



# Final Written Submission to the Nunavut Impact Review Board

**Baffinland Iron Mines Corporation  
08MN053 – Phase 2 Development Proposal**

January 10, 2022





With the Phase 2 proposal, Inuit are asked to consider a Mary River Project mine operation that could involve the extraction and transportation of over 30 million tonnes of ore a year, shipped by two railroads travelling over 300 km on permafrost, and bisecting one of the largest islands in the world where we do not even have roads between our communities.

The Phase 2 proposal involves ports for large ships in a region where Inuit have minimal port infrastructure even in our own communities. It involves icebreaking in arctic waters full of marine mammals critical to Inuit local food chains, economies, and cultures, and which are already under increasing pressure from many sources, including climate change. The proposal seeks to use the same marine areas which Inuit collaborated for decades to protect, now known as the Tallurutiup Imanga National Marine Conservation Area, and occurs on lands selected by Inuit with knowledge of future development potential.

The current Phase 2 proposal has been a lot for Inuit to consider.

As Inuit, we have the right to self-determination. Mining can be part of our future provided proposals conform to an Inuit vision of the future. Mining should only occur when Inuit believe it will strengthen Inuit communities and support a diversified Inuit economy that enhances Inuit cultural and social wellbeing. A mine on Inuit land, using Inuit resources, and affecting every aspect of Inuit harvesting and cultural rights, must respect Inuit rights, knowledge, and needs.

As outlined in more detail in the rest of QIA's Final Written Submission (FWS), the current Phase 2 proposal does not yet meet the necessary balance between impacts on Inuit on the one hand, and the benefits and guarantees of Inuit-led environmental decision-making on the other.

This Summary provides an overview of the rest of QIA's Final Written Submission. QIA's Final Written Submission describes why QIA cannot consent to the proposed Phase 2 Expansion of the Baffinland Iron Mine Corporation's Mary River Project until more work is done to address outstanding concerns.

There are four parts to QIA's Final Written submissions:

1. This **Summary** which gives a plain language introduction to QIA's concerns and QIA's position regarding the proposed Phase 2 expansion;
2. A longer **Overview of QIA's Outstanding Concerns** about the current project proposal, including a summary of QIA's legal, regulatory, technical, and Inuit rights concerns;
3. **Updated Technical Comments** (Appendix 1) on the status of the areas of technical concern (Technical Comments) which QIA raised during the Nunavut Impact Review Board (NIRB) process. 18 of QIA's Technical Comments remain unresolved (many of which are unresolved because they depend on proposed

structures which are not yet in place for Inuit-led adaptive management and Inuit Qaujimajatuqangit integration); and

4. **Recommended Project Certificate Conditions** (Appendix 2) with proposed specific conditions that should be part of a Project Certificate if this expansion proposal is approved, despite Inuit objections, and the rationale for recommended conditions. This document also responds to the most recent technical changes proposed by Baffinland.



### ***QIA as Responsible Designated Inuit Organization in this Review***

QIA is responsible for ensuring that the constitutionally protected rights of Inuit are respected in any mine and regulatory process in the Qikiqtani region.

QIA is the Designated Inuit Organization that owns and manages, on behalf of Inuit in the region, the lands on which the Mary River Project is located. As such, QIA is responsible for protecting and using the Inuit Owned Lands for responsible resource development on behalf of Inuit, if Inuit choose to use these lands for mining. QIA has an obligation under the *Nunavut Agreement* to ensure that any proposed Mary River Project expansion meets the proper balance between impacts and benefits. QIA leases the Mary River Project site lands to Baffinland and has a commercial lease in place granting Baffinland permission to use these lands for specific activities. QIA also negotiated and signed the Inuit Impact and Benefit Agreement (IIBA) with

Baffinland that ensures there are sufficient benefits and environmental controls that flow from the use of these Inuit owned lands and minerals.

Given these and other roles played by QIA, the Proposal cannot proceed without QIA's consent to the proposed change in scope of the Mary River Project.

### ***An Unprecedented Project with Unprecedented Impacts on Inuit***

The Mary River Project is no ordinary mine. The Mary River Project is the largest industrial development in the history of Nunavut.

Qikiqtaalungmiut had little experience (other than the Nanisivik mine), in dealing with smaller mining projects to learn about how to align Inuit rights with mining development in a way that promotes healthy Inuit communities and self-determination. To the best of their abilities, the impacted Inuit communities and Designated Inuit Organizations are using the smaller current Baffinland operation to understand what a larger Phase 2 project could look like.

The Mary River Project was approved in 2012 to produce 18 million tonnes per annum (MTPA) of iron ore and ship this ore by rail to a port at Steensby Inlet on the southwest coast of Baffin Island. It was approval for an unprecedented mining project: one of the world's most remote mining operations, in the Arctic Circle, involving the world's most northerly railway travelling 150 kilometres over permafrost, with shipping affecting some of the arctic's richest marine mammal habitats.

In 2013, Baffinland asked NIRB to approve an amendment allowing a small amount of ore, (3.5 MTPA, which was then adjusted to 4.2 MTPA to allow for "operational flexibility") to be mined. Baffinland asked for approval to truck this ore by the Tote Road to the north side of Baffin Island to the port at Milne Inlet in the area Inuit known as Qinnngua (rather than to the previously approved port at Steensby). This amendment, for an "Early Revenue Phase," was meant to allow enough initial production for Baffinland to raise the revenue to build the mine rail and other infrastructure for the originally approved project. QIA supported this application, and after approval by NIRB and the Minister, Baffinland began to ship iron ore through Milne Port in the Qinnngua area in 2015.

That same year, Baffinland began the process of preparing to apply for a Phase 2 expansion, proposing an entirely new rail route and expanded production.

In 2017, Baffinland submitted the current application for the Phase 2 expansion of the Mary River Project. Baffinland asked NIRB for approval to increase mine production to 12 MTPA and build a different railway going north to the Milne Port (rather than south to Steensby Inlet). As NIRB was beginning the review of the Phase 2 proposal, Baffinland also applied and received approval in 2018 (with QIA support) to increase the initial production of the mine from 4.2 MTPA to 6 MPTA.

The Public Hearing on the Phase 2 proposal commenced in November 2019.

Meanwhile, Inuit were beginning to observe and understand in more detail the impacts of the 4.2 MPTA and then 6 MTPA mine production and shipping on regional wildlife, Inuit land use, and local economies. The impacted Inuit communities have been, within the space of five years, reviewing and responding to multiple changes to the existing approval, and reviewing and responding to the new expansion proposal. At the same time, Inuit are only beginning to experience the scope of impacts of the initial project. The current effects of the Project are not yet understood, and there are growing concerns that existing Project mitigation measures and adaptive management planning, including the current marine mammal monitoring plan particularly, are not working.

It has now become clear to Inuit that both the existing Project and the proposed expansion involve unanswered questions about the scope and scale of Project impacts and how these will be properly addressed. This has been an enormous undertaking, made more challenging by the realization that the consequences of any decisions on the existing and planned expansion of the mine will have enormous effects on Qikiqtaalungmiut and traditional Inuit lands and waters for generations.

Inuit must rely on what we know, as Inuit, about this land and these waters. Our Inuit Qaujimajatuqangit (IQ) and our experience provide critical information that must be the basis for predicting what will happen if the proposed Phase 2 expansion proceeds. The Phase 2 Public Hearings and evidence confirmed that there is still too much we do not know and too much that must be predicted about the impacts of the Phase 2 proposal, without adequate information on which to base these predictions.



With the conclusion of the evidence portions of the Phase 2 Public Hearing process, it is clear that Inuit are being asked to bear the consequences of significant uncertainties regarding the impacts of the current proposal and to rely on weighty promises for Inuit involvement in environmental decision-making without guaranteed mechanisms to ensure those promises will be met or enforced.

The most impacted Inuit communities and the Designated Inuit Organizations (including QIA) are responding by saying: a Phase 2 expansion is not ready yet.

### ***The Current Phase 2 Proposal: Not Ready Yet***

Inuit are not opposed to mining. Proposed mining projects must, however, proceed in a manner which meaningfully addresses impacts on Inuit. QIA and the impacted Inuit communities pushed hard to ensure the NIRB review process addresses the enormous challenges posed to Inuit by both the current and the proposed expanded mine.

Originally, a hearing and decision was supposed to occur in spring 2019. However, it was clear that the Proposal was not ready at that time. Inuit raised multiple concerns about critical gaps in the baseline information in environmental assessment at that point, particularly with respect to proper documentation and integration of Inuit Qaujimajatuqangit.

A Public Hearing commenced in November 2019, and it was clear that Baffinland was still not ready. In the face of many outstanding and unanswered technical questions and concerns, all



the Inuit organizations and communities united in calling for the hearing to be postponed until 2020, to allow time to resolve some of the many outstanding issues with the Phase 2 Proposal. NIRB agreed and halted the process to allow Baffinland time to narrow the gap of outstanding technical concerns.

After the NIRB process halted in November 2019, QIA worked with Baffinland to see how outstanding Inuit concerns could be addressed. These negotiations between QIA and Baffinland led to the Inuit Certainty Agreement (ICA).

The ICA was meant to narrow the extent of outstanding technical concerns as much as possible and address the most significant concerns which Inuit were expressing about Phase 2. QIA and Baffinland focussed on concerns about inadequate integration of IQ into environmental impact studies and into adaptive management plans and processes, and the need for stronger Inuit decision-making for decisions about how to address any emerging impacts. QIA was concerned that commitments needed to be in place prior to the Public Hearing resuming to resolve as many technical and Inuit rights concerns as possible. QIA was focussed on the need to protect Inuit interests in the event that Phase 2 was approved despite Inuit concerns and despite Inuit calls for more time for proper review.





The ICA work resulted in proposed structures to strengthen IQ integration and Inuit-led adaptive management, including:

- an **Inuit Committee** with impacted Inuit community participation to ensure Inuit leadership in environmental decision-making for the project, and to address Inuit concerns about the lack of responsiveness to Inuit concerns in the existing Working Group processes for the marine and terrestrial environments;
- an **Inuit-led Adaptive Management Planning process** including Inuit defined triggers (**Inuit Objectives, Indicators, Thresholds and Responses** or OITRs);
- a **Culture, Resources and Land Use Study** (CRLU Study) to ensure adequate IQ is available for comparison and use in any adaptive management planning process;
- an **Inuit Social Oversight Committee** (ISOC) to ensure Inuit leadership, from the impacted communities, in identifying and measuring the impacts of the Mary River Project on social wellbeing; and
- an **Inuit Stewardship Plan** (ISP) developed by QIA and the impacted Inuit communities as a framework for Inuit-led environmental and social impacts monitoring and management.

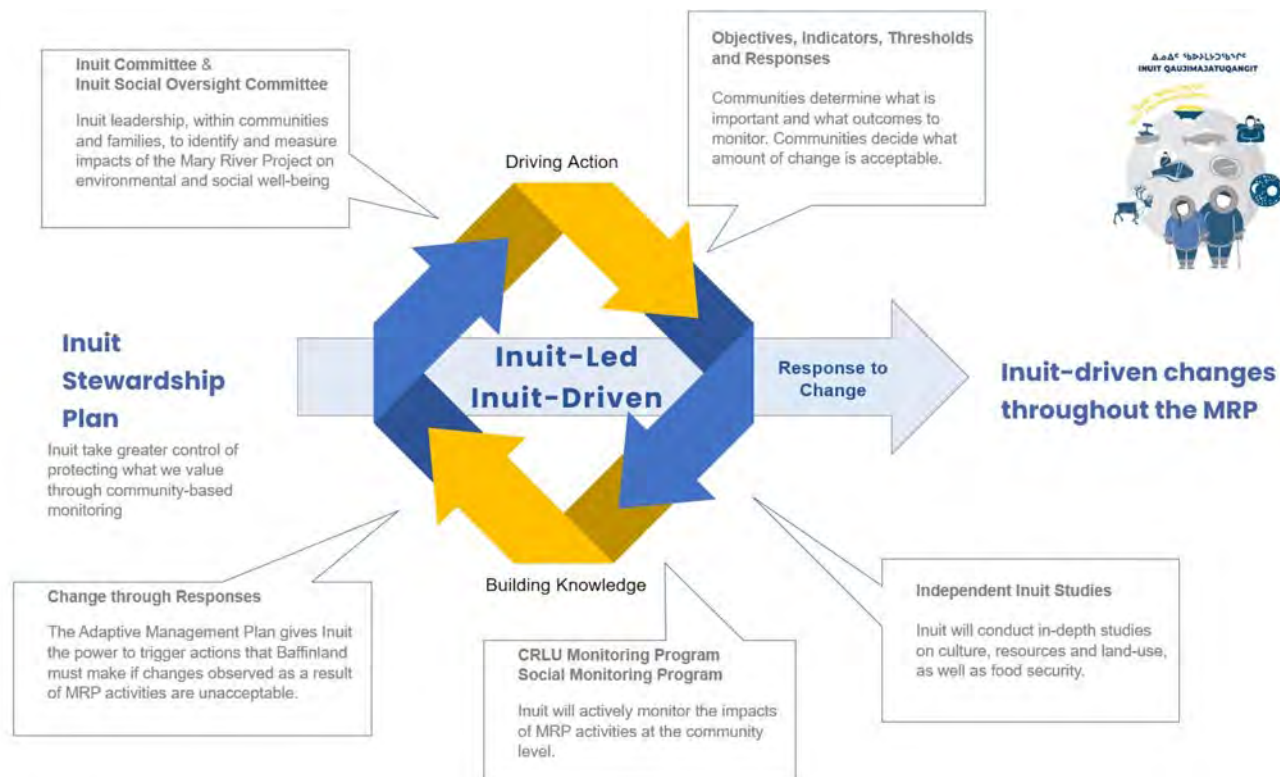


The ICA structures are based on the assumption that the Inuit communities would: (1) need to review and consent to the proposed structures to ensure they actually address impacted communities' concerns; and (2) actually determine the final structures and mechanisms (including adaptive management thresholds).

In between the signing of the ICA in June 2020 and the resumed public hearing in January 2021, QIA began to engage with the impacted communities about the proposed Inuit-led environmental management structures. Participation of the affected Inuit communities is key to the viability of these proposals for Inuit-led IQ integration, adaptive management planning, and project monitoring.

Engagement was difficult during the Covid-19 pandemic, which prevented travel and posed more immediate challenges for all the impacted communities and QIA. The necessary work to fully involve impacted Inuit communities in further developing the proposed ICA structures was also hindered by the frustration and distrust of the impacted Inuit communities with the review process for the Mary River Project overall.

Based on the evidence in the September 2020 Technical Meetings, and the January, April, and November 2021 phases of the Public Hearing, it is clear the proposed ICA structures (the Inuit Committee, the Inuit Stewardship Plan, the Inuit Social Oversight Committee, the Culture Resources and Land Use Study, and Inuit-defined Objectives, Indicators, Thresholds and Responses), all need further input from the impacted communities. QIA and the impacted communities require more time to improve their understanding and confidence in the ICA structures before they are acceptable as meaningful mechanisms to address impacts on Inuit rights.



## ***The QIA Board Decision Not to Support the Current Proposal***

Over the past four years of NIRB's review of this Proposal, important steps were taken to identify and resolve technical and Inuit rights impacts concerns. At the same time, the length of the review period allowed Inuit to look at and begin to evaluate the emerging impacts of the existing project operations and shipping. Inuit have not, however, been able to get the necessary traction from Baffinland in the form of commitments on key issues that require resolution for a Mary River Project expansion to meaningfully balance the risks and harms which Inuit will bear and the benefits we will receive.

As the phases of the public hearing progressed between 2019 and 2021, it was increasingly clear that Inuit are still deeply conflicted and concerned about whether the current proposal for a larger Mary River Project, with all the related shipping and rail activity, is really in the best interests of the community of Mittimatalik and other Inuit in the region.



By early 2021, it was clear that the current Phase 2 Proposal is not ready to go ahead, despite efforts to narrow the gaps of outstanding technical and Inuit rights concerns. In March 2021, the QIA Board (made up of community Directors elected from each of the communities in the Qikiqtani region) met to discuss the hearing evidence to date, and the status of QIA's discussions with Baffinland and the affected communities.

The QIA Board considered the lack of community support for the current Phase 2 proposal, and the wide scope of unresolved concerns raised by the most impacted communities. Based on the lack of community support, the Board passed a resolution that QIA does not consent to the current Phase 2 proposal to expand the scope of the Mary River Project as more work is needed to address concerns about impacts on Inuit and on the environment.

The QIA Board decision followed years of QIA efforts to fully review and engage upon the Phase 2 Proposal, including dedicated outreach and engagement with municipal governments, hunters and trappers organizations, and Inuit in impacted communities. At this point, QIA has spent 6 years considering the proposal, participated in multiple Technical Meetings and four phases of public hearings, dedicated two years of sustained effort to narrow the gaps of unresolved issues after NIRB adjourned the hearings for this purpose in November 2019, and conducted an extensive review of evidence on emerging and insufficiently addressed shipping, marine, caribou, and dust impacts from the existing Project.

QIA continues to support advancing the Mary River Project in a manner consistent with priorities for Inuit benefits, project management, and environmental protection. The current proposal does not, however, meet those requirements.

### ***QIA's Outstanding Technical Concerns***

The rest of QIA's Final Written Submission (in the *Overview of QIA's Concerns*, *Appendix 1: Updated Technical Comments*, and *Appendix 2: Recommended Project Certificate Conditions*) provides a detailed analysis of the technical environmental and the Inuit rights concerns that are not yet resolved for the Phase 2 Proposal.

In summary, QIA's technical and Inuit rights concerns include:

- **Inuit-led Adaptive Management** must be developed further. The proposal still lacks an adaptive management planning process that is acceptable to Inuit. The ICA proposes an Inuit Committee/Inuit Panel with Inuit decision-making authority, and development of Terms of Reference for this body. This structure has yet to be developed.

The environmental monitoring programs which are currently proposed are focused on western science with little consideration of monitoring through an IQ lens. The current structure of the adaptive management is not responsive to input from the working groups, underscoring the need for an Inuit Committee to ensure meaningful Inuit participation in adaptive management.



Other key components of Inuit participation in adaptive management are incomplete. No progress has been made on establishing the Inuit Committee or the Culture, Resources, and Land Use (CRLU) study and monitoring program. The Pond Inlet Country Food baseline has not yet been undertaken. Enforceable Inuit objectives, indicators, thresholds and responses must still be developed and built into the Project's environmental management plans (See *Revised Technical Comments*, Appendix 1, Technical Comments #1, 2, 5, 7, 9, 10, 11, 46).

- **IQ Concerns:** There is not yet meaningful incorporation of Inuit Qaujimajatuqangit into critical aspects of the Project (including design, effects assessment, mitigations, monitoring, and adaptive management planning). For instance, a CRLU reassessment must still occur to address gaps in the original IQ integration into the Final Environmental Impact Study. That CRLU assessment must be completed with full involvement of and verification by Inuit. Proposed environmental monitoring programs focus on western science with little consideration of monitoring through an IQ lens and are not responsive to IQ input from the environmental working groups. (See *Revised Technical Comments*, Appendix 1, Technical Comments #1, 2, 3, 5, 7, 10, 11).

- **Marine Wildlife Impacts:** QIA notes the deep and continuing concern which the impacted communities expressed consistently through this review process about the impacts of shipping, particularly.

Marine wildlife impacts are an area of highest concern to Inuit about the Proposal, from both a technical and an Inuit rights perspective.

At the end of the review process, significant uncertainty remains about the scope of marine wildlife impacts which would occur and whether proposed environmental management mechanisms would be sufficient to address evolving impacts. For example, almost all parties in the review process acknowledged the high degree of uncertainty associated with the assessment of underwater noise impacts, making proper monitoring and adaptive management critical.



To properly address marine wildlife impacts, Inuit must have confidence that IQ regarding marine wildlife, ice, and other marine matters will be respected. Inuit still do not have sufficient confirmation of a meaningful decision-making role for Inuit in the adaptive management process for the marine environment, as noted in the concerns listed above regarding adaptive management and IQ. Inuit organizations and communities raised repeated concerns in the Hearing about the current Marine Environment Working Group (MEWG) structure, which has been unresponsive to IQ inputs, Inuit concerns, and concerns raised by other parties. Notably, Inuit-defined Objectives, Indicators, Thresholds and Responses for marine issues have yet to be developed, reviewed and finalized. As one example, more work is needed to identify and address the discrepancies in how Baffinland and impacted Inuit view sea ice in its various forms, not just the floe edge.



QIA is concerned that the critical and necessary work for IQ integration and the development of Inuit-defined Objectives, Indicators, Thresholds and Responses for adaptive management cannot be completed prior to a Minister's decision, as the relevant ICA structures have not seen sufficient progress to ensure they will be in place in time.

Resolution of the marine wildlife concerns also depends on the impacted Inuit communities supporting and accepting Baffinland's commitments to minimize shipping impacts on land use and harvesting activities, implement proper mitigation measures, and involve the communities in a meaningful way in adaptive management to address any evolving impacts. This has still not occurred. (See *Revised Technical Comments*, Appendix 1, Technical Comments #46, 47, 48, 51, 53).

- **Transboundary Marine Impacts:** Throughout the impact assessment process, the deficiencies in assessing transboundary marine impacts have become evident. This is obvious, for example, in the recent documents provided by the Government of Canada, on behalf of the Governments of Denmark and Greenland through the Espoo Convention (international treaty on environmental assessment) process. The documentation provided by Greenlandic government departments, Inuit communities, and other organizations includes important information for NIRB's consideration regarding the transboundary and cumulative impacts of marine shipping for the current Phase 2 proposal. QIA comments in greater detail on these Espoo submissions in the rest of its Final Written Submission (See *Revised Technical Comments*, Appendix 1, Technical Comments # 50, 51, 53).
- **Caribou Impacts:** The evidence in the assessment process confirms significant uncertainty in predictions about how Phase 2 would impact caribou. Overall, very high uncertainty and very high risk remain that the combined effect of the road and the





railway, including both physical barriers and sensory impacts, will have an important and likely significant effect on caribou movement. Current proposed mitigations have not adequately addressed these concerns.

Proposed caribou monitoring programs are focused on western science with little consideration of monitoring through an IQ lens and are based on the current working group model.

The review process also exposed serious concerns about the current structure of the technical working groups. These are chaired by the Project proponent who is responsible for developing the agenda and providing review materials, and whose Project is responsible for impacts directly in their control. More specifically, and as confirmed repeatedly by multiple parties in the written and oral evidence in the hearing, the existing Terrestrial Environment Working Group (TEWG) is not responsive to IQ inputs and Inuit concerns.

This working group structure has been counter-productive and undermines Inuit confidence in the ability of the current adaptive management processes to meaningfully address concerns about emerging and unaddressed impacts. A major change to the working group structures is required (as proposed with Inuit Committee, Inuit Social Oversight, Inuit Stewardship Plan, and other ICA structures).

Without a Project Certificate condition that clearly outlines the requirements of a revised TEWG terms of reference, the commitment to revise the Terms of Reference for the working groups is weak and leaves uncertainty surrounding whether the efficacy of these groups will improve.

There has also been inadequate response by Baffinland to requests for a collaborative approach to reassess caribou habitat impacts from the proposed Project expansion, including sensitivity analyses.



The review of the totality of the evidence at the close of the public hearing suggests that many outstanding caribou issues remain on the western science side in terms of the adequacy of thresholds, triggers and proposed responses. On the IQ side, the Inuit-defined Objectives, Indicators, Thresholds and Responses have not even been developed at all at this stage.

In the absence of progress on the CRLU monitoring program and the additional of Inuit-defined objectives, indicators, thresholds and responses to the relevant environmental management plans (EMPs), most of the concerns regarding meaningful Inuit involvement in adaptive management with respect to caribou impacts have not been addressed. (See *Revised Technical Comments*, Appendix 1, Technical Comments #1, 41).

- **Dust Impacts:** A consistent concern in the Phase 2 impact assessment, based on Inuit observations of the current Mary River Project, is dust impact and controls.

For instance, the amount of Project-related dust and sediment that enters tote road waterbodies – particularly Phillips Creek – from Project-related activities, and the effects of the dust and sediments on the aquatic receiving environments, are still unknown. Information is still lacking on Project-related dust fall and runoff. Despite increasing dust suppression efforts, current dust fall along the tote road is currently elevated compared to predicted levels. Baffinland has not committed to conducting a study to address this concern, despite a NIRB monitoring recommendation in 2018.

Work is needed on the Inuit Committee structure and the Inuit-defined Objectives, Indicators, Thresholds and Responses that are necessary to address concerns about dust fall and impacts to vegetation and water bodies. Many concerns on the western science side remain regarding the dust related management plans, and no progress has been made to date to develop dust related Inuit-defined Objectives, Indicators, Thresholds and Responses. With little progress to date on these key adaptive management measures to address dust concerns, it is premature to rely on Baffinland's willingness to establish adaptive management triggers that are sufficiently sensitive to address Inuit concerns.

Additional work is also needed to address concerns regarding the impacts of dust fall on plants (particularly lichen and culturally important plants), pathways for the introduction of invasive plants, detecting metals in soil and conducting additional monitoring work for impacts to vegetation. Concerns also remain about the effectiveness of current and proposed dust monitoring programs. (See *Revised Technical Comments*, Appendix 1, Technical Comments #1, 2, 9, 11, 41).



## ***What Next: The Need for a Revised Proposal that Meaningfully Addresses Inuit Concerns***

Throughout the entire NIRB process, Inuit witnesses from the impacted communities have been extremely consistent. Their message is that environmental protection, and protecting the Inuit relationship with the land and water, cultural continuity, and food sources, is paramount. Inuit have also been consistent in seeking commitments from Baffinland for shared risk management.

The most impacted communities have clarified that the proposed changes to Inuit-led monitoring (through the proposed Inuit Committee, Inuit Stewardship Plan, Inuit Social Oversight Committee, Inuit-led adaptive management, and further Culture, Resources and Land Use studies), do not yet adequately address the scope of the concerns raised about the effects of the proposed expansion of the Project and whether these effects can be adequately monitored, mitigated or managed.

Further work is needed, including further input from the impacted communities on the proposed IC, ISOC, ISP, CRLU study, and AMP structures. Having the time and ability to develop those structures is key to resolving a number of technical concerns in both the NIRB and NWB processes.

## ***Inuit Rights Impacts of This Scale Require Inuit Consent***

This NIRB review is an assessment of both general environment impacts, and of impacts on Inuit rights specifically. NIRB is one of the institutions of public government set up under the *Nunavut Agreement* to be specifically responsive to Inuit culture, concerns, and rights in its processes – this was a key condition when Inuit agreed to the *Nunavut Agreement*. The “primary objective” of NIRB, under the *Nunavut Agreement*, is “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.”<sup>1</sup> This objective is reflected in the priority the *Nunavut Agreement* gives throughout to the views, evidence, interests, and traditions of Inuit, and to the protection of Inuit rights.

The Supreme Court, reviewing a decision on another environmental assessment involving Qikiqtani Inuit, confirmed the dual role that an assessment board can have in reviewing both environmental and Inuit rights impacts:

Where the effects of a proposed project on Aboriginal or treaty rights substantially overlap with the project's potential environmental impact, the NEB is well situated to oversee consultations which seek to address these effects, and to use its technical expertise to assess what forms of accommodation might be available.

In sum, the NEB has (1) the procedural powers necessary to implement consultation; and (2) the remedial powers to, where necessary, accommodate affected Aboriginal claims, or Aboriginal and treaty rights. Its process can therefore be relied on by the Crown to completely or partially fulfill the Crown's duty to consult.<sup>1</sup>

The Government of Canada has been clear that it intends to rely on this NIRB process for the review of both environmental and Inuit rights impacts. Canada advised NIRB that Canada is relying on the NIRB process for both procedural and substantive aspects of the Indigenous consultation which is constitutionally required for this Project, indicating:

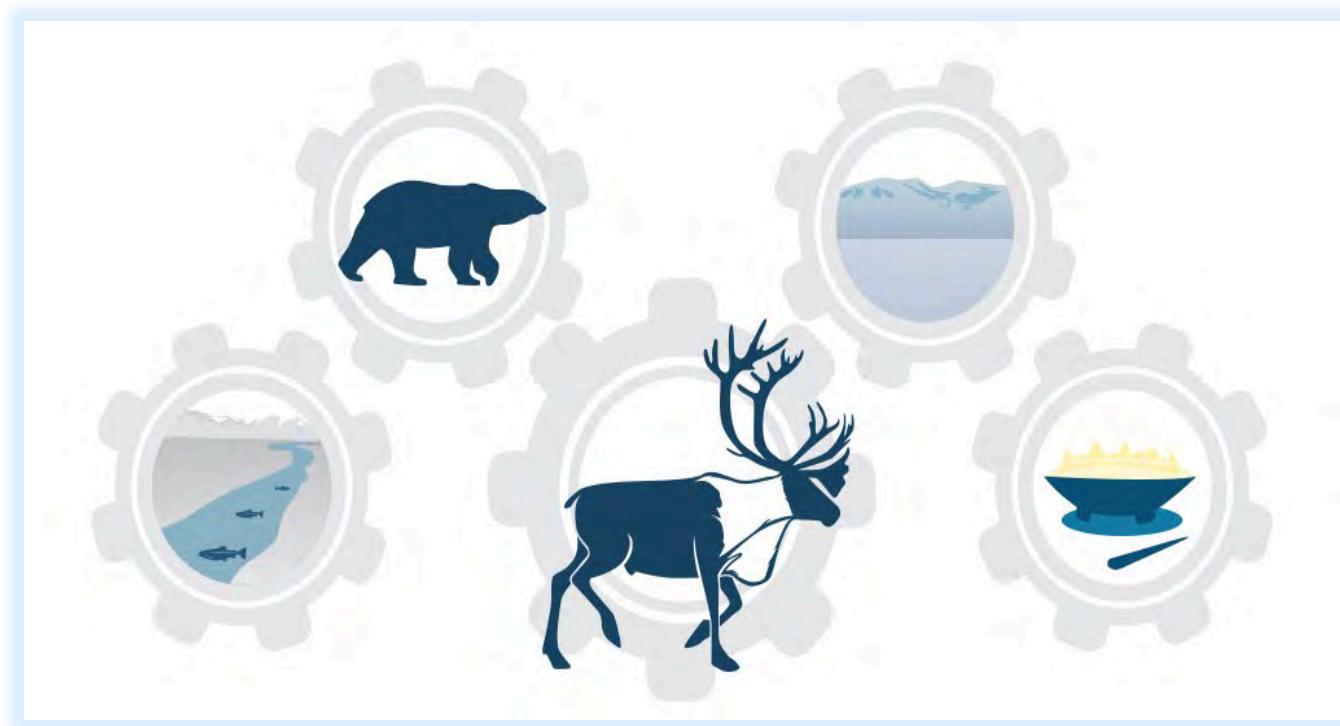
"...The Board's assessment process, and associated proceedings, are relied upon to assist the Crown in discharging its duty to consult with Indigenous peoples. The Board has broad jurisdiction to review a project and its potential impacts, including any impacts on asserted or established s. 35 rights. As established in the *Nunavut Agreement*, the Board's assessment process is designed to facilitate the participation of Inuit ... in the assessment of Nunavut projects which may have an impact on those rights... Specifically, the Board's process provides potentially affected Inuit and other Indigenous peoples with an opportunity to understand the proposed project and its potential impacts, express their views and concerns with respect to potential project-related impacts on their treaty rights, consider ways these views and concerns can be addressed, and ensure those issues are considered both by the Board and the responsible Ministers."<sup>2</sup>

NIRB's review process is central, therefore, to assessing the type and scope of impacts of this Project on Inuit rights. In other words, NIRB must decide whether the "accommodation" proposed by Baffinland, including avoiding or minimizing impacts on protected Inuit rights, is sufficient to address the scale of impacts on Inuit.

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<sup>1</sup> *Clyde River v. Petroleum Geo-Services Inc.*, 2017 SCC 40, at para. 33 and 34.

<sup>2</sup> [Letter from Lisa Dyer, Director General of the Northern Projects Management Office, to Karen Costello, Executive Director of the Nunavut Impact Review Board](#), 08 January, 2021.



The current Phase 2 proposal involves significant impacts on the caribou, marine wildlife, and country foods which are foundational to Inuit food security, cultural practices, and economy. The footprint of the mine, road, any railway, and ports are all on lands and in waters used extensively by Inuit for travel, harvesting, and cultural activities (which are protected rights). The mine uses lands and minerals owned by Inuit under the terms of a modern treaty, the *Nunavut Agreement*. The Project requires an Inuit Impact and Benefit Agreement that guarantees financial and other benefits for Inuit.

This Project's potential for infringement of Inuit rights and impacts on Inuit lands is very high. There is a high risk of damage which can never be compensated (such as catastrophic loss of marine mammal harvesting rights). As Justice Cooper of the Nunavut Court of Justice indicated in another case involving marine impacts in this region, no amount of money can compensate for Inuit loss of marine mammal harvesting rights:

The Inuit right which is of concern in this matter is the right to harvest marine mammals. Many Inuit in Nunavut rely on country food for the majority of their diet. Food costs are very high and many would be unable to purchase food to replace country food if country food were unavailable. Country food is recognized as being of higher nutritional value than purchased food. But the inability to harvest marine mammals would

impact more than the just the diet of Inuit. The cultural tradition of sharing country food with others in the community would be lost. The opportunity to make traditional clothing would be impacted. The opportunity to participate in the hunt, an activity which is fundamental to being Inuk, would be lost. The Inuit right which is at stake is of high significance. This suggests a significant level of consultation and accommodation is required. ...

If the testing proceeds as planned and marine mammals are impacted as Inuit say they will be, the harm to Inuit in the affected communities will be significant and irreversible. The loss extends not just to the loss of a food source, but to a loss of culture. No amount of money can compensate for such a loss.<sup>3</sup>

Similar to the situations dealt with by Courts in the *Clyde River v. NEB* and *Qikiqtani Inuit v. Canada* cases above, the current Project involves serious impacts on constitutionally-confirmed Inuit rights (protected in the *Nunavut Agreement*). Indeed, the current Project far exceeds the impacts in those cases given its significantly larger scope and because it also involves the use of lands and minerals which are owned by Inuit under the terms of the *Nunavut Agreement*. This is a situation where the constitutional obligation for consultation and accommodation lies at the very highest end of the spectrum of what is needed to address impacts on Inuit rights.<sup>4</sup>

In deciding whether the current Phase 2 proposal should proceed, NIRB and the Minister are required to consider the broader public and national interest.<sup>5</sup> In the *Clyde River* case involving impacts on Inuit in this same region, the Supreme Court confirmed that “[a] project authorization that breaches the constitutionally protected rights of Indigenous peoples cannot serve the public interest,” and that “the duty to consult, being a constitutional imperative, gives rise to a special public interest that supersedes other concerns typically considered by tribunals tasked with assessing the public interest.”<sup>6</sup>

In circumstances such as this, Inuit consent is required to proceed. The Inuit rights-holding body responsible for providing that consent (which is QIA as landowner, IIBA holder, and Designated Inuit Organization responsible for representing and protecting Inuit rights in the region) does not give it.

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<sup>3</sup> *Qikiqtani Inuit Association v. Canada (Minister of Natural Resources)*, 2010 NUCJ 12, para 25 and 48.

<sup>4</sup> The rest of QIA’s submission provides a more detailed overview of the legal obligations which exist for a project required “deep consultation and accommodation” because the impacts are at the highest end of the spectrum and the Indigenous rights are proven and guaranteed through a modern treaty.

<sup>5</sup> *Nunavut Planning and Project Assessment Act*, s. 23(2), 92(2)(c), 94(1)(b); *Nunavut Agreement*, Articles 12.2.5, 12.5.5, and 12.5.7.

<sup>6</sup> *Clyde River (Hamlet) v. Petroleum GeoServices Inc.*, 2017 SCC 40, para. 40.



## Conclusion

QIA has a duty to consider all aspects of the proposed Phase 2 Project.

The Mary River Project has always been precedent setting. As Inuit, we have the right to self-determination. Mining can be part of our future provided proposals conform to an Inuit vision of the future. Mining should only occur when Inuit believe it will strengthen Inuit communities and support a diversified Inuit economy that builds Inuit cultural and social wellbeing.

At the heart of this NIRB review on Phase 2 is the question of adaptability. Can Inuit adapt to the scale of environmental changes to marine and land areas, and to the impacts on our food sources and culture? Can the NIRB and federal regulatory processes adapt to meet the intentions and guarantees, of the *Nunavut Agreement*, to promote Inuit economic self-sufficiency over time in a manner consistent with Inuit social and cultural needs and aspirations? Can Baffinland adapt to ensure that the depth and form of the Project commitments are sufficient to address this proposed Project's impacts on Inuit, our lands and our resources?

The Mary River Project and any expansion grows out of Inuit lands and resources. QIA continues to work, and invites NIRB and Baffinland to work with us, to make sure that in a thousand years the Inuit still have an equally meaningful relationship with these lands and waters as we do today.

QIA commends all of the Inuit representatives who participated so vigorously over the past four years to bring their strength, wisdom and commitment to ensuring that their communities' concerns are given space, and their communities' futures are protected.



In the end, there are simply too many outstanding questions yet for Inuit to confidently support the current Phase 2 Proposal. Simply put, Inuit must be at the heart of Project planning in our homelands from the beginning. Inuit must not be expected to fundamentally change or lose their rights to accommodate someone else's right to mine Inuit-owned minerals on Inuit-owned lands in this proposed expansion; rather, the Project must adapt to accommodate Inuit and to respect Inuit rights.



In the case of Baffinland's current Phase 2 proposal, Inuit were asked to respond to plans submitted by the company without the necessary Inuit participation in the development of those plans. Attempts to bridge Inuit participation gaps during this hearing process have not yet resulted in the studies, plans, and structures which need to be in place to ensure Inuit participation in adaptive management, monitoring, and environmental decision-making on an expanded Mary River Project which will so deeply affect Inuit communities.

The current proposal is not ready yet and more work must be done to address these gaps.

QIA asks that NIRB report to the Minister that the current Phase 2 proposal should not go ahead yet. Baffinland needs to bring an updated proposal that meaningfully addresses the legitimate concerns of Inuit about the environmental management and monitoring structures that need to be in place before there is sufficient confidence that the Mary River Project will protect the existing and future well-being of Qikiqtaalungmiut.

QIA requests that NIRB recommend against approval of the current Phase 2 proposal to change the scope of the Mary River Project. QIA requests that NIRB recommend that the Minister require an updated proposal based on a further narrowing of outstanding environmental and Inuit rights impacts concerns before any further Mary River Project expansion.

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# Overview of QIA's Outstanding Concerns

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## PART I - ROADMAP OF QIA'S FINAL WRITTEN SUBMISSIONS

This *Overview of QIA's Outstanding Concerns* supplements the extensive written and oral evidence QIA has already provided in the NIRB review of the proposed Phase 2 expansion of the Mary River Project.

QIA provides an update on remaining environmental and Inuit rights impacts concerns, and QIA's legal analysis of the issues which must be considered by the Board in making its final recommendations and decisions.

