



# OCEANS NORTH



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## Oceans North Final Written Statement – Mary River Mine Phase 2 Proposal

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Kaviq Kaluraq  
Nunavut Impact Review Board  
[info@nirb.ca](mailto:info@nirb.ca)

Dear Ms. Kaluraq,

Oceans North is a charitable organization that supports both marine conservation and the wellbeing of communities that rely on the marine environment. We emphasize made-in-the-Arctic solutions through partnerships with Indigenous organizations and northern communities to foster Arctic ecological resilience and abundance.

Attached to this letter is Oceans North's Final Written Statement regarding the Baffinland Iron Mines Corporation Mary River Mine Phase 2 Proposal. Included as an appendix are the "Oceans North Final Review Comments" filed with the Nunavut Impact Review Board on September 23, 2019. We stand by the arguments we made in that document and do not wish to belabour our comments and analysis. For a great many reasons, it is necessary to supplement our position based on the landscape (and seascape) in which we now find ourselves. Alarming, there is now strong multiyear evidence from harvesters, scientists and even the Proponent's own consultants that narwhal numbers in the project area have declined precipitously.

Much has changed both in and outside this review process since that filing was first made. What has not changed is our belief that this project should not be approved **given known impacts, potential impacts, transparency issues, benefit gaps, and general uncertainty in key aspects of this proposed expansion**. We wish to stress that we support the responsible development of this resource. However, it is only a responsible alternative if Nunavut's wildlife and Nunavummiut's harvesting interests are protected. Baffinland's current development plans fail to do this. Overall, there is too much risk to the environment and to the long-term wellbeing of communities to justify approval.

We profoundly disagree with Baffinland about what a responsible proponent owes the board and society at large in an environmental assessment for a project on public and Inuit land. Given the scale of this resource and the history of Inuit and public rights attached to it, the ultimate decision regarding the Phase 2 Proposal will have lasting consequences for Nunavut and Canada. The Mary River Mine is the single most important extractive development in the Canadian Arctic. Accordingly, we have not arrived at our position lightly.

Thank you for your attention,

Christopher Debicki  
Vice President and Counsel, Oceans North

## Summary

Baffinland is applying in this Phase 2 assessment to build a rail line from its Mary River Mine and ship up to 12 million tonnes of iron ore per season through Milne Inlet and Eclipse Sound. This shipping would occur over a concentrated period and overlaps with the intensive use of this area by several migratory species, including narwhal and beluga. This area is thought to be the highest density narwhal habitat in the world.

Oceans North recommends against approving the expansion of the mine at this time. Neither the proposed monitoring nor the quality of the Phase 2 environmental assessment is sufficient to determine that there will be no significant impacts on the ecosystemic integrity of the Nunavut Settlement Area, on Inuit wildlife harvesting rights, and on the existing and future cultural and social well-being of Nunavut residents. **The NIRB's requirements for an adequate environmental assessment have not been satisfied.** The Final Environmental Impact Statement and associated Addendums provided by the Proponent are not complete.

**We caution against an approval with many conditions that are difficult if not impossible to implement.** We believe that this would continue the systemic problems described by community members during the Phase 2 review, such as limited funding and lack of support to participate meaningfully in project reviews, as well as the poor integration of Inuit Qaujimajatuqangit. Instead, the NIRB's focus should remain on resolving existing issues through fulfilling the existing Terms and Conditions of the current project.

Our objections to the proposed expansion are grounded in the following key arguments:

### **ENVIRONMENTAL IMPACTS**

- The Terms and Conditions for current operations are not being met. This creates uncertainty about Baffinland's ability to create reliable monitoring programs for Phase 2.
- There are indicators of significant effects on narwhal. Baffinland's assessment is based on an incorrect assumption about narwhal sensitivity to sound.
- The cumulative impact assessment for Phase 2 does not properly assess the impacts of regular project shipping nor are cumulative effects monitored.
- As it is based on incorrect assumptions, the Phase 2 assessment cannot properly inform monitoring programs and adds to the risk of significant impacts going undetected, as we are seeing with the change in narwhal numbers and distribution.
- Tallurutiup Imanga provides the physical and biological foundation of the eastern Canadian Arctic marine system. The establishment of this area as a National Marine Conservation Area is meant to protect Inuit harvesting rights; however, increased shipping levels will likely cause significant impacts to ecosystem functions.

### **SOCIOECONOMIC IMPACTS**

- Baffinland's assertions regarding their operational viability are not supported by any evidence and are contradicted by available public information.

- Baffinland has not demonstrated the financial necessity of expanding the mine and independent economic analysis suggests the mine is profitable at current levels.
- Employment numbers are misrepresented – they would increase with Phase 2 construction but then decrease to below current levels. It is not clear that Inuit will benefit from expanding the mine, either in terms of royalties or workforce participation.

## UNCERTAINTY AND RISK

- Baffinland has promised much but delivered little in terms of future management plans, making it difficult to assess how successfully the proponent could manage expanded operations.
- There remain significant gaps in the record and challenges with the overall processes, such as Working Groups, that have hampered participation and make it challenging to reach an informed decision on the expansion.
- Approval of the expansion at this stage would not be consistent with precautionary management principles and could send the wrong message to future proponents.
- Many communities are not supportive of the project. This creates risk as there is a lack of trust and confidence in Baffinland to fulfill its promises.

## PROCESS CONCERNS AND INCOMPLETE EVIDENTIARY RECORD

- Baffinland's assertion that if Phase 2 is not approved the mine will go into care and maintenance is not supported by evidence and went unchallenged in the review process.
- Baffinland has not accounted for Phase 2 expenditures in its discussions about project viability.

## ENVIRONMENTAL IMPACTS

**“The primary objectives of the 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.”**

Since 2014, Oceans North has participated in research projects in Eclipse Sound and Milne Inlet related to the emergence of sustained industrial shipping in this region. Examples of this include a study of the structural dynamics and resiliency of the floe edge at the eastern entrance to Eclipse Sound, a study of potential seal mortality associated with hypothetical spring icebreaking in Eclipse Sound, and ongoing acoustic monitoring to assess impacts of shipping on narwhal distribution and behaviour. Using passive acoustic monitoring devices, our research goals are to record and measure underwater noise from ships, observe the seasonal presence of marine mammal sounds

and their vocal behaviour, and investigate the effects of vessel traffic on narwhal.

Accordingly, most of our technical comments throughout this process focus on environmental impacts and potential impacts as they relate to the marine environment. Because of their biological and cultural importance in this region, narwhals centre prominently in our consideration of risks associated with this project. We are not attempting to offer an exhaustive assessment of the biological impacts and potential impacts as they are presented in the Phase 2 proposal.

## **1. Terms and Conditions from existing operations are not being met, increasing the risk that Phase 2 Terms and Conditions will not be met.**

Baffinland is not fulfilling its Terms and Conditions set out in Project Certificate 005.

Early Warning Indicators (Project Certificate No. 005, Term and Condition #110): The Proponent is expected to determine early warning indicators that will ensure “rapid identification of negative impacts.”

Baffinland is required to develop early warning indicators for Valued Ecosystem Components. However, draft indicators are still in the development phase years after project shipping has begun. This term and condition should have been met before project shipping began. Additionally, measurements made now—well into significant project operations—would not consider an original baseline, which could alter what might be determined as an early warning signal.

At the 2019 technical hearings in Iqaluit, Baffinland confirmed that only a population-level reduction in marine mammal abundance would lead to a change in operations. None of the other monitoring efforts undertaken by the Proponent (e.g., acoustic monitoring, tagging of narwhals, shore-based survey and behavioral study) would connect to a change in project-related shipping operations under the Phase 2 proposal. Further, it was noted that two consecutive years of declining population estimates would be required to make the determination that a significant long-term displacement of narwhals had occurred. These estimates would be made from annual aerial surveys that require substantial time for analysis, creating a potential three-year lag between significant shipping-related displacement of marine mammals and any adaptive management.

The Proponent acknowledges in the technical supporting documents that none of the aerial surveys prior to 2017 were undertaken with experimental design sufficient to determine either abundance or whether narwhal are displaced by ships. However, a draft report from Baffinland consultants dated March 2016 (LGL report FA0059-2) showed a change in distribution of narwhals in the regional study area (RSA). After this report and following a revised final report that was not released to the Marine Environment Working Group (MEWG) or the public despite numerous requests, the Proponent terminated its contract with the consulting company that authored the report and noted in TSD 24-Section 8.3.10 that “There was no significant change in overall narwhal abundance and distribution observed in the area from 2014-2017.” Baffinland also did not undertake an aerial survey in 2018 despite repeated calls to do so from the MEWG (of which Oceans North is an observer).

As of the last aerial population survey conducted by Golder for Baffinland in 2020 and published in 2021, we have seen a significant decline in narwhal, and despite Baffinland’s monitoring programs, no warning indicators predicted this decline. Yet Inuit observations and shared knowledge have clearly identified impacts on marine mammals from current shipping. At the February 2020 MEWG meeting, representatives from the Mittimatalik HTO noted the worsening body condition of narwhal

and suggested it as an important factor in understanding current impacts on the population. Again and again, Inuit concerns have been politely accepted within the process, but not incorporated into monitoring and planning.

When we look at the behavioural response data from both the Bruce Head monitoring program and the narwhal tagging program, we don't see a change in the sensitivity of the response or even the type of response as this shipping season progresses, which we would expect if there was to be a repeated cumulative stress on the animal. **Similarly, we do not see any change in the response when we look year over year, despite shipping levels increasing over that time.** – Phil Rouget, Golder – pg. 3527, 211104-08MN053-Public Hearing Transcripts-Vol 19-IT4E [emphasis added]

Oceans North agrees with MEWG members that stress hormones, size and weight should be considered as early warning indicators. DFO, for example, has suggested integrating cortisol levels as an early warning indicator since 2018 (CSAS SR, 2019/038). The Watt et al.<sup>1</sup> paper provides a basis for this integration. It shows a positive correlation between shipping and stress in narwhal, and although not conclusive, to disregard the correlation would not be in keeping with the precautionary principle.<sup>2</sup> Monitoring stress in narwhal may be the best early warning indicator available at this time, providing evidence of potential long-term cumulative effects. The results of this monitoring can be used to assess any potential differences in narwhal distribution patterns or abundance in the RSA. Had early warning indicators such as cortisol been in place years ago, we may have anticipated the possibility of a decline in narwhal numbers coming and taken measures to alter current shipping levels.

#### Monitoring of Marine Mammals (Project Certificate No. 005, Term and Condition 105-112)

*“The purpose of a monitoring program ....shall be to;*

- measure the relevant effects of projects on the eco-systemic and socio-economic environments of the Nunavut Settlement Area;*
- to determine whether and to what extent the land or resource use in question is carried out within the predetermined terms and conditions;*
- to provide the information necessary for agencies to enforce terms and conditions of land or resource use approvals; and*
- to assess the accuracy of predictions contained in the project impact statements.” (s.12.7.2 – NIRB Guidelines)”*

Current monitoring programs are not well integrated, and boundaries for impacts are set around

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<sup>1</sup> Watt CA, Simonee J, L'Hérault V, Zhou R, Ferguson SH, Marcoux M, Black S. Cortisol levels in narwhal (*Monodon monoceros*) blubber from 2000 to 2019. *Arctic Science*. 2021 Jan 15:1-9.

<sup>2</sup> The principle stipulates that governments shall be obligated to restrict or ban activities that *may* cause serious and/or irreversible harm to human health and the environment, even without fully established scientific evidence of causal relationship. Therefore the most precautionary mitigations supported by biological relevance should be applied to shipping operations.

modelled assumptions rather than existing data. The proposed design of the monitoring programs for Phase 2 are similar to current operations. Based on QIA's concerns (pg. 2 of the QIA letter Re: Preliminary Narwhal Monitoring), the 2020 survey data, and 2021 local knowledge, Baffinland's monitoring programs do not properly assess the impacts of shipping as per the Terms and Conditions of the existing Project Certificate. Therefore, the impact assessments cannot be confirmed for Phase 2.

Current monitoring is meant to assess the impacts of shipping on marine life and inform adaptive management measures. However, observed changes in narwhal numbers have only resulted in prolonged debates about the cause of the change, indicating that the monitoring program is not fulfilling its purpose. The Phase 2 environmental impact assessment should have been able to use the results from the existing monitoring to better predict Phase 2 project impacts; however, intervenors and the Review Board have only been provided promises for adaptive management after the Phase 2 review process is complete.

The science and monitoring programs need great improvements with respect to the current operation. Proceeding with Phase 2 development now will only complicate our understanding of impacts, as there is high uncertainty around existing impacts and the risk to the integrity of the marine ecosystem. Increasing shipping is not appropriate until current impacts are better understood.

**2. The effects of current operations are indicative of greater potential effects in Phase 2**

Data and analysis provided by Baffinland and intervenors show that Baffinland's monitoring is likely underestimating their current impacts on narwhal and other marine mammals. Significant changes are being seen in the Eclipse Sound narwhal population, which may be a bellwether for larger impacts on the broader marine region.

Comparisons between Baffinland's predictions and results from Oceans North's long-term acoustic monitoring and the Scripps Institution of Oceanography (Jones, 2021) show that effects are not being measured accurately. Impacts are occurring at greater distances from vessels and at lower decibels than Baffinland is using in their assessment (Table 1). It is therefore unknown how repeated disturbances, for a large part of the day, weeks, and months, will impact individual animals and the overall narwhal population in the area.

*Table 1 – Differences in Baffinland Environmental Impact Assumptions and results of our ongoing acoustic research in the RSA*

Baffinland Predictions/Assumptions	Scripps Institution of Oceanography/Oceans North Results
Narwhal disturbance at 120 dB	Repeated bottom dives reduced (5 km away from vessel) at 105-115 dB
Vessel avoidance at 135 dB	Narwhal avoid ships (1 km away from bow and stern of ship) at 120 dB

Baffinland has shown that impacts on narwhal are visible (Table 2). It is unknown what the larger impacts are and what the cumulative effects of repeated disturbances over time will look like.

