall be revised to clarify that the definition of “non-essential vehicles and heavy equipment”, as referenced in caribou mitigation procedures, includes vehicles and equipment used to continue mining operations or hauling of ore. “Essential vehicles” includes vehicles operated for the purpose of maintaining the safety of personnel, Emergency Response Team (ERT), security and wildlife monitoring.	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> ▪ All phases
10	Caribou Monitor – Level 2	Within 1 year of Project certification, the Project’s TEMP shall be revised to reduce reliance on the use of discretionary mitigation measures at level 2 of caribou adaptive management, and shall include the addition of specific automatic measures intended to prepare for an operational shutdown if caribou move closer to mine operations or roads. Thereafter, further revisions may be made annually within the TEMP, taking into account ongoing project monitoring. The revisions shall be consistent with advice provided by the TAG, as per the terms of reference.	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> ▪ Within 1 year of project certification ▪ Annually thereafter
11	Caribou Monitor – suspension of vehicles, Heavy Equip.	With respect to monitoring and mitigation of caribou in proximity to mine operations, the Project’s TEMP shall be revised such that the provision for suspension of non-essential vehicles and heavy equipment operation (Level 3 in Figure 6, TEMP, v.4.0), when seasonal caribou group size thresholds are exceeded within a 500 m radius of the vehicle, is applied year-round and increased to 1 km during the calving and post-calving periods. This distance buffer may be revised periodically throughout the life of the Project whenever relevant information becomes available. The revisions shall be consistent with advice provided by the TAG, as per the	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> ▪ All phases ▪ Year-round

No.	Subject	Commitment	Issue Raised by (Date of Commitment)	Project Phase/Timing
		terms of reference.		
12	Caribou Monitor – non essential vehicle	The Project’s TEMP shall be revised to clarify that the definition of “non-essential vehicles and heavy equipment”, as referenced in caribou mitigation procedures, includes vehicles and equipment used to continue mining operations or hauling of ore. “Essential vehicles” includes vehicles operated for the purpose of maintaining the safety of personnel, Emergency Response Team (ERT), security and wildlife monitoring.	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> ▪ All phases
13	Caribou Monitor – Level 2	Within 1 year of Project certification (and again thereafter whenever relevant information becomes available), the Project’s TEMP shall be revised to reduce reliance on the use of discretionary mitigation measures at level 2 of caribou adaptive management, and shall include the addition of specific automatic measures intended to prepare for an operational shutdown if caribou move closer to mine operations or roads. Thereafter, further revisions may be made annually within the TEMP, taking into account ongoing project monitoring. The revisions shall be consistent with advice provided by the TAG, as per the terms of reference.	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> ▪ Within 1 year of project certification ▪ Annually thereafter
14	Caribou Monitor – Level 3	Within 1 year of Project certification , the Project’s TEMP shall be revised to further specify the provision for limitation of non-essential vehicles on the Whale tail haul and Meadowbank all-weather access roads when caribou are in proximity to these roads (i.e. level 3 responses, Figs. 7 & 8, TEMP v4.0) outside sensitive seasons. Thereafter, further revisions may be made annually within the TEMP, taking into account ongoing project monitoring. The revisions shall be consistent with advice provided by the TAG, as per the terms of reference.	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> ▪ Within 1 year of project certification ▪ Annually thereafter
15	4km and 5km Buffer	The TEMP shall be revised such that blasting activities at the Whale Tail site are suspended when caribou above the specified seasonal group size threshold are present within 4 km of the blast site. This provision shall apply year-round except during calving season when the buffer shall be increased to 5 km when cows with calves are	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> ▪ All Phases