In this Overview,

- QIA addresses NIRB's responsibilities and obligations when deciding whether to recommend the approval of the current Phase 2 proposal to expand the Mary River Project. QIA provides an analysis of the factors NIRB must consider as part of its obligations to protect and promote the well-being of Inuit and Nunavummiut, and in the process of weighing the costs and benefits of allowing the Proposal to proceed. QIA also provides submissions on NIRB's obligation to ensure that the standard of deep consultation and accommodation is met in its own procedures and substantive decisions about the Proposal, as NIRB is the body to whom the Crown has delegated practical aspects of the process for consultation and accommodation.
- QIA discusses its role and obligation in the review process arising from the legal obligations under the *Nunavut Agreement*. QIA's involvement in the Hearing and its analysis and position is based on QIA's role as DIO representing regional Inuit rights, as landowner of the Project lands, as party to any Water Compensation Agreement, and as the counterparty to the existing (and any future) Inuit Impact Benefits Agreement.
- QIA provides an overview of QIA's remaining and unresolved Technical Concerns and its unresolved concerns about the current Phase 2 proposal's impacts on Inuit rights. (A key focus of the unresolved concerns is the continued inadequacy of Baffinland's adaptive management process in being responsive to Inuit concerns, and the failure to properly integrate IQ into assessment, monitoring and adaptive management). These concerns form the foundation for

QIA's analysis of why, based on unresolved Inuit rights and environmental impacts, the Phase 2 proposal is not ready yet for approval.

- QIA is deeply concerned that the current proposed Mary River Project expansion may be approved despite the lack of consent from the Inuit who own the lands and minerals involved, and despite the wide scope of unresolved concerns of QIA and the impacted Inuit communities. In the event that this approval does occur, QIA highlights key conditions which must be imposed in a Project Certificate.
- Finally, QIA provides NIRB with its suggested remedy, namely, that approval of the current expansion proposal must be delayed until such time as Baffinland can meaningfully address key unresolved concerns about the proposal.

QIA submitted extensive written evidence which is in the record in the Public Hearing, including the following materials:

- Results of the First Tusaqtavut Study in June 2019,<sup>7</sup> second Tusaqtavut Study in September 2019,<sup>8</sup> and Final Tusaqtavut Study Report in May 2021,<sup>9</sup> and a presentation on the Tusaqtavut Study Findings;<sup>10</sup>
- Technical Comments at various points in the Hearing process;<sup>11</sup>
- Comments on Draft Terms and Conditions for a Project Certificate;<sup>12</sup>
- Responses to Information Requests;<sup>13</sup>
- QIA's initial Final Written Submission attaching Technical Comments in preparation for the September 2019 commencement of the Public Hearing;<sup>14</sup>
- The Inuit Certainty Agreement with proposed structures for Inuit-led adaptive management,<sup>15</sup> and related plain language guides summarizing the ICA environmental management structures and proposals;<sup>16</sup>

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<sup>7</sup> See NIRB Registry Documents [325448](#), [325449](#), [325450](#), [325451](#), [325452](#), [325453](#), [325454](#), [325455](#), [325456](#)

<sup>8</sup> See NIRB Registry Documents [326992](#), [326993](#), [326994](#), [326995](#), [326997](#), [326998](#), [327000](#), [327004](#)

<sup>9</sup> See NIRB Registry Documents [336242](#), [336243](#), [336244](#), [336245](#), [336246](#), [336247](#), [336248](#)

<sup>10</sup> See NIRB Registry Document [325503](#)

<sup>11</sup> See NIRB Registry Documents [323479](#), [326967](#), [331627](#)

<sup>12</sup> See NIRB Registry Document [327422](#)

<sup>13</sup> See NIRB Registry Documents [321080](#)

<sup>14</sup> See NIRB Registry Document [326966](#) and [326967](#)

<sup>15</sup> See NIRB Registry Documents [332869](#) (English), [333015](#) (Inuktitut)

<sup>16</sup> See NIRB Registry Documents [332607](#), [332608](#), [332609](#), [332610](#), [332611](#), [332612](#)

- Responses to Written Questions in March 2021;<sup>17</sup> and
- A final January/February 2021 Presentation summarizing QIA's concerns.<sup>18</sup>

In addition, QIA's representatives and subject matter experts provided extensive oral evidence in the hearing, including statements from then-President P.J. Akeeagok,<sup>19</sup> QIA staff,<sup>20</sup> and evidence and responses to questions from multiple subject area experts.<sup>21</sup>

This *Overview of QIA's Outstanding Concerns* supplements these previously filed materials. In addition, appended to this *Overview* you will find QIA's very detailed technical responses on outstanding concerns in the following two documents:

- **Appendix 1: Updated QIA Technical Comments.** At the start of the Public Hearing in 2019, QIA had 51 areas of technical concern (called "Technical Comments"), for which it sought clarification and commitments from Baffinland. As explained below, over the past three years some Technical Comments were resolved during the exchange of evidence and commitments, some Technical Comments evolved as responses to questions and concerns raised related issues to be resolved, some Technical Comments were added (bringing the total to 53), and some were resolved.

As discussed below and detailed in the Updated Technical Comments in Appendix 1, 18 of QIA's 53 Technical Comments remain unresolved at the end of Public Hearing. Many of these are unresolved because they depend on proposed ICA structures which are not yet in place for Inuit-led adaptive management and Inuit Qaujimajatuqangit integration. These are detailed in the 230-page Updated Technical Comments attached as Appendix 1.

- **Appendix 2: QIA's Recommended Project Certificate Conditions.** If the current Phase 2 Project is approved, despite lack of Inuit consent and in the face of the wide scope of outstanding Inuit concerns, the outcome will be a Project Certificate which has enforceable terms and conditions. QIA has attached proposed specific conditions that

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<sup>17</sup> See NIRB Registry Document [334156](#)

<sup>18</sup> See NIRB Registry Documents [333413](#) (Inuktitut) and [333414](#) (English) and related exhibits Documents [332937](#), [332938](#), [332939](#), and Documents [332580](#), updated in Document [332998](#) (English) and [332999](#) (Inuktitut)

<sup>19</sup> Transcripts of the Nunavut Impact Review Board, Hearing on the *Phase 2 Development Project Proposal – Mary River Iron Ore Mine NIRB File 08MN053* ("Transcripts"), [Volume 1 \(January 25, 2021\)](#), page 79 line 17 to page 89 line 8

<sup>20</sup> Please see transcript references to Jared Ottenhof, Richard Paton, Levi Barnabas, and Stephen Williamson-Bathory

<sup>21</sup> QIA thanks Jason Ash, Alistair McDonald, Susan Leech, Jeff Higdon, Bruce Stewart, and Nick Jewitt for their able assistance as experts in this Hearing.



should be enforceable and part of a Project Certificate. Significant evidence continued to be added to the record throughout this hearing and right until the end of the Community Roundtable in November 2021. The 149-page document outlining QIA's Recommended Project Certificate Conditions, attached as Appendix 2, responds to the most recent technical changes proposed by Baffinland and the most recent evidence in the hearing.

## PART II - NIRB'S ROLE AND RESPONSIBILITIES IN THIS PROCESS

NIRB's "primary objective" is "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" (NSA).<sup>22</sup> In making decisions about the Phase 2 Proposal, NIRB must consider "whether the project would enhance and protect the existing and future well-being of the residents and communities of the Nunavut Settlement Area."<sup>23</sup> It must also consider "whether the proposal reflects the priorities and values of the residents of the Nunavut Settlement Area."<sup>24</sup>

The objective of protecting and promoting the well-being of Nunavummiut and the ecosystem in the NSA is informed by the primacy the Nunavut Agreement gives throughout to the views, evidence, interests, and traditions of Inuit. NIRB has an obligation to "allow, where appropriate, the admission of evidence that would not normally be admissible under the strict rules of evidence,"<sup>25</sup> including Inuit oral evidence and IQ. NIRB has an obligation to "give due regard and weight to the tradition of Inuit oral communication and decision-making."<sup>26</sup> NIRB is required to carry out its functions in a manner consistent with the modern treaty obligations of the *Nunavut Agreement* as agreed upon by the Designated Inuit Organizations (representing Inuit interests) and the federal and territorial government.<sup>27</sup> DIOs are automatically deemed to be intervenors with full standing in any NIRB procedure,<sup>28</sup> given the impact of decisions on Inuit rights protected by the *Nunavut Agreement*. As a further guarantee that NIRB processes properly consider impacts on Inuit, the DIOs have the ability to request that NIRB reconsider the

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<sup>22</sup> [Nunavut Agreement](#), Article 12.2.5; NUPAA, s. 23(1)

<sup>23</sup> [Nunavut Agreement](#), Article 12.5.5(a)

<sup>24</sup> [Nunavut Agreement](#), Article 12.5.5(c)

<sup>25</sup> [Nunavut Agreement](#), Article 12.2.24

<sup>26</sup> [Nunavut Agreement](#), Article 12.2.24

<sup>27</sup> [Nunavut Agreement](#), Article 12.2.4

<sup>28</sup> [Nunavut Agreement](#), Article 12.2.24(a)(ii)

terms and conditions in Project Certificates issues by NIRB, if those conditions are not achieving their intended purposes or to address changes in circumstances and technology change.<sup>29</sup>

These NIRB obligations are described in more detail below.

#### **A. NIRB Must Weigh the Costs and Benefits of the Proposal**

Article 12.5.5 of the Nunavut Agreement and s. 103 of the Act set out the legal tests that NIRB must apply in determining whether to recommend that the Proposal proceed.<sup>30</sup> In effect these factors require NIRB to weigh the costs and benefits of the Proposal in deciding whether to recommend that it proceed.

The factors in the Nunavut Agreement and the Act are consistent. In addition, the Act expands upon the list of factors NIRB must consider, and in the case of some factors which are listed exclusively in the Act, imposes a more rigorous standards than the baselines in the Nunavut Agreement. Where the Act imposes a more rigorous standard, NIRB must apply that standard. The Act cannot impose a lower standard than the floor set by the Nunavut Agreement, nor can the Act shift the weighting in the Nunavut Agreement that prioritizes the interests, values, and rights of Inuit in NIRB's decision-making process.<sup>31</sup>

The factors in the Nunavut Agreement and the Act are described below. In its application of the factors for determining environmental impacts, NIRB must consider the related impacts to the s. 35 rights of Inuit.<sup>32</sup>

##### ***i. Factors Required for NIRB Review Under the Nunavut Agreement***

The Nunavut Agreement imposes eight factors NIRB must consider before recommending that a proposal proceed. They broadly fall into three categories:

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<sup>29</sup> [Nunavut Agreement](#), Article 12.8.2

<sup>30</sup> [Nunavut Agreement](#), Article 12.5.5; [NUPPA](#), s. 103

<sup>31</sup> This is because legislation cannot amend the *Nunavut Agreement* which is protected by s. 35 of the [The Constitution Act, 1982](#). The Supreme Court has interpreted the *Nunavut Agreement* as protecting the priority of Indigenous rights when regulatory decisions are made which affect matters like guaranteed or proven Indigenous harvesting rights. See the Supreme Court's findings in [Clyde River \(Hamlet\) v. Petroleum Geo-Services Inc.](#), 2017 SCC 40. Also note that the *Nunavut Agreement* reflects the Canadian legal principles and tests set out in the early constitutional interpretations of section 35, including [R. v. Sparrow](#), 1 S.C.R. 1075. Sparrow confirmed the foundational principle that specific steps must be taken before infringing an Aboriginal right, the infringement must be as little as possible to achieve the purpose, compensation could be owed for any infringement that could not be avoided, and that Aboriginal rights holders have a priority access to resources where decisions must be made about a level of infringement.

<sup>32</sup> [Clyde River \(Hamlet\) v. Petroleum Geo-Services Inc.](#), 2017 SCC 40, at para. 45

1. the interests of and impacts on Nunavummiut who will be most directly impacted by the project (in this case, the most proximate Inuit communities);
2. ecosystemic and socio-economic impacts of the proposed project; and
3. measures the proponent proposes to mitigate those impacts.

The Nunavut Agreement requires NIRB to determine:

- whether a proposed project will enhance and protect the existing and future well-being of the residents and communities of the Nunavut Settlement Area, taking into account the interests of other Canadians; and
- whether the proposal reflects the priorities and values of the residents of the Nunavut Settlement Area.<sup>33</sup>

The Supreme Court has clarified that when assessing the impacts of a proposal in Nunavut, which is subject to the modern treaty of the *Nunavut Agreement*, the proper inquiry of a regulatory Board is not just into environmental effects *per se*: the inquiry must address the effects of the proposal on traditional resource use by Inuit and the impact on Inuit rights, including the right to harvest marine mammals where that is a significant impact.<sup>34</sup>

When NIRB applies its analysis of “whether the project would unduly prejudice the ecosystemic integrity of the Nunavut Settlement Area,”<sup>35</sup> then, NIRB must consider questions such as:

- If the Proposal will harm marine wildlife such as marine mammals and fish, will that impact the exercise of Inuit harvesting and other rights?
- If the Proposal will harm terrestrial wildlife, such as caribou, will that impact the exercise of Inuit harvesting and other rights?
- If the Proposal will adversely impact the landscape in the vicinity of the Project, for instance through dust fall, will that impact Inuit cultural uses of the land and the exercise of Inuit harvesting and other rights?
- If the project will adversely impact water quality, will that impact the exercise of Inuit harvesting and other rights?

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<sup>33</sup> [Nunavut Agreement](#), Article 12.5.5(a) and (c)

<sup>34</sup> [Clyde River \(Hamlet\) v. Petroleum Geo-Services Inc.](#), 2017 SCC 40, para. 45

<sup>35</sup> [Nunavut Agreement](#), Article 12.5.5(b)

The Nunavut Agreement requires NIRB, when making decisions about a proposed project, to consider whether the proposal properly and sufficiently addresses the following factors:

- a) steps which the proponent proposes to take to avoid and mitigate adverse impacts;
- b) steps the proponent proposes to take, or that should be taken, to compensate interests adversely affected by the project;
- c) posting of performance bonds;
- d) the monitoring program that the proponent proposes to establish, or that should be established, for ecosystemic and socio-economic impacts; and
- e) steps which the proponent proposes to take, or that should be taken, to restore ecosystemic integrity following project abandonment.<sup>36</sup>

Again, when applying these factors, in addition to whatever other analysis it might perform, NIRB must consider whether and to what extent the proposed mitigation measure will mitigate the Proposal's impacts on Inuit's s. 35 rights.<sup>37</sup>

## ***ii. Factors Required for NIRB Review under NUPPAA***

While the Act requires NIRB to consider many of the same factors required by the Nunavut Agreement, the Act imposes some additional factors in the review process. The factors exclusive to the Act are listed in this section. The requirements that are exclusive to the Act in some cases set a higher standard or more rigorous analytical framework than those listed in the Nunavut Agreement's requirements for a review process.

The Act requires NIRB, during the review process, to take into account whether the project properly and sufficiently addresses the following factors:

- a) the purpose of and need for the project;
- b) the capacity of renewable resources [such as wildlife] that are likely to be significantly affected by the project to meet the existing and future needs of the residents of the designated area; and

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<sup>36</sup> [Nunavut Agreement](#), Article 12.5.5(d) to (h)

<sup>37</sup> [Clyde River \(Hamlet\) v. Petroleum Geo-Services Inc.](#), 2017 SCC 40, para. 45

- c) the interests in land [through an IIBA and land lease] and waters [through a Water Compensation Agreement] that the proponent has acquired or seeks to acquire.<sup>38</sup>

The requirement that NIRB consider how a project could significantly affect the capacity of renewable resources to meet the need of future generations, specifically,<sup>39</sup> requires NIRB to do an analysis of a project's impacts on Inuit harvesting rights (among other things).

The Act imposes also more a more rigorous analytical framework which NIRB must apply related to ecosystemic impacts, compared to the factors required by the Nunavut Agreement.

These more rigorous ecosystemic factors which NIRB must assess are:

- a) anticipated effects on climate change and resulting related effects of climate change on the project;
- b) the cumulative ecosystemic and socio-economic impacts that could result from the impacts of the project combined with those of any other project that has been carried out, is being carried out or is likely to be carried out;
- c) whether climate change, ecosystemic, and socio-economic impacts would unduly prejudice the ecosystemic integrity of the designated area;
- d) the significance of the climate change, ecosystemic and socio-economic impacts; and
- e) an analysis of alternative options for the project that are technically and economically feasible.<sup>40</sup>

Critically, these factors require NIRB to consider a project's related impacts on Inuit rights.<sup>41</sup> For example, a proposal might change natural processes which in turn might impact Inuit s. 35 rights. Similarly a project may impact Inuit rights when combined with the cumulative impacts of climate change and other developments.

In addition to the obligations described above in respect of impacts within the Nunavut Settlement Area and the Outer Land Fast Ice Zone, NIRB also has an obligation to consider

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<sup>38</sup> [NUPPAA](#), ss. 103(1)(a)(j) and (l). The *Nunavut Agreement* requires that an Environmental Impact Statement includes information on factors (a) and (c) in this list, but does not include them as factors in the list of matters NIRB must take into account during a review. *NUPPAA* clarifies that these factors are specifically relevant to decisions made during the review process.

<sup>39</sup> *NUPPAA*, s. 103(1)(j)

<sup>40</sup> *NUPPAA*, ss. 103(1)(d)-(g),(i), (j),(m).

<sup>41</sup> *Clyde River (Hamlet) v. Petroleum Geo-Services Inc.*, 2017 SCC 40, para. 45

transboundary impacts. Specifically, s. 113 of the Act requires NIRB to consider transboundary ecosystemic effects in its application of the factors under s. 103 of the Act:

The ecosystemic and socio-economic impacts of the project, both inside and outside of the designated area, must be taken into account for the purposes of sections 101 to 112.

Transboundary impacts are also relevant to several of the factors in s. 103 of the Act that NIRB must apply in considering whether to recommend that the Proposal proceed.<sup>42</sup>

Lastly, the Act (like the Nunavut Agreement) requires that NIRB consider whether a project proposal has sufficiently and properly addressed mitigation and monitoring:

- a) any monitoring program of the project's ecosystemic and socio-economic impacts that should be established, including one proposed by the proponent;
- b) the measures, including those proposed by the proponent, that should be taken to
  - i. avoid and mitigate adverse ecosystemic and socio-economic impacts, including contingency plans,
  - ii. optimize the benefits of the project, with specific consideration given to expressed community and regional preferences in regard to benefits,
  - iii. compensate persons whose interests are adversely affected by the project, and restore ecosystemic integrity after the permanent closure of the project;
- c) the options for carrying out the project that are technically and economically feasible and the anticipated ecosystemic and socio-economic impacts of such options; the posting of performance bonds.<sup>43</sup>

Just as the law requires that a Nunavut regulatory process address the related impacts on Inuit rights associated with an environmental effect of a proposed project, so too must any proposal address how Inuit are affected by and properly involved in any proposed mitigation and monitoring program meant to address impacts on the environment and Inuit rights.

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<sup>42</sup> Transboundary impacts are relevant to the factors listed in s. 103(d), (e), (f), (i) and (j) of *NUPPAA*.

<sup>43</sup> [NUPPAA](#), ss. 103(1)(h) to (n)

## B. NIRB's Responsibility for Aspects of Consultation and Accommodation

An environmental assessment tribunal is not, strictly speaking, an 'agent' of the Crown, but the law is now clear that regulatory and adjudicative tribunals such as NIRB can attract the duty to consult because "they are the vehicle[s] through which the Crown acts."<sup>44</sup> This is particularly the case in a situation of an Indigenous co-management tribunal established as a regulatory structure under a modern treaty meant to protect and guarantee Indigenous rights. A co-management tribunal in this circumstance has an explicit mandate "to engage in the requirement consultation process as part of and prior to completing an environmental assessment."<sup>45</sup>

The proposal for an expansion of the Mary River Project requests that NIRB and the Minister approve the use of lands owned by Inuit, the use of waters subject to an agreement with Inuit, the benefits negotiated under an IIBA, and the significant and irreversible impacts on the exercise of Inuit harvesting and cultural rights. As such, this NIRB review is an assessment of both general environment impacts, and of impacts on Inuit rights specifically.

The Supreme Court, reviewing a decision on another environmental assessment involving Qikiqtani Inuit, confirmed the dual role that an assessment board can have in reviewing both environmental and Inuit rights impacts:

Where the effects of a proposed project on Aboriginal or treaty rights substantially overlap with the project's potential environmental impact, the NEB is well situated to oversee consultations which seek to address these effects, and to use its technical expertise to assess what forms of accommodation might be available.

In sum, the NEB has (1) the procedural powers necessary to implement consultation; and (2) the remedial powers to, where necessary, accommodate affected Aboriginal claims, or Aboriginal and treaty rights. Its process can therefore be relied on by the Crown to completely or partially fulfill the Crown's duty to consult.<sup>46</sup>

The Government of Canada has been clear that it intends to rely on this NIRB process for the review of both environmental and Inuit rights impacts. Canada advised NIRB that

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<sup>44</sup> *Clyde River (Hamlet) v. Petroleum Geo-Services Inc.*, 2017 SCC 40, at para. 29, building on the SCC decision in *Rio Tinto Alcan Inc. v. Carrier Sekani Tribal Council*, 2010 SCC 43, and subsequent cases.

<sup>45</sup> *Yellowknives Dene First Nation v. Canada (Minister of Aboriginal Affairs and Northern Development)*, 2015 FCA 148 at para 60.

<sup>46</sup> *Clyde River v. Petroleum Geo-Services Inc.*, 2017 SCC 40, at para. 33 and 34.



Canada is relying on NIRB's process for both procedural and substantive aspects of the Indigenous consultation which is constitutionally required for this Project, indicating:

"...The Board's assessment process, and associated proceedings, are relied upon to assist the Crown in discharging its duty to consult with Indigenous peoples. The Board has broad jurisdiction to review a project and its potential impacts, including any impacts on asserted or established s. 35 rights. As established in the *Nunavut Agreement*, the Board's assessment process is designed to facilitate the participation of Inuit ... in the assessment of Nunavut projects which may have an impact on those rights... Specifically, the Board's process provides potentially affected Inuit and other Indigenous peoples with an opportunity to understand the proposed project and its potential impacts, express their views and concerns with respect to potential project-related impacts on their treaty rights, consider ways these views and concerns can be addressed, and ensure those issues are considered both by the Board and the responsible Ministers."<sup>47</sup>

NIRB's review process is central, therefore, to assessing the type and scope of impacts of this Project on Inuit rights. Therefore, before NIRB can recommend to the Minister that a project proposal should be approved, it must satisfy itself that both requirements of the Crown's constitutional duty – both "meaningful" consultation plus "serious" accommodation where there are Indigenous rights impacts – have been integrated into its process and its decisions.<sup>48</sup>

NIRB must, as part of its assessment, determine whether the "accommodation" proposed by Baffinland, including avoiding or minimizing impacts on protected Inuit rights, is sufficient to address the scale of impacts on Inuit. The following paragraphs describe the content of the requirement for deep consultation and accommodation for impacts in a situation where Inuit rights are confirmed and protected in a modern treaty (such as the *Nunavut Agreement*), and the conditions for Crown reliance on regulatory proceedings to assist in discharging its duty.

#### ***i. Content of the Crown's duty to consult and accommodate***

The Crown's duty to consult and accommodate Indigenous groups is grounded in the honour of the Crown and the protection for "existing aboriginal and treaty rights" in s. 35 of the

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<sup>47</sup> [Letter from Lisa Dyer, Director General of the Northern Projects Management Office, to Karen Costello, Executive Director of the Nunavut Impact Review Board](#), 08 January, 2021.

<sup>48</sup> See for instance, the analysis in [Tsleil-Waututh Nation v. Canada \(Attorney General\)](#), 2018 FCA 153, paras. 564-565

*Constitution Act, 1982*. The duty forms part of the process of reconciliation and fair dealing between the Crown and Indigenous groups.<sup>49</sup>

The duty is triggered when (1) the Crown has actual or constructive knowledge of the existence of Indigenous rights or title; and (2) contemplates conduct that might adversely affect those rights or title.<sup>50</sup> The duty reflects the imperative of avoiding the impairment of asserted or recognized rights caused by the implementation of a project.<sup>51</sup> Consultation and accommodation must be “meaningful,” and carried out “with the intention of substantially addressing the concerns of the aboriginal peoples whose lands are at issue.”<sup>52</sup>

The extent and scope of the duty is fact specific. It varies according to the strength of the claim to a s. 35 right (or rights) or title, and the seriousness of the potential adverse effect upon the right or title.<sup>53</sup> Where, as with the current proposed Project, the Inuit have legally confirmed rights and title (here, under the terms of the *Nunavut Agreement*), the potential for infringement of rights or title is high, the risk of non-compensable damage to cultural practices is high, then the duty of consultation lies at the deepest (highest) end of the spectrum, including the requirement for Indigenous consent.<sup>54</sup> The requirement for “deep consultation and accommodation”, and in this case for Inuit consent, are detailed below.

## ***ii. Deep consultation and consent for infringements to title or treaty rights***

In the situation of the current Phase 2 proposal, Baffinland proposes activities that involve significant impacts on the caribou, marine wildlife, and country foods which are foundational to Inuit food security, cultural practices, and economy. The footprint of the mine, road, any railway, and ports are all on lands and in waters used extensively by Inuit for travel, harvesting, and cultural activities (which are protected rights). The mine uses lands and minerals owned in fee simple by Inuit under the terms of a modern treaty, the *Nunavut Agreement*. The Project requires an Inuit Impact and Benefit Agreement that guarantees financial and other benefits for Inuit.

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<sup>49</sup> [Haida Nation v. British Columbia \(Minister of Forests\)](#), 2004 SCC 73, para. 32

<sup>50</sup> [Haida Nation v. British Columbia \(Minister of Forests\)](#), 2004 SCC 73, para. 35

<sup>51</sup> [Tsleil-Waututh Nation v. Canada \(Attorney General\)](#), 2018 FCA 153, para. 487

<sup>52</sup> [Delgamuukw v. British Columbia](#), [1997] 3 SCR 1010, para 168

<sup>53</sup> [Haida Nation v. British Columbia \(Minister of Forests\)](#), 2004 SCC 73, para. 39; [Rio Tinto Alcan Inc. v. Carrier Sekani Tribal Council](#), 2010 SCC 43, para. 36

<sup>54</sup> [Chartrand v. British Columbia \(Forests, Lands and Natural Resource Operations\)](#), 2015 BCCA 345, para. 72; [Clyde River \(Hamlet\) v. Petroleum Geo-Services Inc.](#), 2017 SCC 40, paras. 43-44

This Project's potential for infringement of Inuit rights and impacts on Inuit lands is very high. The risk is high of the types of damage which can never be compensated (such as catastrophic loss of marine mammal harvesting rights). Justice Cooper of the Nunavut Court of Justice ruled, in another case involving marine impacts in this region, that no amount of money can compensate for Inuit loss of marine mammal harvesting rights:

The Inuit right which is of concern in this matter is the right to harvest marine mammals. Many Inuit in Nunavut rely on country food for the majority of their diet. Food costs are very high and many would be unable to purchase food to replace country food if country food were unavailable. Country food is recognized as being of higher nutritional value than purchased food. But the inability to harvest marine mammals would impact more than the just the diet of Inuit. The cultural tradition of sharing country food with others in the community would be lost. The opportunity to make traditional clothing would be impacted. The opportunity to participate in the hunt, an activity which is fundamental to being Inuk, would be lost. The Inuit right which is at stake is of high significance. This suggests a significant level of consultation and accommodation is required.

...

If the testing proceeds as planned and marine mammals are impacted as Inuit say they will be, the harm to Inuit in the affected communities will be significant and irreversible. The loss extends not just to the loss of a food source, but to a loss of culture. No amount of money can compensate for such a loss.<sup>55</sup>

Similar to the situations dealt with by Courts in the *Clyde River v. NEB* and *Qikiqtani Inuit v. Canada* cases above, the current Project involves serious impacts on constitutionally-confirmed Inuit rights (protected in the *Nunavut Agreement*).

Indeed, the current Project far exceeds the impacts in those cases given its significantly larger scope and because it also involves the use of lands and minerals owned by Inuit under the terms of the *Nunavut Agreement*. This is a situation where the constitutional obligation for consultation and accommodation lies at the very highest end of the spectrum of what is needed to address impacts on Inuit rights.<sup>56</sup>

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<sup>55</sup> [\*Qikiqtani Inuit Association. v. Canada \(Minister of Natural Resources\)\*](#), 2010 NUCJ 12, para 25 and 48.

<sup>56</sup> In [\*Clyde River\*](#) the Supreme confirmed that deep consultation requires, at a minimum, that Inuit be given:

- a) the opportunity to make submissions;
- b) formal participation in the hearing process;
- c) written reasons showing how their concerns were considered and addressed (focusing on the impact of the project on the asserted right and not just environmental impacts more generally);
- d) participation opportunities and funding to support Inuit participation;
- e) an oral hearing to present evidence;
- f) funding to submit its own scientific evidence;
- g) the opportunity to present evidence, test the evidence of the proponent and make final arguments;

QIA takes the position that, in the situation of the Mary River Project and any proposal to expand its scope, Inuit consent is required.

The Supreme Court of Canada explained the requirement for Indigenous consent for infringements of title and established rights in *Tsilhqot'in Nation v. British Columbia*:

Once Aboriginal title is established, s. 35 of *the Constitution Act, 1982* permits incursions on it only with the consent of the Aboriginal group or if they are justified by a compelling and substantial public purpose and are not inconsistent with the Crown's fiduciary duty to the Aboriginal group [...].<sup>57</sup>

The Court in *Tsilhqot'in Nation* also explained the significance where an Indigenous group has a legally established right to control land "conferred by Aboriginal title," such as Inuit Owned Lands, which means that:

[...] governments and others seeking to use the land must obtain the consent of the Aboriginal title holders. If the Aboriginal group does not consent to the use, the government's only recourse is to establish that the proposed incursion on the land is justified under s. 35 of the *Constitution Act, 1982*.<sup>58</sup>

Inuit title to Inuit Owned Lands, recognized by the Nunavut Agreement, includes the requirement for Inuit consent to entry upon Inuit Owned Lands. No one may enter onto Inuit Owned Lands without consent.<sup>59</sup> Without Inuit consent through an IIBA, no entry onto or infringement of Inuit Owned Lands is possible, even where regulatory agencies have otherwise provided permission to explore, develop, produce or transport minerals.<sup>60</sup>

As detailed below, QIA does not consent to the use of Inuit Owned Lands for the current proposal for an expansion of the Mary River Project, as more work is needed to address the scope and severity of impacts on Inuit rights.

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- h) consideration of barriers created by limited technology access (for example, lack of easy access to the internet); and,
  - i) the right to participation as panel members in an environmental assessment panel.

<sup>57</sup> *Tsilhqot'in Nation v. British Columbia*, 2014 SCC 44, para. 2; *Haida Nation v. British Columbia (Minister of Forests)*, 2004 SCC 73, para. 24

<sup>58</sup> *Tsilhqot'in Nation v. British Columbia*, 2014 SCC 44, para. 76

<sup>59</sup> *Nunavut Agreement*, s.21.2.1.

<sup>60</sup> *Nunavut Agreement*, s. 19.2.2.

### *iii. Scope of appropriate accommodation*

A project with serious impacts on confirmed Inuit rights requires, by law, serious accommodation. Appropriate accommodation will vary from case-to-case and will depend on the strength of the right/title and severity of the impacts.

Potential accommodations could include:

- (a) measures designed to mitigate the environmental impacts of a project, and by extension the impact on s. 35 rights;
- (b) economic accommodation, including potential compensation for negative impacts on s. 35 rights;
- (c) environmental monitoring to assess the ongoing impacts of a project and to ensure that its impacts are within pre-agreed thresholds; and
- (d) the establishment of co-decision-making frameworks or processes.<sup>61</sup>

However, if proposed accommodations cannot address a project's anticipated impacts on an Indigenous group's s. 35 rights, appropriate accommodation may include the need to reject the project, as "[u]ltimately, reasonable accommodation can include consideration of whether the project should proceed at all given its adverse impacts on Aboriginal rights."<sup>62</sup>

QIA takes the position that, for the current proposal to expand the scope of the Mary River Project, the current mitigation and monitoring and benefits 'accommodations' are an incomplete response to the degree of impacts on the environment and Inuit rights, and the proper balance between Project effect and benefits has not been achieved. In this

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<sup>61</sup> Jack Woodward, *Native Law*, § 5:57

<sup>62</sup> *Redmond v. British Columbia (Forests, Lands, Natural Resource Operations and Rural Development)*, 2020 BCSC 561 at para. 48. In *Redmond v. BC*, the Director determined that the appropriate accommodation of the First Nation's interests was to refuse to grant a permit for the development of a dam on a waterway because doing so would interfere with a First Nation's exercise of cultural practices on that waterway. The BC Supreme Court confirmed that the Director's decision was reasonable, and that given the Aboriginal rights impacts it was in the public interest to deny the application. The Court confirmed that the decision was consistent with the government's policy objectives to achieve greater reconciliation with First Nations. See also *Clyde River (Hamlet) v. Petroleum Geo-Services Inc.*, 2017 SCC 40, para. 32 and *West Moberly First Nations v. British Columbia (Chief Inspector of Mines)*, 2011 BCCA 247, para. 149

circumstance, the proper accommodation of impacts on Inuit rights is the rejection of the current proposal.

### C. NIRB's Consideration of the National and Public Interest

In deciding whether the current Phase 2 proposal should proceed, both NIRB and the Minister are required to consider the broader public and national interest including the well-being of residents of Canada outside the designated project area.<sup>63</sup>

This does not, however, give NIRB license to override the interests, concerns, or values of Inuit, and recommend that the Proposal proceed in the name of the “well-being of residents of Canada outside the designated area” if doing so results in a significant and insufficiently addressed infringement of constitutionally protected rights.

In the *Clyde River* case involving impacts on Inuit in this same region, the Supreme Court confirmed that “[a] project authorization that breaches the constitutionally protected rights of Indigenous peoples cannot serve the public interest,” and that “the duty to consult, being a constitutional imperative, gives rise to a special public interest that supersedes other concerns typically considered by tribunals tasked with assessing the public interest.”<sup>64</sup>

This is consistent with the broader goal of section 35 and the modern law of Aboriginal and treaty rights, which is the “reconciliation of Aboriginal peoples and non-Aboriginal peoples and their respective claims, interests, and ambitions.”<sup>65</sup> As the Court explained in *Ahousaht Indian Band and Nation v Canada (Minister of Fisheries and Oceans)*, “[i]n short, reconciliation benefits the public interest.”<sup>66</sup>

In the case of the proposed expansion of the scope of the Mary River Project, the broader public and national interest is best met by advancing the goals of reconciliation through the protection of the constitutionally guaranteed rights of Inuit.

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<sup>63</sup> [Nunavut Planning and Project Assessment Act](#), s. 23(2), 92(2)(c), 94(1)(b); [Nunavut Agreement](#), Articles 12.2.5, 12.5.5, and 12.5.7

<sup>64</sup> [Clyde River \(Hamlet\) v. Petroleum GeoServices Inc.](#), 2017 SCC 40, para. 40

<sup>65</sup> [Mikisew Cree First Nation v. Canada \(Minister of Canadian Heritage\)](#), [2005] 2005 SCC 69 at para. 1

<sup>66</sup> [Ahousaht Indian Band and Nation v Canada \(Minister of Fisheries and Oceans\)](#), 2014 FC 197, para. 31

### PART III - QIA'S ROLE AND RESPONSIBILITIES IN THIS PROCESS

QIA is the Designated Inuit Organizations (DIO) responsible, in the Qikiqtani region, for representing the collective interests of Inuit. QIA also holds title to Inuit Owned Lands for the benefit of Inuit and makes decisions concerning the use of these lands in the best interest of Inuit. QIA negotiates and is the co-signatory to the IIBA and Water Compensation Agreements that protect the interests of Inuit and ensure a proper balance between impacts and benefits for any project.

The *Nunavut Agreement* clarifies that DIOs exercise their powers, functions or authority delegated to them to be “on behalf of, and for the benefit of, Inuit.”<sup>67</sup> In other words, the Nunavut Agreement requires that DIOs (including QIA) act in the best interests, and for the benefit, of the Inuit they represent.

Given the role of DIOs as representatives of the interests of Inuit in regulatory processes, the Nunavut Agreement includes procedural guarantees of DIOs' rights. For an impact review process, this includes guarantees to ensure protection of Inuit interests and proper consideration of impacts on Inuit. For instance, DIOs have automatic standing in any NIRB review of a project.<sup>68</sup> DIOs are part of the process of identifying appropriate functions for NIRB.<sup>69</sup> DIOs can request the reconsideration of terms and conditions in a NIRB certificate if the conditions are not meeting their intended purposes or if circumstances and information and thus potential Project impacts have and environmental management needs have changed.<sup>70</sup> DIOs also have automatic legal standing in a Court to bring a legal application for the implementation of project certificate terms and conditions, compel compliance with project licenses and permits, and seek court review of any decision or orders made by NIRB.<sup>71</sup>

As part of its responsibilities as DIO, QIA has actively participated in the NIRB review of the current proposal to expand the Mary River Project. The following section describes QIA's role to date in this process.

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<sup>67</sup> [Nunavut Agreement](#), Article 39.1.10

<sup>68</sup> [Nunavut Agreement](#), Article 12.2.24(b)

<sup>69</sup> [Nunavut Agreement](#), Article 12.2.4

<sup>70</sup> [Nunavut Agreement](#), Article 12.8.2

<sup>71</sup> [Nunavut Agreement](#), Article 12.10.5(a)–(c)



## A. QIA Represents the Collective Interests of Inuit in the Qikiqtani Region

QIA is the DIO for Inuit in the Qikiqtani Region, as NTI delegated to QIA the relevant “powers, functions or authority” under the Nunavut Agreement.<sup>72</sup> This includes the designation of QIA as legal owner of surface water rights and surface land title to Inuit Owned Land in the Qikiqtani Region, including the lands where Baffinland proposes to build and operate the Proposal.<sup>73</sup> QIA is also the counterparty to the current and any future IIBA and Water Compensation Agreement with Baffinland related to Mary River Project activities. QIA is deemed to be exercising its powers, functions, and authorities on behalf of and for the benefit of Inuit in the Qikiqtani region.<sup>74</sup>

The Courts have confirmed that QIA represents the interests of Inuit in the region, and that the scope of powers exercised by QIA are “are wide in scope and significant in their impact on Inuit collectively and individually. They relate to land, harvesting, employment, finance and economics, social development, and culture.”<sup>75</sup>

Inuit rights in the Qikiqtani region are modern treaty rights protected by s. 35 of the *Constitution Act, 1982*.<sup>76</sup> The Crown is obligated to consult with and accommodate the concerns of the legal representative(s) of the collective Inuit rights prior to making decisions that could affect constitutionally protected Inuit rights.<sup>77</sup> In the Qikiqtani region, the legal representatives of collective Inuit rights are QIA and NTI. In the case of the Nunavut Agreement, accommodations for impacts to those rights can only be negotiated with, and accepted by, QIA as land and surface rights owner and thus IIBA and Water Compensation Agreement signatory. Individual Inuit, alone or in concert, do not represent the collective rights of Qikiqtani Inuit.<sup>78</sup>

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<sup>72</sup> [Nunavut Agreement](#), Article 39.1.3

<sup>73</sup> Master List maintained by NTI under Article 39.1.5 of the [Nunavut Agreement](#), row 118

<sup>74</sup> [Nunavut Agreement](#), Article 39.1.10

<sup>75</sup> [Redfern v Qikiqtani Inuit Association](#), 2018 NUCJ 13, para. 4 and 42

<sup>76</sup> [Qikiqtani Inuit Association v. Canada \(Minister of Natural Resources\)](#), 2010 NUCJ 12, paras. 6-7; [Qikiqtani Inuit Assn. v. Canada \(Attorney General\)](#), 1998 CanLII 8617 (FC), para. 3; [Redfern v Qikiqtani Inuit Association](#), 2018 NUCJ 13, para. 4

<sup>77</sup> [Behn v. Moulton Contracting Ltd.](#), 2013 SCC 26 is an example of the confirmation of the Courts that the proper body for representing Indigenous interests is the collective rights holder, rather than specific families or individuals. See particularly para. 30

<sup>78</sup> [Behn v. Moulton Contracting Ltd.](#), 2013 SCC 26, para. 30

In representing the collective rights of Inuit, the DIOs are accountable to individual Inuit and to Inuit communities through the mechanisms of elected democratic bodies.<sup>79</sup> Decisions made by the DIOs are the decisions of the board members of the DIOs, elected by and representing the Inuit communities. Concerns and perspectives of individual Inuit and of Inuit communities are critical in the DIOs' determination of anticipated impacts of a project and appropriate mitigation and monitoring responses as well as benefits.