*Table 2 – Examples of known and unknown impacts from Baffinland vessel traffic on narwhal*

Known Impact	Source of data	Unknown Impact
Change in dive behaviour -Decrease in surface time and dive duration (within 1 km of vessels) and reduction in bottom dives (feeding) when within 5 km from vessels	Baffinland – Final 2020 Bruce Head Monitoring Report	Will repeated changes in dive behaviour impact foraging success rate? Body condition? Overall population health?
Change in direction of travel -Orientated away from vessels	Baffinland – Final 2020 Bruce Head Monitoring Report	Will repeated changes in travel impact foraging opportunities?
Change in group composition -Proportion of groups with immature animals higher when vessels present	Baffinland – Final 2020 Bruce Head Monitoring Report	Will this impact social bonds? Nursing and calf survival rate?
Change in habitat use -Narwhal closer to shore when vessels present	Baffinland – Final 2020 Bruce Head Monitoring Report	Increase in energy use to avoid vessels? Decrease in body condition?

Results indicate that narwhal respond to shipping. Baffinland has stated that they “do not see detectable responses, but when they do, they are limited to short-term effects.” Currently there is no proper assessment of the cumulative impact of these repeated “short-term effects.” In addition, not all impacts can be seen through binoculars: for example, highly disturbed animals that have left the area would not be seen, and heightened cortisol levels cannot be seen.

“The narwhals are scared of the ships. Even if you try to look at them with binoculars, you will not see them.” – Jamie Enook, pg. 3905, 211106-08MN053-Public Hearing Transcripts-Vol 21-IT4E

“We do not see animals leaving the area for any prolonged periods. We don't see animals diving deep for extended periods when ships are around” – Phil Rouget, Golder for Baffinland, pg. 3525, 211104-08MN053-Public Hearing Transcripts-Vol 19-IT4E

### 3. There are current indicators of significant impacts on narwhal

Over the last seven years there have been clear indicators that the current project is having significant impacts on narwhal.

#### **WARNING LIGHT IN 2016:**

A draft report from March 2016 (LGL report FA0059-2) showed a change in narwhal distribution in the RSA in the presence of three or more vessels. This report was not finalized. Shortly after, Baffinland severed its relationship with the consulting firm hired to run key aspects of its environmental monitoring and environmental assessment (LGL is widely regarded as an industry leader on marine mammal research). Golder replaced this firm and provided a critique of LGL's findings. Oceans North tried unsuccessfully to compel one of the authors of the LGL report to testify and we maintain that the circumstances surrounding the termination of LGL's role is relevant to the Board's determination.

#### **RED LIGHT 2018:**

Through a public consultation process, Pond Inlet community members noted lower narwhal abundance observed in 2017 and 2018.

#### **RED LIGHT IN 2020:**

There was a significant decrease (50%) in overall narwhal population estimate in Eclipse Sound.

"The current evidence from our programs do not suggest the narwhal experience chronic stress for project shipping under a Phase 2 scenario" – Phil Rouget, Golder for Baffinland, pg. 3528, 211104-08MN053-Public Hearing Transcripts-Vol 19-IT4E

#### **WARNING LIGHT IN 2021:**

Watt et al. (2021) established that narwhal cortisol levels increase when under stresses such as ice entrapment or during project vessel traffic. Disruption to narwhal and other marine mammals is not short-term in duration as described by Baffinland. Cumulative impacts are largely unknown due to the lack of a cumulative effects monitoring program, but the changes in narwhal distribution, the significant decline in narwhal numbers, and increased cortisol levels are a potential indication of repeated disturbance over time. It is unknown what the effects from these impacts will be, and what outside projects and factors (such as climate change) will add to the impacts.

We have yet to receive the results of the 2021 aerial survey, which will not be available until after a decision has already been made on the Phase 2 proposal. Local Inuit reporting has indicated that narwhal were again impacted, but these reports were not integrated into project management.



#### 4. Cumulative effects are neither properly assessed for Phase 2 nor adequately monitored

##### Environmental Assessment Process

In 2012, when the NIRB issued its recommendations regarding the original project proposal (rail and shipping through the southern route via Steensby Inlet), the Board had no way of knowing that Baffinland's cumulative effects assessment was materially deficient: the company failed to disclose and account for its plan to ship ore by truck via Milne Inlet. But it was foreseeable to the Proponent, since the company arrived at that decision before the Board issued its final report. This is confirmed by the Ontario Securities and Exchange Commission in [Lowdat Waheed and Bruce Walter](#) (August 26, 2014 and filed with the NIRB in the present review). Consequently, the Proponent received federal authorization to ship 18Mtpa via Steensby Inlet.

Now, in the present determination, the Proponent appears to argue that because the Board took into consideration the cumulative effects of the original project proposal (Steensby), it can now ignore cumulative effects associated with that aspect of its project:

A cumulative effects assessment (CEA) was presented in Volume 9, Section 1 of the FEIS (Baffinland 2012). That assessment was revisited by updating the list of active and reasonably foreseeable projects and considering the temporal boundaries of the Phase 2 Proposal. While the Project Development Area (PDA) boundaries will grow with the Phase 2 Proposal, the overall spatial boundaries of the previous assessments remain largely unchanged. As such, the previous assessment of cumulative effects of components of the Project that are unaffected by the Phase 2 Proposal (i.e., Steensby Port and the south shipping route) remain unchanged from the previous cumulative effects assessment presented in the FEIS.

(Baffinland TSD 27 at p. 1)

In Baffinland's environmental assessment, the National Marine Conservation Area *Tallurutiup Imanga* is listed as a project to be factored into a cumulative effect analysis, whereas Steensby, the "approved project," seems to exist in a special realm that is neither past nor present nor future:

Table 1.5 Potential Interactions of Other Projects and Activities with VECs

Relevant Projects or Activities	Climate Change	Air Quality	Noise and Vibration	Landforms, Soil and Permafrost	Vegetation	Migratory Birds and Habitat	Terrestrial Wildlife and Habitat	Water Quantity	Water Quality	Freshwater Fish, Fish Habitat and Bots	Marine Ice, Water and Sediment Quality	Marine Habitat and Bots	Marine Mammals
<b>Past</b>													
Nanisivik Mine (Decommissioned)	X												X
Mary River Project Definition Phase	X			X	X	X	X	X	X	X	X	X	X
Diamond Exploration	X				X	X	X						
<b>Existing</b>													
Nanisivik Naval Facility and Military Exercises	X												X
Back River and Hope Bay Projects	X												X
Regional Ship Traffic	X					X						X	X
Regional Air Transport	X		X			X	X						X
Communities, Traditional/Recreational Land Use	X	X	X			X	X			X			X
Regional Monitoring Programs	X	X	X			X	X						X
Baffinland Regional Exploration	X			X	X	X	X	X	X	X		X	X
Climate Change				X	X	X	X	X	X	X	X	X	X
<b>Reasonably Foreseeable</b>													
Tallurutiup Imanga/ Lancaster Sound NMCA													
<b>Potential Future Development</b>													
Mine Deposits No. 2 to 5 until 2055	X	X	X	X	X	X	X	X	X	X	X	X	X

(Baffinland TSD 27 at p. 24)

Accordingly, were the current project to be approved, the Proponent will have successfully engaged in two successive reviews of major industrial projects that don't account for one another. Baffinland appears to be attempting to take advantage of the NIRB's guideline definition of "reasonably foreseeable":

Projects or activities that are currently under regulatory review or that will be submitted for regulatory review in the *near future, as determined by the existence of a proposed project description, letter of intent, or any regulatory application filed with an authorizing agency.*

With respect, it is our position that this definition is inconsistent with any reasonable interpretation of the *Nunavut Planning and Project Assessment Act* (S.C. 2013, c. 14, s. 2) which compels the NIRB to consider the cumulative effects "*of the project combined with those of any other project that has been carried out, is being carried out or is likely to be carried out.*"<sup>3</sup> *NuPPAA* defines a project as "the carrying out, including the construction, operation, modification, decommissioning or abandonment, *of a physical work or the undertaking or carrying out of a physical activity that involves the use of land, waters or other resources.*"<sup>4</sup>

Assuming that the NIRB Guideline definition of "reasonably foreseeable" is consistent with *NuPPAA* and the *Nunavut Agreement*, a cumulative effects assessment is incomplete if it does not acknowledge and account for planned industrial activities on the basis that there isn't a proposed project description, letter of intent, or any regulatory application when the Proponent has deliberately chosen to conceal its intentions. If this were the case, it creates a perverse incentive for proponents to conceal their industrial activities and plans from regulators.

### **A number of cumulative effects have been identified in this assessment, all of which are predicted to be not significant.**

*Baffinland TSD-27 at p. 49*

### **Cumulative Impacts**

The Proponent competently identifies real risks related to the proposal, but fails to recognize that, in the aggregate, these risks can create significant impacts. The cumulative impact assessment for Phase 2 does not properly assess the impacts of regular project shipping. Golder and Baffinland have stated that given their planned mitigation measures, the residual effect of disturbance from ship noise on narwhal has been predicted to be "Non Significant" (Baffinland 2018).

The cumulative effects assessment as completed by Baffinland suggests that because one pass of a ship may not significantly affect narwhal, multiple passes of a ship will also not have an effect. Assessing one pass of a ship and extrapolating this to a season, project phase, or decades of operations is not appropriate environmental assessment practice. It does not consider that repeated low-level, localized effects occurring over weeks, months, years, or decades and other proposed phases could have a cumulative effect on the health of marine mammal populations.

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<sup>3</sup> Nunavut Planning and Project Assessment Act (S.C. 2013, c. 14, s. 2) s. 103(1)(f)

<sup>4</sup>NuPPAA s. 2

The input predictions made around cumulative effects are such that impacts were predicted to be limited to temporary localized effects and that cumulative shipping would not result to any disruption of critical narwhal activities such as foraging or reproduction and any carryover effects to the population. – Phil Rouget, Golder for Baffinland, pg. 3524, 211104-08MN053-Public Hearing Transcripts-Vol 19-IT4E

Baffinland's assessment is based on an incorrect assumption about narwhal sensitivity to sound. Modelling of underwater noise fields was undertaken by Baffinland contractor JASCO. The results predicted that for most project-related vessels, the maximum radius to the predicted behavioural disturbance noise threshold of 120 dB would be about 10 km. Measurements of actual underwater sound levels from project ships showed that this level, 120 dB, was seldom recorded even when ships were within a few kilometers of the recorder (Jones, 2021), meaning that the observed narwhal disturbances are likely occurring at lower sound levels.

The Proponent continues to insist in hearings and written submissions that significant effects were occurring at up to 5 km, while still stating that 120 dB re 1  $\mu$ Pa SPL is the “disturbance range” for narwhal. These two statements do not align; narwhal are showing disturbance behaviour at lower noise levels than 120dB, and the data exists to determine the noise levels where this occurs. In addition, these changes in behaviour are not aggregated to estimate the potential cumulative impacts that can occur with repeated, smaller behavioural effects over time at longer distances.

Measurements of underwater noise conducted by the Scripps Institution of Oceanography<sup>5</sup> determined typical received sound levels from bulk carriers at 5 km to be 105-115 dB re 1  $\mu$ Pa SPL. This was the distance at which narwhals were found to significantly change diving behavior associated with foraging (i.e., repeated bottom dives). Together, these results indicate that some types of behavioral disturbance in narwhal occur at substantially lower levels of noise from ships than the assumptions of 120dB re 1  $\mu$ Pa SPL repeated by Baffinland.

The integration of existing behavioural and acoustic monitoring data strongly suggests that use of a 120 dB re 1  $\mu$ Pa SPL “threshold” for behavioural disturbance in narwhals does not reflect the animals' observed sensitivity to underwater noise. Recent studies of narwhal responses to underwater noise demonstrate that these animals change their swimming and echolocation behavior at received noise levels of less than 120 dB<sup>6,7</sup>, meaning their behaviour changes may extend well past the time that Golder and Baffinland estimate.

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<sup>5</sup> Jones J. (2021) Underwater soundscape and radiated noise from ships in Eclipse Sound, NE Canadian Arctic. Scripps Institution of Oceanography. Marine Physical Laboratory Technical Memorandum Number: MPLTM651. Report prepared for the Nunavut Impact Review Board (NIRB) and submitted to the NIRB by Oceans North on January 18, 2021. Retrieved from: <https://www.oceansnorth.org/en/resources/>

<sup>6</sup> Tervo, O. M., Blackwell, S. B., Ditlevsen, S., Conrad, A. S., Samson, A. L., Garde, E., Hansen, R. G., and Heide-Jørgensen. (2021) Narwhals react to ship noise and airgun pulses embedded in background noise. *Biol. Lett.* 17:20210220.

<sup>7</sup> Heide-Jørgensen MP, Blackwell SB, Tervo OM, Samson AL, Garde E, Hansen RG, Ngô MC, Conrad AS, Trinhammer P, Schmidt HC, Sinding M-HS, Williams TM and Ditlevsen S (2021) Behavioral Response Study on Seismic Airgun and Vessel Exposures in Narwhals. *Front. Mar. Sci.* 8:658173.

Under a Phase 2 scenario, the cumulative effect of shipping would be on the order of two hours a day... we know that under current cumulative shipping conditions, it's on the order of one hour per day on the shipping lane, and in Kugluktuk Bay, as an example, 6 kilometers from the shipping lane, noise levels **do not exceed the disturbance threshold** [of 120dB]. – Phil Rouget, Golder for Baffinland, p. 3526, 211104-08MN053-Public Hearing Transcripts-Vol 19-IT4E [emph. added]

The fact that Baffinland points to killer whale presence or the community harbour construction when looking for an explanation for the drop in narwhal numbers directly relates back to how the environmental assessment, and particularly the cumulative assessment, has been completed and then assessed by NIRB. If Baffinland has assessed that regular project shipping has no significant impacts on narwhal, their monitoring programs will reflect this assumption, and they are less likely to acknowledge their potential impact, as that would mean admitting that their FEIS is incorrect.

The Proponent stated that “there are many variables affecting narwhal outside of shipping that could cause a change in cortisol levels.” This may be true. However, if “unknown” stressors have caused the narwhal population’s cortisol levels to increase by 100% over the last decade, then doubling the amount of shipping in this area—in the context of unresolved “variables”—would not be consistent with the precautionary principle.