No.	Subject	Commitment	Issue Raised by (Date of Commitment)	Project Phase/Timing
		present. These buffer thresholds are preliminary pending the results of further studies. These no-blasting buffers may be reviewed periodically throughout the life of the Project whenever relevant information becomes available taking into account ongoing project monitoring. Any revisions shall adhere to advice provided by the TAG, as per the terms of reference.		
16	Blasting Study -	A noise, vibration and visual cues study shall be conducted that: (1) will validate blasting noise and vibration predictions in the Project's EIS; (2) will document the scale and range of visual cues generated by blasting activities (i.e. the distance and duration over which dust plumes can be observed by the naked eye); and (3) may be used to revise the Project's no-blasting buffers for caribou. Notwithstanding the no blasting buffers, Agnico Eagle may conduct studies on caribou within the buffer distance for the purposes of determining whether the buffer distance can be modified. The design and conduct of the study shall be consistent with advice provided by the TAG, as per the terms of reference.	Government of Nunavut (September 21, 2017)	▪ No timeline provided
17	Blasting Surveys –	Prior to each blast, surveys shall be conducted to detect caribou and other wildlife within the no-blasting buffers specified in the Terrestrial Ecosystem Monitoring Plan (TEMP).	Government of Nunavut (September 21, 2017)	▪ All Phases
18	Helicopter – Distance buffers for caribou	The Proponent shall apply mandatory, minimum distance buffers of 300m vertically and 1000m horizontally for the operation of all helicopters and fixed winged aircraft in proximity to caribou, subject to exception for safety considerations or the fulfillment of regulatory compliance activities only.	Government of Nunavut (September 21, 2017)	▪ All Phases
19	Helicopter – Distance buffers for landing and take-offs	The Proponent shall apply the mandatory, minimum distance buffers to landings and take-offs of helicopters, such that engine starts and takeoffs are suspended when caribou are observed within the buffer distance.	Government of Nunavut (September 21, 2017)	▪ All Phases
20	Helicopter –	The Proponent shall revise the Project's TEMP to include a	Government of	▪ All Phases

No.	Subject	Commitment	Issue Raised by (Date of Commitment)	Project Phase/Timing
	Monitor traffic	program to monitor and report helicopter traffic associated with the Whale Tail project (including existing Meadowbank infrastructure) and all associated exploration activities so that the spatial scale and intensity of this activity can be documented. This should include the collection and analysis of GPS track logs for all helicopter flights contracted by the Proponent.	Nunavut (September 21, 2017)	
21	Traffic Monitoring – Program through TAG	Prior to Project commencement, the Proponent shall develop a traffic-monitoring program. This program shall be designed to collect data on vehicle type, time, date, location (i.e. specific road segment utilized), point of origin and destination for all vehicles (Proponent-owned or contracted) using the Project's roads including the Whale Tail haul road and Meadowbank all-weather-access road. The design of this program shall be consistent with advice provided by the TAG, as per the terms of reference.	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> ▪ Prior to Project Commencement
22	Traffic Monitoring – Traffic Data Accuracy	The Proponent shall verify annually traffic data to ensure its accuracy and shall summarize traffic data for each road segment including the Whale Tail haul road and Meadowbank all-weather-access road. In addition to daily rates, any seasonal or monthly variation in traffic shall be reported. The observed rates and composition of traffic shall be compared to predictions in the EIS.	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> ▪ Annually
23	Traffic Monitoring – Exceed traffic predictions	Where traffic rates or composition exceed predictions in the EIS, based on a 3-year average, the Proponent shall produce a revised assessment to examine the potential impacts of this excess traffic on wildlife. This revised assessment shall be submitted to NIRB for consideration.	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> ▪ All phases
24	Traffic Monitoring – Recording use	The Proponent shall expand monitoring efforts for recording public use of roads to include the collection of data by staff conducting wildlife road surveys.	Government of Nunavut (September 21, 2017)	<ul style="list-style-type: none"> ▪ All phases
25	Project tolerant animals -	Within 1 year of Project certification, the Project's TEMP shall be revised to further define 'Project tolerant' animals as applied to wildlife mitigation and monitoring activities. Thereafter, further	Government of Nunavut (September 21,	<ul style="list-style-type: none"> ▪ Within 1 year of Project certification ▪ Annually thereafter