QIA has therefore engaged extensively with the impacted communities throughout the Mary River Project reviews including for the current expansion proposal. Community input has informed and been foundational to QIA's analysis of the proposed expansion Project, and the position of the QIA Board.<sup>80</sup> Much of the critical evidence regarding project impacts and appropriate benefits has come directly from the Inuit communities, including the hunters and trappers organizations and hamlet governments, and through proper Inuit knowledge studies. In addition, the current review also provided extensive direct evidence came the impacted communities through their written and oral submissions, and in evidence such as the Tusaqtavut Studies<sup>81</sup> which QIA undertook to address gaps in the baseline IQ evidence in initial Environmental Impact Statement.

QIA considered this evidence from the impacted communities when the QIA Board decided that the current proposal for a Mary River Project expansion is not ready for approval.

## **B. QIA's Responsibilities and Concerns as Land and Surface Water Rights Owner**

QIA holds land title and surface water rights to most of the lands where Baffinland operates the existing Mary River Project, and which would be involved in any expansion of the Project. This includes land title and surface water rights to:

- the Mine site and any expanded Mine site;
- the Northern Transportation Corridor (the proposed route for the rail line running from the Mine site to Milne Inlet);

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<sup>79</sup> [Nunavut Agreement](#), Article 39.1.6

<sup>80</sup> See *QIA Community Engagement Summary*, NIRB Registry Document [332938](#)

<sup>81</sup> See the Tusaqtavut Studies materials filed for this hearing in NIRB Registry Documents 325448, 325449, 325450, 325451, 325452, 325453, 325454, 325455, 325456, 326992, 326993, 326994, 326995, 326997, 326998, 327000, 327004, 336242, 336243, 336244, 336245, 326246, 326247, 326248, and 325503

- the Southern Transportation Corridor (previously approved for a rail line running from the Mine site to Steensby Port);
- any port facilities at Steensby Inlet; and
- existing and any expanded port facilities at Milne Inlet, including but not limited to a rail yard, a ship loader, access roads, facilities for storing ore stockpiles.<sup>82</sup>

In addition, QIA owns land title and surface water rights to areas adjacent to these areas used by the Project, and which are also affected by any Project activities.

QIA holds that title to these Inuit Owned Lands in “fee simple”. From a legal perspective, fee simple is “the largest estate or interest known in law and is the most absolute in terms of the rights which it confers. It permits the owner to exercise every conceivable act of ownership up on or with respect to it.” In other words, ownership of lands in fee simple “is the equivalent of the absolute dominion a person may have of a chattel.”<sup>83</sup> NTI, meanwhile, owns the mineral rights to the subsurface minerals on those Inuit Owned Lands.

QIA’s ownership of those Inuit Owned Lands confers on QIA the most absolute rights to land recognized at law. This is acknowledged, for example, in various provisions of the Nunavut Agreement which prohibit access to Inuit Owned Lands owned by QIA without the consent of QIA:

- 21.2.1 Except where otherwise provided in the Agreement persons other than Inuit may not enter, cross or remain on Inuit Owned Lands without the consent of the DIO.<sup>84</sup>
- 21.7.11 Except where the operator is exercising a right of access under Section 21.7.1 or 21.7.9, no operator may exercise the rights referred to in Section 21.7.8 until it has obtained the consent of the DIO for the exercise of surface rights to Inuit Owned Lands. If the operator is unable to obtain the consent of the DIO, it may apply to the Tribunal for an entry order for its required purpose.<sup>85</sup>

Establishing certainty around Inuit land ownership and control over use of Inuit Owned Lands was a pivotal aspect of the agreement negotiated by the Inuit for Nunavut. The Nunavut

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<sup>82</sup> Baffinland, [Project Introduction and Overview](#)

<sup>83</sup> Anger & Honsberger, *Law of Real Property*, 3rd Edition, [4.10](#)

<sup>84</sup> [Nunavut Agreement](#), Article 21.2.1

<sup>85</sup> [Nunavut Agreement](#), Article 21.7.11. Section 21.7.8 says: “An operator may exercise rights to explore, develop, produce or transport minerals, in, on or under Inuit Owned Lands only in accordance with the Agreement.”

Agreement preamble confirms that a key purpose of the Agreement is “to provide for certainty and clarity of rights to ownership and use of lands and resources, and of rights for Inuit to participate in decision-making concerning the use, management and conservation of land, water and resources [...]”.<sup>86</sup>

Where QIA consents to allow developers to enter or use Inuit Owned Lands, QIA has an obligation to ensure those lands are used to advance the purposes of the Nunavut Agreement. That includes the “primary purpose of Inuit Owned Lands,” which is “to provide Inuit with rights in land that promote economic self-sufficiency of Inuit through time, in a manner consistent with Inuit social and cultural needs and aspirations.”<sup>87</sup>

Because of QIA’s democratic control by, and accountability to, Inuit in the Qikiqtani Region, its use of those lands must be guided by the wishes of Inuit in the region, represented by their elected Board members.<sup>88</sup> QIA must give particular consideration to the wishes of the Inuit who will be most impacted by any proposed use of Inuit Owned Lands.<sup>89</sup>

Accordingly, the QIA Board considered the evidence to date in the NIRB hearing, and particularly the oral evidence of the most impacted communities at the NIRB hearing phases in November 2019, September 2020, and January 2021. This informed the QIA Board decision in March 2021 that, because the concerns of the most impacted communities were not yet sufficiently addressed, the current Project expansion proposal is not ready for approval.

### **C. QIA’s Responsibilities and Concerns as IIBA Signatory**

QIA also has an interest in any proposed expansion of the Mary River Project because it is the counterparty to the existing *Mary River Project Inuit Impact and Benefit Agreement*. QIA will also be the counterparty to a future amended IIBA, the finalization of which is a pre-requisite to the Proposal proceeding. This is because no “Major Development Project,” which of course

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<sup>86</sup> [Nunavut Agreement](#), Preamble

<sup>87</sup> [Nunavut Agreement](#), Article 17.1.1

<sup>88</sup> See e.g. [Nunavut Agreement](#), Article 39.1.6: “The Tunngavik and every Organization shall be constituted and operate with accountability to, and democratic control by Inuit.”

<sup>89</sup> Section 17.1.3 of the [Nunavut Agreement](#) provides: “Inuit Owned Lands shall, to the extent possible, provide for a mix of the characteristics outlined above in order to secure balanced economic development. However, the relative weighting of the characteristics with respect to any particular community or region shall turn on the actual and potential economic opportunities at hand and the particular community or regional preferences” [emphasis added]

includes the Proposal, may commence on Inuit Owned Lands until an IIBA in respect of that project is finalized.<sup>90</sup>

QIA's role is to ensure, among other things, that any IIBA finalized in respect of the Proposal provide benefits which:

- are “consistent with and promote Inuit cultural goals;”
- “contribute to achieving and maintaining a standard of living among Inuit equal to that of persons other than Inuit living and working in the Nunavut Settlement Area, and to Canadians in general;” and
- are “related to the nature, scale and cost of the project as well as its direct and indirect impacts on Inuit.”<sup>91</sup>

Part of QIA's participation in this proceeding has therefore been aimed at ensuring that any IIBA for the Proposal adheres to these principles. Based on the evidence in the hearing by March 2021, QIA's Board determined that the current Project expansion proposal is not “consistent with Inuit cultural goals” and does not adequately balance the nature and scale of the project and direct and indirect impacts on Inuit with the necessary benefits and protections (including adequate Inuit participation in environmental decision-making and proper IQ integration in baseline, mitigation, and monitoring programs).

#### **D. QIA's Concern About Impacted Inuit Rights in the Project Area**

QIA is responsible for ensuring that Inuit rights impacts are properly addressed when proposals are made for development activities in the Qikiqtani region. The area impacted by the Mary River Project Phase 2 Proposal is “integral to the ability of Inuit ... to travel, harvest, camp, collect water and continue the practice of Inuit cultural on the land.”<sup>92</sup>

QIA and Firelight Research Inc. collaborated on preliminary research to identify locations where Inuit exercise their s. 35 rights that will be impacted by the Proposal through interviews with Inuit.<sup>93</sup> Affected Inuit in the area were asked to identify locations within 250

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<sup>90</sup> [Nunavut Agreement](#), Article 26.2.1

<sup>91</sup> [Nunavut Agreement](#), Article 26.3.3

<sup>92</sup> QIA, [Third Tusaqtavut Study](#), May 28, 2021, NIRB Registry Document [336243](#), p. 26

<sup>93</sup> Note that this list is preliminary and incomplete – the proposed Culture, Resources and Land Use reassessment will provide critical outstanding information regarding Inuit rights impacts of the Project

metres of the Proposal (called the “footprint” in the Report), within five kilometers of the Proposal (called the “local study area” in the Report), and within 25 kilometres of the Proposal (called the “regional study area” in the Report).

The Tusaqtavut Study confirmed extensive exercise of Inuit’s s. 35 rights in the Project area, including the following:<sup>94</sup>

- **Marine hunting** values including: hunting, food cache, and important habitat sites for ringed seal, harp seals, bearded seals, spotted seals, elephant seals, Arctic char, turbot, bottom dwellers, krill, murre, guillemot, walrus, narwhal, and polar bears, and including a key narwhal migration route, narwhal calving area, a polynya, and Inuit names for these sites.
- **Terrestrial harvesting** values including: harvesting and important habitat for blueberries, snow geese, Canada geese, ptarmigan, murre, puffin, weasel, arctic hare, lemming, wolf, fox, and caribou, including numerous caribou calving, feeding and migration areas and site where blueberries, mountain sorrel and snow goose and murre eggs are harvested.
- **Fishing and freshwater** values including: halibut and Arctic char harvesting and habitat (such as spawning) sites; fish drying rack sites and Arctic char cache sites; and numerous drinking water collection sites.
- **Travel, trails, and habitation** values, including: numerous campsites and trails used to access campsites; soapstone gathering sites; floe edge areas used for harvesting and cultural activities; a traditional snowmobile trail; dog team trails; and water routes used to access fishing sites and other communities.
- **Cultural continuity** values, including: sacred sites; a burial site; gathering places; a teaching area; number Inuit place names; a site where material was collected for crafting; numerous soapstone collection sites; and a site where people camped while gathering soapstone.

Put simply, the Tusaqtavut Study and the extensive oral and written evidence from the most impacted communities confirms that the Proposal will have a significant impact on the exercise of Inuit’s s. 35 rights as it will impact many areas where Inuit exercise these rights in

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<sup>94</sup> The Inuit rights values described below can be found in the Tusaqtavut Studies, including the [Third Tusaqtavut Study](#), May 28, 2021, NIRB Registry Document [336243](#)

these three localized areas, and across the Qikiqtani Region. The full extent of those impacts cannot be known and adequately addressed through adaptive management plans until, among other things, the Culture, Resources and Land Use Study reassessment and Pond Inlet Food Study are completed, which have not yet occurred. This is discussed in the Summary of QIA's Outstanding Technical Concerns, below.

## **PART IV - SUMMARY OF QIA'S OUTSTANDING TECHNICAL CONCERNS**

QIA participated in all stages of the NIRB impact assessment process for the proposed Phase 2 expansion of the Mary River Project. This work by QIA included:

- A thorough review of the Final Environmental Statement – Addendum and all filings for the impact assessment;
- QIA work with Inuit in the impacted communities to gain further insight concerning their concerns and recommendations about the existing Project and about the proposed expansion;
- Retaining the advice and services of leading experts in the fields of marine, freshwater and terrestrial biology, integration of Inuit Qaujimajatuqangit (IQ) and culture, resources and land use (CRLU), socioeconomics, and Aboriginal law to review the information and materials that Baffinland provided;
- Engagement with Baffinland, other agencies, regulators, and communities to ensure a comprehensive review; and
- Active participation in the April 2019, November 2019, September 2020, January and February 2021, April 2021, and November 2021 phases of the Final Public Hearing including related Technical Hearings.

### **A. QIA's Initial Technical Concerns**

Throughout this review, QIA has identified important information gaps and methodological issues that create uncertainty about potential impacts.

As QIA outlined in its written and oral submissions to date during the Public Hearing, current baseline information from the operating Mary River Project may not be adequate to make predictions with confidence. Information gaps make potential project-related environmental effects more difficult to detect and mitigate. Impacts to Inuit culture, resources and land use, and impacts on the resources which Inuit rely upon, were not adequately



addressed in the original Final Environmental Impact Statement-Addendum, including with respect to impact characterization and significance estimations. QIA is concerned that, left unaddressed, this may result in a failure to fully capture serious impacts on Inuit cultural practices, land use, and food security. This resulted, for instance, in the QIA proposal for further CRLU studies and a Pond Inlet Food Study which have not yet occurred.

The review process for the proposed expansion was delayed and affected when technical meetings were frequently hindered by gaps in the quantity and quality of information supplied by Baffinland. Compounding this were initial delays by Baffinland in providing complete and detailed materials and responses to the technical comments submitted. This weakened the Parties' ability to properly assess impacts and to develop robust monitoring and mitigation plans within the original process timelines set for review. These process concerns particularly undermined the participation of Inuit, especially communities like Pond Inlet who face significant potential impacts.

On the whole, QIA's work found that deficiencies in Baffinland's submissions largely arose from the failure to adequately include Inuit and their perspectives in the initial impact assessment work done for Phase 2. For instance, it was unclear how IQ was integrated into or informed environmental mitigation, management and monitoring plans. Similarly, the failure to capture Inuit voices and knowledge led to Baffinland not fully appreciating that the initial proposed rail alignment went through a site called Kanajjuk, important place for caribou and Inuit. The original FEIS-A also lacked information on the significance or acceptability of impacts on Inuit CRLU from an Inuit perspective. Adequate consideration of Inuit values and IQ was not properly incorporated into project plans and designs, although Inuit CRLU and IQ are critical to both the assessment process and ongoing project operation and monitoring.

The final Public Hearing commenced in November 2019, and it was clear that Baffinland was not ready to address the technical and Inuit rights impacts concerns being raised. Further action was required to ensure proper IQ baseline studies were complete, and to improve management, planning and monitoring related to impacts on Inuit. This included the need for commitments to alter the rail line and alignment and to address shipping impacts concerns in partnership with Inuit.

In the face of many outstanding and unanswered technical questions and concerns, all the Inuit organizations and communities united in calling for the hearing to be postponed until 2020, to allow time to resolve some of the many outstanding issues with the Phase 2 Proposal.

NIRB agreed and halted the process to allow Baffinland time to narrow the gap of outstanding technical concerns.

The delay in the Hearing allowed the opportunity for additional work to identify potential mechanisms to improve management of project impacts on Inuit and to ensure monitoring that fully integrates IQ. This led to the negotiation of the Inuit Certainty Agreement<sup>95</sup> signed by QIA and Baffinland, which proposes structures to address some of the key Inuit concerns about proposed adaptive management and IQ integration for Phase 2.

However, major concerns remain. Uncertainty of impacts and concerns about the sufficiency of proposed mitigation and monitoring persists under the following thematic sections found in Baffinland's original FEIS-A:

- **Terrestrial and marine wildlife and habitat:** There remain concerns over the unknown effects that the proposed railway and increased shipping traffic under Phase 2 will have on caribou, narwhal and other marine mammals.
- **Socio-economic impacts:** Benefits to the local Inuit population from the project are not being fully realized and the anticipated increased benefits from Phase 2 are unclear.
- **Cultural impacts:** There is evidence the current project is affecting traditional uses of the land. These impacts, absent mitigative action, are likely to increase with the larger footprint, additional infrastructure, and increased activity levels of Phase 2.

These major areas of concern identified above are highlighted in the Tusaqtavut Studies which collected IQ, local and community knowledge and observations regarding project interaction with wildlife and Inuit CRLU. QIA submitted, to NIRB, the results of the First Tusaqtavut Study in June 2019,<sup>96</sup> the second Tusaqtavut Study in September 2019,<sup>97</sup> and the Final Tusaqtavut Study Report in May 2021.<sup>98</sup> QIA also made a presentation on the Tusaqtavut Study Findings during the Hearing.<sup>99</sup>

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<sup>95</sup> [Inuit Certainty Agreement](#), signed June 16, 2020 by QIA and Baffinland Iron Mines Corporation. A [plain language summary](#) of the commitments in the ICA is also available, with information on the proposed structures for Inuit involvement in the adaptive management process and for enhanced integration of IQ

<sup>96</sup> See NIRB Registry Documents 325448, 325449, 325450, 325451, 325452, 325453, 325454, 325455, 325456

<sup>97</sup> See NIRB Registry Documents 326992, 326993, 326994, 326995, 326997, 326998, 327000, 327004

<sup>98</sup> See NIRB Registry Documents 336242, 336243, 336244, 336245, 336246, 336247, 336248

<sup>99</sup> See NIRB Registry Document 325503

These areas of concern are discussed in more detail below, and extensive detail is provided in the appended *Updated QIA Technical Comments* and *QIA's Recommended Project Certificate Conditions*.

## **B. QIA's Key Remaining Concerns – By Theme**

QIA's detailed information on outstanding Technical Comments, reflecting unresolved issues in dialogue with Baffinland regarding technical concerns, are attached in Appendix 1: *Updated QIA Technical Comments*.

Many of these unresolved concerns involve incomplete or inadequate structures for IQ integration and for Inuit-led adaptive management processes. QIA cannot stress enough the importance that effective tools be put in place to ensure IQ and Inuit are at the centre of the Mary River Project's environmental and adaptive management systems. The proper, ongoing management of the full range and extent of potential ecosystemic and socio-economic impacts of the Project depend on it. Active monitoring and mitigation of impacts is essential to all recommendations presented below, and to the success of the Mary River Project. Inuit have been consistent in this messaging since the Mary River Project was first permitted.

Most of QIA's unresolved concerns can be grouped into the following themes.

### **i. Inuit-led Adaptive Management**

The proposal still lacks an adaptive management planning process that is acceptable to Inuit and that is confirmed. The ICA proposes an Inuit Committee/Inuit Panel with Inuit decision-making authority, and development of Terms of Reference for this body. This structure has yet to be developed.

The environmental monitoring programs which are currently proposed by Baffinland are focused on western science with little consideration of monitoring through an IQ lens. For instance, the current structure of the adaptive management is not responsive to input from the existing Marine and Terrestrial Environment Working Groups, underscoring the need for an Inuit Committee to ensure meaningful Inuit participation in adaptive management.

Other key components of Inuit participation in adaptive management are incomplete. No progress has been made on establishing the Inuit Committee or the Culture, Resources, and Land Use (CRLU) study and monitoring program. The Pond Inlet Country Food baseline has not yet been undertaken. Enforceable Inuit Objectives, Indicators, Thresholds and Responses must

still be developed and built into the Project's environmental management plans (See *Revised Technical Comments*, Appendix 1, Technical Comments #1, 2, 5, 7, 9, 10, 11, 46).

## **ii. IQ Concerns**

There is not yet meaningful incorporation of Inuit Qaujimajatuqangit into critical aspects of the Project (including design, effects assessment, mitigations, monitoring, and adaptive management planning). For instance, a CRLU reassessment must still occur to address gaps in the original IQ integration into the Final Environmental Impact Study. That CRLU assessment must be completed with full involvement of, and verification by, Inuit. The current proposal for environmental monitoring programs are focused on western science with little consideration of monitoring through an IQ lens and are not responsive to IQ input from the environmental working groups. (See *Revised Technical Comments*, Appendix 1, Technical Comments #1, 2, 3, 5, 7, 10, 11).

## **iii. Marine Wildlife Impacts:**

QIA notes the deep and continuing concern which the impacted communities expressed consistently through this review process about the impacts of shipping, particularly. Marine wildlife impacts are an area of highest concern to Inuit about the Proposal, from both a technical and an Inuit rights perspective.

At the end of the review process, significant uncertainty remains about the scope of marine wildlife impacts which would occur and whether proposed environmental management mechanisms would sufficiently address evolving impacts. For example, almost all parties in the review process acknowledged the high degree of uncertainty associated with the assessment of underwater noise impacts, making proper monitoring and adaptive management critical.

To properly address marine wildlife impacts, Inuit must have confidence that IQ regarding marine wildlife, ice, and other marine matters will be respected. Inuit still do not have sufficient confirmation of a meaningful decision-making role in the adaptive management process for the marine environment, as noted in the concerns listed above regarding adaptive management and IQ. Inuit organizations and communities raised repeated concerns in the Hearing about the current Marine Environment Working Group (MEWG) structure, which has been unresponsive to IQ inputs, Inuit concerns, and concerns raised by other parties. Notably, Inuit-defined Objectives, Indicators, Thresholds and Responses for marine issues have yet to be developed, reviewed and finalized. As one example, more work is needed to identify and

address the discrepancies in how Baffinland and impacted Inuit view sea ice in its various forms, not just the floe edge.

QIA is concerned that the critical and necessary work for IQ integration and development of Inuit-defined Objectives, Indicators, Thresholds and Responses for adaptive management cannot be completed prior a Minister's decision, as the relevant ICA structures have not seen sufficient progress to ensure they will be in place in time.

Resolution of the marine wildlife concerns also depends on the impacted Inuit communities supporting and accepting Baffinland's commitments to minimize shipping impacts on land use and harvesting activities, implement proper mitigation measures, and involve the communities in a meaningful way in adaptive management to address any evolving impacts. This has still not occurred. (See *Revised Technical Comments*, Appendix 1, Technical Comments #46, 47, 48, 51, 53).

#### **iv. Cumulative and Transboundary Marine Impacts**

As detailed in QIA's Technical Comment 53 (in Appendix 1) QIA has consistently raised concerns throughout the review process that Baffinland has not adequately assessed (as required by the NIRB Guidelines) how Project activities may interact over time and space with one another, with the effects of other human activities, and with other factors such as climate change to have cumulative effects. As a recent example, Baffinland's cumulative effects assessment did not adequately consider the potential for noise generation during the construction of the Small Craft Harbour (SCH) in Pond Inlet. This led to delays in investigating the role of various stressors, alone and in concert, in the recent significant decline in Eclipse Sound narwhal abundance.

Further work – including the Culture Resource and Land Use re-assessment proposed in the ICA and a commitment to carry out further Cumulative Effects Assessment – is still outstanding to fully understand the scope of cumulative effects and how they can be addressed.

Throughout the impact assessment process, the deficiencies in assessing transboundary marine impacts were also evident. This is highlighted, for example, in the recent documents provided by the Government of Canada, on behalf of the Governments of Denmark and Greenland through the Espoo Convention (international treaty on environmental assessment) process. The documentation provided by Greenlandic government departments, Inuit communities, and other organizations includes important information for the NIRB's

consideration regarding the transboundary and cumulative impacts of marine shipping for the current Phase 2 proposal. QIA comments in greater detail on these Espoo submissions in the rest of its Final Written Submission (See *Revised Technical Comments*, Appendix 1, Technical Comments # 50, 51, 53).

#### **v. Caribou Impacts**

The evidence in the assessment process confirms significant uncertainty of predictions about how Phase 2 would impact caribou. Overall, very high uncertainty and very high risk remain that the combined effect of the road and the railway, including both physical barriers and sensory impacts, will have an important and likely significant effect on caribou movement. Current proposed mitigations have not adequately addressed these concerns.

Proposed caribou monitoring programs are focused on western science with little consideration of monitoring through an IQ lens and are based on the current working group model.

The review process also exposed serious concerns about the current structure of the technical working groups. These are chaired by Baffinland as Project proponent which develops the agenda and provides review materials, and whose Project is responsible for impacts directly in their control. More specifically, and as confirmed repeatedly by multiple parties in the written and oral evidence in the hearing, the existing Terrestrial Environment Working Group (TEWG) is not responsive to IQ inputs and Inuit concerns.

This current working group structure has been counter-productive and undermines Inuit confidence in the ability of the current adaptive management processes to meaningfully address concerns about emerging and unaddressed impacts. A major change to the working group structures is required (as proposed with Inuit Committee, Inuit Social Oversight, Inuit Stewardship Plan, and other ICA structures).

Without a Project Certificate condition that clearly outlines the requirements of a revised TEWG terms of reference, the commitment to revise the Terms of Reference for the working groups is weak and leaves uncertainty surrounding whether the efficacy of these groups will improve.

There has also been inadequate response by Baffinland to requests for a collaborative approach to reassess caribou habitat impacts from the proposed Project expansion, including sensitivity analyses.

The review of the totality of the evidence at the close of the public hearing suggests that many outstanding caribou issues remain on the western science side in terms of the adequacy of thresholds, triggers and proposed responses. On the IQ side, the Inuit-defined Objectives, Indicators, Thresholds and Responses have not even been developed at all at this stage.

In the absence of progress on the CRLU monitoring program and the additional of Inuit-defined Objectives, Indicators, Thresholds and Responses to the relevant environmental management plans (EMPs), most of the concerns regarding meaningful Inuit involvement in adaptive management with respect to caribou impacts have not been addressed. (See *Revised Technical Comments*, Appendix 1, Technical Comments #1, 41).

#### **vi. Dust Impacts**

A consistent concern in the Phase 2 impact assessment, based on Inuit observations of the current Mary River Project, is dust impact and controls.

For instance, the amount of Project-related dust and sediment that enters tote road waterbodies – particularly Phillips Creek – from Project-related activities, and the effects of the dust and sediments on the aquatic receiving environments, are still unknown. Information is still lacking on Project-related dust fall and runoff. Despite increasing dust suppression efforts, current dust fall along the tote road is currently elevated compared to predicted levels. Baffinland has not committed to conducting a study to address this concern, despite a NIRB monitoring recommendation in 2018.

Work is needed on the Inuit Committee structure and the Inuit-defined Objectives, Indicators, Thresholds and Responses that are necessary to address concerns about dust fall and impacts to vegetation and water bodies. Many concerns on the western science side remain regarding the dust related management plans, and no progress has been made to date to develop dust related Inuit-defined Objectives, Indicators, Thresholds and Responses. With little progress to date on these key adaptive management measures to address dust concerns, it is premature to rely on Baffinland's willingness to establish adaptive management triggers that are sufficiently sensitive to address Inuit concerns.

Additional work is also needed to address concerns regarding the impacts of dust fall on plants (particularly lichen and culturally important plants), pathways for the introduction of invasive plants, detecting metals in soil and conducting additional monitoring work for impacts to vegetation. Concerns also remain about the effectiveness of current and proposed dust



monitoring programs. (See *Revised Technical Comments*, Appendix 1, Technical Comments #1, 2, 9, 11, 41)

### **C. Summary of Specific Unresolved Technical Comments**

QIA had 51 areas of unresolved concern, detailed in Technical Comments, when the Public Hearing commenced in November 2019. Later, as a result of evidence in the hearing, two additional Technical Comments were added, for a total number of 53 Technical Comments from QIA. Most Technical Comments deal with a specific theme which may, itself, involve multiple questions and concerns requiring resolution.

The process for resolving Technical Comments is iterative: in other words, resolution involves back and forth discussion between a proponent, parties in the hearing, and NIRB's staff and board. Issues can be resolved through exchanged of written information, specific responses on formally submitted Technical Comments, as a result of evidence in the Hearing, through commitments made in response to oral questions during the Hearing, and as a result of direct dialogue between a proponent and a party outside of the formal Hearing process. Technical Comments can evolve over time, therefore, as further clarity is achieved about what has been resolved, what additional questions have arisen on a specific issue area, and what remains unresolved.

At the end of the Hearing, 18 of QIA's 51 Technical Comments remain unresolved. Many of these are classified by QIA as "unresolved" because they depend on proposed structures (under the Inuit Certainty Agreement) which are not yet in place for Inuit-led adaptive management and Inuit Qaujimajatuqangit integration.

The unresolved Technical Comments can be summarized as follows:

**Technical Comment 1 Regarding Alignment Between the Assessment and IQ** - Meaningful incorporation of IQ is still needed for all aspects of the project (design, effects assessment, mitigations, monitoring, adaptive management). Proposed environmental monitoring programs are focused on science with little consideration of monitoring through an IQ lens and are not responsive to input from the working groups. There has been an inadequate response by Baffinland to request for a collaborative approach to reassess habitat impacts from the proposed project, including sensitivity analyses. Deep uncertainty remains with respect to predictions of effects to caribou from the proposed project.

**Technical Comment 2 Regarding Linear Infrastructure Impacts on Caribou Impacts -**

Overall, a very high risk remains that the combined effect of the road and the railway, including both physical barriers and sensory impacts, will have an important and likely significant effect on caribou movement. Currently proposed mitigations have not adequately addressed these concerns. Without certainty on Baffinland's commitment to adhere to Inuit oversight and decision-making on the effects of this linear infrastructure on caribou, the concerns raised in this TC remain unresolved, with low confidence that required improvements will be made in a reasonable time. In the absence of progress on the CRLU monitoring program and the addition of Inuit Objectives, Indicators, Thresholds and Responses to the relevant Environmental Management Plans, most of the concerns raised above have not been addressed.

**Technical Comment 3 Regarding IQ Integration** - QIA noted in its original TC that "This [CRLU] reassessment needs to occur prior to the completion of this EA." The Culture, Resources and Land Use reassessment has not yet been completed. The existing evidence shows that from the perspective of QIA and the Inuit communities, the CRLU baseline and change-over-time data gathered and integrated into the assessment in the FEIS Addendum by Baffinland does not adequately reflect Inuit experiences, use, values, existing or predicted effects. Baffinland has not updated its own current assessment with the findings from the Clyde River and Arctic Bay Tusaqtavut Studies. Until such time as all studies can be completed and a verified CRLU assessment completed with full involvement of Inuit, this TC is unresolved.

**Technical Comment 4 Regarding Marine Mammal Data** – Baffinland has addressed many of the original requests raised in this TC, regarding the need for IQ to be integrated into data on marine mammals. However, as the Inuit-defined OITRs for adaptive management are not yet in place, high uncertainty remains if this item can be fully resolved.

**Technical Comment 5 Regarding the Role of Inuit and IQ in Monitoring and Adaptive Management** – The principles, programs and structures developed in the ICA that address this TC – including the Inuit Committee, Inuit-identified OITRs, and IQ further collection studies – have yet to be endorsed or refined by the impacted communities. Until such time as the ICA is fully implemented and resourced, this TC must be considered unresolved.

**Technical Comment 6 Regarding Inuit Input into Project Alternatives** – This Technical Comment, regarding rail route and shipping alternatives, is unresolved as it depends on the input of the most impacted communities. The community of Pond Inlet has not shown consensus for support for Route 3. Baffinland has not adequately demonstrated that the

community supports this route. As detailed below, there is also a lack of resolution regarding shipping alternatives that would be acceptable to Pond Inlet in order to address marine wildlife harvesting concerns. In order for the TC to be resolved, additionally, the relevant ICA structures (the Inuit Committee, Inuit Stewardship Plan, and Inuit OITRs) would need to be established, which has not yet occurred. Without these Inuit-led adaptive management pillars in place, it is not possible to assess adequacy of mitigation measures, and adaptive management actions are not well developed.

**Technical Comment TC 7 Regarding Integration of Inuit Law, Norms, Values and IQ** – This TC addresses concerns about integrating Inuit wildlife laws and norms into Environmental Management Plans and developing an Inuit Committee for adaptive management decision-making. The ICA contains the conceptual structures that would meet the spirit and intent of QIA's requests to resolve these issues, but this TC can be fully resolved only if the ICA structures are in place and fully be considered resources by Baffinland. That has not been accomplished to date. There is uncertainty about how the impacted Inuit communities want these ICA structures to work to address concerns like those raised in this Technical Comment about the need for adaptive management to reflect Inuit laws, values, and norms. There is also still no long-term, quantitative investment from Baffinland for the implementation of these structures.

**Technical Comment 8 Regarding Food Security** – This Technical Comment regarding the need for a Pond Inlet Country Food Baseline Study and associated CRLU Assessment are not complete. The results of the Pond Inlet Country Food Baseline Study and the CRLU Assessment need to be seen before a determination can be made about the adequacy of Baffinland's commitments to support food security in the affected communities. QIA notes that Baffinland's related commitment to develop an appropriate Risk Communication Program for the Project (#180, which was to be accomplished on or before October 16, 2020) has not been acted on. Therefore this Technical Comment remains unresolved.

**Technical Comment 9 Regarding Assessment of Culturally Important Vegetation** – An assessment left out a critical component in the resources used to support Inuit traditional use of the land, namely culturally important vegetation. The commitment to the ICA structures for Inuit-led adaptive management and for the development of a CRLU Reassessment and a Pond Inlet Country Food Baseline Study would address this concern. However, there has been no progress on the Inuit Committee and Inuit-developed OITRs within the relevant Environmental

Management Plans, particularly related to dustfall and impacts to plants. The necessary CRLU reassessment has not been completed, nor has the Pond Inlet Country Food Baseline Study been done. Many concerns remain on the western science side regarding the relevant environmental management plans, and no progress has been made to date on Inuit-developed OITRs. Given the inadequacies in the initial assessment, it is not appropriate to rely on Baffinland to establish the OITRs that would be sufficiently sensitive to address Inuit concerns. The efficacy of proposed monitoring programs is uncertain unless there is further work to look at how dustfall impacts on plants will be addressed (particularly regarding lichen and other culturally important plants), as well as uncertainty about pathways for the introduction of invasive plants, and detecting metals in soil, and corresponding requirements for additional monitoring for impacts to vegetation.

#### **Technical Comment 10 Regarding Assessment of the Project Footprint on Inuit**

**Traditional Land Use** – There were initially numerous gaps and unsubstantiated assumptions in the assessment of Inuit traditional land use. Resolving these concerns required expanded IQ data collection, through a CRLU reassessment, and Inuit involvement in adaptive management through the proposed Inuit Committee. The relevant ICA structures are not, however, in place, nor has the CRLU reassessment been completed. Therefore, at the time of this submission, based on implementation progress to date, this item is unresolved.

#### **Technical Comment 11 Regarding IQ Integration and Proper Estimation of Project Effects on Inuit Culture**

– A significant gap in the development of the Final Environmental Impact Statement Addendum was proper IQ integration, to address concerns that community views were not properly integrated into determinations of the significance of impacts of the Project. IQ was not meaningfully integrated into baseline studies, assessment of Project interactions, or estimation of residual effects and their significance. The structures proposed in the ICA would address these concerns through the mechanisms of a CRLU reassessment, an Inuit Committee, Inuit-developed OITRs, and an Inuit Stewardship Plan including an Inuit Social Oversight Committee. However, as these ICA structures are not fully and properly implemented, this Technical Concern is still unresolved.

**Technical Comment 40 Regarding a Climate Change Strategy** – QIA is still waiting on Baffinland's proposed climate change strategy. Baffinland made relevant commitments (See proposed Project Certificate Commitments 1, 72, 101, 139, 221, 235, 250), but has not reported any significant progress. Commitment 221 is to provide a Climate Change Strategy within 30

days of the issuance of a positive NIRB Recommendation, but QIA notes that a strategy should be, and is not, in place for the existing Project. Commitments 72 and 101 on black carbon reduction measures were supposed to be reported in Baffinland's 2020 Annual Report, but QIA was unable to find this information.

**Technical Comment 41 Regarding Fugitive Dust and Sediment** – The amount of dust currently entering aquatic and terrestrial environments, as a result of use of the Tote Road, remains unclear and is a source of significant concern to Inuit. A Project expansion, including the proposed North Railway, will contribute fugitive dust and eroded sediment to fish-bearing streams and lakes during construction and operation. QIA considers this set of technical concerns, in TC 41, to be unresolved because information is lacking on Project-related dust fall. Despite increasing dust suppression efforts, dust fall along the tote road currently remains elevated relative to predicted values and inputs of eroded sediments into waterways are ongoing. Baffinland has not committed to conducting a study to address this concern, despite NIRB Recommendation 2. An emerging issue related to Project-generated sediments entering tote road streams is that chemicals from rubber tire wear can harm fish. Rubber tires contain chemicals (such as antioxidants) that can be acutely toxic to aquatic biota and have caused mass mortality of salmonid fishes in streams when mobilized by runoff. This is a concern due to the magnitude of Project truck traffic along the tote road and unexpectedly high rate of tire wear, both of which are expected to continue. Aquatic monitoring is needed for toxic chemicals released by rubber particles worn from tires of vehicles travelling the tote road, but there is no commitment in place for this to occur.

**Technical Comment 46 Regarding Marine Management and Monitoring Plans** – Marine wildlife impacts are one of the most significant areas of concern regarding any proposed expansion of the Mary River Project. In order to address these concerns, a complete understanding is needed of previous monitoring results for previous shipping seasons, and thorough information is needed regarding proposed management and mitigation activities. The Public Hearing included extensive evidence regarding how critical marine adaptive management issues are for Inuit, and issues of uncertainty arising from ongoing monitoring showing potential impacts on narwhal, specifically, of the current level of shipping activity. The structures proposed in the Inuit Certainty Agreement, with a formalized process for incorporating IQ and Community Based Monitoring and which would ensure Inuit have a meaningful role in the adaptive management process, have not been implemented. QIA lacks confidence that the Inuit-defined OITRs could be developed, reviewed and finalized prior to planned Phase 2

shipping given the ICA structures have not seen substantive progress to date. For example, Baffinland committed (in proposed Project Certificate Condition 218) to host dedicated workshops throughout 2021 to identify, develop and review Objectives, Indicators, Thresholds and Responses to be applied in Baffinland's adaptive management of Project activities in the marine environment, including icebreaking. These have not occurred. Until these Inuit-developed OITRs are completed, protocols are in place for working with the Marine Environment Working Group to establish and improve monitoring and reporting for the Early Warning Indicators, and these developments are reflected in a complete Inuit Stewardship Plan and Adaptive Management Plan, QIA cannot consider this TC resolved.