Baffinland claims that they have “acted on outcomes of monitoring programs. In the past season alone, due to what was perceived to be impact of cumulative effects, we eliminated a proportion of the shipping season to attempt to understand what occurred in 2020 in relation to other projects in the area. This is a part of our core values as a company” (211104-08MN053-Public Hearing Transcripts-Vol 19-IT4E, pg. 3523). However, this action was not taken until last-minute pressure from the Mittimatalik HTO demanding a change to icebreaking practices in a letter dated 25<sup>th</sup> June 2020. DFO had also called for this action over the past two years. Notwithstanding the recommendations of these two important expert groups, this mitigation was not implemented before impacts occurred.

Finally, in 2018, when Northern Affairs Minister Dominic LeBlanc and Crown-Indigenous Affairs Minister Carolyn Bennett overrode the NIRB’s recommendation and allowed for an increase of up to 6MT for 2018 and 2019, they noted that *“the impacts of the production increase need to be more broadly examined during the Phase 2 reconsideration, and it will be important to integrate the experience, knowledge and data gained over the course of the next two production years into that review process.”* Regrettably, current monitoring regimes are insufficient to accomplish these goals.

Other parties have raised concern regarding the Proponent’s finding of negligible cumulative effects for a project of this magnitude. We emphatically share that view: many impacts to marine mammals are assumed throughout the assessment to be temporary and not significant, are based on incorrect assumptions and, consequently, significant cumulative impacts on the animals from repeated daily, weekly, and seasonal exposures to ship noise are not being accounted for.

## SOCIOECONOMIC IMPACTS

### 1. Labour opportunities do not improve for Inuit under Phase 2

One of the last narratives presented to the Board at the end of the Community Roundtable portion of the hearings was a video prepared by Baffinland employees and their union. In that video, several of these workers asserted that Phase 2 means more jobs for Inuit. We know from Baffinland's own filings (TSD 26) that this is not true. Whatever we think about whether it should proceed, Phase 2 (post construction) means fewer jobs and, in particular, fewer low-skilled jobs at this mine. Two tables in the Proponent's TSD-26 illustrate this point (publicly available documents referenced in both the Loxley and OpenOil reports suggest an even greater reduction in labour in a future rail scenario):

**Table 2.1: Mary River Project Labour Demand—Early Revenue Phase (Current) Operations**

	2016	2017	2018	2019	2020	Total	Annual Average
<b>Skill Level B and Higher Workforce</b>	360	456	525	525	525	2,391	478
<b>Skill Level C Workforce</b>	479	606	698	698	698	3,179	636
<b>Skill Level D Workforce</b>	94	119	137	137	137	624	125
<b>Total Workforce</b>	933	1,181	1,360	1,360	1,360	6,194	1,239

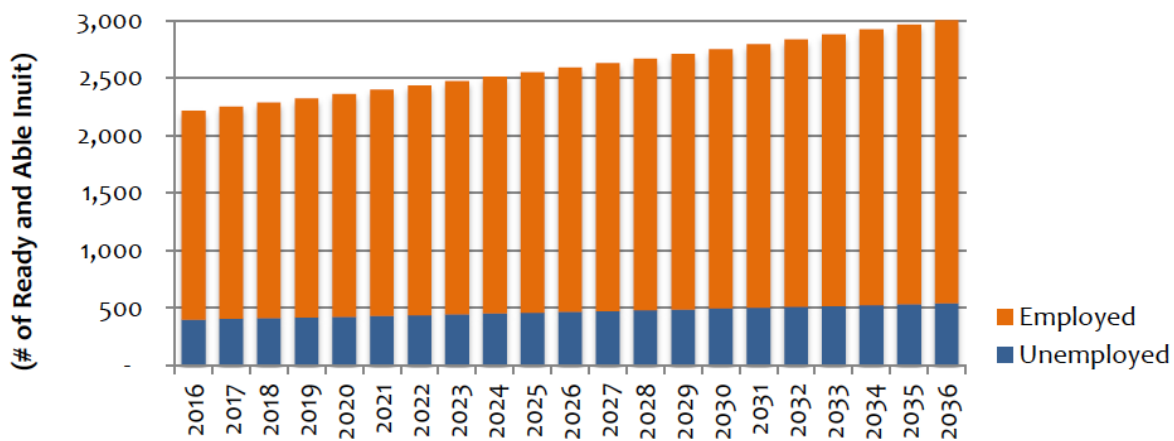
**Table 2.3: Mary River Project Labour Demand—12 Mtpa Operation Phase**

	Total	2021 to 2035 (annual average)
<b>Skill Level B and Higher Workforce</b>	7,577	505
<b>Skill Level C Workforce</b>	6,153	410
<b>Skill Level D Workforce</b>	1,422	95
<b>Total Workforce</b>	16,160	1,010

(TSD-26 at p. 6).

As underscored by the [Loxley report](#) (*Assessment of the Mary River Project Impacts and Benefits*), employment income and public benefits related to employment in Canadian mines (income tax, greater economic participation) have historically contributed more to the Canadian economy and provided more public benefit than other sources (e.g., corporate taxes and royalties). Indeed, royalty projections are seldom realized. Loxley reinforces the fact (established in TSD 26) that Inuit are not currently positioned to benefit from project labour to the extent they have been promised and makes the further point that current compensation schemes are not proportionate to the lost opportunities related to a pace of development that will continue to outflank growth of a local labour pool. This is not to denigrate Baffinland and QIA's continued and legitimate efforts at increasing Inuit participation in the mine workforce.

Baffinland's own Labour Market Analysis acknowledges the limited Inuit labour force available to meet project needs:



**Figure 3.8: Employment Status of Ready and Able Inuit Labour Supply**

(TSD 26 at p.26)

In the same section of this Labour Market Analysis, the Proponent concedes that of this limited labour market “only a fraction of these people will apply for jobs with the Project.” This is reflected in Baffinland’s inability to hire and retain enough Inuit employees to meet the Minimum Inuit Employment Goals (MIEG) of previous years. We acknowledge that Baffinland in 2019 and 2020 made progress toward increasing Inuit employment at the mine. However, with an Inuit workforce largely sidelined for the last 2 years (as a result of public health measures aimed at preventing the mixing of Nunavut-based and non-Nunavut worker populations), we are not in a position to draw any realistic conclusions regarding the Inuit employment gains stated by Baffinland in recent hearings. However, many of the forward-looking statements made by the Proponent are not supported by their own analysis, which makes clear the demographic realities of a large industrial project adjacent to a small labour pool drawn from communities that wrestle with additional and profound barriers to steady employment in a wage economy.

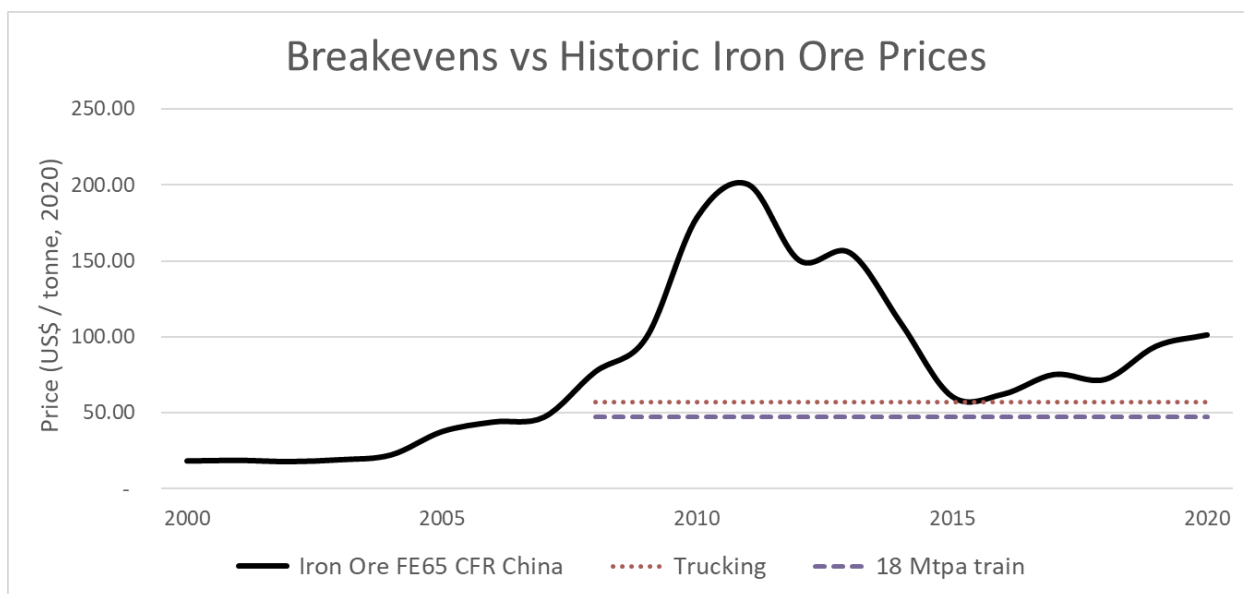
## 2. Economic Necessity to Proceed with Phase 2

In [Financial Analysis: Mary River Iron Ore Mine, 2021](#) (Johnny West & Daniela Q. Lépez), the OpenOil report authors conclude that:

- 1) While railway expansion would clearly be more profitable for Baffinland than continued trucking, trucking would nevertheless yield rates of return that are considered normal in many mining businesses under all realistic price scenarios looking forward to 2020.
- 2) A rail expansion to Steensby would be highly commercially viable even if it required an additional 1 billion USD in capital than would be needed for Milne Inlet.
- 3) Developing both export rail routes to produce 30 MTPA would generate significant extra cash for the company over the decades to come, but only marginally increase the Life of the Project (LoP) rate of return from already high levels achieved by only one rail route.
- 4) There are uncertainties around the costs of ongoing Baffinland operations and expansion possibilities which create a high degree of uncertainty around potential rates of return, and it would advance public debate if Baffinland and the relevant authorities were to make more information available.

The OpenOil model projects a long-term breakeven price range of \$57-64 per tonne on the iron ore benchmark for Mary River to achieve a 10% rate of return a year post-tax through trucking (compared to a spot price of over \$125 today). Baffinland has suggested to the Board that this is wrong (though it is based on their own cost estimates and actual cost reporting). But they offer no breakeven price of their own.

Baffinland's own model, referenced in the OpenOil report (and summarised in the 2018 circular), showed a 60% rate of return on the Milne Inlet railway. As the report's co-author Mr. West has suggested, this represents extreme profitability and clearly leaves plenty of room under which lower profitability (such as through continued trucking) might be profitable *enough* and would correspond to mining industry norms, as documented in publications from respected Canadian institutions such as the Canadian Institute of Mining, Metallurgy and Petroleum.



## UNCERTAINTY AND RISK

### 1. Over-reliance on future, yet-to-be-defined management plans.

As many parties and intervenors have stated, the number of promises versus concrete management plans remain too high in relation to such a significant project. This is inappropriate in any environmental assessment process and creates too much uncertainty. Impacts are meant to be assessed in the context of detailed mitigation and monitoring programs that are in place to minimize negative effects. Accepting promises instead of plans does not enable communities and intervenors are not able to understand the impacts of this project with any reliability. It is inappropriate for a proponent to promise to make significant planning commitments contingent on project approval (especially when they should already be in place).

Much information is also missing, restricting our ability to appropriately evaluate and assess risk. The assessment is split amongst many technical documents and references previous impact assessments, hampering the ability of regulators (including NIRB) to complete a proper concordance review and ensure that all information is available to communities and intervenors.

We are not confident that if the Phase 2 proposal is approved, an adaptive management plan will



be developed that uses research, *Inuit Qaujimajatuqangit*, and local knowledge. We are also concerned that the separation of monitoring and adaptive management plans into either Western Science or Inuit-led monitoring will prevent the adaptive management plan from detecting and responding appropriately to unacceptable environmental impacts of the project. The proposed Inuit indicators and adaptive management plans should have been implemented in Phase 1.

The data presented by the Proponent, as well as data gathered through Oceans North's long-term acoustic monitoring in the region, point to the need to halt further increases in shipping and take time to understand the environmental impacts of current increases in volume (from 4.2 Mtpa<sup>8</sup> permitted under this process to 6 Mtpa allowed until the end of 2021). Unprecedented vessel traffic associated with the Baffinland Phase 2 proposal is putting narwhal and other marine mammals at too great a risk without a clear understanding of the consequences. Indeed, there is already a strong case for immediate and concerted mitigation efforts to address the observed decline in narwhal abundance through the shipping route. More research is needed regarding current impacts before an increase to 12 Mtpa or more is approved.

## **2. Working Groups in the current framework don't work**

Oceans North's participation on the Marine Environment Working Group leads us to the conclusion that it may be unreasonable to require a proponent to facilitate (and govern) a stakeholder and expert group that has been mandated by a regulator. An independent facilitator should lead the Working Groups and ensure the Terms of Reference are finalized and followed.

We encourage the Nunavut Impact Review Board to review the minutes and submissions of MEWG members regarding the Terms of Reference development to understand the needed improvements within the working groups. Without significant change to the working group functions, we believe there is a high risk of poor monitoring outcomes for current and future operations.

## **PROCESS CONCERNS**

### **1. Incomplete evidentiary record**

Oceans North maintains that the Proponent deliberately withheld material information and concealed the scale and timing of its development plans to limit the scope of this review.

Oceans North maintains that an incomplete evidentiary record undermines the Board's ability to make a recommendation based on the best available information pertinent to the Phase 2 project proposal.

The Board has ruled on the admissibility of Baffinland's Preliminary Offering Circular, a memorandum to prospective investors produced in the context of a \$350 million bond issuance. We maintain our position that the board would have benefited from this evidence, as it sheds light on the Proponent's development plans and rebuts their unsubstantiated assertions regarding the necessity of Phase 2 and calls into question their stated plan to close down the mine should Phase

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<sup>8</sup>For simplicity, we adopt the million tonnes per annum metric. It is also helpful to think of this not as an annual volume, but one which is shipped over the course of a shipping season that is less than three months long.



2 not be approved.

However, the Board has admitted into the record ArcelorMittal's 2019 report (200904-08MN053-SEC Filing Form ArcelorMittal 2019 Annual Report-IA1E) which substantively confirmed Baffinland development plans to increase production capacity through Milne Inlet to 18 million tonnes.