No.	Subject	Commitment	Issue Raised by (Date of Commitment)	Project Phase/Timing
	definition	revisions may be made annually within the TEMP, taking into account ongoing project monitoring. The revisions shall be consistent with advice provided by the TAG, as per the terms of reference.	2017)	
26	Project tolerant animals – consulting	Where mitigation measures are to be relaxed for project tolerant animals, the Proponent shall consult with the TAG prior to reducing/removing mitigation.	Government of Nunavut (September 21, 2017)	▪ All phases
27	Project tolerant animals - reporting	The Proponent shall document all cases where mitigation measures are relaxed for project tolerant animals and shall report these cases in the annual project monitoring report.	Government of Nunavut (September 21, 2017)	▪ All phases
28	Muskox - Group size thresholds	Within 1 year of Project certification, the Project's TEMP shall be revised to specify and justify the group-size threshold for triggering adaptive management for muskox. Justification of the group-size threshold should be based on available muskox group size data. Thereafter, further revisions may be made annually within the TEMP, taking into account ongoing project monitoring. The revisions shall be consistent with advice provided by the TAG, as per the terms of reference.	Government of Nunavut (September 21, 2017)	▪ Within 1 year of Project certification ▪ Annually thereafter
29	Muskox - Blasting Suspension	The Project's TEMP shall be revised to include a provision for mandatory suspension of blasting when groups of muskox above the specified group size threshold are observed within 1km of blasting activities. The suspension of blasting shall be maintained until the animals have moved away. The no-blasting buffer may be reviewed periodically throughout the life of the Project whenever relevant information becomes available. The revisions shall be completed annually within the TEMP, taking into account ongoing project monitoring, and will be consistent with advice provided by the TAG, as per the term of reference.	Government of Nunavut (September 21, 2017)	▪ Annually
30	Muskox - Roads,	The Project's TEMP shall be revised to include a requirement for vehicles to slow to 30 km/hr when passing within 500m of a group	Government of Nunavut	▪ All phases

No.	Subject	Commitment	Issue Raised by (Date of Commitment)	Project Phase/Timing
	vehicle speeds	of muskox above a specified group size threshold. This mitigation measure may be reviewed periodically throughout the life of the Project taking into account ongoing project monitoring. The revisions shall be consistent with advice provided by the TAG, as per the terms of reference.	(September 21, 2017)	
31	Muskox - Aircraft Buffers	The Project's TEMP shall be revised to include a mandatory requirement for aircraft to maintain a distances of at least 300m vertically and 1000m horizontally from groups of muskox; subject to exception for flight safety purposes. This mitigation measure may be reviewed periodically throughout the life of the Project taking into account ongoing project monitoring. The revisions shall be consistent with advice provided by the TAG, as per the terms of reference.	Government of Nunavut (September 21, 2017)	▪ All phases
32	Raptor Nests – Buffers	The proponent shall establish automatic minimum no-disturbance buffers around all raptor nests located in proximity to the Project. Project activities, including the operation of vehicles, heavy equipment, aircraft and blasting, shall be prohibited within these buffers unless an exception is specified within a nest-specific management plan that has been reviewed and approved by the GN, subject matter experts and other relevant parties. The size of minimum, no-disturbance buffers shall be based on the BC Guidelines for Raptor Conservation or similar guidelines as recommended by the Project's TAG.	Government of Nunavut (September 21, 2017)	▪ All phases
33	Uncertainty in caribou responses to Whale Tail haul road	Within 1 year of Project certification, Proponent shall: a. Complete movement analyses for collared caribou to measure behavioral responses to the All Weather Access Road including the annual rate of deflections to north of Meadowbank. The analyses should use all available information including harvesting patterns along the All Weather Access Road and annual variation in weather; b. Integrate caribou collar movements with Height of Land and All Weather Access Road survey monitoring data to describe the	Kivalliq Inuit Association (Sept. 21, 2017)	▪ Within 1 year of project certification