**Technical Comment 47 Regarding Ice Breaking During Shoulder Seasons** – Certainty about plans for ice management and icebreaking during the shoulder seasons is essential to the proper review of the potential impacts of shipping, and the mitigation and management environmental effects (including on Inuit travel). In order to resolve this Technical Comment, there must be confirmation that the Inuit in the most impacted communities, and particularly in Pond Inlet, are satisfied with the shipping communications, efforts to minimize shipping impacts on land use and harvesting activities, and the mitigation proposed. There may also be a need for enhanced effort to ensure that sea ice is not being used by harvesters prior to the initiation of shipping. QIA has deferred its decision on whether this TC is resolved to the community of Pond Inlet. Resolution is contingent upon community support for and acceptance of Baffinland's progress to date and commitments regarding shipping communications, efforts to minimize shipping impacts on land use and harvesting activities, mitigation measures proposed and implemented, consultation, and reporting.

**Technical Comment 48 Regarding Ice Break-Up and Freeze-Up Timing** – There were initial inconsistencies in the information provided by Baffinland regarding anticipated ice break-up and freeze-up timing affecting proposed shipping activities. Baffinland provided additional information and made commitments related to monitoring sea ice conditions, reporting on ice conditions including definitions and terminology, and mitigation via seasonal restrictions, transit restrictions based on ice conditions, protocols for Inuit use of sea ice, and consultation (see draft Project Certificate Conditions 14, 15, 45, 89, 123, 142, 143, 168, 213 – 217, 240). In order to resolve this Technical Comment, successful implementation of these commitments is required. There also still needs to be significant integration of Inuit Qaujimajatuqangit and Inuit perspectives on sea ice into monitoring plans.

**Technical Comment 49 Regarding Inconsistencies in ‘Valued Ecosystem Components’ –**

Consistent methodology in the environmental effect’s assessment is required for a comprehensive and consistent assessment of the potential effects of the Project on the environment. However, the initial assessment methods for marine mammals defined magnitude levels in a vastly different way than was used for other VECs, including marine birds. It was thus not possible to assess Project interactions in a consistent manner. Discussions regarding this concern led to Project Certificate Commitment 218 to host dedicated workshops throughout 2021 "to identify, develop and review objectives, indicators, thresholds and responses to be applied in Baffinland’s adaptive management of project activities in the marine environment, including icebreaking". These workshops were also supposed to include “working with the Marine Environment Working Group to improve the existing monitoring and reporting for the Early Warning Indicator(s)”. No workshops have been held to date.

**Technical Comment 51 Regarding Underwater Noise from Vessels –** Underwater noise from shipping remains one of the biggest overarching marine issues for the Project. Some progress has occurred, but critical issues remain. Monitoring reports show that the existing Early Warning Indicator (EWI) failed to provide early warning of a significant decline in the Eclipse Sound narwhal population. This underscores the importance of having EWIs that are effective and provide appropriate early warning prior to significant impacts on marine resources and Inuit harvesting rights. The concerns about the effects of vessel noise on sensitive marine mammals have been echoed by many intervenors throughout this process, and there are numerous peer-reviewed research articles that justify these concerns. Inuit knowledge and Western science provide complimentary information on important habitat areas for cetaceans in the Regional Study Area and highlight areas, such as Eclipse Sound, where species are most at risk from noise disturbance. Given the on-going impacts to narwhal and other marine mammals (e.g., ringed seal) identified by Inuit, the lack of progress on developing appropriate adaptive management for this issue leads to an unacceptable level of risk to marine mammals in the study area.

**Technical Comment 53 Regarding Cumulative and Transboundary Effects –** QIA notes that deficiencies in the Proponent’s transboundary assessment and cumulative effects assessment have been, and remain, apparent throughout this review process. Because ecosystemic effects do not stop at the boundary of the Nunavut Settlement Area and the Outer Land Fast Ice Zone,



s. 113 of NuPPAA expressly requires NIRB to consider transboundary ecosystemic effects in its application of the factors under s. 103 of NuPPAA.<sup>100</sup>

Baffinland's cumulative effects assessment also did not adequately consider the potential for noise generation during the construction of the Small Craft Harbour (SCH) in Pond Inlet. This led to delays in investigating the role of various stressors, alone and in concert, in the recent significant decline in Eclipse Sound narwhal abundance. Baffinland has committed to participating in marine spatial planning and cumulative effects assessments, should they be led by an appropriate regional body such as the Federal government. While useful, these types of exercises, which are not proposed to QIA's knowledge, will not address on-going concerns regarding transboundary and cumulative effects or their monitoring and mitigation.

The comments received from the governments of Greenland and Denmark, through the process for transboundary assessment of impacts under the *Espoo Convention on Environmental Impact Assessment in a Transboundary Context* (the "Espoo Documents"), also highlight unresolved transboundary impacts concerns about the current Phase expansion proposal.

NIRB has accepted these documents as relevant evidence in the record of this Hearing.<sup>101</sup> The Espoo Documents describe the Proposal's transboundary effects in and around Greenland. There are eight Espoo Documents: a letter from Greenland's Ministry for Agriculture, Self-Sufficiency, Energy and Environment (the "Ministry's Report")<sup>102</sup> which describes the Proposal's potential transboundary effects and comments on a report prepared by Baffinland pursuant to the Espoo Convention (the "Baffinland Espoo Report"), and seven letters from parties in Greenland and international non-governmental organizations commenting on the Ministry's Report.

The Ministry's Report explains that the Baffinland Espoo Report failed to adequately consider the Proposal's transboundary effects, including "the consequences of shipping iron ore

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<sup>100</sup> Section 113 of [NuPPAA](#) says: "[t]he ecosystemic and socio-economic impacts of the project, both inside and outside of the designated area, must be taken into account for the purposes of sections 101 to 112." NIRB must apply the list of assessment factors from section 103 to an analysis of transboundary effects.

<sup>101</sup> NIRB *Panel Direction Regarding objections, Motions, and Requests for Procedural Guidance*, November 30, 2021, NIRB Registry Document [337425](#).

<sup>102</sup> The Greenland Ministry for Agriculture, Self-Sufficiency, Energy and Environment (the "Minister's Report"), NIRB Registry Document [337225](#)

with large cargo ships through Baffin Bay and along the west coast of Greenland in periods and areas where there have not previously been disturbances from ship traffic.”<sup>103</sup> The Ministry’s Report indicates that the transboundary effects Baffinland ought to have considered but did not include Project-related shipping impacts on:

- narwhals, and “whether the ship traffic in the waters between Canada and Greenland coincides with the narwhals’ migration periods and routes between Canada and Greenland and whether this could negatively affect the narwhal population;”<sup>104</sup>
- bowhead whales, and “whether ship traffic coincides with the species’ migration routes and periods,” and whether mitigation measures, such as speed limitations, will apply to shipping outside of Canadian waters;<sup>105</sup>
- walrus in Greenland, and “whether ship traffic can affect the walrus population at Store Hellefiskebanke, as well as in Baffin Bay and Hudson Strait;”<sup>106</sup> and
- Store Hellefiskebanke, an ecologically sensitive area off the west coast of Greenland that is a vital habitat and foraging area for many species of marine mammals and seabirds, and which BIMC may use as a temporary anchoring site for ships before the ice breaks up and the ships can navigate Pond Inlet.<sup>107</sup>

The remaining Espoo Documents are letters from Greenland’s Ministry of Fisheries and Hunting;<sup>108</sup> Qeqqata Kommunia (a municipality in western Greenland);<sup>109</sup> the Association of Fishers & Hunters in Greenland;<sup>110</sup> Greenland’s Institute of Natural Resources;<sup>111</sup> Oceans North;<sup>112</sup> the WWF Verdensnaturfonden (Denmark);<sup>113</sup> and the Greenland Business Association.<sup>114</sup>

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<sup>103</sup> Minister’s Report, NIRB Registry Document [337225](#), p. 1

<sup>104</sup> Minister’s Report, NIRB Registry Document [337225](#), p. 2

<sup>105</sup> Minister’s Report, NIRB Registry Document [337225](#), p. 3

<sup>106</sup> Minister’s Report, NIRB Registry Document [337225](#), pp. 2-3

<sup>107</sup> Minister’s Report, NIRB Registry Document [337225](#), p. 3

<sup>108</sup> Greenland’s Ministry of Fisheries and Hunting, NIRB Registry Document [337229](#)

<sup>109</sup> The Qeqqata Municipality Response to the Espoo Report, NIRB Registry Document [337223](#),

<sup>110</sup> The Association of Fishers & Hunters in Greenland, NIRB Registry Document [337229](#)

<sup>111</sup> Greenland’s Institute of Natural Resources, NIRB Registry Document [337224](#)

<sup>112</sup> Oceans North Greenland, NIRB Registry Document [337226](#)

<sup>113</sup> WWF Verdensnaturfonden (Denmark), NIRB Registry Document [337228](#)

<sup>114</sup> Greenland Business Association, NIRB Registry Document [337227](#)

These documents support and affirm the conclusions in the Ministry's Report and add additional information about the Proposal's transboundary impacts. For example, the World Wildlife Federation (Denmark)'s letter adds additional information about the adverse impacts of noise from existing shipping on wildlife in the Arctic, as well as the potential impacts of substantially increased noise resulting from increased shipping on narwhal, beluga, bowhead whale, walrus, ringed seal and beard seal.<sup>115</sup>

The Espoo Documents raise serious concerns about the Proposal's transboundary effects, and the extent to which Baffinland has, to date, adequately considered and/or proposed mitigation measures for those effects.

#### **D. Resolution of Concerns Through the Inuit Certainty Agreement Structures**

After the NIRB process halted in November 2019, QIA worked with Baffinland to see how outstanding Inuit concerns could be addressed. These negotiations between QIA and Baffinland led to the Inuit Certainty Agreement (ICA).<sup>116</sup>

The ICA was meant to narrow the extent of outstanding technical concerns as much as possible and address the most significant concerns which Inuit were expressing about Phase 2. QIA and Baffinland focussed on concerns about inadequate integration of IQ into environmental impact studies and into adaptive management plans and processes, and the need for stronger Inuit decision-making for decisions about how to address any emerging impacts. QIA was concerned that commitments needed to be in place prior to the Public Hearing resuming, to resolve as many technical and Inuit rights concerns as possible. QIA was focussed on the need to protect Inuit interests in the event that Phase 2 was approved despite Inuit concerns and despite Inuit calls for more time for proper review.

The ICA provides greater Inuit control and oversight, direct community benefits and new and expanded programs for Inuit in communities impacted by the Mary River Project.

There were five key themes in the Inuit Certainty Agreement:

- Inuit-led independent monitoring, and comprehensive adaptive management plans developed with full Inuit community participation;

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<sup>115</sup> WWF Verdensnaturfonden (Denmark), NIRB Registry Document [337228](#), pp. 1-2

<sup>116</sup> [Inuit Certainty Agreement](#) between Qikiqtani Inuit Association and Baffinland Iron Mines Corporation, June 16, 2020. An [ICA plain language Outreach Guide](#) is also available.

- Improved and expanded wildlife compensation;
- Changes to employment, training and contracting with measurable and enforceable goals with clear procedures regarding remedial measures;
- Community direct benefits; and
- Significant royalty improvements.

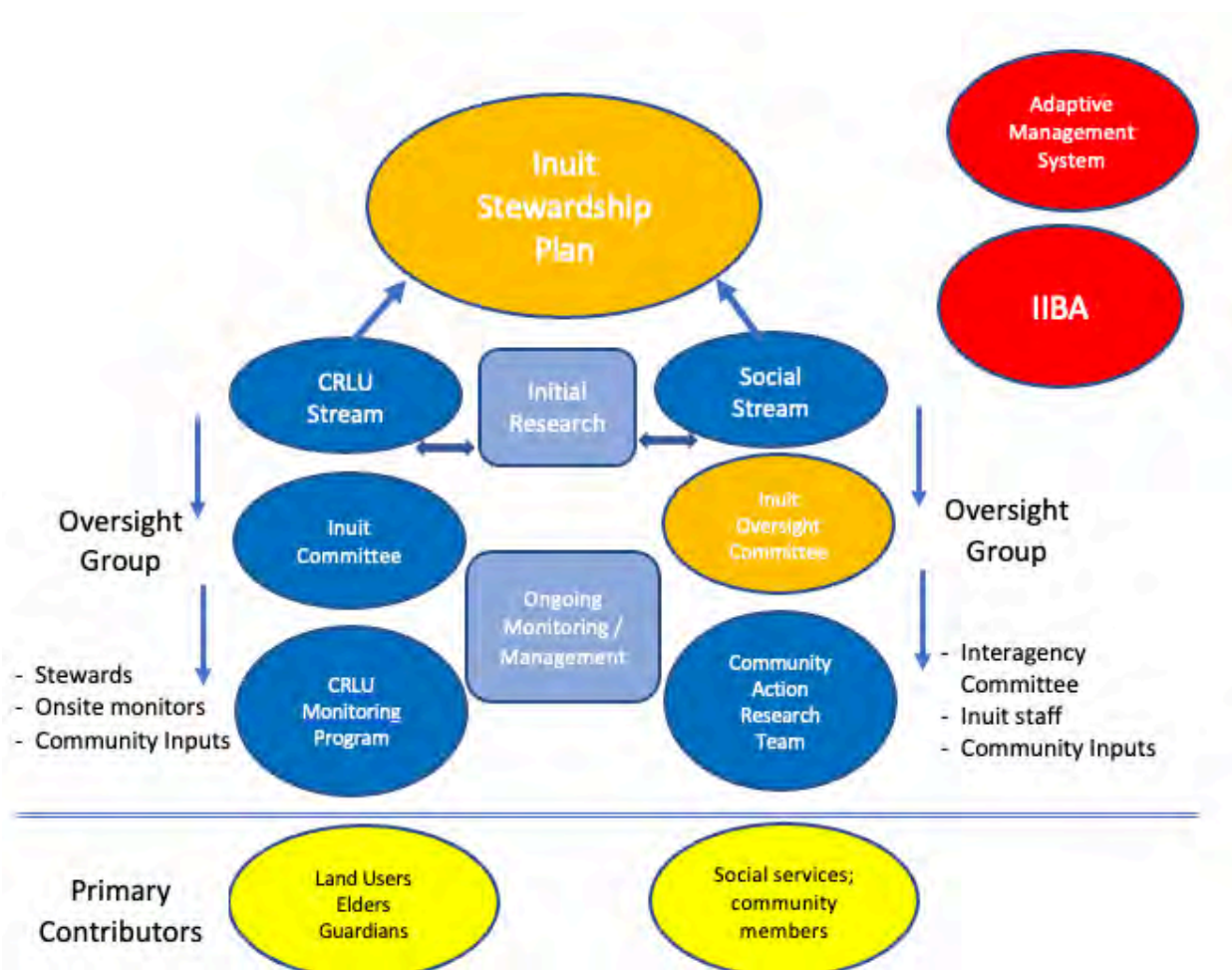
#### ***i. The Proposed ICA Structures***

The ICA proposes Inuit-designed and Inuit-led environmental management structures that strengthen IQ integration and Inuit-led adaptive management, which would resolve many of the outstanding concerns detailed in the Technical Comments above. The structures and commitments in the ICA that are relevant to the NIRB review process include:

- An **Inuit Stewardship Plan for the Mary River Project** will be created, as a framework for Inuit-led monitoring of impacts within communities and on the land, waters and ice as a result of the Mary River Project. Nauttigsuqtiit (Inuit stewards) will be hired to monitor and report on social, environmental, and cultural impacts. The Inuit Stewardship Plan will be run by QIA and funded by Baffinland. The Inuit Stewardship Plan will be built through open and active engagement with two new committees, the Inuit Committee, and the Inuit Social Oversight Committee.
- An **Inuit Committee** will be established to provide oversight and direction for the culture, resource, and land use monitoring stream, and ensure input on Inuit values to be incorporated into project management plans. The Inuit Committee is a structure that guarantees Inuit community participation in environmental decision-making for the project, and addresses Inuit concerns about the lack of responsiveness to Inuit concerns in the existing Working Group processes for the marine and terrestrial environment. Impacted communities will nominate members to the Inuit Committee.
- An **Inuit Social Oversight Committee** (“ISOC”) will be established to provide oversight and direction for the social monitoring stream related to environmental management for the Project. Impacted communities will nominate members to the Inuit Social Oversight Committee.

- An **Inuit-led Adaptive Management Planning process** is the key goal of the ICA. Adaptive management means monitoring the impacts from the Mary River Project, identifying negative impacts, and acting to prevent any further or more serious effects. QIA and Baffinland will jointly approve the Adaptive Management Plan and the adaptive management components of other project management plans, and the impacted communities will play a key role in developing the determining indicators and actions (the “**Inuit Objectives, Indicators, Thresholds and Responses**” or “OITRs”) that will ensure that the Mary River Project operations are environmentally and socially responsible. The Adaptive Management Plan will have a set of key observations that can force Baffinland to take preventative measures. The Inuit Stewards from the Stewardship Program will be a significant resource of information gathering for setting indicators and actions for the Adaptive Management Plan.
- A **Social Monitoring Framework** will focus on community wellbeing. This program will monitor community impacts related to the mine. Some things that will be monitored are language preservation, access to country food, supporting youth and elders, quality of life, housing, income and cost of living, education and training, and mental health. The Inuit Social Oversight Committee will provide oversight and direction for this social monitoring.
- A **Culture, Resources and Land Use Study** (“CRLU Study”) will be conducted before any new major construction related to the rail alignment. This study will involve QIA, the impacted communities and Baffinland, and will ensure that adequate IQ is available for comparison and use in any adaptive management planning process. The findings of the CRLU Study may require modifications and additions to mitigation, monitoring, adaptive management, and compensation measures.
- A **Culture, Resources and Land Use Monitoring Program** (“CRLU Monitoring”) will collect data related to the health and abundance of wildlife, to the land and waters, and to the ability of Inuit to continue to live in harmony with the land. This Program will be Inuit-led on-site monitoring of the Mary River Project. Monitoring will be done through Nauttisuqtiit (Inuit Stewards) QIA on-site monitors, and community members. This

monitoring will help ensure proper implementation of the Adaptive Management Plan. The Inuit Committee will provide oversight and direction for the Monitoring Program. to ensure adequate IQ is available for comparison and use in any adaptive management planning process.



- A **Pond Inlet Country Food Baseline Study** will be conducted in Pond Inlet. The study will provide data on community country food consumption and country food quality. This data is important for monitoring the impacts that Mary River Project may be having on country food in the community of Pond Inlet. This work will be done in collaboration with QIA, Inuit-chosen researchers, and Pond Inlet community representatives.

## *ii. The Status of the Proposed Structures*

When the ICA was negotiated, QIA and Baffinland anticipated that many of these ICA structures could be developed prior to the completion of the Public Hearing.

The ICA structures were based on the key assumptions that the Inuit communities would:

- (1) need to review and consent to the proposed structures to ensure they actually address impacted communities' concerns; and
- (2) actually determine the final structures and mechanisms (including adaptive management thresholds).

QIA began to engage with the impacted communities about the proposed Inuit-led environmental management structures, in between the signing of the ICA in June 2020 and the resumed public hearing in January 2021. Participation of the affected Inuit communities is essential to the viability of these proposals for Inuit-led IQ integration, adaptive management planning, and project monitoring.

Engagement was difficult during the Covid-19 pandemic which prevented travel and posed more immediate challenges for all the impacted communities and QIA. The necessary work to fully involve impacted Inuit communities in further developing the proposed ICA structures was also significantly hindered by the frustration and distrust of the impacted Inuit communities with the review process for the Mary River Project overall.

Based on the evidence in the September 2020 Technical Meetings, and the January, April, and November 2021 phases of the Public Hearing, it is clear the proposed ICA structures (the Inuit Committee, the Inuit Stewardship Plan, the Inuit Social Oversight Committee, the Culture Resources and Land Use Study, and Inuit-defined objectives, indicators, thresholds and responses), all require further input from the impacted communities. The ICA structures are designed to address the concerns of the most impacted concerns and it is critical that they are



involved in their development. QIA and the impacted communities require more time to improve understanding and to confirm the proper design and content of the ICA structures before they can be effective as meaningful mechanisms to address impacts on Inuit rights.

Resolution of many of QIA's outstanding Technical Comments, and resolution of many of the concerns of the most impacted communities, rely on these structures being in place to address the gaps in the initial assessment and proposals for adaptive management. These Technical Comments therefore remain unresolved.

## **PART V - QIA'S POSITION: THE EXPANSION PROPOSAL IS NOT READY YET**

Throughout the entire NIRB process, Inuit witnesses from the impacted communities have been extremely consistent. Their message is that environmental protection, and protecting Inuit relationship with the land and water, cultural continuity, and food sources, is paramount. Inuit have also been consistent in seeking commitments from Baffinland for shared risk management to ensure that the severe risks for Inuit – of permanent and non-compensable damage to Inuit rights – are properly addressed.

The structures needed to meet those commitments are not yet in place. Further work is needed, including further input from the impacted communities on the proposed Inuit Committee, the Inuit-defined triggers for monitoring and responses in adaptive management, and the integration of IQ into baseline studies and monitoring plans including the Pond Inlet Food Study and the Culture, Resources and Land Use Study reassessment needed to fill the gaps in the original lack of adequate IQ integration.

Any critical gaps in the necessary mitigation and monitoring structures and plans must inform NIRB's analysis of whether to recommend that the Proposal is ready to proceed, as NIRB answers the following overall questions:

- Is there sufficient evidence that the benefits of the current proposal to expand the Mary River Project outweigh the costs and impacts?
- Is there sufficient evidence that the proposed adaptive management structures can and will be able to sufficiently identify and respond to evolving Project impacts?
- Is it in the public interest to recommend that the Proposal proceed, if impacts on constitutionally protected Inuit rights have not been sufficiently addressed?
- Do Inuit consent to the Proposal, including through consent to use of the required Inuit Owned Lands and Inuit surface water rights?

In QIA's respectful submission, the answer to each of those questions is no, as detailed below in response to the specific factors and questions NIRB must address.

## **A. The Costs of the Proposal Outweigh its Benefits**

### ***i. Project "Costs" to the Environment and Inuit Rights***

NIRB must assess the impact of "costs" of the project to the environment and Inuit rights. In the whole, the evidence about the anticipated impacts of the proposed Phase 2 expansion shows that:

- There is not sufficient evidence that the proposed expansion will enhance and protect the well-being of the most impacted communities, given the wide scope of unresolved technical and Inuit rights concerns.
- Uncertainty remains about whether the ecosystemic integrity of lands and waters will be harmed by the proposed expansion, and whether sufficient adaptive management mechanisms are in place to address emerging impacts.
- Inuit knowledge and Inuit values are yet to be properly integrated into key baseline studies and proposed adaptive monitoring plans.
- Uncertainty remains about whether key potential project impacts on caribou and on marine wildlife can be sufficiently avoided or mitigated.
- The proposals for Inuit-led monitoring and Inuit-defined indicators and triggers for adaptive management responses is not yet in place.
- Cumulative and transboundary impacts of the proposed expansion have not yet been adequately assessed.
- A Climate Change Strategy is not yet in place for the existing Project, nor is there sufficient information about the strategy for the expanded Project.
- There is evidence of significant potential impacts on the capacity of key renewable resources which are foundational Inuit food sources and critical in Inuit culture (such as narwhal, caribou, char) to meet the needs of current and future Qikiqtaalungmiut, and insufficient evidence that these impacts can be adequately addressed through the currently proposed adaptive management plans.

- As a result, Inuit do not consent to the current proposal, including to the use of Inuit Owned Lands and surface water rights for expansion activities.

As noted earlier in this submission, the Supreme Court has clarified that when assessing the impacts of a proposal in the Nunavut, which is subject to the modern treaty of the *Nunavut Agreement*, the proper inquiry of a regulatory Board is not just into environmental effects *per se*: the inquiry must be into the effects on traditional resource use by Inuit and the impact on Inuit rights, including the right to harvest marine mammals where that is a significant impact.<sup>117</sup>

When NIRB applies its analysis of “whether the project would unduly prejudice the ecosystemic integrity of the Nunavut Settlement Area,”<sup>118</sup> then, NIRB must consider the following evidence about the impacts of the currently proposed expansion on Inuit rights as well:

- Evidence of insufficiently addressed impacts on marine wildlife means that the exercise of Inuit harvesting and cultural rights affected and unaddressed.
- Evidence of insufficiently addressed impacts on terrestrial wildlife, such as caribou, geese and polar bears, means that there are unaddressed impacts on Inuit harvesting and cultural rights.
- Evidence of insufficiently addressed impacts on the landscape in the vicinity of the Project, through dust fall, means that there are unaddressed impacts on Inuit cultural uses of the land and the exercise of Inuit land use, harvesting and cultural rights.
- Evidence of insufficiently addressed impacts on water quality means that there are unaddressed impacts on Inuit land use, harvesting and cultural rights.
- Evidence of insufficiently addressed transboundary impacts means that there are unaddressed impacts on the rights of Inuit in an adjacent jurisdiction (Greenland).

## ***ii. Project Benefits in Exchange for Project Costs***

In exchange for these impacts, Baffinland offers various financial benefits to Inuit from the most impacted communities, and Inuit in Nunavut more generally, as required by the Nunavut Agreement and NUPPAA.<sup>119</sup>

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<sup>117</sup> [Clyde River \(Hamlet\) v. Petroleum Geo-Services Inc.](#), 2017 SCC 40, para. 45

<sup>118</sup> [Nunavut Agreement](#), Article 12.5.5(b)

<sup>119</sup> [NUPPAA](#), s. 103(h); [Nunavut Agreement](#) 26.2.1, 26.3.3

These benefits would be confirmed through an amended IIBA, which has not yet been finalized given QIA's outstanding concerns about the current expansion proposal. Many of the amendments to the benefits under IIBA are confirmed in the ICA, which provides, among other benefits, for the following:

- An **Updated Wildlife Compensation Fund** to compensate Inuit harvesters for Mine-related impacts on their harvest, by adding a full-time QIA administrator to administer the Fund. It would make a one-time payment of \$1.3 million to MHTO "for changes in hunting experience that Inuit from Pond Inlet have described and to address difficulties in accessing the Wildlife Compensation Fund." It would also include annual payments of \$750,000 to be used at the discretion of the HTO's of impacted communities.<sup>120</sup>
- Improved **Inuit Content Requirements** for Inuit employment, training and contracting. This would, for example, improve requirements to include purchasing from community-owned businesses, subcontracting Inuit-owned firms, and providing training opportunities for Inuit. All contracts over \$500,000 will require a Contractor Inuit Content Plan, which will describe how the contractor will meet its Inuit Content Requirements.<sup>121</sup>
- **Measurable Objectives** to ensure that Baffinland meets its Inuit Content, training, contracting and employment obligations. The ICA requires that if the current Phase 2 proposal proceeds, Baffinland will pay compensation if it does not meet certain employment and training-related goals under the ICA. For example, if Baffinland does not meet its Inuit training obligations under the ICA for one year, it must pay QIA \$1.5 million over three years. If it does not meet those obligations two years in a row, it must pay QIA \$3.75 million over five years. QIA would distribute these payments as direct community benefits to impacted communities.<sup>122</sup>
- **Community Direct Benefits** which include the payment of up to \$3 million per impacted community to establish daycares, and daycare subsidies to families in affected communities. QIA will also establish an Inuit governance structure to deliver benefits received by QIA under the IIBA to impacted communities.<sup>123</sup>
- **Amended Royalties** which would amend the IIBA to gradually increase QIA's percentage of Mine-related royalties over the course of 72 months from 1.5% to 3%. It

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<sup>120</sup> [Inuit Certainty Agreement](#), June 16, 2020, NIRB Registry Document 332869, Agreed Term and Condition 5

<sup>121</sup> [Inuit Certainty Agreement](#), June 16, 2020, NIRB Registry Document 332869, Agreed Term and Conditions 19-23

<sup>122</sup> [Inuit Certainty Agreement](#), June 16, 2020, NIRB Registry Document 332869, Agreed Term and Condition 29

<sup>123</sup> [Inuit Certainty Agreement](#), June 16, 2020, NIRB Registry Document 332869, Agreed Term and Condition 16

also includes “milestone payments,” which are a series of one-time payments totaling \$45 million to QIA over the course of 72 months. The ICA also includes mechanisms to ensure that QIA receives increased royalty payments if/when iron prices exceed certain thresholds. This guarantees that Inuit will benefit from any upside resulting from increased global iron prices.<sup>124</sup>

NIRB is obligated to consider whether economic benefits exist at all for a proposed Project but is constrained from making decisions about the scope and content of specific proposed financial benefits.<sup>125</sup> The existence of financial benefits is, however, relevant to NIRB’s overall determination about the ecosystemic and socio-economic impacts of a proposal, and whether there is an appropriate balance between project costs and benefits.

Inuit concern about the sufficiency of the benefits offered by Baffinland is understandable. To date, Baffinland has largely failed to deliver the types of “active” benefits Inuit expected when the Mine was first approved, such as employment, training, contracting, daycare facilities, or other benefits that require active implementation efforts by Baffinland. For example, in the original impact assessment for the Mary River Project,<sup>126</sup> Baffinland predicted an overall Minimum Inuit Employment Goal (“MIEG”) of 25% Inuit employees in the Baffinland workforce. Never once since 2013 has Baffinland achieved the MIEG rate of 25% Inuit employment.

When the QIA Board decided in March 2021 that the Mary River Project Phase 2 expansion proposal is not ready yet for approval, the QIA Board carefully considered the ‘costs’ of the Project outlined above, relying on the evidence and submissions from the most impacted communities. The QIA Board considered the communities’ concerns about benefits, as well. In the end, the QIA Board decided that the costs to Inuit in the region of the current proposal outweighs the specific and enforceable benefits commitments and accommodation of Inuit rights.

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<sup>124</sup> [Inuit Certainty Agreement](#), June 16, 2020, NIRB Registry Document 332869, Agreed Term and Condition 28

<sup>125</sup> [NUPPAA](#) s. 24 provides that “The Board is not authorized to establish, in the exercise of its powers or the performance of its duties and functions, requirements relating to socio-economic benefits.”

<sup>126</sup> Baffinland Iron Mines Corporation, *Appendix 4B – Economic Impact Model (Final Environmental Impact Statement)*, December 2010, NIRB Registry Document [285818](#) at pg 16

Similarly, QIA asks NIRB to apply a ‘project impacts versus benefits’ analysis. QIA submits that the Proposal will not, as it is currently proposed, “enhance and protect the existing and future well-being of the residents and communities of the Nunavut Settlement Area.”<sup>92</sup>

It is clear that Inuit are being asked to bear the cost and consequences of significant uncertainties regarding the impacts of the current proposal and to rely on weighty promises for Inuit involvement in environmental decision-making without guaranteed mechanisms to ensure those promises will be met or enforced.

## **B. It is not in the Public Interest to Recommend that the Proposal Proceed**

In deciding whether the current Phase 2 proposal should proceed, NIRB and the Minister are required to consider the broader public and national interest.<sup>127</sup>

As detailed above, the Supreme Court confirmed in the *Clyde River* case (involving impacts on Inuit in this same region) that “[a] project authorization that breaches the constitutionally protected rights of Indigenous peoples cannot serve the public interest,” and that “the duty to consult, being a constitutional imperative, gives rise to a special public interest that supersedes other concerns typically considered by tribunals tasked with assessing the public interest.”<sup>128</sup> In short, Courts have repeatedly confirmed that decisions which allow significant breaches of constitutionally-protected Aboriginal rights are not in the national interest,<sup>129</sup> and do not achieve the underlying goal of section 35 of the Constitution which is “reconciliation of Aboriginal peoples and non-Aboriginal peoples and their respective claims, interests, and ambitions.”<sup>130</sup>

In the Mary River Project situation, the Inuit rights in question are confirmed in the modern treaty framework of the *Nunavut Agreement*. The *Agreement* was negotiated and settled by Inuit on the basis of the guarantees in the *Agreement*, including protection of Inuit

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<sup>127</sup> [Nunavut Planning and Project Assessment Act](#), s. 23(2), 92(2)(c), 94(1)(b); [Nunavut Agreement](#), Articles 12.2.5, 12.5.5, and 12.5.7

<sup>128</sup> [Clyde River \(Hamlet\) v. Petroleum GeoServices Inc.](#), 2017 SCC 40, para. 40

<sup>129</sup> [Clyde River \(Hamlet\) v. Petroleum GeoServices Inc.](#), 2017 SCC 40, para. 40; [Ahousaht Indian Band and Nation v Canada \(Minister of Fisheries and Oceans\)](#), 2014 FC 197, para. 31

<sup>130</sup> [Mikisew Cree First Nation v. Canada \(Minister of Canadian Heritage\)](#), [2005] 2005 SCC 69 at para. 1

harvesting rights,<sup>131</sup> ownership of Inuit lands<sup>132</sup> and surface water rights<sup>133</sup>, land access rights<sup>134</sup>, rights to IIBAs and to share resource royalties from development,<sup>135</sup> cultural rights,<sup>136</sup> and other matters.

Substantial concerns remain about uncertainty in the assessment of how the proposed expansion will affect these rights, and the sufficiency of mitigation of the impacts on Inuit rights. In the face of these unaddressed infringements on section 35 Inuit rights, it is not in the 'public interest' to approve the current expansion proposal until these issues have been addressed.

### **C. Strict Conditions are Required if the Expansion is Approved Despite Unresolved Concerns and Lack of Inuit Consent**

If NIRB recommends that the current Phase 2 Proposal proceed despite the scope of unresolved concerns about impacts and in the face of Inuit opposition, NIRB must ensure that the Proposal is subject to strict and enforceable conditions that provide minimum protections for the rights and interests of Inuit. Those minimum protections must include:

- (a) **implementation of the ICA structures** meant to address gaps in IQ integration into project baseline studies and adaptive management structures, and a stronger and enforceable role for Inuit in the adaptive management process through mechanisms such as the Inuit Committee and Inuit-defined Observations, Indicators, Thresholds and Responses;
- (b) the imposition of **specific and enforceable terms and conditions** in the Project Certificate; and
- (c) a **more active role for NIRB in monitoring** the construction and operation of the Proposal.

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<sup>131</sup> See Articles 5 and 6 of the [Nunavut Agreement](#)

<sup>132</sup> See Article 19 of the [Nunavut Agreement](#)

<sup>133</sup> See Article 20 of the [Nunavut Agreement](#)

<sup>134</sup> See Articles 7 and 21 of the [Nunavut Agreement](#)

<sup>135</sup> See Articles 25 and 26 of the [Nunavut Agreement](#)

<sup>136</sup> See, for instance, Articles 17.1.2(d), 18.1.1(d), 19.9, 20.3.3(e), 21.8.3, 23.4.2(d)(iii), 23.5.2(d), 26.3.3, 32.1.1, and Article 33 and 34 of the [Nunavut Agreement](#).



***i. ICA-Type Structures Conditions are Required for Improved Environmental Protections***

As described above, the ICA was negotiated in an effort to narrow the gaps in the scope and number of unresolved environmental and Inuit rights impacts of the proposed Phase 2 expansion. The work to develop the Inuit Stewardship Program, which is the framework for “Inuit-led monitoring of impacts and changes within communities and on the land, waters and ice as a result of the Project,”<sup>137</sup> was based on both the evolving experience of Inuit with the existing Mary River Project, and the expected needs for any expansion.

A clearer and more enforceable role for Inuit in environmental decision-making must be part of any decisions about the Mary River Project, whether with respect to existing monitoring and adaptive management program, or any expansion.

For this reason, it is key that if NIRB recommends that the Phase 2 proposal proceed, it is critical that the type of Inuit-led environmental management structures proposed in the Inuit Certainty Agreement be conditions of any approval. For instance, the Inuit Stewardship Program should act as “a primary mechanism through which Inuit actively manage and report on impacts related to the Mary River Project.”<sup>138</sup> Structures such as the Inuit Committee and Inuit Social Oversight Committee are needed to provide oversight and direction for monitoring Mine-related impacts on culture, resource, and land use (“CRLU”). The work of the Committees, including observation of Mine-related impacts, would trigger responses through the Adaptive Management plan.<sup>139</sup> These structures are key to address not just Phase 2-specific impacts, but concerns about Baffinland’s past and ongoing failures to adequately include Inuit and IQ into baseline studies and adaptive management for the Project.

For this reason, the proposed ICA structures are reflected in *QIA’s Recommended Project Certificate Conditions* attached in Appendix 2.

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<sup>137</sup> [Inuit Certainty Agreement](#), June 16, 2020, NIRB Registry Document 332869, Agreed Term and Condition 1

<sup>138</sup> [Inuit Certainty Agreement](#), June 16, 2020, NIRB Registry Document 332869, Agreed Term and Condition 1

<sup>139</sup> [Inuit Certainty Agreement](#), June 16, 2020, NIRB Registry Document 332869, Agreed Term and Condition 1

***ii. New Project Certificate Conditions Must Be Specific and Enforceable***

Specific and enforceable terms and conditions are needed in the amended Project Certificate, if NIRB recommends that the current Phase 2 Proposal proceed over the objections of Inuit.

Inuit now have the experience of observing the implementation of the existing Project Certificate Terms and Conditions over the past six years of Project operations. This experience has raised concerns about how to ensure that Project Certificate conditions contain language and provisions that are enforceable and contain sufficient substantive requirements to actually meet intended environmental management goals.

For instance, there has been little substantive reporting on concrete steps taken to address climate change, despite the original Project Certificate condition. The original Mary River Project Certificate included a condition with clear reporting requirements on climate change (in Condition 3).<sup>140</sup> This condition was intended to confirm that Baffinland is exploring and implementing concrete steps to reduce greenhouse gas emissions. The PC condition required Baffinland to “include relevant information in the Annual Report submitted to the NIRB.” This has not yet occurred and there remains a lack of clarity about reporting requirements and outcomes on this condition.

A broader concern is the current lack of ability to ensure a quality assessment of reporting required by existing PC Terms and Conditions. Reporting requirements for many other terms and conditions were “[t]o be developed following approval of the Project by the Minister.”<sup>141</sup> The original Mary River Project Certificate set no timeline or enforceable obligation requiring Baffinland to develop these reporting requirements or substantive benchmarks regarding what should be included within reports. Baffinland has still failed to develop reporting requirements for some of the terms and conditions in the original Project Certificate.

QIA has also expressed repeated concern that, where the reporting does now occur, there are often no requirements in place in the related PC Terms and Conditions to ensure a quality assessment is conducted of the reports, to ensure that the intended environmental mitigation or monitoring goals are being met.

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<sup>140</sup> Nunavut Impact Review Board, NIRB Project Certificate No. 005, NIRB Registry Document [286438](#) at pg 9

<sup>141</sup> See the original Project Certificate, NIRB Registry Document [286438](#), for the repeated references to the Terms and Conditions with the “Reporting Requirement: To be developed following approval of the Project by the Minister.”

The reporting requirements are intended to provide clear, accessible, and discrete information regarding Baffinland's compliance with each individual term and condition in the Project Certificate. They are critical for QIA and other parties to monitor Baffinland's compliance with the Project Certificate. There are no requirements in many of these existing conditions for specific substantive environmental monitoring and mitigation measures, or opportunity for any quality analysis of the reports.