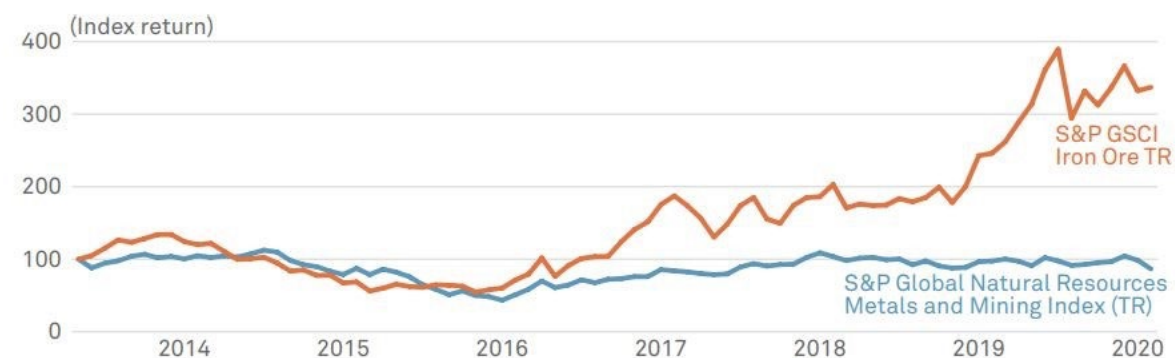
The Proponent and federal government both have taken the position that this fact is not relevant in the hearing process and not material for the Board to arrive at its ultimate recommendation. The Board has agreed with this narrow interpretation with respect to this review. Respectfully, Oceans North continues to disagree with this approach as it constitutes an unprincipled limitation of the scope of this environmental impact assessment and frustrates a fulsome determination of the cumulative effects associated with this project proposal. Additional information contained within the materials which Oceans North sought to file would have assisted the Board in testing Baffinland's evidence that the current 6 million tonne per annum operation is not profitable. The Board does, however, have significant evidence that calls into question the Proponent's assertions regarding profitability, including both the Loxley and OpenOil reports.

## 2. Mine closure: Untested assertion

During the final stage of the hearings ("Community Roundtable" in November 2021), Baffinland was unequivocal in its claim that, if Phase 2 is not approved, the company will put its mining operation into "care and maintenance." In other words, if a rail line, a port expansion and a doubling of output through Milne Inlet is not approved, the mine will shut down.

Regrettably, the Board allowed this assertion to go unchallenged. This position was not stated at earlier stages in this process, when Baffinland witnesses would have been questioned by other

### Iron ore futures performance vs metals and mining equities



Data from May 2013 to February 2020. Past performance is no guarantee of future results.

Chart is provided for illustrative purposes.

Source: S&P Dow Jones Indices LLC.

parties and intervenors. Had Oceans North been afforded the opportunity, we would have sought a cross-examination of the proponent and we would have introduced expert testimony to suggest that a permanent mine closure is unlikely to occur; Baffinland's obligations to its creditors make this claim extremely dubious. While iron ore prices were volatile in 2021, they were at all-time highs for a significant part of the year and remain at levels that, according to the economic and financial

modeling filed by Oceans North with the board (see both the Loxley and the OpenOil reports) suggest profitability and positive cash flow.

### **3. No opportunity to examine new evidence**

Baffinland was also allowed to enter new evidence at the Community Roundtable hearing dates in November 2021. Notably, the Proponent was permitted to display posters and provide pamphlets describing “Mary River Project Benefits” for each of the five most affected communities as well as Iqaluit. According to the NIRB registry, these documents were collectively filed by Baffinland with the Board on October 26, 2021 as a “Community Engagement Update” (dated in the document October 18, 2021). Oceans North and at least one other intervenor objected to their admissibility.

No other party had an opportunity to post material within the hearing rooms. This created an appearance of partiality. These materials were not simply informational summaries of previously filed documents but attempts to influence the communities. To date, there has not been an opportunity to test the veracity of the claims made in these documents. These materials which purport to show financial benefits to communities do not provide consistent metrics between communities. Some companion literature, not filed by the Proponent but widely circulated in communities during the final hearings (Community Roundtable), provides a list of the benefits communities will not receive should Phase 2 not be approved. We are not clear whether intervenors or parties were successful in filing this material with the Board. In any event, its assertions also went untested.

### **4. Baffinland has not accounted for significant Phase 2 capital expenditures in its discussions about project viability**

Despite repeated questioning on the subject, the Proponent has never provided the Board and the Nunavut public with even a cursory explanation for its rationale to engage in capital expenditures on a project proposal that has not obtained regulatory approval. Oceans North estimates, based on publicly available information (including purchase agreements for rail equipment, locomotives, rail car unloading equipment, construction contracts etc.), that Baffinland has spent between \$700 million and \$1 billion CAD on the development of Phase 2.

While a mining enterprise may be free to stage equipment and gamble it will ultimately receive regulatory approval, the sheer size of these expenditures and the bulk of equipment and materials that have been purchased and shipped to the site undermines public confidence in this process. Perhaps more alarming is the idea that a company operating on Inuit-owned land and obligated to pay royalties on net revenues would choose to gamble with the patrimony of Nunavummiut. In other words, Baffinland engaged in large-scale capital spending on an unapproved expansion knowing full well that these expenses will be deducted against royalty payments and taxes.

Contradicting publicly available financial statements, Baffinland has for over two years been telling the board and public that its current mine is not profitable without even attempting to account for its spending on an unapproved expansion (an expansion which, incidentally, would be the single largest industrial project ever to have been built in the Canadian Arctic). Similarly, Baffinland does not account for any additional debt it is carrying as a result of Phase 2 capital expenditures.

This is a dangerous precedent for Nunavut and Canada. A positive recommendation and approval of the Phase 2 project at this time would send a message to extractive industries that they can leverage regulators through massive capital expenditures on unapproved projects.

Throughout this process, the Proponent has been permitted to conflate the profitability of a company with the profitability of a mining operation and has been allowed to make statements about its viability (and by extension the viability of jobs, tax revenues, royalties and other economic rent) without offering evidence to substantiate these claims and without having been subjected to an open and fair cross-examination. On the rare occasions within this process that questions on this subject were permitted, the proponent was consistently evasive. It is now incumbent on the board to draw a negative inference from this pattern of behaviour and from the glaring omissions in the record.

## **5. Baffinland is promoting two distinct narratives to two different audiences – one to communities and regulators, another to investors and shareholders.**

ArcelorMittal's 2019 report which, as previously stated, can be found on the NIRB registry ((200904-08MN053), includes the following reference at p. 105:

Baffinland also has approved Phase 3 of the project, which involves the construction of a railway to replace the existing truck-haul operation for transport of iron ore from Mary River to Milne Inlet, as well as expansion of mining, crushing and screening operations and port shiploading capacity. **The initial plan of Phase 3 to increase production capacity to 12 million tonnes per year has been further increased on December 13, 2019 to 18 million tonnes per annum. As a result, Baffinland has budgeted approximately \$1,385 million of capital expenditures for Phase 3, which will be funded with operating cash flows, additional equity and new debt.** Nunavut Iron Ore contributed \$450 million of equity funding for Phase 3 and, on December 13, 2019, it committed to provide an additional \$125 million [emphasis added].

Reports submitted by Oceans North in the Phase 2 process show that the mine can operate at a profit while shipping 6 Mtpa. Baffinland's poor financial management and decision-making has created pressure on the company that is being unfairly transferred to communities.

## **OVER-ENGINEERING AND UNDISCLOSED SHIPPING CAPACITY**

There is a compelling body of evidence in suggesting that the Proponent has designed and engineered a project to ship 18 Mtpa through Milne Port.

Infrastructure and shipping specifications described in Baffinland's Phase 2 proposal in fact allow for production capacity of or in excess of 18Mtpa. This is not a speculative or unsubstantiated claim:

**Ms. Amanda Hanson-Main for MHTO:**

*Given restrictions on activity like ships and train transits, as Lou has just mentioned, that you've proposed, would Baffinland be able to mine and ship 18 million tons per year using ten train hauls per day and some configuration of 176 yet-to-be-determined size of ore carriers per year from Milne Port?*

**Mr. Lou Kamermans for Baffinland:**

*176 ships, if each one were to be a cape-size vessel, would be a very large amount of ore that - - but that's not what we've proposed in our assessment. What we've proposed - - proposed is a certain mix based on a certain understanding of the tonnage each type of ship can transport. So we're confined by the limits of - - of that assessment and that vessel mix.*

*Similarly with the train, could we do more than 12? I believe so. We could add cars onto each train. There are physical barriers to this with the way we're building the railway, particularly the sidings and how trains pass one another on a - - on a single-track system. One train needs to move over every once in a while. And if - - the way we've designed our sidings, they can only be so long. So trains can only be so long. So there's limits there.*

**Could it be done? Yes. But that is not within the confines of our assessment, and that's not what we're seeking approval for here today.**

- (November 5<sup>th</sup>, 2019, Iqaluit, Nunavut, Transcript Vol 4, pp. 724-725, emphasis added)

The environmental consulting firm Golder contributed much of the technical expertise throughout the Phase 2 environmental assessment process, including that related to marine impact prediction. Golder provides extensive detail on many facets of the Phase 2 shipping plan.

A breakdown of anticipated number of transits by ore carrier size class is provided in TSD 24, Marine Mammal Effects Assessment *Table 2.4: Maximum Number of Ore Carrier Calls (Round Trips) at Milne Port during Phase 2 Operations*. **This table is of particular interest as it is the only place in the Phase 2 FEIS Addendum where sufficient information is provided to inform a rudimentary understanding of the total shipping capacities proposed under Phase 2.** By multiplying the number of transits for each vessel class by deadweight tonnage (amount of weight a ship can carry) and adding the total volumes for each vessel class together, an approximation of how much ore can be shipped under the project specifications can be reached.

*Table 2.4: Maximum Number of Ore Carrier Calls (Round-trips) at Milne Port during Phase 2 Operations*

Vessel Type	Vessel Size	July	August	September	October	Total
Supramax	50,000 DWT	10	5	5	10	30
Panamax	65,000 DWT	9	45	45	34	133
Cape size	150,000 DWT	0	6	5	2	13
<b>Total</b>		<b>19</b>	<b>56</b>	<b>55</b>	<b>46</b>	<b>176</b>

*(Baffinland TSD 24, Marine Mammals Effects Assessment)*

However, there are distinct discrepancies between this table and information provided elsewhere in Golder's literature describing the deadweight tonnage, and classes of ships to be used under Phase 2:

*Table 2-4: Vessel Propeller Wash Summary*

	Standard Tug (Ice- class)	Proposed Dock				Existing Dock
		Supramax (55,000 DWT)	Panamax (75,000 DWT)	Post- Panamax (90,000 DWT)	Capesize (250,000 DWT)	Panamax (75,000 DWT)
Maximum velocity - seabed elevation (assuming 21 m)	0.38 m/s	0.66 m/s	0.73 m/s	0.74 m/s	2.26 m/s	1.07 m/s (at 17.5 m water depth)
Maximum velocity – seabed elevation (based on vessel track)	0.57 m/s	0.68 m/s	0.73 m/s	0.75 m/s	1.51 m/s	0.97 m/s
Area of sediment motion potential (m <sup>2</sup> )	8,100 m <sup>2</sup>	18,500 m <sup>2</sup>	20,800 m <sup>2</sup>	22,600 m <sup>2</sup>	39,900 m <sup>2</sup>	20,600 m <sup>2</sup>
Area of sediment suspension potential (m <sup>2</sup> )	N/A	115 m <sup>2</sup>	275 m <sup>2</sup>	315 m <sup>2</sup>	7,000 m <sup>2</sup>	1,700 m <sup>2</sup>

*(Baffinland TSD 17, Marine Environmental Effects)*

Upon comparison, it is apparent that there are two key differences between these tables:

- 1) Discrepancies in deadweight tonnage (DWT)
- 2) Omission of Post-Panamax ship class from *Table 2.4: Maximum Number of Ore Carrier Calls*

(Round Trips) at Milne Port during Phase 2 Operations.

### Discrepancies in Deadweight Tonnage

Referring to TSD 02 Project Description, the four classes of vessels anticipated to be used in the project are listed at s. 5.3, with a range of sizes provided for each. These numbers are:

Supramax Vessels: 50 000-55 000 dwt

Panamax Vessels: 65 000-75 000 dwt

Post-Panamax Vessels: 80 000-90 000 dwt

Capesize Vessels: 130 000-250 000 dwt

In the TSD 17 2-4 Propeller Wash table, Golder chose to provide the largest DWT for each given ship—this is fairly consistent with best practices of environmental assessment, which require an assumption of the most significant impacts. There is a range of deadweight tonnage for each vessel class, which in turn largely reflects size variations within each class, and potentially, size-dependent variations in impacts.

In contrast, Golder chose to use the **absolute lowest** values for the table in TSD 24. Thus, when using these figures to calculate the total ore capacities for the 176 transits described in the document, we will reach a far lower number than had they been DWT figures provided elsewhere, or an average of the two.

### Omission of Post-Panamax ship class

Throughout the Phase 2 FEIS Addendum documents, Phase 2 shipping is consistently described as relying upon four distinct categories of ore carrier: Supramax, Panamax, Post-Panamax, and Capesize. This remains consistent throughout Golder's materials as well, with Golder making eight references to Post-Panamax ships in TSD 24 alone (pp. 36, 39, 45, 47, 51, 53, 56, 57). It should be noted that at no point in this document does Golder abbreviate "Post-Panamax" to "Panamax". They are two entirely distinct classifications of vessels, with very different considerations and implications for the project. Given the distinction made throughout the rest of the document, we can assume that Golder recognizes the importance of differentiating between the two categories of ore carrier.

However, in *Table 2.4: Maximum Number of Ore Carrier Calls*, Golder provides only three categories of ships: Supramax, Panamax, and Capesize. Golder has entirely omitted Post-Panamax vessels, the second largest class of ore carrier used in Phase 2. The advantage to this omission is that third parties can be led to believe that 176 ships is a reasonable estimate of the vessel number required to ship 12Mtpa.

Excluding Post-Panamax ships and using only the absolute minimum DWT per ship class, using the vessels provided in *Table 2.4: Maximum Number of Ore Carrier Calls*, Baffinland already neatly exceeds 12Mtpa shipping capacity, 12,095,000 DWT. Using the maximum capacity listed in TSD 02, Baffinland still exceeds the shipping capacity by several million tonnes—the total is 14,875,000 DWT. This total is reached without accounting for the use of Post-Panamax vessels, the second-largest class of ore carrier used by the Project.