No.	Subject	Commitment	Issue Raised by (Date of Commitment)	Project Phase/Timing
		current representation of the collared caribou relative to the herds; and c. Revise thresholds using the results of the analyses of caribou speed, turning rates and direction of travel from the movement analyses for mitigation along the Whale Tail haul road in the TEMP.		
34	Terrestrial Ecosystem Management Plan	Within 1 year of Project certification, the Proponent shall revise the TEMP to include details on: a. Thresholds for when to implement convoying and duration of the gaps in traffic for all three project segments (mine operations, haul road and All Weather Access Road); b. How convoying will be tested for effectiveness (e.g., cameras, track surveys); and c. Information on the effectiveness of convoying as mitigation shall be presented in annual reporting with the TAG.	Kivalliq Inuit Association Sept. 21, 2017	▪ Within 1 year of project certification
37	Uncertainty in effects of Whale Tail pit and haul road activities on caribou disturbance	Within 1 year of Project certification, the Proponent shall complete a review of statistical design, statistical power and sample size for caribou collaring applicable for environmental assessment and adaptive monitoring.	Kivalliq Inuit Association Sept. 21, 2017	▪ Within 1 year of project certification
Socio-Economic Commitments				
38	Requests for financial information	Agnico Eagle will continue to engage with the GN and will respond to requests for financial information as appropriate.	Government of Nunavut (September 20, 2017)	▪ All phases
39	Staff schedule - forecasts	Proponent is strongly encouraged to submit staff schedule forecasts to the Nunavut Impact Review Board and to the Government of Nunavut six (6) months prior to each phase of the Project	Government of Nunavut (September 20,	▪ All phases

No.	Subject	Commitment	Issue Raised by (Date of Commitment)	Project Phase/Timing
		(construction, operations, closure). The schedule forecasts should, at a minimum, provide a description of quantity of positions available by Project phase, broken down by trade and job category	2017)	
40	Staff schedule – additional information	The Proponent is strongly encouraged to submit additional staff schedule information to the Nunavut Impact Review Board and to the Government of Nunavut for each phase of the project (construction, operations, closure), as soon as it becomes available. This information should include: •Transferable skills, both certified and uncertified which may be required for, or gained during, employment within each job category and trade; and •The National Occupational Classification code for each individual position.	Government of Nunavut (September 20, 2017)	▪ All phases
41	Staff schedule – consultation and deviations	The Proponent is encouraged to consult the Government of Nunavut's Career Development division during development of the schedule. A new schedule shall be submitted following any significant deviation from original predictions.	Government of Nunavut (September 20, 2017)	▪ All phases
42	Human Resources - Proponent/G N Collaboratio n	The Proponent's Human Resources shall make best efforts to collaborate with the Government of Nunavut's Career Development Officer, Regional Manager of Career Development, and Director of Career Development. Semi-annual calls, at minimum, should be initiated by the Proponent with these Government of Nunavut representatives regarding: •Hiring procedures and policies; •Issues regarding employee recruitment and retention; •AEM policies regarding career pathways and opportunities for advancement; •Internal and/or partnered training and development of employees; •Long-term labour market plans to facilitate training in communities.	Government of Nunavut (September 20, 2017)	▪ All phases
43	OHS plan	The Proponent shall update their Occupational Health and Safety	Government of	▪ No timeline given

No.	Subject	Commitment	Issue Raised by (Date of Commitment)	Project Phase/Timing
		Plan to include sexual and well-being information in its employee orientation programming.	Nunavut (September 20, 2017)	
44	Health services – education	The Proponent undertake an education program to inform workers of the range of health services available onsite.	Government of Nunavut (September 20, 2017)	▪ All phases
45	Health services – subcommittee	AEM commits to the formation of a subcommittee which includes Government of Nunavut representatives, to reach consensus decisions on health related issues that AEM or the Department of Health bring forward. Examples of items include programs and services to address sexually transmitted infections when workers present to the medical services clinic at the mine and a process for the treatment and transport of workers that may require medical services beyond that which the mine provides. Additional participants may be invited as needed and agreed to by both parties.	Government of Nunavut (September 20, 2017)	▪ All phases
46	Health services – ongoing care	The Proponent engage with the GN to develop a process to ensure that any conditions first treated at the mine site and requiring ongoing care is appropriately accommodated in a timely manner at the community health centre as required.	Government of Nunavut (September 20, 2017)	▪ All phases