QIA requested, and the Minister strongly recommended to NIRB, that a workshop be conducted to review reporting requirements and to allow for a quality analysis of the reporting on the existing Project Certificate Terms and Conditions. A quality analysis of the reporting is important in the process of ensuring environmental management goals are being met for key areas such as:

- Term and condition 21, Groundwater/Surface Waters – Aquatic Effects Monitoring Plan, which is intended to mitigate potential Mine-related impacts on surface and ground waters;
- Term and condition 50, Terrestrial Wildlife and Habitat – General, which is intended to ensure appropriate and responsive adaptive management to Mine-related impacts on terrestrial wildlife;
- Term and condition 53, Terrestrial Wildlife and Habitat – Caribou, which is intended to mitigate Mine traffic-related impact to Caribou; and
- Term and condition 109, Marine Environment – Ship Noise, which is intended to prevent Mine-related shipping impacts on marine mammals.

After several years, the workshop which QIA and the Minister requested to review the quality of environmental reporting for the existing project has still not occurred. QIA wishes to ensure that the same issues with lack of sufficient specificity and lack of ability to enforce intended mitigation and monitoring requirements is not repeated in an amended Project Certificate.

QIA therefore recommends that any revised Project Certificate must include:

- specific dates by which the reporting requirements for each term and condition must be developed;

- a mechanism for NIRB, with input from interested parties, to comment on the adequacy of those reporting requirements; and
- a mechanism that makes Baffinland's obligation to develop reporting requirements by a specific date enforceable.

In *QIA's Recommended Project Certificate Conditions*, attached in Appendix 2, QIA provides suggested wording for specific Project Terms and Conditions which would be enforceable, to avoid issues such as the ongoing lack of reporting requirements for key terms and conditions.

### ***iii. NIRB Must Play a More Active Role in Monitoring***

Lastly, QIA submits that NIRB must play a more active role in monitoring the Project, including Baffinland's compliance with the terms and conditions in any certificate it issues for the Mine.

NUPPAA contemplates a role for NIRB in any monitoring program established for the Mine.<sup>142</sup> It also contemplates a role for NIRB in actively monitoring Baffinland's compliance with the terms and conditions in any project certificate. This is because NUPPAA grants NIRB the power to reconsider terms and conditions in a project certificate of its own accord:

112 (1) The Board may, on its own initiative or at the request of the designated Inuit organization, the proponent or any interested person, reconsider the terms and conditions set out in a project certificate that it has issued if

(a) the terms and conditions are not achieving their intended purpose or are having effects that are significantly different from those anticipated at the time the certificate was issued;

(b) the circumstances relating to the project are significantly different from those anticipated at the time the certificate was issued; or

(c) technological developments or new information provides a more efficient method of achieving the intended purpose of the terms and conditions.

For a Project of the scale and potential severity of impacts of the Mary River Project, NIRB must actively participate in monitoring so that NIRB can determine whether terms and

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<sup>142</sup> [NUPPAA](#), s. 135.

conditions are achieving their desired effect or whether they require reconsideration. For this reason, QIA also submits that NIRB must also more actively follow the work of the Inuit Committee and working groups, and their outcomes, when they are established. This is necessary in order to ensure that the terms and conditions contained in the project certificate are continually updated, responsive to on the ground conditions, and achieve their desired results. QIA recognizes that NIRB may have a concern about its own internal capacity to more robustly fulfill this role anticipated by the *Nunavut Agreement* and NUPPAA. Ensuring that NIRB has adequate funding in order to properly implement this *Nunavut Agreement* requirement is key to effective project monitoring.

QIA also suggests that, given the quantity and magnitude of the changes Baffinland is proposing to the Project Certificate, some of which were not even discussed through the public review process, NIRB should consider holding specific engagements with stakeholders on the proposed terms and conditions, if NIRB recommends approval of the Project.

Typically in a NIRB review, once the Board Report is delivered and after a Minister's decision, terms and conditions are finalized including during a 1-day "workshop" for review of Terms and Conditions. In this typical process, there is no opportunity for modification of Terms and Conditions – it is only a workshop to ensure understanding amongst stakeholders. The absence of any opportunity for further stakeholder comments or edits on Terms and Conditions at this point is not appropriate or adequate for a proposal of this scope and magnitude where many terms and conditions are linked to a number of separate decision-points which may or may not be approved by NIRB and the Minister and which each have cascading effects on other areas of review. This is particularly problematic if the result is that modified language renders terms and conditions unenforceable. Having a subsequent stakeholder discussion on resulting terms and conditions, linked to the specific Minister's decision, would better meet legal requirements for addressing infringements on Inuit rights, and would prevent further delays necessary for formal requests by the DIOs for reconsideration of Terms and Conditions.<sup>143</sup>

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<sup>143</sup> The alternative is that after a NIRB and Minister's decision, the DIOs may need to exercise their right under Article 12.8.2 of the *Nunavut Agreement* to have NIRB reconsider terms and conditions in the Project Certificate, which would add to further delay

## PART VI - CONCLUSION

The NIRB review of the current proposal for the Phase 2 expansion of the Mary River Project has been unusual and unprecedented in its length and scope. The Mary River Project is the largest industrial project in Nunavut. The current Phase 2 expansion proposal involves terrestrial and marine impacts of a magnitude not experienced in other Projects and requires review of proposed environmental management of infrastructure for the world's most remote iron mine with shipping through some of the world's most sensitive marine wildlife habitat. The location and scope of the existing Mary River Project and any expansion mean that this review has included a degree of active participation of impacted Inuit communities that is novel in the NIRB review process.

QIA commends NIRB on its extensive efforts to ensure the resulting review has been thorough, robust, and inclusive in a manner which meets its mandate and goals under the *Nunavut Agreement* and *NUPPAA*. This has been a challenging and lengthy review process and QIA thanks NIRB staff and Board members for their dedication and hard work in completing the review. This is a sizeable undertaking in any event, and particularly in the face of the Covid pandemic which disrupted the process in multiple ways.<sup>144</sup>

QIA also commends all the Inuit representatives who participated so vigorously over the past four years to bring their strength, wisdom and commitment to ensuring that their communities' concerns are given space, and their communities' futures are protected.

The Mary River Project has always been precedent setting, with a particular impact on current and future generations of Inuit in the Qikiqtani region. As Inuit, we have the right to self-determination. Mining can be part of our future provided proposals conform to an Inuit vision of the future. Mining should only occur when Inuit believe it will strengthen Inuit communities and support a diversified Inuit economy that builds Inuit cultural and social wellbeing.

At the heart of this NIRB review on Phase 2 is the question of adaptability. Can Inuit adapt to the scale of environmental changes to marine and land areas, and to the impacts on our food sources and culture? Can the NIRB and federal regulatory processes adapt to meet the *Nunavut Agreement* intention and guarantees to promote Inuit economic self-sufficiency over time in a

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<sup>144</sup> QIA suggests that NIRB may wish to consider providing an opportunity, through a workshop or written comments, for all stakeholders to provide feedback on the NIRB process for this hearing, as there were many opportunities to learn about best practices for NIRB review of a project of this scope and complexity

manner consistent with Inuit social and cultural needs and aspirations? Can Baffinland adapt to ensure that the depth and form of the Project commitments are sufficient to address impacts on Inuit of this Project on our lands and using our resources?

The Mary River Project and any expansion grows out of Inuit lands and resources. QIA continues to work, and invites NIRB and Baffinland to work with us, to make sure that in a thousand years the Inuit still have an equally meaningful relationship with these lands and waters as we do today.

In the end, there are simply too many outstanding questions for Inuit to confidently support the current Phase 2 Proposal. Simply put, Inuit must be at the heart of Project planning in our homelands from the beginning. Inuit must not be expected to fundamentally change or lose their rights to accommodate someone else's right to mine Inuit-owned minerals on Inuit-owned lands in this proposed expansion; rather, the Project must adapt to accommodate Inuit and to respect Inuit rights.

In the case of Baffinland's current Phase 2 proposal, Inuit were asked to respond to plans submitted by the company without the necessary Inuit participation in the development of those plans. Attempts to bridge Inuit participation gaps during this hearing process have not yet resulted in the studies, plans, and structures which need to be in place to ensure Inuit participation in adaptive management, monitoring, and environmental decision-making on an expanded Mary River Project which will so deeply affect Inuit communities.

The current proposal is not ready yet and more work must be done to address these gaps.

**QIA therefore respectfully submits, based on the evidence in the review including Public Hearing on the current Phase 2 expansion proposal for the Mary River Project, that NIRB must:**

- **Report to the Minister that the current Phase 2 proposal should not proceed until Baffinland provides updated proposal that meaningfully addresses the legitimate concerns of Inuit about the environmental management and monitoring structures that need to be in place before there is sufficient confidence that the Project will protect the existing and future well-being of Qikiqtaalungmiut; and**
- **Recommend to the Minister against approval of the current Phase 2 proposal that would change the existing scope of the Mary River Project,**



**and recommend that the Minister require an updated proposal based on a further narrowing of outstanding environmental and Inuit rights impacts concerns before any further Mary River Project expansion.**

All of which is respectfully submitted by QIA on January 10, 2022



Jeremiah Groves  
Executive Director, Qikiqtani Inuit Association

# Appendix 1

to the Final Written Submission of the  
Qikiqtani Inuit Association



## Updated Technical Comments

Regarding the Baffinland Iron Mines Corporation  
08MN053 – Phase 2 Development Proposal



## Appendix 1 Updated Technical Comments

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Review Comment	1. Misalignment Between Proponent's Assessment and Community Observations Regarding Caribou and Project Interaction
Subject	Terrestrial Wildlife and Habitat; Assessment Methods and Environmental Monitoring Integration of IQ
Reference	<ul style="list-style-type: none"> <li>NIRB EIS Guidelines 8.1.10.2 Impact Assessment and 9.4.16 Wildlife Mitigation and Monitoring Plan; FEIS Addendum Table 1, pg. 55 of 512</li> <li>TSD 10 Wildlife Baseline and Impact Assessment, Sections 3.4.1.1 (Habitat), 3.4.1.3 (Mortality), 3.4.1.4 (Health)</li> <li>TSD 03 Phase 2 Workshop Report, Section 6.4 Expressed Community Issues and Concerns</li> <li>IR# GN41, sub-question 1 and 2 (BIMC Response to IR's page 14 – 17/587, see also GN45, subquestion 2 (page 17 – 20/587), see also GN48, subquestions 1-3 (page 19- 22/587)</li> <li>IR# GN52, sub-question 3 (BIMC Response to IR's page 23 – 26/587)</li> <li>IR# GN43, sub-question 1-3 (BIMC Response to IR's page 16 – 19/587)</li> </ul> <p>Additional references as of Sept. 23, 2019:</p> <ul style="list-style-type: none"> <li>Baffinland Iron Mines Corporation DRAFT Adaptive Management Plan, Aug. 23, 2019</li> <li>GN TRC#14: Caribou Habitat Loss</li> <li>GN TRC#15: Caribou Habitat</li> <li>BIMC memo re: revised addendum to TSD 27 – Cumulative Effects Assessment (August 23, 2019)</li> <li>EDI Memo re: significance determination for caribou, Sept. 17, 2019</li> </ul>
Importance of issue to impact assessment	The EIS Guidelines require integration of TK/IQ into all aspects of effects assessment and monitoring programs (for the latter, especially for wildlife). IQ provides a critical lens through which to assess change over time and likely impacts in the future on a variety of VECs and VSECs; without it, uncertainty about predicted outcomes increases. Currently, the Proponent's estimation of effects on caribou do not correspond with observations by community members. Reassessment including a greater role for IQ holders, and improved monitoring of effects on caribou, are required in the future.
Detailed Review Comment	<p><i>Gap/Issue</i></p> <p>There are substantial differences in the perspectives of Inuit observers and the FEIS findings in relation to caribou effects that need to be reconciled (see "Disagreement with Addendum/TSD Conclusion" below).</p> <p>Section 9.4.16 of the EIS Guidelines requires "a clear and detailed description of how TK collected by the Proponent has been integrated into baseline data collection, impact predictions and significance determinations, and the development of mitigation and monitoring programs", as well as "details regarding plans for involvement of local hunters in wildlife baseline studies and monitoring program if applicable, including the mechanisms and resources allocated for local participation".</p>



Review Comment	1. Misalignment Between Proponent's Assessment and Community Observations Regarding Caribou and Project Interaction
	<p>QIA requires further clarification as to how IQ and community knowledge has been incorporated into the monitoring process and the ongoing assessment of impacts from road and mine activity to caribou population health, location and mortality.</p> <p><i>Disagreement with Addendum/TSD Conclusion</i></p> <p>In Table 1 of the FEIS Addendum, the Proponent estimates that the probability of residual effects occurring is low for caribou health. This does not necessarily reflect what community members/IQ holders are saying. For example,</p> <p>"There are not a lot of caribou around Milne Inlet and Steensby Inlet. They seem to avoid that area. It could be because of the noise of the vehicles... This area always had caribou prior to the iron mine project. The area from Milne Inlet to Big A Lake was always known to have caribou all the time. With the constant traffic all the time now, however, it could be causing some impact. There are less caribou there now." [Workshop #4 Participant]</p> <p>"Your studies of animals and your maps don't tell you everything. As a hunter, you can see that animals start leaving the area once activities ramp up. You're the one responsible for moving them out. [Workshop #4 Participant]"</p> <p>(both quotes appear on page 78 of TSD 03: Phase 2 Workshop Report)</p> <p>To date, QIA sees minimal evidence of the appropriate and concrete inclusion of community knowledge and IQ into assessments of the ongoing impacts of the mine, tote road, and ancillary related activities on caribou populations and mortality.</p> <p>In addition, there are large gaps in the integration of IQ into the project monitoring system. The above quotes are included as evidence that hunter observations are not aligned with the Proponents characterization of project impacts.</p> <p><i>Reason for disagreement with Addendum conclusion</i></p> <p><b>Different findings/observations of community members</b></p> <p>Community members who are harvesting the caribou in the Mary River area have firsthand observational knowledge of the area, the behaviour of local caribou and trends in their demographics and movements. Without appropriate consideration of their understandings of observations of the impacts of the mine and associated impacts it is not appropriate to reach any conclusions about the impacts of the Project.</p> <p><b>Inadequate monitoring to confirm existing modeling/effects estimations</b></p> <p>There is no evidence of the use of current IQ and Inuit harvester observational data to substantiate any of the conducted modelling related to caribou.</p> <p>Conclusions as to the impact of mine activities in the future cannot be drawn without effective assessment of current impacts on caribou abundance. There is no evidence that assessment of this kind has occurred. BIMC should conduct further long term monitoring, including involving Pond Inlet, Arctic Bay, Igloodik and Clyde River HTO's in the conduct of this research. As part of the conduct of this monitoring program there should be a program of engagement conducted with hunters and other data collectors to expand Inuit</p>



Review Comment	1. Misalignment Between Proponent's Assessment and Community Observations Regarding Caribou and Project Interaction
	involvement beyond formalized surveys and to create an avenue for the inclusion of hunter observations, including potential observations of mine impacts.
<b>Recommendation /Request</b>	<p>The Proponent is requested to:</p> <ol style="list-style-type: none"> <li>1. Further consult with community members and hunters travelling to the Mary River area to establish whether they have discerned impacts on the caribou in this area. QIA is currently conducting an independent assessment of these effects using IQ that may be submitted to NIRB upon completion.</li> <li>2. Further consult with QIA and affected communities prior to identifying revised plans for long-term IQ and harvester observation caribou monitoring, in relation to the mine site and transportation infrastructure, in an update to the Wildlife Mitigation and Monitoring Plan. In addition, the Proponent is requested to act on the requested expansion of the surveyed area (as per the 'Expressed Community Recommendations' on page 91 of TSD 03: Phase 2 Workshop Report).</li> <li>3. Reassess contemporary harvesting pressure on caribou from the communities of Pond Inlet, Igloolik, Clyde River and Arctic Bay in a formal harvesting study, which should include a fulsome cartographic examination of caribou harvesting sites throughout the North Baffin region.</li> </ol>
<b>Sept. 23, 2019 Update</b>	<p><b>Unresolved – Pending documents, further discussion, and additional commitments.</b></p> <p>At the second technical meeting in June 2019, BIMC committed to reconsidering project effects on caribou upon receiving QIA's Independent IQ Study, as appropriate. BIMC has also committed to developing a regional caribou research MOU with GN. In their response to GN TRC#15 and 15, BIMC committed to a collaborative effort to revisit the assessment of impacts to caribou habitat from the proposed project as well as the cumulative effects of the project and reasonably foreseeable future developments, as directed by NIRB at the June 2019 June technical meeting. BIMC has also stated that they are "amenable" to providing funding for a formal harvesting study, to be led by HTOs and the GN, when the TAH is lifted. Despite these commitments, there are a number of important and outstanding concerns regarding the main themes of this technical review comment that have not been addressed at this time.</p> <p><b>Concern 1. Meaningful incorporation of IQ into all aspects of the project (design, effects assessment, mitigations, monitoring, adaptive management)</b></p> <p>As of the submission of these final comments, QIA's concerns regarding the incorporation of IQ into the assessment of impacts to caribou (habitat, movement, mortality, and health) remain largely unresolved. BIMC has repeatedly responded to QIA's concerns in this regard by pointing out all of the meetings and workshops they have held with IQ holders since this project was initiated more than a decade ago. However, having meetings with Inuit knowledge holders is not equivalent to incorporating perspectives from IQ into project design, assessment, mitigations, and monitoring. Despite the acknowledgement that science has little information to provide at this time on the behaviour, movement patterns and habitat use of caribou on North Baffin Island, and IQ is the best source of information on these caribou, the proponent has not meaningfully incorporated concerns</p>





Review Comment	1. Misalignment Between Proponent's Assessment and Community Observations Regarding Caribou and Project Interaction
	<p>expressed by IQ holders about current and future impacts to caribou from the proposed project into the assessment or design of mitigations. QIA makes these comments with the recognition that BIMC representatives are now making an effort to address this disconnect. However, in the absence of clear rules and protocols for working with IQ holders and conducting efficacious social science research, the disconnect continues to be a problem.</p> <p>BIMC has attempted to address concerns regarding the failure to incorporate IQ into the assessment process through risk management workshops, held from January to September 2019 (final report not yet available at the time of drafting of this resolution update). Remaining gaps in the proponent's ability to incorporate Inuit concerns about the project effects on caribou is abundantly apparent from the opening sentence of Section 3.4.2 (Inuit Qaujimagatuqangit and Impact Significance) in the revised CEA memo (Sept 2019): "All impacts are still considered not significant (Section 3.3.6), even at the overestimated scenario magnitude of effects (Section 3.4.1)." QIA recognizes that this statement is made in reference to the proponent's revised habitat effect assessment as presented in this document, but it is still a problematic opening to a section that should be focused on IQ perspectives on impact significance. The Proponent has not properly incorporated the Inuit worldview and knowledge source into the environmental assessment process, even though the NIRB process considers IQ and Inuit perspectives very important.</p> <p>QIA understands that BIMC hopes to resolve some of these issues through the development of an "Inuit Advisory Panel", which will become part of BIMC's proposed monitoring and Adaptive Management Plan (BIMC draft Adaptive Management Plan 23Aug19 - AMP). QIA's concerns about the "advisory" limitation for any Inuit body in relation to culture, resources and land use (including caribou) are discussed further in relation to TC #3 below. The AMP needs to be designed to ensure that qualitative and holistic IQ perspectives that point to specific concerns and the need for additional mitigations to address these concerns can be considered on equal footing with scientific information. While the draft AMP represents a step forward in this regard, there are still significant gaps that will make it difficult to ensure that IQ is given appropriate weighting within the adaptive management process:</p> <ul style="list-style-type: none"> <li>For example, Figure 2, p. 11 and Table 1 on p. 12 show BIMC's proposed adaptive management process. In the Plan phase, the diagram notes "identify IQ integration mechanisms". In the Evaluate and Learn phase, the diagram notes "provide opportunities for IQ input." Getting "Input from IQ holders" is listed as a separate component, with the proposed adaptive management mechanism to "Provide opportunities for IQ holders to review results and input into adaptive management responses / mitigations". This type of thinking places IQ as a supplementary or complementary knowledge source, rather than having it used from the outset, for example in determining whether additional mitigation and new or revised management strategies are required. IQ should be driving this</li> </ul>



Review Comment	1. Misalignment Between Proponent's Assessment and Community Observations Regarding Caribou and Project Interaction
	<p>process, not augmenting it. The AMP needs to be designed so it is equally informed by both IQ and science.</p> <ul style="list-style-type: none"> <li>Similarly, Appendix B (Adaptive Management Checklist Template) also shows the current failure to integrate IQ. Under the "Evaluate and Learn" phase, "Review Data and Feedback", "Additional Mitigation" and "Input of IQ Holders" are all separate components. This isn't integration, as the entire process should be conducted under an IQ lens.</li> </ul> <p>At this time, the AMP is still written as though integration of IQ is tacked on as an afterthought to a process that was initially designed to rely primarily on scientific information. BIMC recognizes the need to revise the AMP as they develop their IQ Management Framework, Inuit Committee/Inuit Panel, and Culture and Resource Land Use (CRLU) monitoring program (Section 1.5 of the AMP (the Role of IQ and Community Involvement in Adaptive Management)). Without being able to review these documents, which have not been provided by the Proponent as yet, it is impossible for QIA to assess whether BIMC will adequately address these concerns.</p> <p><b>Concern 2. Environmental monitoring programs are focused on science with little consideration of monitoring through an IQ lens, and are not responsive to input from the working groups.</b></p> <p>In BIMC's draft Adaptive Management Plan, listed monitoring programs in section 2.3 include those that have been used throughout Phase 1 of the Mary River project. The terrestrial environment working group (TEWG) has consistently asked for improvements to specific monitoring programs. While some programs have seen minor improvements (e.g., in response to concerns about the dustfall monitoring program, BIMC added more dustfall monitoring stations), other programs have not changed (e.g., notably, caribou height of land surveys and track surveys; see comments from the TEWG on monitoring reports over the last five years). Apart from the commitment to develop the CRLU monitoring program, the proponent does not commit to the development of any further processes to integrate IQ-based observations into decision-making. BIMC says that Inuit will continue to be involved in annual monitoring programs at the project level in a capacity that uses and records Inuit observations. This needs to be much more comprehensive, frequent and formalized. QIA is hopeful that the proposed CRLU monitoring program will address these concerns and allow for consistent, meaningful and regular IQ-based monitoring to occur in relation to the project. However, in the absence of further details on the highly conceptual CRLU monitoring program, agreement about the scope, mandate and decision-making authorities of an Inuit Committee/Inuit Panel, and inadequate detail on planned integration of Inuit observations into monitoring and adaptive management, QIA cannot at this time indicate with confidence that IQ is likely to be meaningfully integrated into Project monitoring and management.</p> <p>At this time, the process for decision-making based on input from the TEWG and the marine environmental working group (MEWG) has not been formalized. As a result, the</p>



Review Comment	1. Misalignment Between Proponent's Assessment and Community Observations Regarding Caribou and Project Interaction
	<p>TEWG and the MEWG feel more like checkbox exercises than a meaningful way to provide input into the operations of the mine. For Phase 2, BIMC is proposing to add another advisory group (its proposed "Inuit Advisory Panel") to the list of groups providing advice and input into the monitoring and adaptive management process. Without a better process for responding to comments from these groups, the addition of an Inuit Panel runs the risk of also being more of a checkbox, refusable advice exercise than a meaningful way to alter mine operations in response to Inuit concerns. The process outlined in the draft AMP is vague: it is hard to evaluate how quickly BIMC will respond to requests for changes to monitoring programs and/or additional mitigations.</p> <p>To address these concerns, the GN has put forward some recommended changes to the terms of reference for the working groups. QIA looks forward to reviewing the revised terms of reference to ensure that the role of working group members is sufficiently robust to consider them to be an effective way to adjust the operations of the mine. These same comments apply to the addition of any proposed Inuit Committee or Inuit Panel. It is absolutely critical for QIA and other intervenors to see the proposed process for decision-making before QIA can comment on whether BIMC's suggested revisions to their current approach will address the concerns we currently have with the process. Until further information is provided, these concerns remaining outstanding.</p> <p><b>Concern 3. Inadequate response by BIMC to request for a collaborative approach to reassess habitat impacts from the proposed project, including sensitivity analyses.</b></p> <p>In response to GN's request for an improved assessment of caribou habitat impacts from the proposed project, BIMC's consultants have responded with a revised addendum to TSD 27 (Cumulative Effects Assessment). Though specifically aimed at addressing concerns with the CEA, the memo also describes a reanalysis of seasonal habitat impacts from the proposed project, including revised disturbance coefficients (DCs) for specific existing impacts and project components, as well as a sensitivity analysis to look at how altering DCs impacts habitat loss. Unfortunately, the execution of this request was problematic. Some specific concerns that QIA has with these revised habitat loss numbers (for both the project-specific and cumulative impacts):</p> <ul style="list-style-type: none"> <li>- BIMC's consultants made a decision to redo the habitat loss calculations starting from baseline, to correct a mistake that was made in the analysis presented in TSD-10. While QIA understands the motivation here, the decision to start again from baseline makes it very difficult to compare the results of the analysis presented in TSD-10 to the reanalysis performed in July-August 2019. Given the huge uncertainty with the modeled approach for determining habitat loss, and the uncertainty in terms of what should be considered a significant loss of habitat, it is problematic to introduce a revised approach to making these calculations without explaining the source of the error in the numbers presented in Table 7 of TSD-10. EDI has made an effort to explain their analysis in detail; however, the dramatic change in the numbers is concerning without a more thorough explanation of the source of error in the 2018 calculations presented in TSD-10.</li> </ul>

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Review Comment	1. Misalignment Between Proponent's Assessment and Community Observations Regarding Caribou and Project Interaction
	<p>- The resource probability selection functions for caribou, which are used by the Proponent to calculate how much habitat is classified as seasonally important for caribou, are based on very few animals (32 collared caribou) over a two year period in which caribou numbers were very low, the end result of which may be to underestimate the amount of habitat actually impacted by the components.</p> <p>On September 17 2019, BIMC provided a response to QIA's concerns about the uncertainty of their assessment on impacts to caribou, particularly for caribou movement (the EDI memo). The EDI memo describes that, according to the <i>Criteria for Assessing Significance</i> outlined in Section 3.3.5 of TSD 10 — criteria arbitrarily determined by the Proponent and their consultants — these analyses have all resulted in a determination that the Project will have a Not Significant effect on caribou movement. The memo then states that this assessment is made in consideration of the various mitigation measures and monitoring program commitments made by BIMC through the review process to date, and goes on to outline these mitigation and monitoring measures.</p> <p>Based on input from the Crossings Workshop, BIMC has proposed additional mitigations, which include:</p> <ul style="list-style-type: none"> <li>- Provision of 30 level crossings across the entire rail route (subject to Transport Canada and Community acceptance);</li> <li>- The rail design as proposed would see a minimum of 55% of the alignment measure less than 2 m in elevation;</li> <li>- For embankment between 2 m and 4 m in height, a flattening of side slopes from 1:1.5 to 1:2;</li> <li>- Use of Type 8 (&lt;6 in) material for embankment fill for the entire rail project;</li> <li>- Installation of 14 plate arch culverts along sections of railway with high embankments.</li> </ul> <p>In TC-02, below, we discuss these new mitigations and point out why they are not yet sufficient to address the high level of uncertainty associated with the effects assessment of the railway and embankment on caribou movement, particularly when considered in combination with the already-existing Tote road. The EDI Memo provides no further evidence or information to reduce our concerns with respect to the current effects assessment on caribou movement from the proposed Project.</p> <p><b><u>Recommendations to address outstanding concerns:</u></b></p> <p>To address these concerns, QIA is requesting the following (organized by topic as above):</p> <p><b>Meaningful incorporation of IQ into project assessment, design, mitigations and monitoring</b></p> <ul style="list-style-type: none"> <li>- That the proponent allow for a fulsome review by interested parties of the proposed additions of some form of Inuit Committee/Inuit Panel, the terms of</li> </ul>





Review Comment	1. Misalignment Between Proponent's Assessment and Community Observations Regarding Caribou and Project Interaction
	<p>reference for this panel and for other working groups, and the decision-making process for BIMC to act on input provided by these groups;</p> <ul style="list-style-type: none"> <li>- That all relevant aspects of the AMP be revised to show the input of IQ and Inuit perspectives on equal footing with other sources of knowledge throughout the adaptive management cycle;</li> <li>- That BIMC commit to supporting IQ-based monitoring of impacts from the project on caribou, as per the specifics outlined under QIA-02 below;</li> <li>- Other requests specific to the CRLU monitoring program will be made in comments specific to TC #3.</li> </ul> <p><b>Responsiveness of BIMC to input from working groups:</b></p> <ul style="list-style-type: none"> <li>- That BIMC commit to working with interested parties to ensure that all working groups, including the TEWG, the MEWG and the Inuit Committee/Inuit Panel have a strong and meaningful ability to make changes to monitoring programs and introduce additional mitigations if necessary.</li> </ul> <p><b>Understanding habitat impacts from the proposed project:</b></p> <ul style="list-style-type: none"> <li>- That BIMC provide the breakdown in terms of absolute numbers of the following in relation to the total area of the North Baffin caribou range: a) the total area in km<sup>2</sup> of the PDA for each component of Phase 1 and Phase 2; the total area in km<sup>2</sup> of the ZOI (no DC applied; broken down by distance as per the ZOI ranges defined in tables 3 and 5 of the revised Aug. 2019 CEA) of each component of Phase 1 and Phase 2; b) the total area in km<sup>2</sup> of each seasonal habitat type in the PDA for each component of Phase 1 and Phase 2; the total area in km<sup>2</sup> of each seasonal habitat type within the ZOI (no DC applied; broken down by distance as per the ZOI ranges defined in tables 3 and 5 of the revised Aug. 2019 CEA) of each component of Phase 1 and Phase 2; c) the area in km<sup>2</sup> of the North Baffin caribou range and the total amount of each seasonal habitat type falling within the range.</li> <li>- That BIMC commit to working with interested parties to develop predictions of habitat loss in relation to project components, which can be tested through the monitoring program and responded to through mitigations and adaptive management.</li> </ul> <p><b>Addressing uncertainty within the assessment:</b></p> <p>BIMC has already committed to supporting a regional caribou collaring program, which will help address uncertainty moving forward. However, there remain a myriad of uncertainties regarding the impact assessment on caribou. QIA has the following additional requests with respect to addressing uncertainty with the assessment:</p> <p><i>Changes to the impact characterization and significance estimations:</i></p> <p>Given high uncertainty about how Baffin Island caribou will react to an additional raised linear feature, and lack of evidence re: the imposition of a railway on caribou in the circumpolar north, QIA does not have enough information to make an informed</p>



Review Comment	1. Misalignment Between Proponent's Assessment and Community Observations Regarding Caribou and Project Interaction
	<p>estimation of impact significance on caribou, nor should BIMC have enough data to maintain its assertions on significance determinations.</p> <p><i>Improvements to monitoring programs:</i> Below under TRC QIA-02, we make several specific recommendations about improvements to monitoring programs to address the uncertainties moving forward, including supporting a regional caribou collaring program and gene flow study to determine how caribou movement and habitat use is impacted by the mine and the transportation corridor.</p> <p><i>To address uncertainty, commitment for collection of IQ and range planning for North Baffin caribou:</i> To ensure that IQ continues to inform caribou management planning for North Baffin, QIA is requesting the following from BIMC:</p> <ul style="list-style-type: none"> <li>- Commitment to conduct a harvester's survey to determine where caribou are being harvested and how many; this will inform the need for additional mitigations and the actual habitat requirements to sustain the population;</li> <li>- Commitment to ongoing collection of IQ to inform adaptive management and additional mitigations, especially as the population grows;</li> <li>- Commit to supporting (pending community support) a regional IQ-based approach for monitoring North Baffin caribou, and local monitoring program for caribou interactions.</li> <li>- Commitment for BIMC to work with the GN, QIA and HTOs to conduct an IQ study of caribou habitat use and establish protection areas and other protection measures for caribou in the North Baffin caribou range.</li> </ul>
August 11, 2020 Update	<p><b>Resolved, contingent on ICA Implementation. QIA will provide an update on Implementation at the upcoming Technical Meeting.</b></p> <p>The status of each of the specific concerns identified above, contingent on ICA implementation, is described below:</p> <p>Concern 1: Meaningful incorporation of IQ into all aspects of the project (design, effects assessment, mitigations, monitoring, adaptive management).</p> <ul style="list-style-type: none"> <li>• With Baffinland's commitment to the ICA and specifically ID1 (establishing the Inuit Committee and the Inuit Stewardship Program), ID4 (developing a culture, resources and land use monitoring program), ID6 (Phase 2 CRLU assessment), ID8 (approach for integrating IQ into rail route selection, wildlife crossings, land user crossings, slope designs, adaptive management, and railway monitoring), this concern is addressed, pending meaningful implementation of the ICA and the ability of Inuit to be involved in this process. Work to implement the ICA has begun between QIA and Baffinland, and QIA will provide an update on implementation status to the Board at the Phase 2 Technical Meeting and subsequent Hearings.</li> </ul>





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	<ul style="list-style-type: none"> <li>Resolution of the following specific issues is contingent upon the full and proper implementation of ID1, ID2, ID4 and ID8: a) Acceptability of route 3 to Inuit; b) construction of the rail in a way that ensures no existing caribou trails are disrupted; c) identification of thresholds and responses for impacts on caribou deemed appropriate by Inuit.</li> </ul> <p>Concern 2: Environmental monitoring programs are focused on science with little consideration of monitoring through an IQ lens, and are not responsive to input from the working groups.</p> <ul style="list-style-type: none"> <li>This concern is resolved, contingent on Baffinland's commitments related to ID2 (adaptive management plans approval) and ID4 (developing a culture, resources and land use monitoring program)</li> </ul> <p>Concern 3: Inadequate response by BIMC to request for a collaborative approach to reassess habitat impacts from the proposed project, including sensitivity analyses.</p> <ul style="list-style-type: none"> <li>This concern is resolved, contingent on Baffinland's commitments related to ID2 (adaptive management plans approval) and ID4 (developing a culture, resources and land use monitoring program)</li> </ul> <p>Concern 4: Deep uncertainty with respect to predictions of effects to caribou from the proposed project.</p> <ul style="list-style-type: none"> <li>This issue is resolved, pending revisions to relevant EMPs. Revisions to the EMPs, including the integration of Initial Inuit Objectives, Indicators, Thresholds and Responses, is being conducted through ID2 (Adaptive Management Plan) of the Inuit Certainty Agreement. QIA will provide an update on the status of updating the EMPs and the Adaptive Management Plan to the Board at the Phase 2 Hearings</li> </ul>
Final Status Update	<p><b>Unresolved.</b></p> <p>This TC was previously marked resolved contingent upon ICA Implementation, including establishing the Inuit Committee, developing the CRLU monitoring program, incorporating IQ into rail design, and developing improved adaptive management and environmental management plans. While some progress has been made, there are important gaps that remain and lead us to recommend that the status be changed to unresolved. The rationale for this change is provided below by key concern.</p> <p>Concern 1: Meaningful incorporation of IQ into all aspects of the project (design, effects assessment, mitigations, monitoring, adaptive management).</p> <p>Existing commitments: Baffinland has committed to the use of Inuit input to finalize crossing locations; monitoring the railway; modifying the railway over time if needed; funding a caribou-focused IQ study and using this information to inform protection measures; working with the TEWG and the Inuit Committee to develop a preliminary</p>



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	<p>threshold for caribou group sizes that would trigger temporary suspension of the road and/or railway; working with Inuit and the TEWG will develop a Caribou Crossing Construction Decision Matrix to define the exact process that will be used to make additional modifications to the railway for the purpose of caribou crossings.</p> <p>These commitments leave some important gaps, which result in the recommendation that this concern should be considered unresolved.</p> <p>Rationale: Many of these commitments rely on the ICA. However, the principles, programs and structures developed in the ICA have yet to be endorsed or refined by the impacted communities, so they remain conceptual at this point. For example:</p> <ul style="list-style-type: none"> <li>• The Inuit Committee is not yet established.</li> <li>• The CRLU monitoring program has not been developed.</li> <li>• The process of integrating IQ into Inuit Objectives, Indicators, Thresholds and Responses within environmental management plans has not yet occurred.</li> </ul> <p>Outside of the ICA, Baffinland has only explicitly committed to using Inuit input to make decisions about locations of wildlife crossings for the railway, and to inform the additional of crossings in the future. That leaves most of the other gaps associated with this concern unresolved, without the ICA and its associated programs and principles in place.</p> <p>Concern 2: Environmental monitoring programs are focused on science with little consideration of monitoring through an IQ lens, and are not responsive to input from the working groups.</p> <p>Existing commitments: Baffinland has committed to coming to agreement on railway monitoring; evaluating the railway operation and maintenance plan against the adaptive management plan and checklist, and subsequent updates; revising the TEWG and MEWG terms of reference; conducting an IQ study of caribou; using input from the IQ study to inform the location of protection measures.</p> <p>Despite these commitments, the previous status of “resolved, contingent on Baffinland’s commitments related to ID2 (adaptive management plans approval) and ID4 (developing a culture, resources and land use monitoring program)” should be changed to unresolved at this time.</p> <p>Rationale:</p> <ul style="list-style-type: none"> <li>• The Inuit Committee is not yet established.</li> <li>• The CRLU monitoring program has not been developed.</li> <li>• The process of integrating IQ into Inuit Objectives, Indicators, Thresholds and Responses within environmental management plans has not yet occurred.</li> </ul>



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	<p>Furthermore, without a PCC that clearly outlines the requirements of the revised MEWG and TEWG terms of reference, the commitment to revise the TOR for these two groups is weak and leaves uncertainty surrounding whether the efficacy of these groups will improve.</p> <p>Concern 3: Inadequate response by BIMC to request for a collaborative approach to reassess habitat impacts from the proposed project, including sensitivity analyses.</p> <p>Existing commitments: Baffinland has committed to updating the TEMMP to identify that it will undertake research to determine the ZOI and disturbance coefficients exerted by the Project on caribou, and will provide updates estimates of cumulative habitat losses at least every 5 years, taking into account differences in caribou behaviour at lower and higher population levels in a manner that allows for equal consideration of IQ and science.</p> <p>Despite this commitment, the previous status of “resolved, contingent on Baffinland’s commitments related to ID2 (adaptive management plans approval) and ID4 (developing a culture, resources and land use monitoring program)” should be changed to unresolved.</p> <p>Rationale: key aspects of the ISP have not been fleshed out adequately to know if they will address the original concern. In particular:</p> <ul style="list-style-type: none"> <li>• The Inuit Committee is not yet established.</li> <li>• The CRLU monitoring program has not been developed.</li> <li>• The process of integrating IQ into Inuit Objectives, Indicators, Thresholds and Responses within environmental management plans has not yet occurred.</li> </ul> <p>Furthermore, although Baffinland has committed to undertaking this research, their own research paper on regional monitoring suggests that it will be impossible to monitor impacts to caribou until the numbers increase (EDI 2021: Mary River Project, Caribou Monitoring: Triggers and Recommendations). It may be several years before this commitment can be acted upon, in the absence of an adequately developed and resourced CRLU monitoring program to detect effects based on IQ.</p> <p>Concern 4: Deep uncertainty with respect to predictions of effects to caribou from the proposed project.</p> <p>Existing commitments: Baffinland has committed to a research agreement with the GN to support regional monitoring of caribou, and to reassessing the ZOI / disturbance coefficients based on this research.</p> <p>Despite this commitment, the previous status of “resolved, pending revisions to relevant EMPs” should be changed to unresolved.</p> <p>Rationale:</p>