Additionally, for each Supramax or Panamax transit that is replaced by a Post-Panamax transit, the Proponent's pre-carrying capacities are further increased.

### Golder's Figures vs. Reality

It is reasonable to consider limitations of market availability of vessels, and the extent to which DWT capacities within vessels available to Baffinland affect Project capacities. However, a review of vessels calling at Milne Port reveals several trends:

- 1) Post-Panamax ships are prolifically in use by Baffinland. Of the forty-one ships calling at Milne Port in 2019, twelve were Post-Panamax.
- 2) Supramax ships constitute a marginal volume of ship traffic at Milne. In 2019 there were only two Supramax vessels calling, constituting only six transits. Confusingly, Golder estimates up to thirty of these ships throughout the season under Phase 2, a five-fold increase in transits over 2019 for a two-fold increase in ore volume. Supramax are the least-used class of ship, and their role is negligible. By predicting a higher number of smaller ships are to be used, Golder and the Proponent inflate the number of transits that appear to be needed, without appearing to inflate the amount of ore being shipped.
- 3) Upon actually reviewing the ore carriers serving the Project, it is apparent that range of values provided by Baffinland is misleading, implying overall lower DWT capacities in aggregate:

2019 Supramax average DWT: 56,348

2019 Panamax average: DWT 74,169

These are not only above the low figures provided in the TSD 24 *Table 2.4: Maximum Number of Ore Carrier Calls*, but the Supramax average is above the entire range provided in TSD 02, and the Panamax average is at the absolute upper end of it (75,000)

Finally, it should be noted that there is a general trend toward the increased size of bulk carriers and the capacity to carry more ore in fewer transits.

### Baffinland's Request to Regulate by Activity-Based Limits

On November 3, 2019, Ms. Lord-Hoyle for Baffinland requested that the Project be regulated by activity-based limits, rather than total ore volumes:

*[...]So the - - the Phase 2 proposal proposes the production increase to 12 million tons, and we've conducted the environmental assessment based on certain limits, respecting the activities we may - - which may interact with the environment around that.*

*In the proposed terms and conditions that Baffinland has put forward in August 23<sup>rd</sup> and communicated at the June technical meeting, we propose that instead of a production limit in the terms and conditions, we be moved to environmental - - or activity-based limits, excuse me, activity-based limits; so in those proposed terms and conditions, we proposed a limit of 176 ship calls per year to Milne Port and a limit of 20 rail transits per day, and that's what our environmental assessment has been based on, taking into consideration those activities and the associated atmospheric environmental assessment, et cetera.*



*In terms of how that relates to operational flexibility, the idea would be that as we go forward, and we are incentivized to find efficiencies in that operation, and we have the ability to move more tonnage within those limits, that would be something that we would certainly be interested in, taking into consideration that we're within the constraints that are outline in our environmental assessment. Should we be outside, should we be thinking about moving to a tonnage that would be outside of those environmental constraints, the would certainly require us to come back from Nunavut Impact Review Board for direction on next steps.*

The advantages for the Proponent of this proposal are self-evident and this request provides further proof of the deliberate built-in capacity to ship substantially more ore with the proposed number of transits than that which the Phase 2 expansion is ostensibly designed to produce. This is entirely consistent with the reality that the Proponent has deliberately engineered Phase 2 to operate on a far greater production scale than 12Mtpa, while misrepresenting the true intentions for the Project to communities and regulators.

*... That was the intention of my last comment, and I just want to also put forward that no unessential shipping has been proposed as part of the Phase 2 proposal.*

- Ms. Lord-Hoyle, Vol. 5, p. 1355

## BAFFINLAND IN POTENTIAL VIOLATION OF NLCA ARTICLE 26

Article 26 of the Nunavut Agreement sets out the parameters for the obligation to negotiate impact benefit agreements between Baffinland and the Qikiqtani Inuit Association for the Phase 2 proposal. Ss. 26.4.1 provides the terms for commencement of such negotiations and makes explicit an obligation between parties to negotiate in good faith:

At least 180 days prior to the proposed start-up date of any Major Development Project, the DIO and the proponent, unless they otherwise agree, will commence negotiations, **in good faith**, for the purpose of concluding an IIBA [emphasis added].

Throughout this protracted hearing process, Baffinland has consistently recognized its obligation to negotiate an Inuit Impact Benefit Agreement with QIA. However, the hearing record also confirms that Baffinland directly engaged in impact benefit agreement negotiations with other entities. Examples include the following:

Vol. 5, p. 879:

Baffinland has also formed an agreement with the Hamlet of Pond Inlet and the Hunters and Trappers Organization to pay \$10,000 for every vessel—for each vessel that's needed to move more than 4.2 million tonnes in any given year, and this program would continue into Phase 2.

Vol. 17, p. 3172:

We are also committed to work with ore carriers to use lighter fuels in Nunavut waters, which will mean less emissions. Baffinland understands Phase 2 will continue to shape how the community of Pond Inlet users—uses, sorry—their marine area. Therefore, we will pay the Pond Inlet facility working group \$10,000 for each ore carrier that travels by their community.



Vol. 14, pp. 2636-7:

Some programs worth highlighting here in the communities would be funding the Tasiuqtiit working group. This working group is composed of the Hamlet of Pond Inlet and the Mittimatalik Hunters and Trappers Organization and intended to invest the money received to this point—and proposed under Phase 2 is \$10,000 per vessel required to transport Baffinland's iron ore to market—that those funds to be used to support programs that support local harvesters and the steady supply of country food into the community, if that's how they choose to spend those funds.

Vol. 3 Transcript Baffinland Phase 2 Public Hearing November 2019, p. 535:

In terms of the 1.2 million offer, this is what Baffinland feels comfortable committing to at this time, understanding the financial situation that we're in, but it is our desire that as we grow, the communities grow, too. As we have increasing financial stability, so, too, will the fund—funds be able to flow directly into the communities. We provide funding currently through community support and donation programs as well. We don't envision that that will change in the future, even with the 1.2 million. The 1.2 million was meant to go directly to the communities for them to support initiatives of their choosing and to direct to funds that are based on their community's priorities. Quajannamik.

Vol. 2: Transcript Baffinland Phase 2 Public Hearing November 2019, p.292:

Madam Chair, to clarify, Baffinland has an Inuit Impact Benefit Agreement with the Qikiqtani Inuit Association. The \$1.2 million referred to is direct funding to the communities of Arctic Bay, Hall Beach, Igloolik, Clyde River, and Pond Inlet. Quajannamik.

THE CHAIR: Oceans North.

MR. DEBECKI[sic]: Thank you, Madam Chair. And so just to be clear, what's—what's the rationale for that funding to communities?

THE CHAIR: Baffinland.

MS. LORD-HOYLE: Megan Lord-Hoyle with Baffinland. The rationale for this funding is a direct result of engagement with the communities where we have heard on numerous occasions that benefits are not throwing—flowing to the communities the way that they would like, and we understand that communities are in need of funding now, so this is a proposal that Baffinland has put forward. Quajannamik.

Article 26 also provides a dispute mechanism for a negotiating party should they believe that another party is not negotiating in good faith (see ss. 26.6.2 and following). For obvious reasons, it is not the Board's role to invoke this mechanism. However, there is nothing in the Nunavut Agreement or the Board's enabling legislation to suggest that the Board cannot take into account evidence that a Proponent has undermined the position of a DIO by negotiating side impact and benefit agreements that undermine a DIO's relative position (a tactic that can also be seen to sow division between communities and community members). Indeed, the Board's broad mandate includes a duty to ensure that project impacts and benefits are assessed with the wellbeing of impacted communities and citizens in the foreground.

## Conclusion

From the first hearings into Baffinland's original project proposal—in which they failed to disclose their decision to abandon the Steensby shipping route—to the present date, this proponent has by its own actions and strategies imposed an unacceptable burden on public institutions. The Proponent's repeated failure to be transparent about core components of its development plans has resulted in the delay and prolongation of this process. The true public cost of these hearings, including the participation of government and Inuit organizations as well as citizens and civil society, may never be known. In a jurisdiction with such a large land and sea mass and a small population, the burden on public agencies is amplified, and informed participation for many offices no doubt resulted in a shifting of resources away from other important files. The challenge of informed participation in this process constitutes a barrier for non-governmental participants and the sheer volume of materials filed means that there is no practicable way that regular citizens can reasonably follow this process.

In the *Nunavut Impact Review Board Final Hearing Report, Mary River Project, Baffinland Iron Mines Corporation, September 2012*, the Board expressed concerns regarding regulatory capacity (including its own) “to fulfill their inspection, response and enforcement mandates” (p. 227). Nearly a decade later, these concerns remain valid. In that report, the Board also made the following recommendations:

### 6.5.2 Conclusions and Recommendations

While the Board understands the need for operational flexibility as requested by the Proponent, given the uncertainty regarding the potential effects on marine mammals and Inuit harvesting associated with year round shipping, the Board is concerned about the changes to shipping frequency that may result from a significant increase in production for an extended period of time. As indicated in section 4.13 of this report reviewing potential effects on Marine Wildlife and Marine Habitat, **in the Board's view it is appropriate to apply a more stringent approach to the application of the precautionary principle in respect of potential effects on marine wildlife and marine habitat.** As a reflection of that approach, the Board is recommending that an upper operating limit be imposed on the maximum number of ship transits annually and during the open water season [...](p. 232, emphasis added).

Over the course of the hearings, we heard powerful testimony from citizens, including harvesters and their families, about the importance of this marine ecosystem and its cultural, social and economic ties to the fabric of Qikiqtaaluk communities. These connections militate in favour of the stringent approach articulated by the Board.

We also advise that the Board reject any advice in the context of this review to issue a positive recommendation couched in a long list of project conditions.

This Board has made brave and principled recommendations in the past: with respect to the original project and southern rail route, the NIRB suggested precautionary output limits at Steensby port. In that process, we must remember that it was Baffinland itself that had rejected a rail route to Milne Inlet, and environmental considerations related to shipping through the densest narwhal habitat in the world factored into the decision. So did the fact that the geography and ice conditions in Milne Inlet are such that it will never be able to accommodate the kinds of ore volumes that the Proponent ultimately seeks to ship.

This brings us back to one of the most troubling aspects of this project proposal. The Proponent is asking the board to recommend the approval of a project to build a railroad to Milne Inlet (and double its shipping volumes) so that they may eventually build a railroad to Steensby Inlet (where it hopes to achieve the shipping volumes it says its investors need). It is hard to imagine how such an objective can be squared with the Board's mandate, both as conceived in the establishment of the Nunavut Agreement or in the current context of increased and acute environmental pressures on Arctic ecosystems. On what precautionary grounds could we ever accept the risks inherent in approving the development of not one but two untested rail and port operations in a region which has never experienced anything that even approximates these kinds of industrial pressures? Oceans North strongly believes that the risks at this critical time remain too high and urges the Nunavut Impact Review Board to recommend against proceeding with the Phase 2 expansion.

## Appendix 1: Oceans North Final Submission on Baffinland's "Phase 2 Proposal"



502-100 Gloucester Street  
Ottawa, Ontario  
K2P 0A4

September 23, 2019

Ryan Barry  
Executive Director  
Nunavut Impact Review Board  
(NIRB) By Email: [info@nirb.ca](mailto:info@nirb.ca)

Re: Oceans North Final Submission on Baffinland's "Phase 2 Proposal"

Dear Mr. Barry:

Oceans North is a Non-Governmental Organization (NGO) focused on marine conservation in Canada's northern oceans and supporting the well-being of communities that rely on the marine environment. We emphasize made-in-the-Arctic solutions through partnerships with Indigenous organizations and northern communities to foster Arctic ecological resilience and abundance. Based on our lengthy involvement in this process, and the existing precedents, expectations of a fair impact assessment, and the information provided to stakeholders, **Oceans North believes the project should not be approved as proposed given known impacts, potential impacts, benefit gaps, and general uncertainty in key aspects of this proposed expansion.**

Our submission centers around several major factors: the unacceptable risks to the marine environment, an unacceptable level of uncertainty with regards to the project's impacts, as well as the exaggerated benefits to Nunavutmiut resulting from rapid expansion of output and correlative increases in ship traffic and volume.

While we were early advocates for the creation of a National Marine Conservation Area for Talurutiup Imanga, we always believed that a responsible mining operation at Mary River could be consistent with a world class marine protected area. Regrettably, the potential implications of this project proposal imperil the prospect of sustainable development in this unique region. This proposal fails to provide any concerted effort to balance environmental and socioeconomic obligations against a bottom line.

Sincerely,



Christopher Debicki  
Vice-President, Policy and Development and Counsel  
Oceans North



**Oceans North Final Review Comments**  
Baffinland Iron Mines Corporation's Phase 2 Development

Submitted to the Nunavut Impact Review Board  
September 23, 2019

## **Executive Summary**

Oceans North is a Non-Governmental Organization (NGO) focused on marine conservation in Canada's northern oceans and supporting the well-being of communities that rely on the marine environment. We emphasize made-in-the-Arctic solutions through partnerships with Indigenous organizations and northern communities to foster Arctic ecological resilience and abundance.

Oceans North has been active in research and community initiatives in Eclipse Sound and Mittimatalik for the past ten years including leading and participating in numerous research projects in Eclipse Sound related to the emergence of industrial shipping in this region during the Proponent Baffinland's "Early Revenue Phase".

In this final review, we divide our focus in three directions:

1. We assess the Proponent's submission in relation to anticipated ecosystem impacts of the project proposal with a focus on anthropogenic disturbances in the marine environment and, in particular, potential risks to narwhal as a result of industrial shipping;
2. We assess the Proponent's submission in relation to anticipated socio-economic impacts of the project proposal;
3. We assess the level of uncertainty in the Proponent's submission, previous precedents, and the subsequent lack of confidence in the Proponent's position through this environmental impact assessment process.