Appendix C: List of Exhibits from the Whale Tail Pt Project Final Hearing

Exhibit Number	Date of Receipt	Exhibit Description	Party Tendering Exhibit
1.	September 19, 2017	Hard Copy PowerPoint Presentation Whale Tail Pit: The Future of the Meadowbank Division Part i – Introduction and overview Final Hearing – September 2017 (<i>English/Inuktitut</i>)	Agnico Mines Ltd. Eagle
2.	September 19, 2017	Hard Copy PowerPoint Presentation Whale Tail Pit: The Future of the Meadowbank Division Part ii – Public Participation Final Hearing – September 2017 (<i>English/Inuktitut</i>)	Agnico Mines Ltd. Eagle
3.	September 20, 2017	Hard Copy PowerPoint Presentation Whale Tail Pit: The Future of the Meadowbank Division Part iii – Atmospheric Environment Final Hearing – September 2017 (<i>English/Inuktitut</i>)	Agnico Mines Ltd. Eagle
4.	September 20, 2017	Hard Copy PowerPoint Presentation Whale Tail Pit: The Future of the Meadowbank Division Part iv – Freshwater Environment Final Hearing – September 2017 (<i>English/Inuktitut</i>)	Agnico Mines Ltd. Eagle
5.	September 20, 2017	Hard Copy PowerPoint Presentation Whale Tail Pit: The Future of the Meadowbank Division Part v – Terrestrial Environment Final Hearing – September 2017 (<i>English/Inuktitut</i>)	Agnico Mines Ltd. Eagle
6.	September 20, 2017	Hard Copy Map – Figure 1.4-2 Proposed Exploration Access Road on Inuit Owned Lands (<i>English</i>)	Agnico Mines Ltd. Eagle

Exhibit Number	Date of Receipt	Exhibit Description	Party Tendering Exhibit
7.	September 20, 2017	Hard Copy Meadowbank Division Terrestrial Ecosystem Management Plan Version 4, July 2017 (English)	Agnico Mines Ltd. Eagle
8.	September 20, 2017	Hard Copy Resumé John A. Virgl	Agnico Mines Ltd. Eagle
9.	September 20, 2017	Electronic Copy Only Video Clip File Digital Rendering of 3 Stages of the Project (video clip associated with Exhibit #1: Part i – Introduction and overview, Slide #19)	Agnico Mines Ltd. Eagle
10.	September 20, 2017	Electronic Copy Only Video Clip File Herd Movement Animation (video clip associated with Exhibit #5: Part v – Terrestrial Environment, slide #10)	Agnico Mines Ltd. Eagle
11.	September 20, 2017	Hard Copy PowerPoint Presentation Whale Tail Pit: The Future of Meadowbank Division Caribou Animation Final Hearing – September 2017 (English/Inuktitut)	Agnico Mines Ltd. Eagle
12.	September 20, 2017	Hard Copy PowerPoint Presentation Whale Tail Pit: The Future of the Meadowbank Division Part vi – Marine Environment Final Hearing – September 2017 (English/Inuktitut)	Agnico Mines Ltd. Eagle
13.	September 20, 2017	Hard Copy PowerPoint Presentation Whale Tail Pit: The Future of the Meadowbank Division Part vii – Human Environment and Socio-Economics Final Hearing – September 2017 (English/Inuktitut)	Agnico Mines Ltd. Eagle