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	<ul style="list-style-type: none"><li>• In the absence of revised EMPs that integrate Inuit Objectives, Indicators, Thresholds and Responses, the uncertainty of effects predictions with respect to caribou remain very problematic.</li><li>• It is unclear whether existing proposed monitoring programs will adequately detect all impacts, particularly in the absence of a defined CRLU monitoring program.</li><li>• Though Baffinland has committed to working with the GN on a research agreement related to regional monitoring, and has an AIP, the scope of this AIP (i.e., financial commitment to enable adequate monitoring) is unknown and therefore it is impossible to assess its adequacy.</li></ul>



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Subject	Terrestrial Wildlife and Habitat; Environmental Mitigation and Management and Assessment Methods – Integration of IQ
Reference	<ul style="list-style-type: none"> <li>• NIRB EIS Guidelines 8.1.10.2 Impact Assessment</li> <li>• TSD 10 Wildlife Baseline and Impact Assessment Sections 2.3.1.2, 3.2.1, Section 3.3.2 (Movement) and Section 3.4.1.2</li> <li>• FEIS Addendum 4.3.1 (Project Effects on VECs)</li> <li>• FEIS Addendum Table 1 (pgs. 54-55/512)</li> <li>• IR# GN06, sub-question 4 (BIMC Response to IR's page 5 – 8/587)</li> <li>• IR# GN47, sub-questions 1-3 (BIMC Response to IR's page 18 – 21/587)</li> <li>• IR# GN51, sub-question 1-4 (BIMC Response to IR's page 22 – 25/587, see also GN06 (25/587), and GN21 attachment 1 (184/587)</li> <li>• IR# QIA21/23, (BIMC Response to IR's page 44, – 47/587)</li> </ul> <p><b>September 23, 2019 Update:</b></p> <ul style="list-style-type: none"> <li>• BIMC Crossings workshop report (not available)</li> <li>• Summary of caribou-related mitigation for rail (BIMC memo by Todd Burlingame, Nov. 29 2017)</li> <li>• Railway embankment “sensitivity” analysis for caribou crossing potential (M. Setterington, July 23 2019)</li> <li>• Potential rail route revision (provided by email, August 2019; not yet on the public record)</li> <li>• BIMC PowerPoint: Rail System (PowerPoint dated July 2019)</li> <li>• FEIS TSD 01 Alternatives Analysis Table 1.1, p. 1.4; Section 3.5, p. 3.6</li> <li>• EDI Memo re: significance determination for caribou, Sept. 17 2019</li> </ul>
Importance of issue to impact assessment	Caribou are the main terrestrial indicator species used by the Proponent in the FEIS Addendum. They are an important harvest species with current low numbers, making them sensitive at a population level to change caused by industrial disturbance. There is also no precedent for the development of a railroad through Baffin Island or anywhere in the Canadian Arctic, making effects inherently uncertain and meriting high diligence in assessment and management planning. The mine site is known through IQ to be important calving ground for caribou. The overall significance of this Project is closely tied to potential impacts of the proposed rail route on caribou and, by extension, Inuit harvesters, now and into the future. Risks to caribou from noise and transport are a key issue now and into the future. In particular, caribou reactions to linear barriers are of high uncertainty and concern.
Detailed Review Comment	<p><i>Gap/Issue</i></p> <p>At pg. 42 of 512 of the FEIS Addendum, the Proponent states “<i>The main project interaction with caribou would be when caribou cross the road or rail lines. Although it is possible that individual caribou could be involved in collisions with trains or trucks, these numbers are expected to be limited and will not be significant compared with total numbers in the region.</i>”</p> <p>At pgs. 54 and 55 of 512 (Table 1 – Summary of Residual Effects), the Proponent states</p>



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	<p>that there will not likely be significant adverse effects on caribou habitat or health, and that the likelihood of any residual effects on caribou health is low.</p> <p>Given uncertainty in how caribou will react to sensory disturbance and physical/visual barriers from a railroad across the tundra, such assertions merit further evaluation than is currently in the FEIS. Caribou are highly sensitive to linear barriers, and the presence of the railroad may cause shifts in movement of caribou and may also impact reproductive rates for highly sensitive females.</p> <p>In addition, IQ has not yet been integrated into the siting of wind turbines or into planning the locations of caribou crossings and other wildlife permeability-enhancing infrastructure.</p> <p><i>Disagreement with Addendum/TSD Conclusion</i> Fundamental questions remain, such as</p> <ul style="list-style-type: none"> <li>•How are caribou likely to interact with a railroad?</li> <li>•How are caribou currently interacting with the tote road and mine infrastructure?</li> <li>•What do Inuit say about this?</li> <li>•How has the Proponent researched this question from an IQ perspective on caribou behaviour?</li> <li>•How will total disturbance and other effects on caribou, from all mine-related sources, combine to impact on individual and population health characteristics?</li> </ul> <p>QIA needs to see these questions answered more compellingly before making informed estimations about the acceptability of this proposal.</p> <p>In addition, further consultation with Inuit over appropriate design, location, frequency and management of two key new elements of proposed infrastructure, the proposed railroad and wind turbines, is critical during, not after, this EA. Each of these parameters, depending on how they are planned and implemented, may have implication for the significance of total impact loads on caribou.</p> <p><i>Reason for disagreement with Addendum conclusion</i> [Please note: further comments on the lack of IQ on current effects of the mining operation and transportation system are discussed in a separate QIA technical comment].</p> <p><b>Embankment structure</b> While the Proponent's response to GN IR#6 describes elders and community members having been involved in the determination of embankment slope angle and suitability for caribou crossings, all the stated examples are from the Ekati mine, and there is no indication of consultation with relevant Baffin region elders on this subject. Assessments of elder agreements with embankment grade from other regions of the north are not relevant to this example, so the Proponent's assessment suggesting the embankment grade is appropriate cannot be credited without further evidence of consultation with Qikiqtani Inuit.</p>





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	<p><b>Potential barrier effects on caribou of railroad</b></p> <p>Assessments of the barrier of the road and railroad embankment complex to caribou are inadequate to make any assessment of their impact. The Proponent's response to GN IR 51 does not address the current impacts or permeability assessments.</p> <p>The permeability assessment has not been adequately conducted using surveys of caribou from Baffin Island. Baffin Island caribou are noted by local hunters as behaving differently from caribou on the mainland. Therefore, they must be assessed in their own right, when circumstances such as behaviour around human infrastructure are being assessed.</p> <p>There is also limited to no evidence that the conclusions the Proponent has presented have incorporated observations or IQ from hunters in the region, as suggested in the Proponent's response to QIA IR 21. It is also not clear how the Proponent used data from Inuit on likely "pinch points" or human-wildlife conflict zones and other issues, when assessing effects of the railroad on wildlife. The Proponent points to the non-migratory nature of north Baffin caribou and yet acknowledges the patterned movement of these caribou as identified by Inuit.</p> <p><b>Wind turbines: effects on caribou and siting process</b></p> <p>QIA feels the Proponent has not answered IR GN47 adequately in regards to the impacts of wind turbines on Baffin Island caribou. The Proponent's assessment of the impacts of wind turbines is inadequate and the use of data from reindeer and not caribou from Baffin Island is inappropriate. Baffin Island caribou are acknowledged by Inuit from the region to be highly sensitive to disturbances both auditory and visual and therefore the use of past studies which have focused on reindeer are inadequate as a proxy.</p> <p>In addition, IQ has not yet been integrated into the siting of wind turbines. Effects cannot be assessed if IQ has not been considered appropriately in the assessment of impacts or in the description of the locations/shapes/sizes of wind turbines. Inuit know the caribou of Baffin Island the best, and therefore are best placed to assess impacts from Project related infrastructure.</p>
<b>Recommendation /Request</b>	<ol style="list-style-type: none"> <li>1. The Proponent is requested to consult with elders and other IQ holders in the north Baffin region who are familiar with the topography of the Mary River mine area and the behaviour of caribou that transit the acknowledged movement corridors which intersect with the mine and road footprint, in the determination of the appropriate grade, slope angle and appropriate locations for caribou crossings.</li> <li>2. QIA requests a thorough and complete reassessment, including IQ and hunter observations and IQ holders in the effects characterization process itself, related to disturbance and barrier effects of all mine related and transportation infrastructure to caribou.</li> <li>3. QIA requests a full assessment of the impact of wind turbines and railroad on caribou abundance, mobility, avoidance and mortality, incorporating IQ into the effects estimation and significance determination process. Assessments of the</li> </ol>





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	<p>impacts of these structures (road and railroad crossings and wind turbines), using IQ must be undertaken immediately before the EA is completed. Additionally, this study should be focused on the behavioural characteristics of caribou from the north Baffin region, and consider the cumulative impact of the wind turbines in association with other project components including roads, railroads, human and vehicular traffic and mining activity including blasting.</p>
<p><b>Sept. 23, 2019 Update</b></p>	<p><b>Unresolved, pending further analysis and additional commitments.</b></p> <p>To address QIA’s concerns, BIMC committed to holding a Crossings Selection Workshop with elders and HTO members from Pond Inlet and Igloolik. This workshop was held from July 29 – August 2, 2019 on site at Mary River. No report has been received yet on this workshop, but QIA was able to participate in the workshop. We have the following comments on the potential disturbance and barrier effects of the railway at this time:</p> <ol style="list-style-type: none"> <li>1. Alternative routing and BIMC’s ability to assess impacts to caribou if the route is changed at this time: <ul style="list-style-type: none"> <li>- Much of the July crossings workshop was spent discussing alternatives to the proposed “dogleg” diversion. As of Sept. 11 2019, BIMC has responded to these comments by starting to consider an alternate route for the proposed dogleg, based on inputs from Pond Inlet. This information is not yet on the public record through NIRB, but QIA understands that the alternate route was recently brought up at community meetings in Iqaluit and Pond Inlet. It is unclear at this time whether the alternate route addresses community concerns. The proposed alternate route may still preclude hunting in the area if it is within 1 mile of the travel corridor.</li> <li>- Regarding alternatives to BIMC’s preferred route, we note that the FEIS Addendum considers an alternate route (Option B) that runs east of the Tote road in higher country (TSD 01, Section 3.5, p. 3.6). Although feasible, this route is dismissed outright in the FEIS Addendum based on an apparent preference from communities for the selected route (TSD 01, Table 1.1, p. 1.4). Community members present at the caribou crossings workshop strongly indicated that the community perspective was misrepresented in the FEIS Addendum.</li> <li>- Although QIA recognizes BIMC’s recent effort to provide an alternate route following the crossings workshop, the impending regulatory deadline means that the proposed alternate route cannot be fully assessed for potential impacts to caribou crossings and potential mitigations. This is unfortunate: community opposition to the dogleg has been expressed for some time. An alternate route should have been feasible to identify within the regulatory time frame, allowing for a full assessment of the route to be undertaken.</li> <li>- Regardless of whether the recently proposed alternate route addresses community concerns regarding travel, important concerns remain in terms of potential impacts to caribou, particularly as both proposed dogleg routes strand an important caribou calving area between the Tote road and the rail route.</li> <li>- In summary, the impending regulatory deadline and the late proposal of this alternate dogleg make it impossible to fully assess the impacts of this new route on caribou.</li> </ul> </li> </ol>



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	<p>Other alternatives have not been fully assessed. QIA is very concerned about proceeding with the project without this full assessment in place.</p> <p>2. Outstanding concerns regarding construction and operation of the railway.</p> <ul style="list-style-type: none"> <li>- For the entire transportation corridor, QIA has a number of other key concerns that have yet to be addressed. These include:</li> <li>- For the majority of the route, the railway embankment is at least 1.5 – 2 m high, including the ballast and rail, which sits on top of an embankment currently proposed to be built of large boulders, with a 1:1.5 slope ratio (i.e., 1.5 m wide per 1 m of width). QIA notes that uncertainty remains with respect to the embankment height along the railway: EDI's memo re: caribou movement significance determination states that the rail design as proposed will see a minimum of 55% of the alignment measure less than 2m in elevation, whereas Table 1 of EDI's Railway Embankment Sensitivity Analysis for Caribou Crossing Potential suggest that 32% of the North Rail embankment is less than 2 m in height.</li> <li>- The Tote road is basically flat to the tundra for the majority of its route, but most community members already think that it has impacted caribou movement through the area, particularly since it became an active haul road for the mine. In other words, the vast majority of the Tote road falls into what Baffinland's analysis would consider "permeable to caribou", but based on Inuit observations, caribou are avoiding the road. Based on community observations, it is the noise, smell and dust of the road that is currently keeping caribou away from the area.</li> <li>- Note that because of the shortcomings of Baffinland's existing monitoring programs and the small size of the caribou herds on North Baffin at this time, there is no scientific information to help answer the question of whether caribou are avoiding the road. There is an urgent need to improve the existing monitoring program to determine how caribou are interacting with or being deflected from the Tote road.</li> <li>- In other parts of barren ground caribou range, caribou will cross roads. However, they usually cross when the drive to migrate is high, and are deflected from the road at times—apparently as a result of small group sizes, heavy traffic on the road, or a combination of the two. Recent findings from radio collared caribou in the Meadowbank mine area illustrate this effect clearly: caribou approach the road from the east during their fall migration, but in 2016 they failed to cross, bouncing back from the road and instead overwintering in their summer feeding grounds. In this case, hunters from the area observed that the condition of the herd was impacted and very few calves survived the winter in 2016. In 2018, when the mining company in question was forced to shut down activity on the road for a period of time, many of the migrating caribou did cross the road. The timing of this shutdown was critical and was informed by radio collar data from the Government of Nunavut (GN).<sup>1</sup></li> <li>- These findings need to be considered in the context of what is being proposed on North Baffin. Firstly, North Baffin caribou are not known to be migratory in the same</li> </ul>

<sup>1</sup> Note that an article describing this impact is forthcoming from the GN but is not currently available; there are numerous studies of impacts to barren ground caribou from roads, which can be used to back up this opinion from a scientific and Indigenous knowledge perspective.



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	<p>way as caribou further south and on the mainland. Though they are always moving, they do not show the same drive to migrate to a specific wintering ground and calving ground, using dispersal rather than herding as their primary means of avoiding predation. North Baffin caribou travel in smaller groups and are more likely to be skittish around disturbances. Because their numbers are currently so low, they may have little drive to cross the rail.</p> <ul style="list-style-type: none"> <li>- Secondly, though a linear feature, a railway is a very different type of disturbance than a road. The physical structure itself is a barrier, making it difficult for caribou to see over the line. Though a railway will generate less dust than the road, the noise, smell and vibration of a train are likely higher deterrents for caribou. The <i>currently proposed embankments</i> (see note below) are very steep and the preferred material for construction (large cobbles) will not facilitate movement. Though caribou would likely be capable of climbing it if needed (i.e., if they are being chased by wolves), they are more likely to look for easier travel routes if they are available.</li> <li>- Based on the available evidence, it is QIA's opinion that the set of structures together—the road and the railway, with the noise, dust from vehicle traffic on the Tote road, smells and vibrations—is <b>highly likely to meaningfully impede the east-west movement of caribou on North Baffin island</b>. This perspective is based on both available IQ and available western science data, which admittedly is poor.</li> <li>- The sensitivity analysis performed by BIMC's consultant (July 2019) regarding assumptions about permeability and caribou movement is revealing in that it clearly shows how assumptions about permeability can drastically alter how much of the railway is considered permeable to caribou. By assuming caribou can only move easily across rail heights of less than or equal to 1.5 m, only 19% of the north rail remains permeable to caribou. In contrast, if we assume caribou can move across embankment heights less than or equal to 2.5 m, the proportion of the north rail that is permeable to caribou jumps up to 43%. These numbers illustrate QIA's concerns about the uncertainty of this assessment on the potential barrier effect of the railway to caribou crossings.</li> </ul> <p><b>Recommendations to address outstanding concerns:</b></p> <ul style="list-style-type: none"> <li>- QIA requests that BIMC commit to the following mitigations prior to the approval of the northern transportation corridor. Note that these recommendations are not without precedent (see the 2017 Summary of Caribou-Related Mitigation for Rail, which indicates the mitigations that were included in various documents issued by BIMC between 2012-2016, including a large railway bridge at the Cockburn Lake caribou water crossing). Even with these mitigations in place, it is QIA's position that the transportation corridor should be considered to have a significant residual effect to caribou movement. In light of the evidence provided, QIA requests that NIRB consider the implications of finding a significant residual effect to caribou movement from the proposed northern transportation route.</li> </ul> <ol style="list-style-type: none"> <li>1. Commit to full assessment of alternatives to the current "dogleg" diversion in combination with QIA and HTOs. This includes proper and full assessment of the</li> </ol>

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	<p>transportation corridor is complete, BIMC is requested to develop a summary of expected impacts to caribou movement in collaboration with QIA, GN, HTO members and other members of the terrestrial environment working group (TEWG) and the as-yet undefined Inuit Committee/Inuit Panel. These predictions should form the basis for designing effective monitoring programs; some recommendations for monitoring programs are provided below.</p> <p>6. Regional monitoring program for movement impacts: BIMC is requested to develop a strong regional monitoring program to answer questions about how caribou are being affected by the railway. This regional monitoring program should be science-based and IQ-based, with both streams of knowledge equally informing the need for additional mitigations. With respect to science-based regional monitoring, QIA supports the GN's proposal to develop a radio collar program for North Baffin caribou. If communities are supportive, QIA also recommends the development of a regional community-based program for monitoring caribou, which may include interviewing hunters to determine the behaviour, health and condition of caribou and caribou feed after hunting trips. QIA further underscores the importance of setting up a monitoring program to look at gene flow over time, as genetic monitoring will be critical for determining whether restricted movement due to the railway is affecting population viability.</p> <p>7. Local monitoring program: BIMC is requested to develop a strong local monitoring program in the immediate vicinity of the railway, to identify high collision locations and trigger additional mitigations when caribou are in the area (e.g., the use of ultrasonic devices to warn caribou of the approach of trains). For the development of this program, the proponent may look to other mines (e.g., the Meadowbank gold mine) to identify best practices and learn what works best from these programs.</p> <p>8. For all monitoring programs, BIMC is requested to ensure that clear triggers are in place, based on what is known about north Baffin caribou movement patterns and typical group sizes, to introduce additional mitigations to reduce effects to caribou, including initiating temporary shutdowns to allow caribou movement through the north transportation corridor. Evidence suggests that the timing of these shutdowns can greatly reduce the impacts of industrial linear features to caribou movement. Phase 2 must include strong project conditions that tie monitoring programs to adaptive management, and require action by Baffinland within a fixed time period, based on input from HTOs and the terrestrial environmental working group.</p> <p>9. For all monitoring programs, BIMC is requested to work closely with the TEMP and the BIMC-proposed "Inuit Panel" (or other Inuit Committee) to identify triggers that will lead to the identification and implementation, within a reasonable time frame, of additional mitigations.</p> <p><b>Wind turbines: Resolved.</b> Wind turbines have been removed from the project description, so that specific issue is considered resolved.</p>
August 11, 2020 Update	<b>Resolved, contingent on ICA Implementation. QIA will provide an update on Implementation at the upcoming Technical Meeting.</b>





Review Comment	2. Effects of Linear Infrastructure on Caribou; Wind Turbines
	<p>Contingent upon the full and meaningful implementation of the Inuit Certainty Agreement, including robust regional and local monitoring programs, and identification of thresholds that are sufficiently sensitive to address Inuit concerns, the 9 recommendations listed above can be considered resolved.</p> <p>QIA has flagged a few specific issues that will need particular attention through ID2 and ID8 of the ICA:</p> <ul style="list-style-type: none"> <li>• QIA Recommendation 1: Confirming the acceptability of route 3 to Inuit—with meaningful engagement with Inuit based on the measures contained in ICA ID8 (approach for integrating IQ into rail route selection, wildlife crossings, land user crossings, slope designs, adaptive management, and railway monitoring), this concern will be resolved pending the full and proper implementation of ID8.</li> <li>• QIA Recommendation 2: This commitment requested BIMC to avoid all of the important caribou crossing locations identified by community members. This concern will be resolved pending the full and proper implementation of ID8 (specifically 8.1.3).</li> <li>• QIA Recommendation 9: ID2 of the ICA lays out a structure through the AMP Working Group and the Inuit Committee to engage with QIA and Inuit on the issue of identifying Inuit Objectives, Indicators, Thresholds and Responses; however, there is no complementary process to engage with the TEWG. This concern is resolved pending the ongoing revisions to the TEWG terms of reference. QIA will provide an update on its perspective of the status of this initiative at the Board's Technical Meeting and subsequent Hearing.</li> </ul>
Final Status Update	<p><b>Unresolved.</b></p> <p>Rationale: Baffinland has made some progress and key commitments regarding the construction and subsequent retrofitting of the railway embankment to improve cross-ability of the railway for caribou, as well as the commitment to developing initial caribou group size thresholds required to temporarily halt traffic on the road and railway, a commitment to developing a comprehensive monitoring program, and various other commitments related to operations of the railway.</p> <p>However, in the absence of progress on the CRLU monitoring program and the additional of Inuit OITRs to the relevant EMPs, most of the concerns raised above have not been addressed. Our recent review of the EMPs suggest many outstanding issues remain on the scientific side in terms of the adequacy of thresholds, triggers and proposed responses—and the Inuit OITRs have not been developed at all at this stage. It is unclear whether monitoring programs will be sufficiently robust to detect impacts to caribou (both in terms of habitat loss and the ability of caribou to cross the railway). While Baffinland has committed to developing an initial group size threshold, it is unclear whether the threshold will be sufficiently sensitive to address Inuit concerns.</p> <p>In regards to the three specific issues noted in our August 11 2020 comments, these concerns are still very much at play in the absence of progress on the ICA. Specific to recommendation 9, without a PCC that clearly outlines the requirements of the revised</p>



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Review Comment	2. Effects of Linear Infrastructure on Caribou; Wind Turbines
	<p>MEWG and TEWG terms of reference, the commitment to revise the TOR for these two groups is weak and leaves uncertainty surrounding whether the efficacy of these groups will improve.</p> <p>Overall, a very high risk remains that the combined effect of the road and the railway, including both physical barriers and sensory impacts, will have an important and likely significant effect on caribou movement, and current mitigations have not adequately addressed these concerns. Without certainty on Baffinland's commitment to adhere to Inuit oversight and decision-making on the effects of the linear infrastructure on caribou, the concerns raised in this TC remain unresolved, with low confidence that required improvements will be made in a reasonable time.</p>





Review Comment	3. Insufficient Methods of Collecting and Evaluating IQ
Subject	Marine Wildlife and Marine Habitat and Socioeconomic – Culture, Resources and Land Use; Existing Conditions and Baseline and Assessment Methods
Reference	<ul style="list-style-type: none"> <li>• NIRB EIS Guidelines 8.1.13.2 Impact Assessment</li> <li>• TSD 3 – Phase 2 Community Workshop Report, page 15-16 of 237</li> <li>• TSD 3 – Phase 2 Community Workshop Report, page 20-21 of 237</li> <li>• TSD 3 – Phase 2 Community Workshop Report, pages 25 and 34 of 237</li> <li>• TSD 5 – Mapbook</li> <li>• TSD 24 Marine Mammal Effects Assessment</li> <li>• TSD 25 Socio-economic Assessment; Section 9 – Culture, Resources and Land Use</li> </ul>
Importance of issue to impact assessment	The limited means and scope by which the Proponent has collected IQ and Inuit land and marine use data over the better part of the past decade means that there is limited data available to support the assessment of effects on culture, resources and land use. Thus, it is critical to improve the methods, analysis and reporting of IQ/Inuit land and marine use, prior to making decisions on expansion of the mining and transportation system.
Detailed Review Comment	<p><i>Gap/Issue</i></p> <p>The methods for conducting the gathering of IQ and evaluation of impacts with community members have largely been limited to workshops, a useful but partial and overall insufficient means by which to gather and analyze traditional use and IQ data, for a variety of reasons discussed further below. This makes the amount of IQ data, and particularly traditional marine and land use data, substantially smaller and more dated than would typically be expected for a project of this size, location and potential for adverse effects.</p> <p>The integration of IQ into prior Mary River FEIS documents has been limited in all of the following areas:</p> <ol style="list-style-type: none"> <li><b>the amount of IQ provided:</b> only the Original Mary River Project assessment saw dedicated mapping of traditional use and that information is a decade out of date now;</li> <li><b>control:</b> data collection has been primarily if not exclusively run by the Proponent and/or its consultants, rather than independent community-directed studies;</li> <li><b>settings:</b> community workshops have been the primary tool, with limited mapping workshops and no recent individual mapping exercises;</li> <li><b>focus:</b> usually primarily concerns raised at community workshops run by the Proponent rather than multiple data collection opportunities); IQ has been treated synonymously with Traditional Knowledge (TK), meaning that the focus has been on environmental observations of Inuit, rather than social, economic, cultural, spiritual, and values-based considerations of IQ;</li> <li><b>use:</b> data has been incorporated as a baseline input, rather than as a lens through which to conduct an impact assessment. In addition, it has been primarily “used” by the Proponent and its consultants, rather than seeking QIA or community inputs into community-led assessments. There is no current IQ “lens” in BIMC’s effects assessment or significance estimation;</li> </ol>



Review Comment	3. Insufficient Methods of Collecting and Evaluating IQ
	<p>f. <b>methods and metrics:</b> communal workshops have been the primary focus, with no known examination of key issues like food security, alienation and loss of use, retrospective assessment of changing land use, and extremely limited cumulative effects assessment overall;</p> <p>g. <b>geographic scope:</b> we have seen no evidence of recent IQ data collection work, and analysis by the Proponent, in particular, has been conducted on the terrestrial environments;</p> <p>h. <b>temporal scope:</b> primarily past and current use has been integrated; limited consideration of change over time or desired future use; and</p> <p>i. <b>breadth of voices:</b> primarily elders and members of HTOs or CLARCs; limited youth engagement for example.</p> <p><i>Disagreement with Addendum/TSD Conclusion</i></p> <p>QIA has identified eight issues with the Proponent's traditional use and IQ database that have contributed to our concerns with the methods and scope of traditional use and IQ data available with which to make decisions on this proposed Project, and which suggest that it is premature to make any estimations of the significance of adverse effects from the Phase II expansion on culture, resources and land use. The Proponent's existing effects estimations in the EIS on culture, resources and land use (see TSD 25, Section 9), all of which find insignificant impacts, will need to be revisited from a stronger evidentiary base prior to the completion of this EA.</p> <p><i>Reason for disagreement with Addendum conclusion</i></p> <p><b>1. Focus on Workshops</b></p> <p>The Proponent argues that workshop based data collection is efficient and enables the sort of communal decision making and consensus sometimes associated with the values within IQ. The Proponent focuses on the beneficial aspects of community workshops for data collection without fully identifying some of their limitations.</p> <p>Group workshops and consensus decision-making have limited value for gauging effects or opinions of impacts, particularly in Inuit culture where the voices of elders carry particular weight and where others will differ to their wisdom and experience. Nonetheless, this is the primary to sole vehicle used by the Proponent.</p> <p>It is widely acknowledged that Inuit traditions and behaviour predispose Inuit towards deferring to the knowledge of elders and to not voicing disagreement in an explicit way particularly in a public setting, where it might cause embarrassment or bad feeling. This could lead to estimates of communal convergence of opinion from such a setting being exaggerated. It is unclear whether or how this cultural context was considered by BIMC when designing and choosing these data collection methods.</p> <p>While some IQ is inherently communal and may be broadly held by a group of people, individual memories and experiences are also at the heart of IQ. A group gathering or verification process may not by itself be the most appropriate way to gather this potentially sensitive material. The sole use of communal settings for the collection of information about use and values that are in many ways inherently personal and individual</p>



Review Comment	3. Insufficient Methods of Collecting and Evaluating IQ
	<p>in nature may leave serious gaps in the data on Inuit culture, land and marine use, and IQ in general.</p> <p>As a result, QIA disagrees with the sole focus on IQ workshops for IQ data collection. When community knowledge and IQ is gathered it needs to include individual interviews and not solely group workshops.</p> <p>Due to the partial and limited methods used to conduct these knowledge gathering and effects assessment exercises, the outcomes are not held by QIA to be adequate to fully and properly assess community evaluations of impacts from the Project.</p> <p><b>2. Limited and Dated Traditional Use Data Collection</b></p> <p>QIA is concerned with the development of this FEIS Addendum without the collection in advance of additional traditional use data beyond that collected for the original FEIS. The topic of traditional land and marine use by Inuit, has been subject of limited assessment. The original Mary River Project saw dedicated traditional use and occupancy data collected by Knight Piesold, with some 35 Inuit involved in mapping exercises. This, however, occurred back in 2006-10, leaving an almost decade long gap in the collection of any traditional use data up to present day.</p> <p>This is not adequate spatial use and occupancy data upon which to assess major revisions to a project. The reliance of data collected approximately a decade ago is not appropriate and needs to be extensively updated, including to gauge change over time effects on Inuit harvesters and travellers from the mine and associated infrastructure, which we are hearing reports of in QIA's ongoing traditional use study. Any conclusions of effects on traditional harvesters (currently they are estimated to be insignificant by the Proponent) will be premature until this information base is updated.</p> <p><b>3. Constraints on Methods of Recording Data</b></p> <p>At pg. 16 of 237 of TSD 3, the Proponent states: <i>"Data recorded in the open houses was differentiated both in the data collection process (e.g. by using different coloured markers or annotations on the maps) and in the GIS databases (e.g. in separate attribute or notes files). Any written notes produced from the open houses also distinguished the source of the data. The open houses were not audio recorded, due to the difficulties associated with audio recording in large group settings where multiple conversations could be occurring simultaneously."</i></p> <p>QIA is concerned that IQ/TK data collection exhibits the following characteristics that do not live up to best practice:</p> <ul style="list-style-type: none"> <li>-data collection without audio recordings</li> <li>-data collection without extensive metadata trackable back to individual respondents</li> </ul> <p>IQ gathered must be verifiable, gathered with sufficient detail and are required for the data to be used in effective analysis of project impacts, including impacts from various project impacts which may vary over geographic or temporal scales or focus. Proper</p>



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	<p>confidentiality provisions can be included so that the data of each individual is protected and their identities are not attributed to specific comments/knowledge.</p> <p>The Proponent should identify how it will improve its data collection methodology prior to the end of this EA to support enhanced data collection on IQ-related topics.</p> <p><b>4. Timing of the IQ Data Collection</b></p> <p>The question of timing of IQ integration into EAs is also a troubling one. For example, specific to the forthcoming Mary River Phase 2 EA, the Proponent has drafted a FEIS, without conducting any additional TLU data collection since the 2006-10 study, and in advance of collecting a large amount of community inputs (currently, the primary data collection planned by BIMC is a series of workshops in Pond Inlet in December 2018 to March 2019). Notwithstanding this data gap, the Proponent has completed a draft FEIS that includes impact predictions on traditional use and other Valued Components (VCs) in the absence of adequate baseline or change over time data from the communities. This type of “cart before the horse” assessment is not considered to meet the standards of best practice and is unacceptable to QIA.</p> <p><b>5. Outside “Interpretation” of IQ and Traditional use Data</b></p> <p>At pgs. 20-21 of 237 in TSD 3, the Proponent states: <i>“Two types of data were collected in the workshops and open houses: verbal/textual data and spatial data... Data analysis was then accomplished through a form of associative analysis. In associative analysis, “the researcher looks for patterns, replication and linkages in the dataset” (GSRU 2007: 8:38). Data obtained from the workshops were thus analyzed to see if general themes emerged amongst the data sets and, if so, to qualitatively describe those themes.”</i></p> <p>This technique means that Inuit voices and IQ do not speak for themselves or in their own terms but through a process of elimination and distillation by an outside party, who likely does not hold IQ themselves. This “pattern recognition” system also appears predicated on the idea that the more common the knowledge the more valuable; outlier comments appear to be less valuable to the interpretative lens.</p> <p>Among the unanswered questions in relation to this outside interpretation of the workshop data are:</p> <ul style="list-style-type: none"> <li>• How did BIMC attempt to involve Inuit in establishing appropriate methods for effective IQ data gathering?</li> <li>• Who conducted the data interpretation and what are their qualifications for interpretation of IQ-related topics?</li> </ul> <p>Overall, there are inherent weaknesses to the “associative analysis” approach that may limit the confidence that can be held in the findings and the effects assessment that is predicated on these findings.</p> <p><b>6. Data Verification Priorities and Limitations</b></p> <p>At pg. 16 of 237 in TSD 3, the Proponent states: <i>“In the interest of time, only selected</i></p>

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Review Comment	3. Insufficient Methods of Collecting and Evaluating IQ
	<p>estimation of their significance or potential impacts from the project etc., difficult to impossible.</p> <p>Community members cannot be expected to be able to offer accurate spatial analysis when the map scales used are so coarse. Accurate and defensible effects assessment is difficult when so much spatial data is unattributed or improperly described.</p> <p><b>Summary</b> Overall, there are a large number of gaps in the Proponent's traditional use and IQ data that point to the strong need for additional data collection and more Inuit-engaged analysis of results, including their implications re: effects estimation and significance.</p>
Recommendation /Request	<p>The Proponent needs to provide evidence/commitment of a revised approach that will more fully inform a revaluation of effects on Inuit culture and land and marine use. The data currently advanced by the Proponent is too dated and too poorly attributed and coarse to allow effective or comprehensive impacts assessment to move forward. Based on the Proponent's information, QIA cannot confidently predict impacts on culture, resources or land use. Therefore, the Proponent is requested to:</p> <ol style="list-style-type: none"> <li>1. Commit to revisit the affected communities, the assessment of effects on culture, resources and land use. Initial analysis of the data gathered during this QIA study conducted during February 2019, suggests that it will provide a stronger information base of existing effects and likely future effects in Phase 2 than the existing workshop data, and create a starting point for dialogue on mitigation, monitoring and significance of impacts of Phase 2, alone and in combination with Mary River Project overall, on Inuit culture, resources and land use. This reassessment needs to occur prior to the completion of this EA.</li> <li>2. Provide further detail on how IQ was recorded from Inuit community members during the meetings and workshops. Important to this provision of further detail is for the Proponent to address the question of if sessions were not audio recorded, how can data be properly attributed, archived, verified or utilized? Further justification for this technique and a commitment to updating techniques to meet the required standard for best practice in future studies is required.</li> <li>3. Identify whether and how it engaged the Inuit communities in the advance identification of the topics to be included in the "summary information" that drove the Workshops.</li> <li>4. Identify what time constraints were placed on the process of IQ data collection and how those time constraints could have been avoided, and can be avoided in future consultations? For example, could the consultations conducted with Inuit regarding marine and terrestrial land use and IQ have commenced earlier?</li> <li>5. Provide further justification for the chosen technique for "interpreting" IQ, as well as consideration of what role Inuit should be playing in "interpreting" IQ in the EA and mine permitting and management processes moving forward, and how BIMC will support this.</li> <li>6. Identify whether and how it engaged the Inuit communities in the advance identification of the topics to be included in the "summary information" that drove the Workshops.</li> </ol>



Review Comment	3. Insufficient Methods of Collecting and Evaluating IQ
	<p>7. Commit to an increase in the representativeness of its IQ and traditional use information, by increasing the sample size of its study as well as increasing the demographic diversity of those sampled in communities and conducting interviews at a variety of times during the year.</p>
<p>Sept. 23, 2019 Update</p>	<p><b>Unresolved, pending review of documents (particularly the just-filed IQ Management Framework), further discussions and additional commitments.</b></p> <p><i>Relevant Proponent Commitments</i></p> <ul style="list-style-type: none"> <li>Baffinland has committed to reconsidering project effects on Culture, Resources, and Land Use based on the Tusaqtavut Study, as appropriate.</li> </ul> <p><i>Outstanding Gaps/Issues</i></p> <p>The Proponent has not filed its committed-to revised CRLU Assessment as of September 11, 2019, so QIA's concerns related to this document (response to request 1) remain outstanding as of this date. A one-day session on this topic was held between QIA and BIMC in July 2019 and QIA provided extensive verbal and written comments on issues with the proposed CRLU assessment at that time, but has not received any response material from the Proponent on those comments. An additional one-day meeting was held on September 14 wherein BIMC provided an extremely high-level overview of its proposed CRLU Assessment and proposed IQ Management Framework, but no documents were filed on this on the public record at that time.</p> <p>QIA received the Proponent's IQ Management Framework document on the public record on September 18, 2019. An initial review of the IQ Management Framework suggests that efforts like the Culture, Resources and Land Use Monitoring Program are an improvement. However, QIA remains concerned that Inuit will not consider an "Inuit Advisory Panel" as proposed by the Proponent, with minimal to no decision-making powers in relation to effects on culture, resources and land use, as an adequate monitoring and management tool for the Project.</p> <p>In relation to data collection, BIMC has stood by its 2007 and 2008 study and the 2015-16 community workshops as adequate for the purposes of impact assessment for the Phase 2 Project. QIA disagrees with the adequacy of these studies for the assessment of the Phase 2 Project and has provided detailed comments within the technical comment itself about gaps in the Proponent's work as against current expected practice. The Proponent has not acknowledged or adequately addressed these identified gaps in expected practice. Minimal traditional use and occupancy data has been collected by BIMC in the interim between 2008 and present day, making the mapped data available outdated. Furthermore, no mapped data is provided in the FEIS that is less than 11 years old for the area south of Milne Inlet, and only a small amount was gathered in 2015-16 even for this northern portion of the Project. We do not share the Proponents' statement that it is "up to date" information. While we feel our detailed review comments speak for themselves, QIA is ready and willing to meet to discuss the deficits in the available data, especially as they relate to the inability to confidently predict effects on culture, resources and land use.</p>





Review Comment	3. Insufficient Methods of Collecting and Evaluating IQ
	<p>QIA notes for the record that the Tusaqtavut Study, by itself, is not sufficient to make up for the deficits in Inuit values and land use data collection, and reiterates that the Proponent has a responsibility to collect up-to-date Inuit values and land use data on a regular basis in order to assist in the understanding of effects and identification of appropriate management for the Mary River Project. The Tusaqtavut Study needs to feed into a proper ongoing Inuit data collection system for the Project.</p> <p>The Proponent has not responded to the request (request 3.7) for increased representativeness in the collection of mapped data, including interviewing more people and from a broader demographic. This issue was also echoed by the Hamlet of Pond Inlet in the first Mary River Project Phase II Technical Meeting. This request is important because by not expanding representativeness the Knowledge of younger land users will not be considered. As previously stated, a whole new generation of harvesters who were not old enough to be part of the earlier BIMC traditional use data collection in 2006-10, are now actively travelling and harvesting on the lands and waters, who should be engaged along with elders, and we are now in a position that any traditional use study of mine-related activities needs to include a retrospective assessment of change over the last decade as well.</p> <p>The Proponent has provided some limited commitments in response to these requests. It remains unclear how the Proponent will integrate the affected Inuit communities into the reassessment of effects on culture, resources and land use. <b>QIA continues to request the Proponent commit to full integration of IQ holders into effects characterization and significance estimation;</b> this is the only way to correct for the problematic "interpreting" of IQ currently conducted by BIMC and its consultants.</p> <p><b>Recommendations/requests:</b></p> <p>QIA requests the Proponent provide more details on its proposed Culture, Resources, and Land Use Monitoring Program at least two weeks prior to the November hearing, so that the adequacy of the scope and committed-to funding for the life of the Project of an ongoing Inuit data collection system for the Project can be assessed by the Inuit parties and the NIRB.</p> <p>QIA requests the Proponent to commit to increased representativeness in the collection of mapped data, including interviewing more people and from a broader demographic.</p> <p>QIA requests the Proponent commit to adoption of an Inuit Committee/Inuit Panel that is demonstrably agreeable to Inuit parties in scope and powers, including appropriate decision-making authorities, with a timeline set for the development of Terms of Reference for this body.</p>
August 11, 2020 Update	<b>Resolved, contingent on ICA Implementation. QIA will provide an update on Implementation at the upcoming Technical Meeting.</b>