The data presented by the Proponent, as well as data gathered through Oceans North's long-term acoustic monitoring in the region, point to the need to halt further increases in shipping and take time to understand the effects of increased volumes from 2018 and 2019 on narwhal and the environment as a whole. Due to overall duration of narwhal disturbance, avoidance and masking predicted by the Proponent under a Phase 2 scenario, it is reasonable to expect long-term impacts on narwhal that could affect their ability to carry out vital life functions like foraging and maintaining social bonds. In addition to environmental impacts, the Proponent's assertion of positive socio-economic impacts are inconsistent with the current economic benefits flowing to Nunavut beneficiaries and citizens. Forward benefit projections linked to this expansion are not supported by facts and the rapid pace of development instead threatens to undermine or at best diminish the benefit potential of this resource.

Overall, there is too much uncertainty within this process to justify the NIRB recommending to the Minister that this project proceed as proposed. The barriers to information, the uncertainty of the information provided, the unwillingness of the Proponent to incorporate Inuit Qaujimajatuqangit, the lack of evidence regarding positive social and economic outcomes for Inuit, and the low levels of certainty that monitoring will be able to show impacts prior to any significant and potentially irreversible impacts occurring - these factors all lead to uncertainty in how the NIRB can assess the project and fulfill its mandate under the Nunavut Agreement. Based on our lengthy involvement in this process, existing precedents, expectations of a fair impact assessment, and the information provided to stakeholders, Oceans North believes the project should not be approved as it is proposed and that the NIRB does not have enough information to recommend this project proceed as proposed.

## Résumé directif

Océans Nord Canada est une organisation non gouvernementale (ONG) qui se consacre à la conservation marine dans les océans du nord du Canada et au soutien du bien-être des collectivités qui dépendent de l'environnement marin. Nous mettons en valeur les solutions proprement arctiques grâce aux partenariats avec les organismes autochtones et les collectivités du Nord pour encourager la résilience et l'abondance écologique en Arctique.

Océans Nord Canada participe activement à la recherche et aux initiatives communautaires dans les secteurs du détroit d'Éclipse et de Mitimatilik depuis dix ans, et a notamment dirigé de nombreux projets de recherche dans le détroit d'Éclipse liés à l'émergence de la navigation industrielle dans cette région pendant l'« étape de génération de recettes anticipées » du promoteur, Baffinland, projets auxquels l'organisation a également participé.

Dans le cadre de cet examen final, nous centrons notre attention sur trois principaux points :

1. Nous évaluons la soumission du promoteur par rapport aux répercussions écosystémiques prévues de la proposition de projet en mettant l'accent sur les perturbations anthropiques dans l'environnement marin et, en particulier, les risques pour le narval engendrés par la navigation industrielle;
2. Nous évaluons la soumission du promoteur par rapport aux répercussions socioéconomiques prévues de la proposition de projet;
3. Nous évaluons le degré d'incertitude dans la soumission du promoteur, les précédents antérieurs et le manque de confiance qui en découle à l'égard de la procédure d'évaluation environnementale.

Les données présentées par le promoteur ainsi que celles recueillies grâce à la surveillance acoustique à long terme d'Océans Nord Canada dans la région indiquent la nécessité de freiner toute augmentation future du volume de transport de marchandises, et de prendre le temps de comprendre les effets d'une telle augmentation entre 2018 et 2019 sur le narval et l'environnement en général. En raison de la durée globale des perturbations subies par le narval, de l'évitement et du masquage prévus par le promoteur dans le cadre d'une deuxième étape possible, il est raisonnable de s'attendre à des répercussions à long terme sur le narval qui pourraient affecter sa capacité d'assurer ses fonctions vitales comme la recherche de nourriture et le maintien des liens sociaux. En plus des répercussions environnementales, les retombées socioéconomiques que le promoteur qualifie de positives sont démenties par les répercussions économiques actuelles pour les bénéficiaires et les citoyens du Nunavut. Il n'y a aucune raison économique d'augmenter la vitesse de production dans un contexte où la capacité du marché du travail passe par le développement et la coopération avec les instances gouvernementales locales.

Dans l'ensemble, il n'y a pas de certitude suffisante dans ce processus pour justifier que la CNER recommande au ministre d'aller de l'avant avec ce projet, dans sa forme actuelle. L'incertitude découle des obstacles à l'information, de la réticence du promoteur à tenir compte des connaissances traditionnelles des Inuits, du manque de preuves concernant les retombées sociales et économiques positives pour les Inuits et du manque de preuves pour appuyer l'hypothèse voulant que la surveillance permette de détecter les répercussions avant que des conséquences importantes et potentiellement irréversibles se fassent ressentir. Compte tenu de notre longue participation à ce processus, des précédents existants, des attentes en matière d'évaluation environnementale équitable et de l'information fournie aux intervenants, Océans Nord Canada estime que la CNER n'a pas de renseignements suffisants pour remplir son mandat en vertu de l'Accord sur les revendications territoriales du Nunavut ni pour recommander que le projet aille de l'avant tel que proposé.





## **Table of Contents**

<b>Executive Summary</b> .....	<b>3</b>
<b>English</b> .....	<b>3</b>
<b>French</b> .....	<b>4</b>
<b>Inuktitut</b> .....	<b>6</b>
 <b>1. Introduction</b> .....	 <b>8</b>
 <b>2. Comments</b> .....	 <b>9</b>
2.1 Marine Environment.....	<b>9</b>
2.2 Socio-Economic.....	<b>15</b>
2.3 Overall uncertainty, precedents, and confidence .....	<b>21</b>
 <b>3. Summary</b> .....	 <b>24</b>
 References.....	 <b>30</b>

## **1.0 Introduction**

Oceans North is a science and community-based marine conservation organization that advocates for scientifically-sound policies consistent with Indigenous land claims and traditional practices. Over the past decade, Oceans North has supported regional voices in their desire to ensure adequate protection for the Lancaster Sound marine region. In particular, Oceans North supports the efforts of the Qikiqtani Inuit Association and Parks Canada in their establishment of the Tallurutiup Imanga National Marine Conservation Area.

Oceans North has both led and participated in numerous research projects since 2014 in Eclipse Sound related to the emergence of industrial shipping in this region during Baffinland's "Early Revenue Phase". Examples of this include a study of the structural dynamics and resiliency of the floe edge at the eastern entrance to Eclipse Sound, a study of potential seal mortality associated with hypothetical spring icebreaking in Eclipse Sound, and ongoing acoustic monitoring to assess impacts of shipping on narwhal distribution and behaviour. Using passive acoustic monitoring devices, our research goals are to record and measure underwater noise from ships, observe the seasonal presence of marine mammal sounds and their vocal behaviour, and investigate the effects of vessel traffic on narwhal. As we begin our sixth year of monitoring, this project is increasingly important given the substantial increase in shipping in the region associated with the Baffinland mine and the proposed Phase 2 increase. We have also recently completed an assessment of regional economic benefits as they are linked to specific industrial outputs (at existing and proposed volumes) at the Mary River mine.

Although we have a number of outstanding technical questions and comments that have not been addressed by the Proponent in this environmental review process, with the technical review periods completed, we have focused our submission on the overall project and major issues regarding Baffinland Iron Mines Phase 2 Development Project Proposal. Our comments focus on the potential effects of this proposal on the marine and socio-economic environments in the Qikiqtani region, the inadequate justification for the Proponent's conclusions drawn from its own research undertaken for this environmental assessment, previous precedents, and the resulting

lack of confidence in our collective ability to fairly assess impacts and benefits through this environmental impact assessment process.

## **2.0 Comments**

### **2.1 Marine Environment**

An estimated 140,000 narwhal migrate into High Arctic Canadian waters seasonally, with the largest proportion, the largest summering population in the world, migrating to the Lancaster Sound region each year (IUCN, 2017). These animals are of great importance both culturally and for subsistence hunting. Until recently, these waters have been generally free of large vessels and industrial disturbances. This important summer habitat for narwhal now overlaps with Baffinland port activities in Milne Inlet and project-related ship traffic throughout the habitat. High concentrations of marine mammals congregate in relatively narrow waterways in this area, which they now must share with large commercial vessels that have restricted travel routes. This presents unique problems that require unique approaches to monitoring and stewardship.

It is clear based on the available information from the Proponent, our own research and observations from harvesters and impacted communities that narwhals in this population are disturbed by the presence and underwater noise of vessels. If narwhal remain in the area, at current levels of shipping, they are at risk of vessel noise masking their social communication and navigation, causing behavioral disturbance that can affect their ability to carry out vital life functions, and the possibility of repeated temporary loss of hearing creating a potential for hearing injury. The effects of vessel traffic at current volumes has the potential to harm individual narwhal or change patterns of local abundance and distribution, patterns that have been long recognized by regional Inuit and which Inuit have reported are changing in response to the increased presence of project-related ships (QIA Tusaqtavut Study; June 14, 2019).

The Proponent has identified many of the risks its current project and project proposal present to marine mammals, and has conducted research demonstrating that each of these effects occurs in

narwhals at current shipping levels, but concludes without scientific basis that in the aggregate, these risks pose no significant threat to marine mammals. Results presented in their research, however, suggest a precautionary approach. In particular, the significance of the cumulative effects of repeated daily impacts from project-related vessel traffic risks is not statistically established. Much information is available from research programs conducted by the Proponent, but thorough analyses are missing that could assist in evaluation of project-related shipping impacts to marine mammals at currently-approved levels of vessel traffic. This inability to draw reliable conclusions from shipping at present volumes greatly impedes our ability to appropriately evaluate and assess risk of the doubling of shipping in the Phase 2 proposal under consideration. The data presented by the Proponent, as well as data gathered through Oceans North's long-term acoustic monitoring in the region, point to the need to halt further increases in shipping and take time to understand the effects of increased volumes for 2018 and 2019 on narwhal and the environment as a whole. Unprecedented vessel traffic associated with the Baffinland Phase 2 Proposal is putting the narwhal at too great a risk, without a clear understanding of the consequences.

#### ***2.1.1. Monitoring and adaptive management***

Under the terms and conditions of Project Certificate No. 05, the Proponent is expected to determine early warning indicators that will ensure “rapid identification of negative impacts.” Multiple marine mammal research projects have been undertaken by the Proponent since 2014 to establish baseline information on the natural behavior, abundance, and distribution of narwhals and other marine mammal species in the project areas. Both baseline knowledge and ongoing monitoring are necessary to detect negative ecological impacts resulting from project-related activities. Research undertaken by the Proponent has demonstrated that behavioral, social, and hearing effects on narwhals result from the passage of large project-related commercial ships. Further, their research concludes that these are likely to occur with each ship passage, and that the effects from each exposure may last for minutes to hours during and following each ship passage (e.g. TSD 24 Sect. 4.1.2.1.2). The Proponent acknowledges yet dismisses all of these observed and predicted effects as “not significant” (TSD 24 Sect. 2; Effects Assessment) without scientific justification for that determination. The Proponent has enacted one mitigation

measure, a reduction in transiting vessel speed to 9 knots (a speed reduction which in fact had been discussed in the first phases of this project), to reduce the underwater noise from the ships and the risk of hearing injury to narwhals. The Proponent, however, proposes a single impact threshold that must be met to necessitate any further change in shipping operations proposed under the Phase 2 plan. This threshold is the abandonment or long-term displacement of marine mammals from the region. At the 2019 technical hearings in Iqaluit, Baffinland confirmed that only a population-level reduction in marine mammal abundance would lead to a change in operations. None of the other monitoring efforts undertaken by the Proponent (e.g. acoustic monitoring, tagging of narwhals, shore-based survey and behavioral study) would connect to a change in project-related shipping operations under the Phase 2 proposal. Further, it was noted that two consecutive years of declining population estimates would be required to make the determination that a significant long-term displacement of narwhals had occurred. These estimates would be made from annual aerial surveys that require substantial time for analysis, creating a three-year lag between potential significant shipping-related displacement of marine mammals and any potential adaptive management.

The Proponent acknowledges in the technical supporting documents that none of the aerial surveys prior to 2017 were undertaken with experimental design sufficient to determine both abundance and whether narwhal are displaced by ships. However, a draft report from Baffinland consultants dated March 2016 (LGL report FA0059-2) showed change in distribution of narwhals in the regional study area (RSA). After this report, and a revised final report that was not released to the Marine Environment Working Group (MEWG) or the public despite numerous requests, the Proponent terminated its contract with the consulting company that authored the report and notes in TSD 24-Section 8.3.10 that “There was no significant change in overall narwhal abundance and distribution observed in the area from 2014-2017.” Baffinland also did not undertake an aerial survey in 2018 despite repeated calls from within the MEWG (of which Oceans North is a member) that it was essential. With no 2018 data the soonest any determination of significant displacement of marine mammals from the Eclipse Sound and Milne Inlet area could be made would be 2021. Furthermore, no specific operational contingencies are provided for in the Phase 2 proposal for the scenario where increased shipping is determined to

cause significant population-level effects on marine mammals as a result of project-related activities.

The Proponent has also conducted community workshops seeking Inuit observations of shipping-related impacts on marine mammals. Summaries of Inuit knowledge from those Baffinland community workshops suggest that there are no significant negative impacts on narwhals resulting from project vessels (TSD-24 Sect. 4.1, 4.2). These conclusions differ substantially from the QIA Tusaqtavut Study (June, 2019) in which multiple knowledge holders shared observations that ships negatively affect narwhals, displacing them and changing their behavior. 2018 observations shared by Inuit in the QIA Tusaqtavut Study describe a dramatic decrease in narwhal numbers in 2018. However, there is no expressed connection between Inuit observations or reports of project-related impacts of shipping on narwhals and any adaptive management plan or monitoring for impacts on narwhals that would result in a change in shipping operations. Again, at the 2019 technical hearings in Iqaluit, Baffinland confirmed that Inuit Qaujimagatuqangit would not be incorporated into any assessment of population-level reductions in abundance or other significant negative impacts on marine mammals that would lead to a change in proposed Phase 2 operations.

### ***2.1.2 Cumulative impacts of shipping on narwhal behavior and disturbance***

Concerns have been expressed by Inuit (e.g. QIA Tusaqtavut Study, 2019) and other stakeholders about negative impacts on marine mammals resulting from marine shipping. These impacts include behavioral disturbance during which animals change from their natural behaviors due to the presence of or noise from ships, auditory masking reducing effective space in which animals can communicate with one another, and temporary and permanent damage to hearing from exposure to underwater noise. Excluding permanent hearing injuries, each of these effects has been determined by the Proponent to exist as a result of project-related commercial vessel traffic, which will double under the Phase 2 proposal.