Exhibit Number	Date of Receipt	Exhibit Description	Party Tendering Exhibit
14.	September 20, 2017	Hard Copy PowerPoint Presentation Whale Tail Pit: The Future of the Meadowbank Division Part viii – Human Health Final Hearing – September 2017 (<i>English/Inuktitut</i>)	Agnico Eagle Mines Ltd.
15.	September 20, 2017	Hard Copy PowerPoint Presentation Whale Tail Pit: The Future of the Meadowbank Division Part ix – Management Plans and Monitoring Programs Final Hearing – September 2017 (<i>English/Inuktitut</i>)	Agnico Eagle Mines Ltd.
16.	September 20, 2017	Hard Copy PowerPoint Presentation Whale Tail Pit: The Future of the Meadowbank Division Part x – Accidents and Malfunctions Final Hearing – September 2017 (<i>English/Inuktitut</i>)	Agnico Eagle Mines Ltd.
17.	September 20, 2017	Hard Copy Joint Submission on Commitments [sic] By Agnico Eagle Mines Ltd. and the Government of Nunavut (<i>English</i>)	Agnico Eagle Mines Ltd. and Government of Nunavut
18.	September 20, 2017	Hard Copy Joint Submission on Suggested Terms and Conditions By Agnico Eagle Mines Ltd. and the Government of Nunavut (<i>English</i>)	Agnico Eagle Mines Ltd. and Government of Nunavut
19.	September 21, 2017	Hard Copy PowerPoint Presentation Whale Tail Pit: The Future of the Meadowbank Division Predevelopment Application Final Hearing – September 2017 (<i>English/Inuktitut</i>)	Agnico Eagle Mines Ltd.

Exhibit Number	Date of Receipt	Exhibit Description	Party Tendering Exhibit
20.	September 21, 2017	Hard Copy Correspondence dated September 20, 2017 from the Baker Lake Hunters and Trappers Organization to the Chair of the Nunavut Impact Review Board and the Minister of Indigenous and Northern Affairs Canada RE: Proposed Whale Tail Mine (English)	Agnico Eagle Mines Ltd.
21.	September 21, 2017	Hard Copy Agnico Eagle Terrestrial Environment Commitments in response to Government of Nunavut (English)	Agnico Eagle Mines Ltd.
22.	September 21, 2017	Hard Copy Agnico Eagle Commitments re Terrestrial Environment (With Reference to Kivalliq Inuit Association Final Written Submission Comments) Dated September 21, 2017 (English)	Agnico Eagle Mines Ltd.
23.	September 21, 2017	Hard Copy PowerPoint Presentation Whale Tail Gold Project KIA-NTI Technical Review of the Environment Impact Statement (English/Inuktitut)	Agnico Eagle Mines Ltd.
24.	September 21, 2017	Hard Copy Baker Lake Hunters and Trappers Organization Revised Final Hearing Presentation for the “Whale Tail Pit” Proposal (English)	Baker Lake Hunters and Trappers Organization
25.	September 21, 2017	Hard Copy Baker Lake Hunters and Trappers Organization Revised Final Hearing Presentation for the “Whale Tail Pit” Proposal (Inuktitut)	Baker Lake Hunters and Trappers Organization

Exhibit Number	Date of Receipt	Exhibit Description	Party Tendering Exhibit
26.	September 21, 2017	Hard Copy NIRB Final Hearing Agnico Eagle Mines' "Whale Tail Pit" Project Government of Nunavut: Technical Session September 19-22, 2017 (<i>English/Inuktitut</i>)	Government of Nunavut
27.	September 21, 2017	Hard Copy NIRB Final Hearing Agnico Eagle Mines' "Whale Tail Pit" Project Government of Nunavut: Technical Session September 19-22, 2017 (<i>English/French</i>)	Government of Nunavut
28.	September 21, 2017	Originally Filed As (and referenced in the Final Hearing Transcript as): Hard Copy Table of Proposed Terms and Conditions Government of Nunavut: Proposed Terms and Conditions (<i>English</i>) Document Description Updated on October 30, 2017 at request of the GN: Hard Copy GN Information Item: Summary of GN Proposed Terms and Conditions included in Final Written Submission as of August 14, 2017 (<i>English</i>)	Government of Nunavut