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	<p>Phase 2 assessment will stand to inform NIRB’s decision. That evidence shows that from the perspective of QIA and the Inuit communities, the CRLU baseline and change-over-time data gathered and integrated into the assessment in the FEIS Addendum by Baffinland is not adequately reflective of Inuit experiences, use, values, existing or predicted effects. Nor has Baffinland updated its own current assessment with the findings from the Clyde River and Arctic Bay Tusaqtavut studies.</p> <ul style="list-style-type: none"> <li>• Until such time as all studies can be completed and a <u>verified</u> CRLU assessment completed with full involvement of Inuit, this TC should be labeled unresolved.</li> </ul>



Review Comment	4. Incomplete Data Set with Respect to Marine Mammals
Subject	Marine Wildlife and Marine Habitat; Assessment Methods – Integration of IQ
Reference	<ul style="list-style-type: none"> <li>• NIRB EIS Guidelines 8.1.13.2 Impact Assessment</li> <li>• TSD 24: Marine Mammal Effects Assessment, including Appendix A, Section 2.4</li> <li>• FEIS Addendum, 4.3.1 Project Effects on VECs</li> <li>• FEIS Addendum pg. 43 of 512, 4.3 VECs and VSECs Interaction with the Project</li> <li>• NIRB Reconsideration Report re: Production Increase Proposal – August 31, 2018; pgs. 37, 43-44, and 47 of 60</li> <li>• IR# GN72, sub-questions 1-5 (BIMC Response to IR's page 30 – 35/587)</li> <li>• IR# QIA80, (BIMC Response to IR's page 48 – 51/587)</li> <li>• IR# QIA81, (BIMC Response to IR's page 48 – 51/587)</li> <li>• IR# ON005, (BIMC Response to IR's page 69 – 73/587)</li> </ul> <p>Additional documents (post Technical Review comments)</p> <ul style="list-style-type: none"> <li>• Baffinland Iron Mines Corporation Marine Monitoring Plan. Document # BAF-PH1-830-P16-004, Revision: Rev. 1.0, Issue Date: June 10, 2019 (file name on Stantec FTP site "1_Baffinland Marine Monitoring Plan_MMP_June10-2019.pdf")</li> <li>• Baffinland Iron Mines Corporation Draft Adaptive Management Plan (August 23, 2019; "01_dft_adaptive_management_plan.pdf" on the Stantec FTP site)</li> <li>• Assessment of Icebreaking Operations during Shipping Shoulder Seasons on Marine Biophysical Valued Ecosystem Components (VECs). Mary River Project - Phase 2 Proposal. Report by Golder Associates for Baffinland Iron Mines Corporation. 1663724-102-R-Rev1-30000. 17 May 2019 (Stantec FTP site file name "02A_Assessment_Icebreaking_Operations.pdf")</li> </ul>
Importance of issue to impact assessment	<p>Existing NIRB findings in relation to the Mary River Project indicate:</p> <p>“At the public and community level, significant concerns were expressed regarding the potential effect of the both the existing Mary River Project and the potential for increased effects associated with the Production Increase Proposal on the marine and terrestrial environments” (Reconsideration Report, p. 44 of 60).</p> <p>“...due to the information gaps resulting from limited available monitoring data from BIMC on several valued ecosystemic components of specific concern to communities closest to the project, the Board is not satisfied that the increased impacts associated with increased hauling and shipping can be fully managed by current mitigation and monitoring plans for the site” (Reconsideration Report, p. 47 of 60).</p> <p>Without a comprehensive data set addressing the IQ and community knowledge of marine mammals, the assessment of project effects cannot occur in a timely or effective manner. QIA considers the current state of data, and in particular the IQ data that has been gathered to date to be weak, based on its relative age, the altered nature of project components since the original TUS study was completed by Knight Piesold, the coarse scale used when mapping exercises was conducted and the infrequent use of individual</p>



Review Comment	4. Incomplete Data Set with Respect to Marine Mammals
	<p>interviews with audio recording as a data collection technique. These critiques have also been addressed elsewhere in other QIA submitted technical comments.</p> <p>Marine mammals of particular concern to QIA include narwhal, polar bear, ringed seal and bearded seal.</p>
<p><b>Detailed Review Comment</b></p>	<p><i>Gap/Issue</i></p> <p>The Proponent has not acknowledged or considered concerns of Pond Inlet hunters regarding impacts from the current operations of the Project on Marine Mammals. There is no evidence of the comprehensive incorporation of IQ and community knowledge of the impact of shipping and Project activities on polar bears, bearded seals, walrus or narwhal.</p> <ul style="list-style-type: none"> <li>• The Proponent is therefore likely not successfully incorporating IQ into marine monitoring and Project decision-making as required by certificate conditions 101 and 126 and IIBA articles 14.1.1, 15.3.3, 15.6.1, 15.6.2 and most importantly 16.2.2.<sup>2</sup></li> <li>• In its response to intervenors during the Review Process the Proponent answered that, “current monitoring is not demonstrating exceedances to thresholds...” (Reconsideration Report, p.37 of 60), ignoring concerns raised by Pond Inlet community members and QIA regarding changes in marine mammals available for traditional harvesting.</li> <li>• Importantly the Board did recognize this as an information gap and further noted that marine mammal surveys had also not yet been completed by the Proponent (Reconsideration Report, p. 43 of 60).</li> </ul> <p>At pg. 43 of 512 of the FEIS Addendum, the Proponent asserts: “There is potential for acoustic disturbance from ship noise along the Northern shipping route as well as vessel strikes on marine mammals which can cause serious injury or mortality through physical harm. With respect to the Northern shipping route, ringed seals, narwhal, beluga whales and bowhead whales may all be expected to encounter ship traffic in low to high frequencies. There have been no vessel strikes to date with marine mammals. Polar bears and walrus are infrequent along the Northern shipping route in the open water season and are, therefore, not expected to experience acoustic disturbances from ship noise or vessel strikes. Given the relatively low likelihood and short duration of encounters between marine mammals and vessel traffic, acoustic disturbances are not expected to affect marine mammals at the population level.”</p> <p><i>Disagreement with Addendum/TSD Conclusion</i></p> <p>Without a consideration of existing shipping and an evaluation of community observed impacts from the Project thus far, the Proponents conclusions regarding impacts are felt to be premature and likely inaccurate. In addition, QIA and community knowledge and IQ, disagrees with the Proponents position that impacts can be assessed across seal species.</p>

<sup>2</sup> IIBA Article 16.2.2: “The Company shall take IQ into consideration for all its decisions when considering the accuracy of impact predictions, when designing or interpreting the effectiveness of impact reduction activities and the need to modify such activities including but not limited to social economic elements such as Inuit Human Resource planning.”



Review Comment	4. Incomplete Data Set with Respect to Marine Mammals
	<p>The evidence presented and the lack of IQ considered in relation to Atlantic walrus does not support a conclusion of limited walrus-shipping interactions in the RSA.</p> <p>IQ and hunter observations do not support the conclusion of a non-significant impact from shipping on narwhal numbers in the Bruce Head area of Milne Inlet.</p> <p><i>Reason for disagreement with Addendum conclusion</i> Community knowledge of polar bears, bearded seal, narwhal and walrus are essential considerations, and should be considered in relation to Project impacts. Furthermore, community observed impacts should be documented and responded to regardless of relation to the RSA.</p> <p>Bearded seals are an entirely different species from ringed seals with significantly different habitat needs according to IQ.</p> <p>Without inclusion of IQ, an appropriate assessment of the project impacts on Atlantic walrus is not possible and the conclusion of negligible impacts is not supported.</p> <p>Based on IQ considered by QIA there is direct evidence supporting the opposite conclusion – that in fact the project has had a significant role in decreasing narwhal abundance in the RSA from 2014-2017.</p>
Recommendation /Request	
	<p>QIA requests the existing shortfalls in marine mammal IQ data collection and integration be addressed through the following steps:</p> <ol style="list-style-type: none"> <li>1. As part of ongoing monitoring, community consultations and studies should be undertaken that appropriately assess community observations of changes and impacts from the Project on marine life including the location and abundance of polar bears, narwhal, Atlantic walrus and bearded seals, whether inside or outside the RSA.</li> <li>2. QIA requests that the impacts on bearded seals be assessed independently from ringed seals using IQ of harvesters and community members in the RSA.</li> <li>3. QIA requests an assessment of the impacts of the project on Atlantic walrus and narwhal using IQ, and an assessment using IQ of the appropriate areas of walrus habitat within the RSA that better identifies potential impact pathways.</li> <li>4. QIA requests that the Proponent provide material evidence of revised and enhanced IQ incorporation in the Marine Environmental Effects monitoring program, especially in Reference marine mammal monitoring regimes. QIA further requests that these revisions be considered in consultation with impacted communities and with QIA.</li> </ol>
Sept. 23, 2019 Update	Unresolved, pending additional commitments.





Review Comment	4. Incomplete Data Set with Respect to Marine Mammals
	<p>QIA identified a number of shortfalls with the collection and integration of marine mammal IQ data, and throughout the review process these concerns have also been raised by other parties (e.g., Mittimatalik HTO, Hamlet of Pond Inlet).</p> <p>The Proponent noted that, in addition to Inuit participation in monitoring programs and gaining approval of monitoring programs each year through the MHTO, they are funding a Community Based Monitoring program that is currently contemplating this type of research (i.e., equipping hunters with GPS units and setting up a payment program for data deliveries). QIA has repeatedly noted that while Inuit involvement in the Proponent's monitoring programs is necessary and important, additional efforts are needed. Recommendations on the selection of subjects to cover through ongoing consultation activities could be integrated into the IQ Collection Protocol or Community and Stakeholder Engagement Plan. The Marine Monitoring Plan and Adaptive Management Plan could also be revised to improve the incorporation and integration of IQ (see below).</p> <p>In the Proponent's Marine Monitoring Plan (June 10, 2019; Stantec FTP file name "1_Baffinland Marine Monitoring Plan_MMP_June10-2019.pdf"), one of the objectives of the monitoring framework (s. 3, p. 24 of 130) is to "<i>[i]ntegrate IQ knowledge into the development and implementation of the environmental monitoring programs</i>". One of the monitoring principles (s. 31, p. 24 of 130) is to "<i>[c]onsult Inuit on their perspectives of Project effects and the effectiveness of mitigation measures to understand where alignment or gaps between scientific monitoring programs and IQ exist</i>". There remains however a lack of clarity on how these important activities will be conducted.</p> <p>Regarding request #1, the Proponent's adaptive management framework proposed in the draft Adaptive Management Plan (August 23, 2019; file name "01_dft_adaptive_management_plan.pdf" on the Stantec FTP site) does not adequately ensure integration of IQ in the monitoring of marine mammals. See for example, Table 1 (Adaptive Management Phase, Components and Mechanisms, p. 12 of 50), where "<i>IQ integration and influence</i>" is a component, but isn't at the forefront of plan development. Under the "<i>Evaluate and Learn</i>" phase and "<i>Additional mitigation</i>" component, the proposed Adaptive Management (AM) mechanism is to "<i>Determine need for additional mitigation and new or revised management strategies</i>". Getting "<i>Input from IQ holders</i>" is listed as a separate component, with the proposed AM mechanism to "<i>Provide opportunities for IQ holders to review results and input into adaptive management responses / mitigations</i>". This type of thinking places IQ as a supplementary information source, rather than having it used from the outset, for example in determining whether additional mitigation and new or revised management strategies are required. IQ should be driving this process, not augmenting it. Similarly, Appendix B (Adaptive Management Checklist Template) is also relevant re: integration of IQ. Under the "<i>Evaluate and Learn</i>" phase, "<i>Review Data and Feedback</i>", "<i>Additional Mitigation</i>" and "<i>Input of IQ Holders</i>" are all separate components. This isn't integration, as the entire process should be conducted under an IQ lens. Appendix C (Adaptive Management Assessment for Management and Monitoring Plans) is the same as above with respect to issues re: integration. To BIMC's credit, for the "<i>Marine Monitoring Plan</i>" table they acknowledge that integration needs</p>





Review Comment	4. Incomplete Data Set with Respect to Marine Mammals
	<p>work. However, for "Input of IQ Holders", they identify opportunities for IQ holders "to review results and provide input into adaptive management responses / mitigations" as via "review of annual reports". Again, this isn't effective integration and doesn't place the focus on IQ where it's needed. Depending on Inuit in impacted communities to review Annual Reports will not lead to effective integration of IQ into the adaptive management process.</p> <p>The Marine Monitoring Plan includes ringed seal as a key indicator (s. 2, Table 2-1, p. 22 of 130), but the only monitoring activity identified is for marine mammal mortality (s. 5.4, p. 43 of 130). Inuit have identified concerns with shipping effects on ringed seals, and have provided observations that impacts are occurring. In the assessment of icebreaking operations (s.s. 5.6.3, p. 77), it "is assumed that approximately 70 to 200 ringed seal in Milne Inlet and Eclipse Sound will exhibit avoidance of the icebreaking noise source per icebreaker transit, this represents &lt;1 % of the population of ringed seals in the Canadian Arctic". The number of ringed seals in the Canadian Arctic is not a useful metric for impact assessment, as impacts are felt locally, at a smaller scale. Impacts need to be assessed, and monitored and mitigated, at scales relevant to Inuit harvesting. IQ can and should play a key role in the development of ringed seal monitoring programs.</p> <p>On request #4, the Proponent has yet to make any concrete commitments to enhancing IQ integration into ongoing monitoring. We note as well that when asked about IQ observations and concerns about narwhals at the Technical Meeting, the Proponent indicated that it has not engaged Inuit in the identification of what would be a significant adverse effect on narwhal from the Inuit perspective. This is a major gap in the confidence that can be held that the Proponent's assessment of impact significance is appropriate, and a notable gap in the "integration" of IQ into the Project assessment.</p> <p><b>Recommendations/Requests:</b></p> <p>QIA recommends the Proponent commit to, and the NIRB enshrine in a Project Certificate condition, more detailed requirements for incorporation of IQ into marine (and terrestrial) environmental management plans moving forward, and explicitly require involvement of Inuit in development of limits of acceptable change.</p> <p>QIA recommends the Proponent commit to, and the NIRB enshrine in a Project Certificate condition, a requirement for Inuit and IQ metrics to be incorporated into Early Warning Indicators for the Project.</p> <p>QIA recommends the Proponent commit to, and NIRB develop a Project Certificate condition also requiring, more efficient and Inuit-based monitoring of Ringed seals.</p>
August 11, 2020 Update	<b>Resolved, contingent on ICA Implementation. QIA will provide an update on Implementation at the upcoming Technical Meeting.</b>



Review Comment	4. Incomplete Data Set with Respect to Marine Mammals
	<p>This technical comment is now considered largely resolved, provided ICA ID1 (Inuit Stewardship Plan and Inuit Committee), ID2 (Adaptive Management Plan) and ID4 (CRLU Monitoring Program) are fully resourced by Baffinland and implemented.</p> <p>Through the CRLU Monitoring Stream (ID4) of the Inuit Stewardship Plan (ID1), Inuit and IQ will be integrally involved in Project monitoring (i.e. for Ringed Seal), and Inuit will be directly involved in the determination of relevant triggers/thresholds (i.e. Early Warning Indicators) and response actions for inclusion in the Adaptive Management Plan (ID2).</p>
Final Status Update	<p><b>Unresolved.</b></p> <p>The list of commitments by the Proponent includes substantial concessions on each of the three original requests (incorporation of IQ in environmental monitoring and management plans (Commitments #223, 135, 134), requirement for Inuit and IQ metrics in EWIs (Commitment #41-see further discussion below), and to more – and IQ-enriched – monitoring of seals – Commitments #225, 224, 30). However, without Inuit OITRs for adaptive management developed under the Inuit Committee, high uncertainty remains if this item can be fully resolved.</p>



Review Comment	5. Influence and Utilization of IQ on Planning and Design of Project
Subject	Environmental Mitigation and Management and Environmental Monitoring - Integration of IQ
Reference	<ul style="list-style-type: none"> <li>FEIS Addendum Section 10.4, Table 10-4, starting at pg. 10.9 (pdf pg. 211 of 512)</li> <li>Project Summary, pdf pg. 35 of 512</li> <li>Table 7-2, pdf pg. 171 of 512</li> <li>TSD 3 – Phase 2 Community Workshop Report, pdf pg. 61 of 237</li> <li>TSD 28, Appendix Y, pdf pg. 177</li> </ul>
Importance of issue to impact assessment	The role of Inuit and IQ in monitoring and management of the effects of the Mary River Project on the human and biophysical environment is a critical, but to date somewhat underutilized, value. Deeper engagement of Inuit in environmental management and monitoring of the entire industrial complex will improve communications between BIMC and affected communities, reduce community concerns about environmental issues, and potentially increase the sense of safety and security of community members out on the land, at the same time that increases Inuit stewardship of lands and waters. BIMC needs to provide more information on its commitments to integrate Inuit and IQ into its management planning, adaptive management system, and ongoing monitoring.
Detailed Review Comment	<p><b>Gap/Issue</b></p> <p>The FEIS Addendum does not provide adequate evidence of how IQ, local knowledge and community knowledge have influenced the planning and design of the proposed activities and associated management and monitoring plan updates. The Proponent rightfully flags some items, such as how community input has led to reductions in the shipping season, as signs of success. Nonetheless, there are large remaining gaps in the engagement of Inuit in monitoring and management planning and implementation that merit redress.</p> <p>While IQ information is present in the documents, it has often played an implicit and passive role rather than an explicit and active (i.e., having IQ holders in the room is not synonymous with evidence that IQ is being actively sought and used to frame decisions and actions, and having IQ holders develop and implement those actions on the ground).</p> <p><b>Disagreement with Addendum/TSD Conclusion</b></p> <p>QIA disagrees that the current committed to and implemented plans for Inuit involvement in Project monitoring and management planning are adequate and calls for a renewed effort by BIMC to increase the Inuit presence in scientific and IQ monitoring, and to involve Inuit in development and implementation of management plans. This requires further commitments from BIMC to improve Inuit/IQ integration into management and monitoring.</p> <p><b>Reason for Disagreement with Addendum/TSD Conclusion</b></p> <p><b>Management Plans</b></p> <p>Section 10.4 of the FEIS Addendum notes that changes to mitigation and monitoring plans will be ongoing throughout as well as outside of the regulatory process (p. 10.8). It is not clearly stated how IQ has updated any of the plans since approval or what specific steps will be taken to integrate IQ into updates/new plans.</p>



Review Comment	5. Influence and Utilization of IQ on Planning and Design of Project
	<p>TSD 28 also describes the formation of the Community Advisory Group in Pond Inlet (now referred to as the Mary River Community Group - MRCG), which is intended to “provide an effective means to engage Elders and community members in order to have community-level input into the BIMC monitoring programs and mitigation measures” (TSD 28 Appendix Y PDF p.177). BIMC has not described how input from the MRCG has altered management plans since approval or described how they plan to work with the MRCG to complete updates.</p> <p><b>Adaptive Management Mechanisms</b></p> <p>It is not clear what systems are in place to monitor the impacts of project activities and respond to community observations – as in the case of the sculpin die-offs noted by Inuit hunters (TSD 3; pg. 61 of 237) and the need identified by Inuit for wider terrestrial and freshwater impact monitoring outside of the PDA into the broader area (TSD 3; pg. 93 of 237).</p> <p><b>Inuit Monitoring</b></p> <p>In the Project Summary (pdf pg. 35 of 512), the Proponent indicates that, “<i>At each of these stages community involvement is an important part of the process. An approach that emphasizes learning as you verify the effects of actions allows BIMC to continuously improve and adapt quickly to changing conditions.</i>”</p> <p>Despite this, in the FEIS Addendum, the emphasis on scientific monitoring suggests the Proponent assumes scientific monitoring of biophysical resources will capture any unanticipated impacts (p.77). The value and role of IQ-based monitoring is not adequately discussed.</p> <p>A notable exception is that Table 7-2 at pg. 171 of 512 of the FEIS Addendum indicates that Inuit ship observation monitoring was re-initiated in 2018. No reference is made to whether this will be extended into the railroad and road construction and terrestrial operations side of the project. More information on full Proponent commitments to site-specific and transportation system Inuit monitoring is required.</p> <p>Overall, there is limited evidence of dedicated monitoring programs that have detailed community environmental monitoring activities being set up since the original Mary River Project was permitted. Of particular concern are limited records of change along the Tote Road, using sensory observation tools unique to Inuit harvesters.</p> <p>At section 4.1.2.1 (pdf pg. 148 of 512), the Proponent indicates that traffic will be higher for about three years during construction of the North railroad. There will be a “pulse” of construction and operations activities during this time period that could have serious ramifications for wildlife, vegetation and traditional use and travel by Inuit. There is likely a need for an independent Inuit monitoring presence along the Tote Road corridor during this time period, at minimum. We know of no commitment by the Proponent to this, at this time.</p>



Review Comment	5. Influence and Utilization of IQ on Planning and Design of Project
	<p><b>Summary</b></p> <p>Further information is required on the Proponent's support for and commitments to current and proposed Inuit on-territory monitoring and adaptive management mechanisms in relation to the project, separating between activities Inuit working for BIMC conduct, and independent Inuit monitoring activities.</p>
<p><b>Recommendation /Request</b></p>	<p>The Proponent is requested to provide more information on how IQ and Inuit observation is being incorporated into monitoring of project-specific and cumulative effects. It is requested that the Proponent:</p> <ol style="list-style-type: none"> <li>1. Review Table 10-4 in the FEIS Addendum and provide an updated discussion and an updated table, including:             <ol style="list-style-type: none"> <li>1. Changes/additions made to mitigation/monitoring plans based on Inuit IQ including a description of input provided by the Community Advisory Group in Pond Inlet; and</li> <li>2. Details, with timelines, for future collecting, integrating, and verifying IQ for drafting mitigation/monitoring plans relevant to the Phase 2 Proposal</li> </ol> </li> <li>2. Identify how it is using the principles of IQ and adaptive co-management to effectively integrate and respond to the knowledge and observations of Inuit hunters and community members.</li> <li>3. Identify what tangible actions will be taken to alter monitoring programs to take on board the critiques offered by community members regarding height-of-land surveys and increasing surveying beyond the mine/project footprint into the broader area.</li> <li>4. Provide commitments with details, including timelines, for ground-truthing key environmental processes and species with IQ users (e.g. fish locations, caribou and other wildlife, vegetation sampling etc.), especially along the Tote Road, and for setting up ongoing Inuit monitoring along the Tote Road.</li> <li>5. Provide further detail on how it has incorporated IQ observations, including from dedicated Inuit monitors on site, from Community Environmental Monitors, and from general public input, into its monitoring and management scheme, including all sensory observations.</li> <li>6. Identify hurdles to its ability to achieve compliance with Commitment #104 to have Inuit monitors present at all times at the Project site, and what the Proponent is doing to overcome these hurdles, identify a timeline to full implementation of this commitment, and indicate whether this commitment also applies to Inuit monitors along the transportation route and shipping complex.</li> <li>7. Identify what plans are in place for dedicated Inuit transportation route monitoring, especially during the three year "pulse" period. This may involve but would not be limited to dedicated on-territory community environmental monitoring at key "higher risk" locations along the transportation route.</li> </ol>



Review Comment	5. Influence and Utilization of IQ on Planning and Design of Project
<p><b>Sept. 23, 2019 Update</b></p>	<p><b>Unresolved, pending documents, further discussion and additional commitments.</b></p> <p><i>Relevant Proponent Commitments</i></p> <ul style="list-style-type: none"> <li>Baffinland will provide a summary its approach to incorporate Inuit and IQ into its environmental monitoring programs for Phase 2.</li> </ul> <p>In relation to Request 1-5, the Proponent suggested in its Technical Comment responses that QIA involvement in development of Baffinland's Adaptive Management Plan and IQ Collection Protocol may provide the certainty requested that IQ will be incorporated into monitoring programs moving forward.</p> <p><i>Outstanding Gaps/Issues</i></p> <p>The Proponent filed its committed to IQ Management Framework on September 18, 2019.</p> <p>Appendix 13 to the Technical Comment responses and the just received IQ Management Framework both reflect an improvement on previously available characterization of the role of Inuit and IQ in Project planning, assessment, monitoring and management. BIMC also provided additional response materials to several of the requests related to Inuit monitoring, including a commitment to "the use of dedicated high cars to monitor for wildlife presence which could be sent ahead of the train during periods of substantial wildlife presence/movement to monitor for animals along the track. Inuit environmental monitors will have the first right of refusal for these position[s]; During construction Baffinland will have wildlife monitors stationed at key higher risk areas for wildlife and Inuit environmental monitoring staff will have the first right of refusal for these positions."</p> <p>However, the integration of IQ in monitoring programs cannot yet be considered as "sufficient". It remains unclear how effective the Proponent's commitments (if any) will be to capture Inuit concerns in a timely manner, and react to them. Concerns raised even back in 2015-16 have not demonstrably been responded to by the Proponent in some cases (e.g., increasing the geographic scope of caribou monitoring), and community inputs on the significance and acceptability of impacts on caribou, narwhal and the proposed North Railway routing, to name three examples, have not been adequately integrated into project effects assessment to date.</p> <p>QIA is concerned that Inuit and IQ remain underutilized in relation to Project monitoring. The Proponent has recently made some additional commitments in its IQ Management Framework to improve Inuit/IQ integration into project management and monitoring. More details are necessary on the Culture, Resources, and Land Use Monitoring Program and the proposed "Inuit Advisory Panel" model, before QIA can gauge their adequacy for improving the relationship between monitoring and management of the Project. The proposed "advisory" nature of the "Inuit Advisory Panel", in particular, is problematic for Inuit.</p> <p>The draft Adaptive Management Plan (BIMC August 23 2019) is problematic in its attempt to integrate IQ as it offers discrete steps for IQ consideration rather than situating the</p>





Review Comment	5. Influence and Utilization of IQ on Planning and Design of Project
	<p>entire plan within an IQ lens. This type of thinking places IQ as a supplementary or complementary knowledge source, rather than having it used from the outset, for example in determining whether additional mitigation and new or revised management strategies are required.</p> <p>"IQ integration and influence" is a component of, but isn't at the forefront of, the Adaptive Management Plan. An example of this is Table 1 (Adaptive Management Phase, Components and Mechanisms, p. 12 of 50). IQ should be driving this process, not augmenting it. Similarly, Appendix B (Adaptive Management Checklist Template) in the draft Adaptive Management Plan is ineffective in the approach to integration of IQ as under the "Evaluate and Learn" phase, "Review Data and Feedback", "Additional Mitigation" and "Input of IQ Holders" are all separate components. This isn't integration, as the entire process should be conducted under an IQ lens.</p> <p><b>Recommendations/Requests:</b></p> <p>QIA requests the Proponent provide more details on its proposed Culture, Resources, and Land Use Monitoring Program at least two weeks prior to the November hearing, so that the adequacy of the scope and committed-to funding for the life of the Project of an ongoing Inuit data collection system for the Project can be assessed by the Inuit parties and the NIRB.</p> <p>QIA requests the Proponent commit to adoption of an Inuit Committee/Inuit Panel that is demonstrably agreeable to Inuit parties in scope and powers, including appropriate decision-making authorities, with a timeline set for the development of Terms of Reference for this body.</p> <p>QIA requests the Proponent commit to working with QIA and the Inuit communities to review adequacy of existing - and develop enhanced and independent - Inuit community-based monitoring programs.</p>
<p><b>August 11, 2020 Update</b></p>	<p><b>Resolved, contingent on ICA Implementation. QIA will provide an update on Implementation at the upcoming Technical Meeting.</b></p> <p>This technical comment and associated requests are now considered largely resolved, provided ICA ID1 (Inuit Stewardship Plan and Inuit Committee), ID2 (Adaptive Management Plan) and ID4 (CRLU Monitoring Program) are fully resourced by Baffinland and implemented.</p> <p>The first request (more detail on the CRLU Monitoring Program) is resolved with agreement to ICA ID4. Baffinland's proposed CRLU Monitoring Program is now captured under the Culture, Resources and Land Use Stream (ID4) for the Inuit Stewardship Plan (ID1). The CRLU monitoring program will be designed and led by Inuit. Baffinland is responsible to resource the program. QIA will update the Board on the status of resourcing and implementation of this CRLU Monitoring Program at the technical meeting and hearing.</p>





Review Comment	5. Influence and Utilization of IQ on Planning and Design of Project
	<p>The second request (Inuit Committee agreeable to Inuit with adequate scope and controls) is considered resolved with the ICA agreement to an Inuit-led Inuit Committee (ID1) to provide oversight to Project planning, Inuit monitoring, investigations, and development of enforceable Inuit Objectives, Indicators, Thresholds and Responses, built into the Project's Adaptive management Plan which is subject to QIA approvals (ID2). QIA will update the Board on the status of resourcing and implementation of this Inuit Committee at the technical meeting and hearing.</p> <p>The third request (Baffinland to review with Inuit and QIA adequacy of existing community-based monitoring programs) is something that will be ongoing. For the record, the ICA indicates that the Inuit Stewardship Plan and the associated Social Stream (ID3) and CRLU Monitoring Program (ID4), while led by Inuit, will not replace existing Baffinland commitments to specifically fund and support Inuit community-based monitoring programs.</p>
Final Status Update	<p><b>Unresolved.</b></p> <p>The principles, programs and structures developed in the ICA have yet to be endorsed or refined by the impacted communities, so they remain conceptual at this point. Until such time as the ICA is fully implemented and resourced, this TC must be considered unresolved.</p>



Review Comment	6. Project Alternatives and Community Input
Subject	Project Description (Project Alternatives); Integration of IQ
Reference	<ul style="list-style-type: none"> <li>• NIRB EIS Guidelines Section 6.1 Alternatives</li> <li>• FEIS Addendum Section 6 Project Alternatives, pg. 6.1; pdf pg. 165 of 512</li> <li>• TSD 01 Alternatives Analysis, pdf pg. 5 of 22; and Table 1.1 (Assessed Alternatives)</li> <li>• TSD 04 Public Consultation, Section 4.3 Inuit Knowledge Workshops, Section 4.4 Summary of Comments/Responses, Table 4.1</li> <li>• IR# QIA 88 (BIMC Response to IR's PDF page 54 of 587).</li> </ul>
Importance of issue to impact assessment	<p>The Proponent has not provided enough detail in the discussion of the assessment of alternatives to satisfy the requirements of Section 6.1 of the EIS Guidelines: “the public opinions and preferences shall also be taken into consideration as a criterion in the assessment all the alternative options. Therefore, the alternative analyses shall include a discussion on how public consultations by the Proponent have influenced the Project planning, and how public preferences have been considered by the Proponent in determining the preferred project alternatives.” (PDF pages 32 and 33 of 101).</p> <p>It remains unclear what the methodology for determining community acceptability of alternatives was, or how Inuit preferences were considered by the Proponent in determining the preferred project alternatives. This information is essential in determining the adequacy of the alternative means assessment.</p>
Detailed Review Comment	<p><i>Gap/Issue</i> Given that some of the alternative means chosen by the Proponent for Phase 2 may have substantial implications for Inuit (e.g., increased ship size, increased shipping season, expanded port infrastructure, a railroad bisecting North Baffin), it is critical that Inuit are meaningfully involved in the assessment of alternative means to undertake the Project.</p> <p><i>Disagreement with Addendum/TSD Conclusion</i> QIA disagrees with the Proponent's statement in the FEIS Addendum section 6 that, “Viable alternatives have been evaluated according to technical feasibility, cost effectiveness, environmental acceptability, and community acceptability” (PDF p. 71 of 142) as limited evidence is provided that Inuit community acceptability was integrated in alternatives decision-making.</p> <p><i>Reason for Disagreement with Addendum/TSD Conclusion</i> Section 6 of the FEIS Addendum states that BIMC has considered various alternatives means to undertake the Project but does not discuss what role if any Inuit had in the alternatives assessment. Greater transparency is required to determine the adequacy of the alternative means assessment.</p> <p><b>Integrating “Community Acceptability”</b> Limited discussion in the FEIS Addendum, TSD 01, TSD 04, and IR Responses is provided respecting the methods for determining community acceptability in alternative means assessment and how Inuit concerns were weighted and integrated in the final decision.</p>



Review Comment	6. Project Alternatives and Community Input
	<p>TSD 01, at pdf pg. 5 of 22, suggests that Inuit perspectives on alternative means to undertake the project were sought through consultation forums (public meetings and workshops). However, Table 1.1 appears to be an internal exercise by the Proponent, without community verification of the critical “Community Acceptability” criterion for each alternative means considered.</p> <p>The Proponent’s response to QIA IR 88 states: “An understanding of community acceptability was derived from community engagement activities (see TSD 4 Public Consultation Report) and incorporated into the alternatives assessment. It is notable however, that any alternatives that would make the project economically or technically infeasible could not be carried forward, irrespective of how high community acceptability for a proposed option was ranked.” (PDF p. 54 of 587). TSD 04 Public Consultation Report does not describe in detail how “community acceptability” was sought for alternatives assessment. TSD 04 only mentions a 2015 workshop where participants commented on, “the acceptability of BIMC’s proposed trans-shipping sites and described shipping route conditions along the proposed Phase 2 Proposal shipping route and other locations in the Eclipse Sound and Navy Board Inlet areas” (TSD 04 PDF p. 26 of 73). How Inuit concerns raised at these workshops were integrated into alternatives decision-making has not been described. The Proponent has also not provided the “no go” technical and economic feasibility threshold that would negate a high priority community concern nor described any community concerns that were overridden for these reasons.</p> <p>This raises issues about whether BIMC has meaningfully engaged Inuit in consideration of alternatives prior to determining appropriateness of preferred alternative means. More information is required about who conducted the alternatives assessment and what role, if any, Inuit played in determination of “Community Acceptability”. We agree that determination of “community acceptability” is by definition subjective (TSD 01; pdf pg. 5 of 22) as is the determination of significance of impacts itself. This recognition requires that the people affected by the Project must be intricately involved in the determination of “community acceptability”.</p> <p><b>Inuit Involvement in Assessment of Alternative Means for Shipping</b></p> <p>In addition to the workshop noted above on shipping the FEIS Addendum Section 6.2 (pdf pg. 165 of 512) notes that four shipping season alternatives were assessed. In the end “The preferred shipping alternative is an extended season from July 1 to November 15, which allows for operational flexibility and reduces potential impacts on Inuit use of the landfast ice.” TSD 25 Section 9.2 also notes Inuit concern with increased marine shipping but how this concern was weighted in decision-making has not been provided. It also remains unclear if any Inuit laws and norms were included as criteria for in decision-making.</p> <p><b>Inuit Involvement in Assessment of Alternatives for Railway</b></p> <p>As a permanent intersection of Inuit territory, the proposed rail route will have a substantial effect on traditional use. The lack of evidence for Inuit involvement in the assessment of alternative means for rail is therefore a critical concern. Several Inuit</p>

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Review Comment	6. Project Alternatives and Community Input
	<p>written submission, no revisions have yet formally been made to the rail routing by the Proponent. Specifically, QIA is aware that BIMC indicated that they are willing to modify the currently proposed route to reflect an alternative that the Pond Inlet HTO identified during a site visit in summer 2019. QIA has no evidence to review the adequacy of this alternative route because the reconsideration does not appear to have taken place yet, and information on the potential routing change is not on the public record as of September 11, 2019. As a result, QIA will reserve judgment on the appropriateness of any route alterations until they have been properly studied in a multi-party setting.</p> <p>The Proponent has also not committed to provide more detail on technical and economic feasibility calculations, as requested in request 3, and reiterated in the Technical Meetings. This information is necessary in order for QIA, other parties, and NIRB to review BIMC's economic and technical feasibility arguments. QIA continues to recommend that the NIRB put enhanced emphasis on the Proponent providing more information on technical and economic feasibility of multiple alternative rail routes, and convene multi-party rail routing meetings, prior to the completion of the technical phase of the EA. This would ensure that Inuit are satisfied with the route and crossings as proposed, designed, and evaluated.</p> <p><b>Recommendations/Requests:</b></p> <p>QIA requests the Proponent commit to full assessment of alternatives to the current "dogleg" diversion in combination with QIA and HTOs. This includes proper and full assessment of the alternative route put forward by Pond Inlet and any alternatives to it currently being examined by BIMC.</p> <p>QIA requests the Proponent commit to providing more information on technical and economic feasibility of multiple alternative rail routes during reconsideration of the rail routing as discussed above.</p> <p>QIA requests the Proponent commit to the inclusion of a discussion on the triggers for modifying crossings so that clear steps on triggers and thresholds are known for when a modification to rail will occur (e.g., HTO formal application, repeated observations, individual observations, etc.) at any and all future rail routing meetings.</p>
August 11, 2020 Update	<p><b>Resolved, contingent on ICA Implementation. QIA will provide an update on Implementation at the upcoming Technical Meeting.</b></p> <p>This technical comment and associated requests are now considered resolved, provided Baffinland adheres to properly implement its commitments with the affected Inuit communities and QIA. Baffinland will construct "Route 3" and will be responsible for all costs associated with the change in the route and is committed to incorporating Inuit input. The monitoring plans and adaptive monitoring principles will be used to improve crossing locations for wildlife and harvester access. Additionally, Inuit monitoring is committed to by QIA and Baffinland, where QIA Inuit staff or representatives working</p>



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Review Comment	6. Project Alternatives and Community Input
	under the Inuit Stewardship Plan will monitor according to Inuit interests. QIA and Baffinland will all continue to engage on this subject.
Final Status Update	<p><b>Unresolved.</b></p> <p>This technical comment is deemed irreconcilable for QIA. The community of Pond Inlet has not shown consensus for support for Route 3, and is the underlying principle for this issue. The proponent has not adequately demonstrated that the community supports this route. Additionally, the Inuit Committee, Inuit Stewardship Plan, and Inuit OITRs have not yet been established. Without these pillars in place it is not possible to assess adequacy of mitigation measures, and adaptive management actions are not well developed.</p>





Review Comment	7. Inuit Maligarjuat – Inuit Values and Integration of IQ
Subject	Socioeconomic; Assessment Methods - Integration of IQ
Reference	<ul style="list-style-type: none"> <li>EIS Guidelines Section 2.4 Sustainable Development, pgs. 20-21 of 101</li> <li>FEIS Addendum TSD 4 – Public Consultation, page 7-8 of 73</li> <li>FEIS Addendum, Section 11 (Sustainability Analysis); pgs. 11.1 to 11.3</li> </ul>
Importance of issue to impact assessment	NIRBs EIS Guidelines require consideration of contributions toward sustainable development of a proposed project. For Inuit, for a Project to be deemed sustainable it needs to also be in harmony with recognized Inuit laws and norms. Thus, the potential benefits and impacts of the Project and the Proponent's plans, policies and programs to manage it, are highly relevant to the environmental assessment and decisions around project acceptability.
Detailed Review Comment	<p><b>Gap/Issue</b> There is a very short sustainability assessment in the FEIS Addendum. Not enough information is provided to deal meaningfully with the following Inuit issue - Are there Inuit laws and norms that are being violated by the Project as proposed and how has the Proponent brought those laws and norms into its assessment and operations?</p> <p><b>Disagreement with Addendum/TSD Conclusion</b> Section 11 of the FEIS Addendum includes a very short (three page) sustainability assessment. Table 11-1 provides a summation of the Proponent's perspective on the Project's potential contributions to sustainability based on the Proponent's definition of sustainability, with limited to no actual evidence provided to support the assertions made.</p> <p>There is an absence of recognition that Inuit laws and norms are critical to be adhered to by all parties living or working on the land and waters of Nunavut. The contribution to sustainability by the Project would be much more meaningfully assessed if the Proponent provided more information on how its operations have and will be in harmony with Inuit laws and norms passed down for many generations to keep balance with wildlife and the environment in general.</p> <p><b>Reason for Disagreement with Addendum/TSD Conclusion</b> Sustainable development as a concept has some close similarities with concepts underlying IQ and Inuit laws and norms. Section 11 of the FEIS Addendum makes no Reference either, nor are Inuit laws and norms referred to or used as an assessment lens anywhere in the FEIS Addendum or TSDs.</p> <p>As a result, it is not clear whether or how the Proponent considered Inuit maligarjuat (laws or more accurately "big things that must be followed") when developing its proposed project, and whether the project impedes upon any of those laws.</p> <p>Inuit laws and norms include but are not limited to:</p> <ol style="list-style-type: none"> <li>1. working for the common good and not being motivated by personal interest or gain;</li> <li>2. living in respectful relationships with every person and thing that one encounters;</li> <li>3. maintaining harmony and balance; and</li> </ol>





Review Comment	7. Inuit Maligarjuat – Inuit Values and Integration of IQ
	<p>4. planning and preparing for the future (Karetak and Tester: 2017, 3).<sup>3</sup></p> <p>With specific Reference relationships with wildlife, Inuit laws and norms include but are not limited to<sup>4</sup>:</p> <ol style="list-style-type: none"> <li>1. Show respect to animals;</li> <li>2. Leave animals alone unless hunting them;</li> <li>3. Animals are to be used, not wasted;</li> <li>4. Each animal has its own habitat; and</li> <li>5. Protect animal habitat.</li> </ol> <p>It is requested that the Proponent show more evidence to support its “sustainability analysis”, especially whether and how it integrated IQ and the Inuit worldview overall into this assessment.</p>
<b>Recommendation /Request</b>	<p>The Proponent is requested to:</p> <ol style="list-style-type: none"> <li>1. Provide more information about how its policies and actions are in accordance/adherence to Inuit laws, norms, and societal values. For example, are there Inuit laws and norms that are being violated by the Project as proposed and how has the Proponent brought those laws and norms into its assessment? This discussion should identify whether and specifically how BIMC’s corporate policies, plans and programs recognize and adhere to Inuit laws and norms, including those identified in the sources above, as well as how the Proponent adheres to the Government of Nunavut’s Eight Inuit Societal Values Principles<sup>5</sup> in its day-to-day operations, how the Proponent has “operationally interpreted” these principles for its mining operation, and communicated that to management, staff and contractors.</li> <li>2. Identify whether it has engaged Inuit on their definition of sustainability and if not, to conduct this exercise in order to support a joint reconsideration of effects of the Project on sustainability from an Inuit perspective. Factors such as protection of culture in all its manifestations, long-term food security, and adherence to Inuit laws and norms, likely will need to be considered.</li> </ol>
<b>Sept. 23, 2019 Update</b>	<p><b>Unresolved, pending documents, review of the IQ Management Framework, further discussion and additional commitments.</b></p> <p>Relevant Proponent Commitments</p> <ul style="list-style-type: none"> <li>• Baffinland has committed to further discussions with QIA on this topic.</li> <li>• Proponent has built QIA’s IQ Statements and Inuit Societal Values into its principles in the IQ Management Framework.</li> </ul> <p>Outstanding Gaps/Issues</p>

<sup>3</sup> Karetak, J., Tester, F., and S. Tagalik (eds) (2017). Inuit Qaujimajatuqangit: What Inuit Have Always Known to be True. Halifax: Fernwood Publishing.