Baffinland has undertaken extensive research into the behavioral responses of marine mammals, particularly narwhals, to ships. Statistically significant behavioral responses of narwhals to

project ships have been repeatedly documented by shore-based visual observation when ships were within 15 km of the animals. These behavioral responses included changes in distance from shore, increased swimming speed, changes in group formation, and decreases in group size (TSD 24 Sect. 4.1.2.1.2). When acoustic recording was undertaken in the same area as the behavioral observation, the noise levels rarely reached 120 decibels (dB re  $\mu$ Pa) at the recorder (*e.g.* TSD 24 Fig. 4.37), suggesting that disturbance thresholds for narwhals may be lower within the project area than this commonly generalized estimate for acoustic disturbance in marine mammal species with similar hearing to narwhals (*e.g.* Southall *et al.*, 2007). At closer ranges to ships, narwhals have exhibited avoidance behavior, swimming directly away from the ship line of travel and sometimes exiting the observation area for a period of approximately two hours before returning to normal behavior (TSD 24 Sect. 4.1.2.2).

To help evaluate underwater noise levels and estimate acoustic disturbance resulting from the project, the Proponent has put considerable effort and resources into measuring and modeling underwater noise from shipping. Estimated distances from ships to noise levels high enough to cause behavioral disturbance (*i.e.* 120 dB re  $\mu$ Pa) ranged from approximately 10 to 30 km for ore carriers transiting at 9 knots in typical open water operations along the shipping route (TSD 24 Quijano *et al.*, 2018 p. 27) and at ranges up to 44 km during icebreaking operations in the shoulder season (1663724-135-TM-Rev0, July 2019). For each transiting ore carrier in open water, this results in periods of one to almost four hours and with icebreaking up to ten hours during which the noise levels from the ship could be high enough to expect behavioral disturbance in narwhals. In Milne Inlet, the area of expected disturbance resulting from each transiting ship encompasses the entire inlet, resulting in the likelihood that all animals in Milne Inlet would exhibit some amount of behavioral disturbance each time a ship passes.

Under the proposed Phase 2 proposal, an average of six ore carrier transits per day would pass through Eclipse Sound and Milne Inlet. **Narwhals across a large area of the northern shipping route would be disturbed six to 24 hours per day by project-related shipping** (emphasis added). The Proponent has concluded without scientific basis that because each individual disturbance is ‘short-term’, lasting minutes to hours, that repeated daily instances of disturbance from large commercial vessels is “not significant” (TSD 24). There is insufficient



evidence to draw this conclusion. Rather, the results of research by the Proponent suggest that narwhals across much of the northern shipping route will be disrupted from their natural behavior for a substantial proportion of the day during the majority of days in the shipping season, which is the full duration of time each year in which narwhals inhabit this region. The effects of this level of disturbance to the individual and population are unknown, but should be carefully considered when evaluating the potential costs of the Phase 2 proposal to the ecosystem and to Inuit.

### ***2.1.3 Cumulative impacts from ship noise masking narwhal communication***

Marine mammals use sound for critical social communication. When noise levels increase in the frequency range of marine mammal acoustic communication, the potential for auditory masking exists. To address concerns about auditory masking resulting from shipping noise, the Proponent conducted modeling analyses to estimate of the loss of total area in which narwhals along the northern shipping route can effectively communicate with one another, also referred to as Listening Space Reduction (LSR), during project vessel transits. As with predictions of behavioral disturbance, each vessel transit is predicted to cause a substantial reduction in communication space for marine mammals along the northern shipping route (e.g. 1663724-102-R-Rev1-30000, Appendix B.3.2). These LSR events are similar in duration (and radius around transiting ships) to periods of behavioral disturbance. During each ship transit, the area in which narwhals can effectively communicate with one another using their normal social sounds would be reduced by 90% or more within a large area around the ship. The Proponent concludes without scientific justification that daily repeated reductions in communication space lasting substantial proportions of the day will have no significant effect on narwhals or other marine mammals. This region, and in particular Milne Inlet, is also known as a calving area for narwhals according to local hunters who are concerned about the potential for narwhal to abandon their calving areas (QIA Tusaqtuvut Study, 2019). The impacts of reduced communication space and behavioral disturbance on cow-calf pairs is not discussed. However, observations reported by the Proponent from the 2015 Bruce Head Study noted that female narwhals stopped nursing their calves when ships passed. The cumulative impact of this substantial daily reduction in communication space over the full annual time period in which narwhal inhabit this area is

unknown, but should be carefully considered when evaluating the potential costs of the Phase 2 proposal to ecosystems and to Inuit.

## **2.2 Socio-Economic**

Based on a thorough review of the socio-economic dimensions of the Mary River project, Oceans North maintains very low confidence in Baffinland's assertion that project expansion will result in substantial economic benefits for the Qikiqtani region.

As a result of the Nunavut Agreement and the land selection process that preceded it, Inuit retain surface and subsurface rights to mineral deposits that now fall within Baffinland's Mary River mine. These rights are held by Inuit whose representatives seek to maximize the socio-economic benefits that can flow from the exploitation of this resource. Maximizing the benefits to rights-holders is a constitutionally-protected requirement (*Nunavut Agreement*), reflected in legislation (*The Nunavut Planning and Project Assessment Act*) and reinforced by contract (IIBA).

The Proponent's position that expansion to 30 million tonnes of ore per year is necessary to ensure the success of this project is not supported by evidence; Baffinland has failed to demonstrate an economic case for this "necessity". Baffinland appears at present and by their own admission to be operating a profitable mine. This additional expansion, therefore, is not "necessary," and will result in lost benefits to rights holders.

Key socio-economic issues include:

- The economic benefits flowing to Nunavut beneficiaries and citizens from the Phase 2 development have been grossly exaggerated by the Proponent. Conclusions drawn from the Proponent's own labour market and economic benefit studies are incompatible - the economic benefits purported to flow to Nunavutmiut are not supported by the conditions described in the Proponent's labour market analysis.
- The projected growth in the workforce along the timelines proposed will vastly outpace any advancement in the local labour force resulting from training initiatives. Moreover,

training initiatives alone are unlikely to resolve Baffinland's failure to hire significant numbers of Inuit. Other barriers to local employment, including social trauma, are not fully considered in the Proponent's socio-economic analyses.

- Ongoing failure to hire local residents by Baffinland will not likely prevent planned output levels from being reached; workers will continue to be brought in from outside Nunavut. However, this will result in diminished benefits throughout the Nunavut economy, adversely impacting GDP forecasts, government revenue and direct benefits to Nunavut residents. The Proponent has also failed to provide any information regarding the impact of the unionization of its workforce and collective bargaining on IIBA commitments and Inuit employment targets.

As a result of these issues, Oceans North believes the purported benefits of expansion have not been established and there remains an unacceptable level of uncertainty in Baffinland's impact predictions regarding the socio-economic environment. The proposed expansion of the Mary River mine will result in lost economic opportunities within the Qikiqtani region for citizens, Inuit organizations and government to capitalize on this non-renewable resource.

### ***2.2.1 Inuit Employment Benefits***

The Proponent has been unable to meet IIBA commitments-- notably, those targets related to Inuit employment and contracting. While Baffinland has expressed the commitment to increase Inuit participation, it also acknowledges that this is a "long-term" commitment that will unfold on a corresponding timeline. By its own admission, Baffinland recognizes the Inuit labour market conditions are such that these targets are unachievable at this time and "progress is likely to be slow." It is therefore unrealistic to estimate socio-economic benefits based on the assumption that IIBA targets will be met.

The FEIS and TSD 25 predict that the expansion will have a positive effect on the employment of LSA residents, with Baffinland "[remaining] committed to meeting Inuit employment targets". The Proponent has consistently failed to maximize benefits to Inuit at this stage of production and has never met IIBA "minimum Inuit employment goals", targets which it has

subsequently described as “aspirational”. There is to suggest in the language of the applicable IIBAs that such a commitment is “aspirational”. Accordingly, the additional jobs associated with any expansion cannot be expected to result in a proportionate increase of employment benefits to Nunavut—present labour market conditions suggest that these jobs will go to workers from outside the Territory.

A substantial portion of the benefits afforded to citizens from any mining development take the form of employment opportunities. However, the Inuit labour force currently does not have the absorptive capacity to meet the increased labour needs of the Project, a fact emphasized in the Proponent’s Labour Market Analysis. Accordingly, the high rates of labour participation suggested by the proponent in the Socioeconomic Benefit Study are unrealistic. Rather than gain from increased employment opportunities as the EIS implies, Inuit will instead lose benefits, as the percentage of Inuit employees at the Project will inevitably decrease with the Phase 2 expansion. This widening of the gap between Inuit employment targets and actual employment will only serve to diminish the overall share of Inuit employment opportunities and therefore benefits over the lifespan of the project.

Baffinland’s own Labour Market Analysis (TSD 26) suggests that it cannot meet IIBA Inuit employment commitments. The document estimates that there are approximately 2,200 regional Inuit both “ready” (working age) and “able” (possess high school diploma) to work. The document notes that even with expansion, there will be a very marginal increase in “D-class” jobs not requiring high school. Accordingly, a diploma is an important qualification in employability. This figure of 2,200 individuals does not account for an extensive number of other factors identified in TSD 26 as barriers to the likelihood of individuals seeking jobs at the Mary River Project or succeeding in long-term employment there. These barriers include current employment status (and willingness to change jobs), personal aptitudes, interests, familiarity with wage employment, family responsibilities, language, criminal record, dependencies, and the (substantial) influence of competition from other employers. Likewise, this Inuit labour force of 2,200 “ready and able” individuals includes people of all genders. This is particularly relevant as TSD 26 explicitly states that there is an argument for further separating this basic labour supply by gender, given the small percentage of woman amongst total employees in the context of any

mining project. The document notes that “[i]t is not uncommon to find women representing no more than 20% of a mining project’s workforce, and oftentimes, this percentage is below 15%.” The gendered of employment in the mining industry further reduces the potential labour force for the Project substantially.

Phase 2 is expected to increase total Project labour needs to fill approximately 1960 full-time equivalent positions. As per IIBA commitments, “Total Inuit Employment” targets are set at 50%, which would require 980 Inuit employees to meet targets at Phase 2 output levels. This would require nearly half of the regional Inuit labour force to be recruited and retained to work at the mine. Considering the myriad factors identified as barriers to this possibility—including the fact that, given women’s greater high school graduation rates, the proposed labour force of 2200 will be composed of more women than men—it is exceptionally unrealistic to expect that these targets can be met, should Phase 2 expansion occur at this time.

Further, Baffinland’s employment records to date demonstrate that they are incapable of meeting far more modest employment targets (25%), even when operating at current output levels. Since commencing operations, Baffinland has not managed to meet IIBA employment or contracting targets in a single year. Inuit employment significantly declined between 2013 (20.3% of all hours worked) and 2017 (13.5%) (TSD 25, p.34). While Baffinland has publicized recent initiatives intended to support Inuit recruitment and retention, improvements in this area have since been marginal at best. This is made evident in Baffinland’s 2018 Annual Report to the Nunavut Impact Review Board, which states that Inuit employment for the year “hovered around 14%”. This change corresponds with Baffinland having managed to hire an additional seven Inuit employees, out of the approximate 1572 individuals working at the Project, while operating in a territory where more than 84% of the population is Inuit. As perhaps could be anticipated given their issues with Inuit employment, Baffinland acknowledges profound difficulties with retention of Inuit employees. The Inuit turnover rate increased from 2013-2017, with the 2017 turnover rate being 45%--nearly half of all Inuit workers did not remain employed at the Project (TSD 25, p.37). While retention is a near-universal issue in remote mining operations, it is worth noting that the Inuit turnover rate was a third higher than that of non-Inuit employees (TSD 25,

p.37). These statistics reflect the reality that the Inuit labour market may be approaching its absorptive capacity and that further gains of any significance will take much more time.

The magnitude of lost Inuit wages from rapid expansion becomes apparent in the Loxley report (Oceans North Technical Review Comments, 2019). This report establishes a strong case for denying this expansion at this time given the region's current inability to capitalize on employment benefits at present output levels. Should expansion proceed before the Inuit labour force can effectively fill IIBA targets (50% Inuit employment) surrounding the labour needs of the project, lost Inuit wages over the Project lifespan are anticipated to potentially fall in the \$1b range (Loxley, p.46). This figure does not account for employment-generating multiplier effects and other positive externalities, both of which are important factors driving potential losses faced by Inuit far higher yet.

Inuit employment targets are unachievable at this time, and the Project's poor track record of Inuit employment reflects this. Given this history, the estimated socio-economic benefits as quantified in TSD 25 are not reliable. This weakness in the Proponent's application is not trivial and raises implications at the heart of the NIRB mandate. Protecting the well-being of rights-holders is in fact a constitutionally-protected requirement (Nunavut Agreement), reflected in legislation (NuUPA) and reinforced by contract (IIBA).

### ***2.2.2 Need for expansion***

The Proponent maintains that project expansion at the proposed scale and timeline is "necessary" to maintain the financial viability of this mine, and to continue to provide benefits to rights-holders. However, the Proponent fails to justify the supposed financial or project necessity. This is of particular consequence given that the implications of rapid expansion are not benign; in addition to profound environmental impacts, our evidence suggests that there is a high likelihood that per tonne benefits to Inuit will significantly decrease should this project proposal proceed. Community members and Nunavut Agreement beneficiaries will ultimately bear substantial costs in lost potential revenues. (See section above). Baffinland has not provided any analysis of the relative benefits to Inuit at different output levels.

Baffinland maintains that an expansion of the Mary River Project is “necessary [...] to meet the demand of its customers, and to continue to provide these benefits [to communities].” The implication inherent in this statement is that without increasing output, Baffinland’s operations (and subsequent benefits to community) will not be feasible. These sentiments are echoed in TSD 01, where it is affirmed that “expansion of the Project is necessary for Baffinland to continue to operate and provide benefits to its shareholders, its Inuit partners, governments, and stakeholders.” However, this is seemingly contradicted by “Table, 1.1: Assessed Alternatives” (TSD 01), in which the option of maintaining production at current levels is described as “less cost effective”, rather than “least cost effective”, or “not-economically feasible”, as with several other alternatives evaluated in the document.