Exhibit Number	Date of Receipt	Exhibit Description	Party Tendering Exhibit
29.	September 21, 2017	<p>Originally Filed As (and referenced in the Final Hearing Transcript as): Hard Copy Table of Proposed Terms and Conditions Government of Nunavut: Proposed Terms and Conditions <i>(Inuktitut)</i></p> <p>Document Description Updated on October 30, 2017 at request of the GN: Hard Copy GN Information Item: Summary of GN Proposed Terms and Conditions included in Final Written Submission as of August 14, 2017 <i>(Inuktitut)</i></p>	Government of Nunavut
30.	September 21, 2017	<p>Originally Filed As (and referenced in the Final Hearing Transcript as): Hard Copy Table of Proposed Terms and Conditions Government of Nunavut: Proposed Terms and Conditions <i>(French)</i></p> <p>Document Description Updated on October 30, 2017 at request of the GN: Hard Copy GN Information Item: Summary of GN Proposed Terms and Conditions included in Final Written Submission as of August 14, 2017 <i>(French)</i></p>	Government of Nunavut
31.	September 21, 2017	Hard Copy PowerPoint Presentation Environment and Climate Change Canada's Presentation to the Nunavut Impact Review Board Respecting the Whale Tail Pit Project <i>(English/Inuktitut)</i>	Environment and Climate Change Canada

Exhibit Number	Date of Receipt	Exhibit Description	Party Tendering Exhibit
32.	September 21, 2017	Hard Copy PowerPoint Presentation Environment and Climate Change Canada's Presentation to the Nunavut Impact Review Board Respecting the Whale Tail Pit Project (<i>French/English</i>)	Environment and Climate Change Canada
33.	September 21, 2017	Hard Copy PowerPoint Presentation Fisheries and Oceans Canada Presentation to the Nunavut Impact Review Board Final Hearing (<i>English/Inuktitut</i>)	Fisheries and Oceans Canada
34.	September 21, 2017	Hard Copy PowerPoint Presentation Fisheries and Oceans Canada Presentation to the Nunavut Impact Review Board Final Hearing (<i>English/French</i>)	Fisheries and Oceans Canada
35.	September 21, 2017	Hard Copy PowerPoint Presentation Indigenous and Northern Affairs Canada Whale Tail Pit Project Nunavut Impact Review Board Final Hearing: Technical Session (<i>English</i>)	Indigenous and Northern Affairs Canada
36.	September 21, 2017	Hard Copy PowerPoint Presentation Indigenous and Northern Affairs Canada Whale Tail Pit Project Nunavut Impact Review Board Final Hearing: Technical Session (<i>Inuktitut</i>)	Indigenous and Northern Affairs Canada
37.	September 21, 2017	Hard Copy PowerPoint Presentation Indigenous and Northern Affairs Canada Whale Tail Pit Project Nunavut Impact Review Board Final Hearing: Technical Session (<i>French</i>)	Indigenous and Northern Affairs Canada

Exhibit Number	Date of Receipt	Exhibit Description	Party Tendering Exhibit
38.	September 21, 2017	Hard Copy PowerPoint Presentation Indigenous and Northern Affairs Canada Whale Tail Pit Project Nunavut Impact Review Board Final Hearing: Community Session (<i>English</i>)	Indigenous and Northern Affairs Canada
39.	September 21, 2017	Hard Copy PowerPoint Presentation Indigenous and Northern Affairs Canada Whale Tail Pit Project Nunavut Impact Review Board Final Hearing: Community Session (<i>Inuktitut</i>)	Indigenous and Northern Affairs Canada
40.	September 21, 2017	Hard Copy PowerPoint Presentation Indigenous and Northern Affairs Canada Whale Tail Pit Project Nunavut Impact Review Board Final Hearing: Community Session (<i>French</i>)	Indigenous and Northern Affairs Canada
41.	September 21, 2017	Hard Copy Joint Submission on Suggested Terms and Conditions by Agnico Eagle Mines Ltd. and Indigenous and Northern Affairs Canada September 20, 2017 (<i>English</i>)	Agnico Eagle Mines Ltd. and Indigenous and Northern Affairs Canada
42.	September 21, 2017	Hard Copy PowerPoint Presentation Natural Resources Canada's Final Hearing Presentation: Agnico Eagles Mines (AEM) Whale Tail Pit Project (<i>English</i>)	Natural Resources Canada
43.	September 21, 2017	Hard Copy PowerPoint Presentation Natural Resources Canada's Final Hearing Presentation: Agnico Eagles Mines (AEM) Whale Tail Pit Project (<i>Inuktitut</i>)	Natural Resources Canada