The limited evidence that Baffinland has produced to support the economic case for expansion refers to the current “marginal return on investment (ROI); possible negative ROI at lower ore prices”. This is followed by a statement regarding ROI expressing that with recent low iron ore prices and production levels of less than 3 mtpa, the Project experienced a negative return on investments. This argument has not been updated to reflect 2018 output and 2019 output allowances of 6 mtpa, as well as any long-term forecasting of iron ore prices. Notably, Baffinland provides no actual data to substantiate these claims regarding ROI. This position contrasts sharply with the conclusions of the Loxley report. This document suggests that-- contrary to Baffinland’s claims-- the mine is in all likelihood extremely profitable at present output (Section 3: “*Forecasts of the Financial Viability of the Mary River Project*”, p.10-13).

Baffinland has provided insufficient evidence to demonstrate that expansion at this time is a financial necessity. There has been no credible argument made supporting the degree of economic urgency that could possibly justify an expansion in the context of environmental uncertainty and at the expense of local communities and Nunavut Agreement beneficiaries, and without accounting for GDP implications for the territory as a whole.

### **2.3 Overall uncertainty, precedents, and confidence**

Based on our review of Baffinland's proposal, Oceans North believes that there is an unacceptable level of uncertainty with regard to the predicted ecosystemic and socio-economic impacts of the proposal. The NIRB report and ministerial decision related to AREVA Resources' Kiggavik project set an important precedent for environmental review in Nunavut. In that case, the Kiggavik project was rejected due to unacceptable levels of uncertainty regarding project impacts. The fact that key aspects of the project had yet to be determined (especially a project start date and production timelines) was an important source of uncertainty, together with deficiencies in baseline data and impact analyses.

Baffinland's proposal suffers from similarly high levels of uncertainty and draws favorable conclusions that are not supported by the extensive research undertaken as a part of the environmental impact assessment process. In this case, sources of uncertainty include:

- 1) A lack of information about key aspects of the project, including marine shipping routes and a start-date for the Steensby Inlet component of the project. Baffinland has not submitted a credible development proposal that allows for the assessment of cumulative impacts of its previously-approved but never developed project to ship ore via Steensby Inlet.
- 2) Deficiencies in Baffinland's impact analyses regarding marine mammals. The Proponent's determination that no significant negative impacts to marine mammals will result from current or increased marine shipping operations is not supported by the findings of substantial research conducted by Baffinland and other groups in the region.
- 3) A failure develop early warning thresholds for significant negative impacts on marine mammals resulting from current levels of shipping and a failure to appropriately project cumulative impacts of proposed increased shipping. Thresholds for corrective action on the part of the Proponent are too high (e.g. abandonment of region by narwhals), are not reached with sufficient time to avoid long-term negative impacts on marine mammal populations, and adaptive management strategies have not been developed to respond to negative impacts that



may occur.

4) A lack of sufficient baseline data for marine mammals. The NIRB recently completed a Strategic Environmental Assessment (SEA) into future oil and gas development Baffin Bay and Davis Strait. The SEA process made clear that there is insufficient baseline data for oil and gas development to proceed in the region. Oceans North believes that this lack of data about marine mammals adds significant uncertainty to Baffinland's impact predictions.

5) Deficiencies in Baffinland's socio-economic analyses. Oceans North believes that Baffinland's socio-economic impact assessment does not sufficiently address barriers to local employment beyond training and provides inflated government and community benefit forecasts that have no factual basis.

6) The Proponent appears to be presenting an unrealistic development plan to the public that is not supported by its own behaviour and previous public communications, including NIRB submissions. Baffinland has a history of participating in the NIRB project review process while simultaneously moving forward with alternative development plans and the Phase 2 development plan appears to be a continuation of this pattern.

Given the unacceptably high levels of uncertainty associated with this proposal, Oceans North believes that the transportation of ore through the Milne port should not be permitted to exceed present output and that such output be reviewed when we have a better understanding of impacts in all recent shipping seasons.

Recent developments and actions taken by the Proponent also call into question their ability to strike a balance between legitimate corporate interests and the unique environmental and socio-economic considerations related to this project. Of new concern, the Proponent has, over the course of the present shipping season, been receiving shipments of equipment needed for this still unapproved expansion (*Bulk Handling Review*, 2019). These shipments comprise materials and high-tech purpose-built equipment only usable at Milne Inlet if the company's project changes and expansion are approved. This new infrastructure includes a complete

railcar unloading station, a crusher and screening system, and a new ship loading system and conveyors. These acquisitions appear to be more than a mere gamble and the Proponent's actions undermine public confidence in a fair and fulsome impact review process.

As stated in our previous letter, Baffinland's ownership structure has changed since the Early Revenue Phase was approved, such that a majority interest is no longer controlled by a publicly-traded corporation. This has resulted in increased barriers to public information. In our view, this places a greater onus on the Proponent to provide complete disclosure of risks and rewards as they pertain both to the existing terrestrial and maritime operations and to the expanded operations. It also places further responsibility with NIRB to show how their assessments of the Proponent's submissions meet with their stated mandate under the Nunavut Land Claims Agreement. Respectfully, a socio-economic assessment of the merits of this proposal cannot be properly completed without much more transparency as to the exact nature of the present, historical and future public and Inuit-specific benefits that flow from this project.

The Proponent's written and oral submissions throughout the Phase 2 Proposal up to the present date have been insufficient in both data and transparency. Oceans North has both led and participated in numerous research projects in Eclipse Sound and Milne Inlet and is deeply concerned with the connection between the data collected by the Proponent, the summary of results and the conclusions requiring action. Data from a number of marine monitoring programs is being accumulated annually with no coordination and little collaboration among contractors to the Proponent and independent research organizations to ensure rigorous scientific standards are met to allow for understanding of cumulative effects. Currently, neither the environmental monitoring programs in place nor local knowledge and observation have connections to the improvement of mitigations, or to ensuring regulations are being followed -- this is a serious issue.

In 2018, when Northern Affairs Minister Dominic LeBlanc and Crown-Indigenous Affairs Minister Carolyn Bennett overrode the NIRB recommendation and allowed for an increase of up to 6MT for 2018 and 2019, they noted that "the impacts of the production increase need to be

more broadly examined during the Phase 2 reconsideration, and **it will be important to integrate the experience, knowledge and data gained over the course of the next two production years into that review process**” (emphasis added). Because of the Proponent’s failure to conduct key studies, 2018 provided stakeholders with little information on how increased production impacted the environment. Any knowledge and data gained in 2019 has been neither shared nor incorporated in the present review process. The Proponent has made it clear in public meetings, as noted earlier, that only a population level reduction in narwhal would lead to a change in operations and that two consecutive years of declining population estimates would be required to make changes. Baffinland did not run an aerial survey in 2018 during this increased shipping year. This does not live up to the clear expectations set out by Minister’s Bennet and LeBlanc.

### **3.0 Summary**

Without highly robust baseline data, no project will ever be able to fully capture the risks associated with unprecedented intensive shipping in sensitive marine environments. Furthermore, independent oversight of research design and implementation and analyses of data collected under the environmental impact assessment process is needed to appropriately assess the costs of the Phase 2 proposal to ecosystems and communities. Without this collaboration and oversight, the Proponent is left to conclude from its own monitoring that no significant impacts to the marine environment will result from the project. A review of this project must take into account the general lack of data and knowledge regarding present impacts of recent production increases and, in particular, the lack of data regarding recent increases in shipping intensity at Milne Inlet and Eclipse Sound. This information is critical to any assessment of expanded extraction and shipping. Accompanying this project’s high levels of environmental impact uncertainty is the additional uncertainty associated with the putative public benefits (including benefits to Inuit specifically) that would potentially flow from this expanded project.

Based on our involvement in this process and our ongoing research in the region, and the deficiencies in the Proponent's environmental and socio-economic analyses, Oceans North believes the project should not be approved as it is proposed, for the following reasons:

## **1. Risks to the marine environment**

- The Proponent proposes a single impact threshold that must be met to necessitate a change in shipping operations under the Phase 2 Proposal. This threshold is the abandonment or long-term displacement of marine mammals at the population level from the region as determined by two consecutive years of aerial survey data. No other monitoring efforts or Local Knowledge would connect to a change in project-related shipping operations. This 'to little too late' approach does not attempt to use early warning indicators to avoid displacement or abandonment or fulfill the Proponents obligations under their current permit.
- Disturbance of natural behaviour in narwhals is clearly observed and documented by the Proponent in their in their extensive research as part of this environmental assessment process. However, the Proponent concludes a "non-significant" impact of the project with no adequate justification or statistical confidence. The Proponent fails to take into account cumulative impacts of daily disturbance, which is expected to occur across the entire northern shipping route and to last throughout the annual period narwhal occupy the area for up to 24 hours per day. The effects of this level of disturbance to the individual and population are unknown.
- The ability to communicate using sound and to utilize hearing effectively are essential for narwhals to carry out vital life functions like foraging and maintaining social bonds. The Proponent predicts under a Phase 2 scenario that the effective communication area for narwhals would be reduced by 90% or more along the northern shipping route, but concludes that daily repeated reductions in communication space, lasting substantial proportions of the day, will have no significant negative effects on narwhals or other marine mammals. The Proponent provides no scientific justification for this conclusion. The cumulative impact of this substantial daily reduction in communication space over the full time period in which narwhal inhabit this area is unknown.

- The Proponents conclusion that narwhal will not abandon the area year to year is not supported by the data presented in the Phase 2 Development Proposal and ignores local knowledge and observations. The Proponent accepts that there is behavioural disturbance and temporary displacement of animals as a result of transiting ships, but its assumption that the level of disturbance is insignificant is not adequately supported by its research.

## 2. Socio-Economic Rationale

- The Proponent has given insufficient consideration of socio-economic benefits and has spent less effort in promoting their optimization.
- The percentage of Inuit employment at Baffinland, as measured by hours worked, has generally declined since the beginning of operations:

2013: 20.3%  
 2014: 20.3%  
 2015: 17.5%  
 2016: 14.8%  
 2017: 13.5%  
 2018: “hovered around 14%”

Source: 2013-2017 (TSD 25); 2018 (Baffinland Iron Mines 2018 Annual Report to the Nunavut Impact Review Board March 31, 2019)

- The proposed expansion would inevitably result in loss of significant employment benefits for Inuit over the lifespan of the mine. The output expansion would require approximately doubling the mine’s labour force to a total of 1960 employees during post-construction operations. While Baffinland characterizes the increase in employment opportunities as fundamentally beneficial to Inuit, in reality the Inuit labour force is not presently positioned to capture the benefits of this increase.
- There is a strong case for denying this expansion at this time given the region’s current inability to capitalize on employment benefits at present output levels. Should expansion proceed before the Inuit labour force can effectively support IIBA labour targets (50% Inuit employment), lost Inuit wages over the Project lifespan are anticipated to potentially fall in the \$1b range.

- Baffinland neglects to weigh the benefits of increased future royalties as a result of economies of scale against the losses incurred in Inuit employment opportunities. This is a particularly glaring omission given that a substantial portion of the benefits flowing to Inuit were intended to take the form of employment opportunities. Further, there are arguments to be made that benefits are maximized when conferred through employment, specifically. Increased workforce participation has tremendous capacity for generating positive externalities in at community-level. These include stimulating the creation of other jobs, as well as the compounding social benefits that come with employees being able to move from (in many cases) circumstances of poverty, to those of financial independence and stability.
- In order to provide a more accurate analysis of the socio-economic impacts of Phase 2, benefits must be re-evaluated using achievable employment targets. TSD 26 is intended to provide a certain degree of background for the development of these targets, and acknowledges as much in the concluding section. However, until realistic targets are established using robust quantitative data, it is not possible that any projections of the socio-economic impacts of Phase 2 sufficiently account for the loss of employment benefits to Inuit. Accordingly, Baffinland's current predictions surrounding the socio-economic impacts of Phase 2 are not inclusive enough of this critical piece to be considered to be evidence-based.
- While Baffinland maintains that an expansion at the proposed scale and timeline is necessary to maintain the financial viability of this mine and to continue to provide benefits to rights-holders, they do not provide evidence that serves to substantiate this claim. The limited information provided is incomplete in that it pertains to only lower production levels from earlier years and therefore fails to account for current capacity and associated profits.
- This mineral deposit was selected by Inuit in a land claim negotiation process with the objective of maximizing benefits to Agreement beneficiaries. Protecting the well-being of rights-holders is in fact a constitutionally-protected requirement (Nunavut Agreement), reflected in legislation (NuUPA) and reinforced by contract (IIBA).

### **3. Proponent Behaviour**

- The Proponent's inability to determine significance of impacts documented to affect marine mammals within the study region as a result of project-related shipping.
- The Proponent's unwillingness to do the required work to establish a baseline and determine thresholds for adaptive management (ie. if aerial surveys are the only thing that triggers change in shipping why have comprehensive aerial surveys not been undertaken every year?).
- The Proponent's concealment of documents related to significant impacts in narwhal distribution (LGL 2016 report).
- The Proponent's ongoing lack of clarity on their future plans.
- The Proponent's desire to keep pushing the line of maximum output without regard for environmental or Inuit social well-being.

### **4. Process Deficiencies**

- This process has proceeded in spite of an unacceptable level of uncertainty with regard to the predicted ecosystemic and socio-economic impacts of the proposal.
- Insufficient time has been provided to stakeholders to review and respond to proponent submissions. Proponent must be compelled to provide answers to inquiries with ample time for review and response. Two days prior to a technical meeting is not acceptable as well as documents coming after technical meetings that don't have the same opportunity for public review.
- New and unexpected information being presented after technical meetings. The GN and others were asking for clarification on alternate shipping which was around the top of Bylot and into Baffin Bay – what was released was a paper on shipping west through the Northwest Passage which would undoubtedly require another Environmental Assessment as the current assessment does not cover this area, new communities that would be affected or this completely different marine environment.

## **5. Ministerial Oversight**

- Ministers Leblanc and Bennet made direct reference to the importance of 2018 and 2019 “experience, knowledge and data” regarding the mining and shipping impacts of their 2018 decision to allow the production increase. These sources of information have not been incorporated into this review process.



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