Exhibit Number	Date of Receipt	Exhibit Description	Party Tendering Exhibit
44.	September 21, 2017	Hard Copy PowerPoint Presentation Natural Resources Canada's Final Hearing Presentation: Agnico Eagles Mines (AEM) Whale Tail Pit Project (<i>French</i>)	Natural Resources Canada
45.	September 21, 2017	Hard Copy PowerPoint Presentation Natural Resources Canada's Community Roundtable Presentation: Agnico Eagles Mines (AEM) Whale Tail Pit Project (<i>English</i>)	Natural Resources Canada
46.	September 21, 2017	Hard Copy PowerPoint Presentation Natural Resources Canada's Community Roundtable Presentation: Agnico Eagles Mines (AEM) Whale Tail Pit Project (<i>Inuktitut</i>)	Natural Resources Canada
47.	September 21, 2017	Hard Copy PowerPoint Presentation Natural Resources Canada's Community Roundtable Presentation: Agnico Eagles Mines (AEM) Whale Tail Pit Project (<i>French</i>)	Natural Resources Canada
48.	September 21, 2017	Hard Copy PowerPoint Presentation Whale Tail Pit: The Future of the Meadowbank Division Community Information Session Introduction and Overview (<i>English/Inuktitut</i>)	Agnico Eagle Mines Ltd.
49.	September 22, 2017	Handwritten notes of Community Member, Margaret Kaluraq (unable to attend the Final Hearing in person) (<i>English</i>)	Margaret Kaluraq

Exhibit Number	Date of Receipt	Exhibit Description	Party Tendering Exhibit
50.	September 22, 2017	Hard Copy Meeting Notes Indigenous and Northern Affairs Canada, Agnico Eagle and Golder Associates Ltd. Golder Document No. 145, dated September 14, 2017 (<i>English</i>)	Agnico Eagle Mines Ltd.
51.	September 22, 2017	Hard Copy Appendix A Terms of Reference – Terrestrial Advisory Group (<i>English</i>)	Agnico Eagle Mines Ltd. (with agreement of the Government of Nunavut)

Appendix D: List of Acronyms

Agnico Eagle	Agnico Eagle Mines Ltd.
ARD	Acid Rock Drainage
AWAR	All-Weather Access Road
CCME	Canadian Council of Ministers of the Environment
COPC	Chemicals of Potential Concern
CREMP	Core Receiving Environmental Monitoring Program
DFO	Fisheries and Oceans Canada
ECCC	Environment and Climate Change Canada
EIS	Environmental Impact Statement
EQC	Effluent Quality Criteria
GN	Government of Nunavut
ha	hectares
HHERA	Human Health and Ecological Risk Assessment
HTO	Hunters' and Trappers' Organization
IIBA	Inuit Impact and Benefit Agreement
INAC	Indigenous and Northern Affairs Canada
IR	Information Request
KIA	Kivalliq Inuit Association
km	kilometer
LSA	Local Study Area
ML	Metal Leaching
Mt	Million tonnes
NHC	Nunavut Housing Corporation
NIRB	Nunavut Impact Review Board
NNLP	No Net Loss Plan
NPA	Navigable Protection Act
NPAG	Non-Potentially Acid Generating
NPC	Nunavut Planning Commission
NRCan	Natural Resources Canada
NTI	Nunavut Tunngavik Incorporated
Nunavut Agreement	<i>Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada</i>
NuPPAA	<i>Nunavut Planning and Project Assessment Act</i>
NWB	Nunavut Water Board
PAG	Potentially Acid Generating
PHC	Pre-hearing Conference
PM	Particulate Matter
RSA	Regional Study Area
SEMC	Socio-Economic Monitoring Committee
SSWQO	site-specific water quality objective
TAG	Terrestrial Advisory Group
TC	Transport Canada
TEMP	Terrestrial Ecosystem Management Plan
TSF	Tailings Storage Facility

TSP	Total Suspended Particulate
VC	Valued Component
WRSF	Waste Rock Storage Facility
WSLRAP	Wildlife Screening Level Risk Assessment Plan
ZOI	Zone of Influence