<sup>4</sup> Qikiqtani Inuit Association (2019). Uqausirisimajavut: What we have said. The Inuit view of how oil and gas development could impact our lives. QIA submission to the Nunavut Impact Review Board for the Baffin Bay and Davis Strait Strategic Environmental Assessment, February 25, 2019.

<sup>5</sup> Accessible at <https://www.gov.nu.ca/information/inuit-societal-values>



Review Comment	7. Inuit Maligarjuat – Inuit Values and Integration of IQ
	<p>While the Proponent has made a reasonable effort in Appendix 13 and the IQ Management Framework to address how its policies, programs and plans align with Inuit Societal Values, BIMC has not included Inuit Laws and Norms, particularly those related to wildlife and flagged explicitly in QIA’s, that would be impacted by the Project. Neither Proponent filing includes reference to any Inuit laws and norms related to wildlife from the Strategic Environmental Assessment of oil and gas development, such as “leave animals alone unless hunting them” and “protect animal habitat”. The Proponent has yet to provide any information on how it adheres to Inuit laws and norms related to wildlife.</p> <p>The Proponent has asked QIA to “clarify what they mean by Inuit wildlife laws and norms and how they wish to see this incorporated”. QIA refers the Proponent again to the way Inuit wildlife laws and norms were described in the “Uqausirisimajavut: What we have said. The Inuit view of how oil and gas development could impact our lives”, report developed by QIA and the IQ Committee for the strategic assessment of oil and gas development in Baffin Bay and Davis Strait. This document was clearly referred to in the original Technical Comment as an example where not only were Inuit laws and norms for wildlife used as a lens through which to assess the acceptability of certain types of development in certain areas and at certain times of year, but also where an Inuit body (the IQ Committee) was empowered to frame and run the assessment for QIA from an Inuit perspective.</p> <p>QIA also remains concerned that, as indicated by the response to request 2, the Proponent has not engaged Inuit communities in defining sustainability or in BIMC’s sustainability assessment. While the Proponent may have met the minimum requirements of the EISG concerning sustainability assessment, exclusion of an Inuit perspective of what constitutes sustainable development (and how the Project contributes to sustainability defined in Inuit terms), limits the information provided to NIRB concerning project acceptability for Inuit.</p> <p><b>Recommendations/Requests:</b></p> <p>QIA requests the Proponent commit to including conformity with Inuit wildlife laws and norms as an objective in its terrestrial and marine EMPs, and reporting on Project conformity with Inuit wildlife laws and norms as an element of the enhanced IQ-enriched monitoring system.</p> <p>QIA requests the Proponent commit to adoption of an Inuit Committee/Inuit Panel that is demonstrably agreeable to Inuit parties in scope and powers, including appropriate decision-making authorities, with a timeline set for the development of Terms of Reference for this body.</p>



Review Comment	7. Inuit Maligarjuat – Inuit Values and Integration of IQ
<p><b>August 11, 2020 Update</b></p>	<p><b>Resolved.</b></p> <p>This technical comment and associated requests are now considered largely resolved, provided ICA ID1 (Inuit Stewardship Plan and Inuit Committee), ID2 (Adaptive Management Plan) and ID4 (CRLU Monitoring Program) are fully resourced by Baffinland and properly implemented.</p> <p>The first request (building Inuit wildlife laws and norms into EMPs), will be accomplished if Inuit Objectives, Indicators, Thresholds and Responses (OITRs) are properly integrated into the EMPs and associated Adaptive Management Plan subject to QIA approval. The Inuit-led CRLU Monitoring Program will (if properly funded and implemented) ensure that an IQ-enriched monitoring program informs both terrestrial and marine environmental monitoring and management for the life of the Project. QIA will update the Board on the status of resourcing and implementation of the work to build Inuit OITRs into the EMPs/AMP at the technical meeting and hearing.</p> <p>The second request (Inuit-led Inuit Committee) will be accomplished with the development and implementation of the Inuit Committee for the Mary River Project. QIA will update the Board on the status of resourcing and implementation of this Inuit Committee at the technical meeting and hearing.</p>
<p><b>Final Status Update</b></p>	<p><b>Unresolved.</b></p> <p>While the ICA has the conceptual structures in place to accomplish the spirit and intent of the requests, as noted in the August, 2020 Update, the TC will only be considered resolved if “fully resourced by Baffinland and properly implemented”. That has not been accomplished to date. We still don’t have a sense from Inuit of how they want these mechanisms to look, nor is there any long-term, quantitative investment from Baffinland to implementation.</p>



Review Comment	8. Impacts on Food Security
Subject	Socio-economic Assessment: Culture, Resources and Land Use - Project Harvesting Interactions and Food Security
Reference	<ul style="list-style-type: none"> <li>• NIRB EIS Guidelines 7.2.2 EISG Human Health and Wellbeing, and 8.2.5.2</li> <li>• FEIS Addendum Section 8.2</li> <li>• TSD 25 Socio-Economic Assessment, sections 6.6.2, Table 10-5, Table 6.3, Table 6.4</li> <li>• TSD 25 Appendix B 2017 Socio-Economic Monitoring Report for the Mary River Project, sections 2.3, 10.1, summary table, Table 1-1</li> <li>• QIA. 2018. Evaluating the role of marine-based harvesting in food security in the eastern arctic. Report prepared by Impact Economics for submission with the Baffin Bay and Davis Strait Strategic Environmental Assessment. October 2018.</li> </ul>
Importance of issue to impact assessment	Impacts to Food Security in relation to Project Harvesting Interactions cannot presently be properly assessed due to data gaps in monitoring and inadequate collection of Project interactions with harvesting, harvesting effort, and diet baseline data that reflects change over time. Absence of this data and assessment is a very large gap as country food plays an integral role in Inuit food security. According to the recent QIA (2018) report on food security, "In truth, there are two things that are preventing rampant destitution in Nunavut... The second is the subsistence economy; that is, hunting and fishing for the purpose of providing food that would otherwise be unaffordable." (p.25). Potential impacts to food security as a result of wildlife disturbance and reduced access to traditional harvesting areas is also a requirement of the EIS Guidelines s. 8.2.5.2 (PDF p. 78) that needs to be met.
Detailed Review Comment	<p><i>Gap/Issue</i></p> <p>The FEIS addendum and TSD 25 do not provide evidence of an adequate baseline for the assessment of Inuit food security, especially in relation to Project Harvesting Interactions. Furthermore, while the Proponent recognizes the importance of harvesting for food security, and that in recent decades diets have been shifting to retail foods (FEIS Addendum Section 8.2.7.8.6 Food Security PDF p. 95 of 142) they fail to acknowledge or apply to the assessment the understanding that an increasing reliance on store food can also have negative effects on Inuit health and well-being. Further data and an assessment approach aligned with best practice is required in order to understand impacts to food security.</p> <p><i>Disagreement with Addendum/TSD Conclusion</i></p> <p>QIA disagrees with the Proponent's conclusions that:</p> <p><i>"The Phase 2 Proposal will continue to have positive effects on the well-being of children in the LSA, through increases to household income and food security generated by Project employment opportunities"</i> (TSD 25 s. 6.6.2 PDF p. 88 of 535); and that</p> <p><i>"Positive residual effects on the well-being of children related to increased household income and food security in the LSA are still expected to be long-term, of high magnitude, and significant"</i> (TSD 25 s. 6.6.2 PDF p. 89 of 535)</p> <p><i>Reason for disagreement with Addendum conclusion</i></p>



Review Comment	8. Impacts on Food Security
	<p><b>Baseline Gaps:</b></p> <p>Section 8.2 of the FEIS Addendum; PDF p. 174 of 512, provides only an extremely high level overview on traditional food reliance with no Reference baseline data collection. The Proponent references the subsidy rate of country food harvests versus southern retail foods but does not provide the citation for this rate, how it was determined, what the implications are. Section 8.2 also does not provide information on how food secure each Inuit community is nor do they provide data on or describe how reliant on country foods each Inuit community is.</p> <p>Baseline gaps (Pre-Project and Project) are also noted for food security by the Proponent in TSD 25 Socioeconomic Assessment. Specifically, data gaps are discussed in Appendix B 2017 Socio-Economic Monitoring Report for the Mary River Project:</p> <ul style="list-style-type: none"> <li>• Summary table provided on page (iv and v in Appendix B) that notes data unavailable for Project harvesting interactions and food security, with no explanation for this data gap provided, for the Pre-development Trend, Post-development Trend, and Trend since Previous Year (TSD 25 PDF p. 235 of 535).</li> <li>• Table 1-1 Socio-economic monitoring plan for the Mary River Project (Appendix B, TSD 25 PDF p. 249 of 535) only lists the proportion of taxfilers with employment income and median employment income and Percentage of population receiving social assistance as metrics for household income and food security.</li> <li>• Section 2.3 states no indicator data for Project harvesting interactions and food security (TSD 25 PDF p.253 of 535).</li> <li>• Section 10.1.1 states that No specific prediction related to Project harvesting interactions and food security was presented in the original FEIS (TSD 25 PDF 322 of 535).</li> <li>• Section 10.1.2 states that: “Appropriate community-level indicator data are currently unavailable for this topic. As such, this topic continues to be tracked through the QSEMC process, BIMC’s community engagement program, and related indicators. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.” (TSD 25 PDF p. 79). Absence of Food security indicators is a substantial gap that needs to be addressed with QIA and Inuit Communities through the SEMWG.</li> </ul> <p>In the FEIS and TSD 25 there is no evidence that the Proponent has engaged Inuit communities in targeted diet studies or hunter effort surveys in order to address these data gaps. The QIA (2018) food security report does provide some baseline data that could have been referenced and or formed a starting point for additional studies. QIA (2018) includes data from two surveys; one on food sharing and the other on country food production, consumption, and costs. For example, the report does provide the number of harvesters per community compared to the harvest volume of char, ringed seal, narwhal, and beluga which could be used in trends analysis if further data is collected. QIA (2018) highlights the need for and recommends the completion of updated studies as the available data is from 20 years ago and does not capture any recent decline in harvest or consumption (p.28).</p>



Review Comment	8. Impacts on Food Security
	<p><b>Conflation with Household Income:</b></p> <p>By combining Food Security with Household Income as an indicator for Inuit health in the FEIS Addendum and TSD 25 the Proponent pre-maturely assigns a positive effect from the Project to Food Security. Given its critical importance to Inuit Health, Food Security needs to be assessed as its own Valued Component. Examples of this conflation include:</p> <ul style="list-style-type: none"> <li>• In the FEIS Addendum s. 8.2.7.8.6 the Proponent notes a positive benefit with increased employment and access to “nutritious” retail food (PDF p.95 of 142).</li> <li>• In the FEIS Addendum Table 10-5 Summary of Residual Effects the Proponent combines food security with household income as an indicator assigning a positive benefit (PDF p. 121 of 142).</li> <li>• Section 6.6.2 of TSD 25 also combines food security with household income and the Proponent suggests:  <i>“The Phase 2 Proposal will continue to have positive effects on the well-being of children in the LSA, through increases to household income and food security generated by Project employment opportunities”</i> (PDF p. 88 of 535) This statement is problematic as it discounts individuals that live at the economic margins potentially being further marginalized through loss of access to shared country foods, a critical element of Inuit food security (and cultural transmission). QIA (2018) found that: “occasional harvesters and those not participating reported they consume country food, with many dependent on parents and other family members to provide that food” and “younger families with many children tended to be occasional harvesters or not active and were dependent on others for country food” (p. 40).</li> <li>• Table 6.3 EIS Guideline Summaries – Human Health and Well-being in TSD 25 does acknowledge that there could be negative impacts to the consumption of country foods. However, the Proponent proposes that economic benefits from employment could pay for harvesting activities and the wildlife compensation fund could mitigate negative effects from the Project to wildlife (PDF p. 95 of 535). This, despite minimal evidence that the existing system has been successful at identifying and compensating Inuit for wildlife harvest losses.</li> </ul> <p>Overall, it is concerning that the Proponent has assigned a significant positive/beneficial effect with a high prediction confidence for Household Income and Food Security (see table 6.4 Significance of Residual Effects to Human Health and Well-Being TSD 25, PDF p. 97 of 535) given:</p> <ol style="list-style-type: none"> <li>1. The lack of baseline data for assessment;</li> <li>2. Multiple Community engagement comments recorded by the Proponent in TSD 25 Appendix B PDF p. 322 to 325 of 535, referencing harvesting and food security as an issue of concern; and</li> <li>3. The multiple adverse potential pathways on country food security that were not assessed with high rigour, for example the potential long-term impacts on food sources such as narwhal, caribou, and seal in the Pond Inlet to Milne Inlet areas, near the mine site and along the transportation route.</li> </ol>





Review Comment	8. Impacts on Food Security
<b>Recommendation /Request</b>	<p>The Proponent is requested to:</p> <ol style="list-style-type: none"> <li>1. Begin work with Inuit communities to develop and implement baseline data collection for food security to address baseline gaps and reassess.</li> <li>2. Work with the Socioeconomic Monitoring Working Group and Qikiqtani Socio-Economic Monitoring Committee to develop Food Security indicators for the Mary River Socioeconomic Monitoring Plan for Current Operations.</li> <li>3. Work with Inuit communities to develop culturally appropriate mitigation for Inuit food security beyond employment and financial compensation.</li> <li>4. Work with QIA and Inuit communities to review the effectiveness and benefits of the Wildlife Compensation Fund.</li> </ol>
<b>Sept. 23, 2019 Update</b>	<p><b>Unresolved, pending documents (especially Food Security Update), further discussion, and additional commitments.</b></p> <p><i>Relevant Proponent Commitments</i></p> <ul style="list-style-type: none"> <li>• Baffinland is committed to meeting with the QIA and the MHTO to discuss revisions to the WCF. This discussion could include consideration of Baffinland assistance for buying country food to offset losses of caribou or narwhal related to the Project.</li> <li>• Baffinland will submit a Food Security Assessment with the updated assessment of Culture, Resources, and Land Use. <i>Not yet provided; proponent now indicates these two documents will be available by October 15, 2019.</i></li> </ul> <p>Baffinland is still carrying out a desktop assessment of food security in the five north Baffin communities. This includes the collection of all available baseline data, including monthly harvest data for caribou (GN), polar bear (GN), and narwhal (DFO) and community specific data from the Aboriginal Peoples Survey (Statistics Canada; 8-12 week waiting period). As part of this process Baffinland is suggesting a regular survey that includes questions related to food security, which it would deliver in the years between the Aboriginal Peoples Survey. To deliver this survey would ultimately require a NRI Research License and the support of QIA and communities.</p> <p>Baffinland has also indicated it has engaged the MHTO in discussions around hunter harvests and food security.</p> <p><i>Outstanding Gaps/Issues</i></p> <p>The Proponent has not yet filed its committed to revisiting of food security baseline information, so QIA's request 8.1 remain outstanding as of this date. BIMC has indicated it is providing this additional material by October 15, 2019. A short session on this topic was held between QIA and BIMC in July 2019 and again September 14, 2019, and QIA provided extensive verbal comments on food security issues at those times, but we have not received any written material from the Proponent on this topic, nor had any further discussions beyond those noted above.</p>





Review Comment	8. Impacts on Food Security
	<p>No new written information was provided to QIA by BIMC on food security between or after the two technical meetings. The point of QIA's technical meeting request was for the parties to work together in this gap analysis; this has not been the case. It also remains unclear how and whether BIMC has engaged the affected communities on the question of potential Project effects on food security. QIA is concerned that without the involvement of QIA and Inuit communities gaps may remain in the new baseline being developed and that the assessment of food security for the Project will lack an Inuit perspective.</p> <p>QIA also continues to question the data and assumptions underlying the Proponent's assertion that the Phase 2 Proposal is not anticipated to have a negative effect on food security, given uncertainty of magnitude of effects on caribou and narwhal, in particular. The Proponent has yet to provide a justification for this assertion.</p> <p>Mitigations proposed for food security within the FEIS remain inadequate. While QIA acknowledges the documents referenced in the Proponent's response to request 3 do have culturally appropriate mitigations, it is unclear which of these will be adopted by the Proponent for Phase 2.</p> <p><b>Recommendations/Requests:</b></p> <p>QIA requests the Proponent to submit its Food Security Update on the public record for review at least one month prior to the November hearing.</p> <p>The Proponent is requested to firm up its commitments to support food security and to contribute to efforts to track food security in the communities affected by its operations. QIA also requests that any mitigations proposed by BIMC for food security are confirmed with QIA and Inuit communities, re: their adequacy.</p> <p>Given gaps in the food security data collection program in place, the NIRB should provide a more detailed Project Certificate Condition related to what food security needs to be collected, analyzed (and by whom), reported and tied to adaptive management triggers in relation to the Mary River Project.</p> <p>QIA requests the Proponent provide in the Food Security Update a defensible written justification and any relevant evidence that explains the assertion the Phase 2 Proposal is not anticipated to have a negative effect on food security.</p> <p>QIA requests the Proponent commit to develop and fund a CRLU Risk Communication Strategy/Program with Inuit, focused on gathering and dissemination of information to Inuit on the health of the land and country foods.</p>
August 11, 2020 Update	<b>Resolved, contingent on ICA Implementation. QIA will provide an update on Implementation at the upcoming Technical Meeting.</b>



Review Comment	8. Impacts on Food Security
	<p>This Technical Comment is considered largely resolved, contingent on proper Baffinland resourcing for and completion of key elements of the ICA.</p> <p>Overall, The Pond Inlet Food Security Baseline (ID7) and the Social Monitoring Stream (ID3) of the Inuit Stewardship Plan (ID1) will ensure food security is tracked within affected communities. Revisions to enhance the Wildlife Compensation Fund (ID5) will also provide necessary support once implemented. QIA will update the Board on the status of resourcing and implementation of each of these ICA IDs at the technical meeting and hearing.</p> <p>It is recognized by QIA that the timelines for the Pond Inlet Country Food Baseline Study and the related CRLU Assessment (ID6) may extend beyond the time frame for the NIRB process; the ICA indicates that in such a case, the evidence on the public record for the Phase 2 assessment will stand to inform NIRB's decision. For the record, QIA raised issues in the initial Public Hearing in November 2020 about estimations of net benefits from Phase 2 on Inuit food security, particularly country food security, and called for the type of additional work committed to now through ICA IDs 6 and 7, to get to a better estimation of impacts from the Project on food security and Inuit harvesting.</p> <p>In relation to the specific requests:</p> <ul style="list-style-type: none"> <li>• The first request was accomplished when Baffinland filed its Food Security Update on October 15, 2019.</li> <li>• The results of the Pond Inlet Country Food Baseline Study and the CRLU Assessment will need to be seen before a determination can be made about the adequacy of the Proponent's commitments to support food security in the affected communities.</li> <li>• The Pond Inlet Country Food Baseline Study and CRLU Assessment process have steps built in to get Inuit and QIA verification of the adequacy of Baffinland's proposed mitigations related to food security.</li> <li>• The Pond Inlet Country Food Baseline Study and CRLU Assessment will afford Baffinland the opportunity to verify (or refute) its findings related the direction and magnitude of Project effects on Inuit food security.</li> <li>• Our understanding is that Baffinland has committed to a CRLU Risk Communication Strategy/Program (January 6, 2020). Further discussions are required between QIA and Baffinland on how that Program will be resourced and implemented. Baffinland is requested to confirm how this commitment will be implemented. In the future, the Culture, Resources and Land Use Stream (ID4) of the Inuit Stewardship Plan (ID1) is well poised to collect and communicate with Inuit the results of monitoring that would contribute to a better understanding of potential risks of country food consumption, and should inform any Risk Communication Strategy/Program.</li> </ul>
Final Status Update	Unresolved.



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Review Comment	8. Impacts on Food Security
	<ul style="list-style-type: none"> <li>It is stated in the August 11, 2020 QIA update on the status of the TCs that if the Pond Inlet Country Food Baseline and associated CRLU Assessment are not complete by the end of the NIRB process, that specific concerns on the public record raised by QIA would stand (i.e., remain unresolved).</li> <li>The results of the Pond Inlet Country Food Baseline Study and the CRLU Assessment will need to be seen before a determination can be made about the adequacy of the Proponent's commitments to support food security in the affected communities.</li> <li>Baffinland's commitment to develop an appropriate Risk Communication Program for the Project (#180, which was to be accomplished on or before October 16, 2020) has not been acted on; therefore it remains unresolved.</li> </ul>



Review Comment	9. Assessment of Culturally Important Vegetation
Subject	Socio-economic Assessment – Culture, Resources, and Land Use: Culturally Valued Vegetation
Reference	<ul style="list-style-type: none"> <li>• TSD 09 Vegetation Baseline and Impact Assessment, sections 2.4.5, 3.3, 3.4.3</li> <li>• TSD 11 Evaluation of Exposure Potential from Ore Dusting Events in Selected VCs, sections 6.2.3, 6.2.5, 7.0</li> <li>• FEIS Appendix G Traditional Knowledge Studies Report: Report on Inuit Qaujimagatuqangit regarding plants, Pond Inlet elders</li> <li>• IR# QIA10 (BIMC Response to IR's PDF page 45 of 587)</li> <li>• Baffinland Iron Mines Corporation. 2017. Terrestrial Environment Mitigation and Monitoring Management Plan. Available at: <a href="http://www.baffinland.com/document-portal-new/?cat=9&amp;archive=0">http://www.baffinland.com/document-portal-new/?cat=9&amp;archive=0</a></li> </ul>
Importance of issue to impact assessment	Impacts to Culturally Important Plants have not been assessed as part of the Mary River Phase 2 Project EA Process. Baseline information carried over from the FEIS has limited incorporation of IQ. The Proponent has not included Culturally Important Plants as part of the Terrestrial Environment Mitigation and Monitoring Plan therefore present Project impacts have not been monitored. Impacts to Culturally Important Plants need to be assessed in order to understand existing and likely future environmental effects to Inuit culture and land use.
Detailed Review Comment	<p><i>Gap/Issue</i> According to the Proponent in TSD 09: "No effect assessments for culturally valued vegetation will be completed for Phase 2 Proposal." (TSD 09 PDF p. 66 189). This assessment gap leaves out a critical component in the resources used to support Inuit traditional use of the land. The Proponent Rationale for this gap is based on a baseline informed by limited IQ and limited monitoring data, with no targeted monitoring for culturally valued plants ever undertaken. Steps need to be taken to better incorporate IQ in baseline data collection and monitoring. Culturally Important Plants need to be assessed as part of this environmental assessment process and IQ based field surveys need to be conducted on both disturbed/undisturbed lands in the Project area to inform this assessment.</p> <p><i>Disagreement with Addendum/TSD Conclusion</i> QIA disagrees with the Proponent that no effects assessment needs to be completed for Culturally Valued Vegetation for the Phase 2 Proposal (See s. 3.3.3 in TSD 09 PDF p. 66 of 189).</p> <p><i>Reason for disagreement with Addendum conclusion</i> <b>Limited IQ Incorporation in Baseline Data collection:</b></p> <p>While one Traditional Knowledge Study Report was conducted in 2007 for Culturally Valued Vegetation (FEIS Appendix G), no further studies have been completed since, and baseline data and monitoring used for assessment was collected without the full benefit of IQ. According to the Proponent's response to QIA IR 10:</p>



Review Comment	9. Assessment of Culturally Important Vegetation
	<ul style="list-style-type: none"> <li>• Inuit Qaujimagatuqangit (IQ)-based monitoring indicators and thresholds were not identified for the various vegetation surveys completed in the Project area as part of baseline and existing project monitoring;</li> <li>• There is no data available regarding the willingness of Inuit to use the vegetation in the PDA/LSA;</li> <li>• IQ was not used in the selection of vegetation sampling locations for monitoring work</li> </ul> <p><b>Overlooking of disturbed sites:</b></p> <p>The Proponent has also discounted Culturally important vegetation species in the PDA due to clearing (See TSD 09 s. 3.4.3 PDF p. 86 of 189). Incidental surveys have recorded natural vegetation returning in older disturbed sites (See s. 2.4.5 in TSD 09 PDF p. 56 of 189). Table 8 Native plant species found revegetating old disturbed areas within the Project footprint (TSD 09 PDF p. 57 of 189) includes two species also discussed in the 2007 TKS Report:</p> <ul style="list-style-type: none"> <li>• Mountain Sorrel (<i>Oxyria digyna</i>) located on the Tote Road; and</li> <li>• Purple saxifrage (<i>Saxifraga oppositifolia</i>)</li> </ul> <p>This indicates that Culturally Valued Plants may in fact be present in the PDA and could be impacted by phase 2 through dust emissions (See TSD 11) and or further clearing.</p> <p>The Proponent acknowledges Inuit concerns about dustfall contamination on caribou forage and culturally valued plants in TSD 11 s. 6.2.3 (PDF p. 65 of 98). The Proponent concludes that these concerns are unfounded due to limited availability of berries and restrictions to harvesters and caribou within the Project area where dust contamination is highest (see TSD 11 s. 7.0 PDF p.72 of 98). The Proponent also notes that no berry picking was identified in the study area during the 2006 to 2010 Inuit Knowledge Study without acknowledging that the sample population in this study reflected one particular group of Inuit male hunters and may not be representative of all culturally valued vegetation harvesting (see TSD 11 s. 6.2.5, PDF p. 70 of 98). More data on harvesting within the Project area is required to verify these conclusions. Furthermore, neither TSD 09 nor 11 adequately assess or address impacts from Inuit perceptions of dust contamination of culturally valued vegetation, which must be included in assessment.</p> <p><b>Proponent Focus on Blueberry as only VEC for Culturally Valued Vegetation led to inadequate assessment:</b></p> <p>The Proponent only assessed Blueberry as a VEC for Culturally Valued Vegetation in the FEIS, FEIS Addendum, and TSD 09 because it was easiest to “model” (TSD 09 s. 3.3.3 PDF p. 66 of 189). This decision was made without verification by Inuit knowledge holders of the appropriateness of the single indicator species “proxy” focus, and despite the fact that 20 plant species were identified in the Proponent’s traditional knowledge study, with 17 in the Project area (See FEIS Appendix G and Proponent response to QIA IR 10). Restricting baseline data to Blueberry in the FEIS addendum factored into the Proponent’s decision to not assess culturally valued vegetation for this assessment as:</p>



Review Comment	9. Assessment of Culturally Important Vegetation
	<p>“Any Phase 2 Proposal related effects to culturally valued vegetation will be negligible since blueberry abundance within the RSA is very low and has been previously assessed as being not significant at the RSA scale with a high confidence” (TSD 09 PDF p. 66 of 189).</p> <p>Modelling a single species without verification with IQ holders should not be considered as meeting the standards of assessment for this process.</p> <p><b>Lack of Monitoring for Culturally Valued Vegetation:</b> As noted in the Proponent’s response to QIA IR 10 and as evidenced in the Terrestrial Environment Mitigation and Monitoring Plan there has been no monitoring of Culturally Valued Vegetation for the Mary River Project.</p> <p><b>Lack of incorporation of IQ in mitigation planning, reclamation planning and revegetation research:</b> In section 3.4.3 of TSD 09 PDF p. 86 of 189, the Proponent assumes mitigation for reducing effects of the Phase 2 Proposal on vegetation abundance and diversity are also considered suitable for mitigating effects to culturally valued vegetation. However, IQ has not demonstrably and verifiably informed these mitigations. The Proponent response to QIA IR 10 does suggest that IQ will be incorporated into reclamation planning and revegetation research, but this has not occurred yet despite culturally important vegetation appearing in incidental revegetation observations (TSD 09 s.2.4.5 PDF p. 56 of 189). There is no evidence that IQ-based observations on natural revegetation has been sought or recorded by the Proponent.</p> <p>It is certain that Culturally Important Vegetation occurs in the PDA and LSA and may be impacted by Phase 2 thereby impacting Inuit rights and traditional use and cultural values. Gaps in baseline data and monitoring need to be addressed and culturally appropriate mitigation developed.</p>
<b>Recommendation /Request</b>	<p>The Proponent is requested to:</p> <p>Consult with QIA prior to, and carry out the following activities:</p> <ol style="list-style-type: none"> <li>1. Expedite work with affected communities to develop and implement baseline data collection including on the ground studies for Culturally Important Vegetation.</li> <li>2. Reassess with affected communities Phase 2 Project Effect on Culturally Important Vegetation and provide a supplemental filing to the FEIS Addendum.</li> <li>3. With affected communities, review, update and implement the EPP and the Terrestrial Environment Mitigation and Monitoring Plan to include Culturally Important Vegetation monitoring and re-vegetation research incorporating IQ into these activities.</li> </ol>
<b>Sept. 23, 2019 Update</b>	<p><b>Unresolved, pending additional commitments to build Inuit involvement in monitoring and management of culturally important vegetation onto Project monitoring and management system.</b></p> <p>To date there has been little to no movement on this topic by the Proponent. At this time, our concerns and recommendations remain outstanding.</p>





Review Comment	9. Assessment of Culturally Important Vegetation
	<p>The Proponent has yet to fully commit to any of the QIA requested activities. The response provided by Baffinland to this TC reiterates their monitoring approach towards culturally important vegetation, but does not address QIA's concerns about how the assessment of impacts to culturally important vegetation is being undertaken.</p> <p>The response provided by Baffinland again limits IQ to the baseline assessment, rather than including IQ holders as impact assessors or significance determiners. IQ is not merely a baseline input, it must occur throughout the effects assessment process. It is QIA's perspective that an improved approach for monitoring impacts on the quality and availability of culturally important vegetation, based on IQ and driven by a community-based monitoring program, must be implemented by Baffinland.</p> <p>The proponent notes the efforts that are ongoing (described in the TEMMP) to monitor impacts to vegetation. None of these efforts are based on IQ. It is further QIA's understanding that monitoring for metals in vegetation did not occur in 2018, despite ongoing exceedances in dustfall levels throughout the project area.</p> <p>QIA also notes that the location of the railway and Tote road is such that some portions of the existing area may well be "stranded" via Inuit alienation/risk perception, and thus unavailable for cultural during the operation of the mine. This should be taken into account in the assessment of effects on traditional plant use, as well as in monitoring and mitigation measures.</p> <p>Revegetation research must directly involve Inuit in all stages, revegetation planning must include locations and desired end land uses identified by Inuit, and revegetation practices must also be designed to meet standards for cultural use and address community concerns with respect to ongoing use of these areas. QIA expects an explicit, without reservation (no "IQ, where applicable" statements) commitment to work with Inuit toward more effective monitoring and revegetation programs related to culturally important plants.</p> <p><b>Recommendations/Requests:</b></p> <p>QIA requests the Proponent commit to develop and implement, with Inuit communities, an improved baseline data collection program, including on the ground studies for Culturally Important Vegetation, including impacts of dustfall on vegetation.</p> <p>Given the lack of community-based monitoring of impacts to vegetation, the NIRB is recommended to develop a Project Certificate Condition related to development of Proponent-funded, independent terrestrial (and marine) monitoring programs in relation to the Project.</p> <p>NIRB is recommended to develop a Project Certificate Condition regarding revegetation standards for reclamation and developing standards based on IQ, including meeting</p>





Review Comment	9. Assessment of Culturally Important Vegetation
	<p>standards for cultural use and addressing community concerns with respect to re-establishing use of these areas.</p> <p>QIA requests the Proponent commit to, with affected communities, review, update and implement the EPP and the Terrestrial Environment Mitigation and Monitoring Plan to include Culturally Important Vegetation monitoring and re-vegetation research incorporating IQ into these activities.</p>
<p><b>August 11, 2020 Update</b></p>	<p><b>Resolved, contingent on ICA Implementation. QIA will provide an update on Implementation at the upcoming Technical Meeting.</b></p> <p>With Baffinland's commitment to the ICA and specifically to ID2 (adaptive management plans approval), ID4 (developing a culture, resources and land use monitoring program), ID6 (CRLU Assessment), and ID7 (Pond Inlet Country Food baseline), the concerns identified above are resolved. The following issues are resolved contingent upon full and meaningful implementation of these IDs:</p> <ul style="list-style-type: none"> <li>• Revegetation standards for reclamation must be acceptable to Inuit and based on IQ, including meeting standards for cultural use and addressing community concerns with respect to re-establishing use of these areas. This concern can be addressed through ID4 but must be a specific requirement of that program pending confirmation with Inuit. QIA will update the Board on the status of resourcing and implementation of this ICA ID at the technical meeting and hearing.</li> </ul> <p>Baffinland is requested to identify how the following commitments it made in January 2020 are going to be integrated into the revised data collection, monitoring and management systems for the Project contemplated for Phase 2:</p> <ul style="list-style-type: none"> <li>• Proponent to fund a community-based monitoring program, including but not limited to culturally important vegetation;</li> <li>• Proponent to work with QIA and the North Baffin communities to develop reclamation standards for inclusion in the Final Closure and Reclamation Plan;</li> <li>• Proponent shall conduct soil sampling to determine metal levels of soils in areas with culturally important plants in Inuit preferred harvesting areas near any Project infrastructure.</li> </ul>
<p><b>Final Status Update</b></p>	<p><b>Unresolved.</b></p> <p>Baffinland has committed to working with QIA and the North Baffin communities to develop revegetation standards based on IQ for reclamation and revegetation, including standards for cultural use and addressing community concerns with respect to re-establishing use of critical areas (156). However, the concerns raised in this TC should be considered unresolved in the absence of implementation of the ICA. Key concerns are:</p> <ul style="list-style-type: none"> <li>• No progress on the Inuit Committee and Inuit OITRs within EMPs, particularly related to dustfall (the AQNAMP) and impacts to plants (the TEMMP). Many</li> </ul>



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	<p>concerns on the science side remain on these plans, and no progress has been made to date on Inuit OITRs. It is premature in the absence of progress at this stage to rely on Baffinland to be willing to establish OITRs that are sufficiently sensitive to address Inuit concerns.</p> <ul style="list-style-type: none"> <li>• No progress has been made on establishing the IC or the CRLU monitoring program.</li> <li>• The CRLU assessments have not been completed.</li> <li>• The Pond Inlet Country Food baseline has not been undertaken.</li> <li>• Without additional certainty on strengthening Project Certificate Terms and Conditions re: impacts of dustfall on plants (particularly lichen and culturally important plants), pathways for the introduction of invasive plants, detecting metals in soil and conducting additional monitoring work for impacts to vegetation, there are still concerns on the efficacy of these monitoring programs.</li> </ul>



Review Comment	10. Impact of Project Footprint on Traditional Land Use
Subject	Socio-economic Assessment – Culture, Resources, and Land Use: Assessment and Monitoring of Inuit Land Use and Harvesting in Project Area
Reference	<ul style="list-style-type: none"> <li>• FEIS Addendum Sections Executive Summary, 8.3.11.8</li> <li>• TSD 07 Atmospheric Assessments Appendix D Section 3.2.1.4</li> <li>• TSD 25 Socio-Economic Assessment, Section 9</li> <li>• IR# GN 02 (BIMC Response to IR's PDF page 4 of 587)</li> <li>• IR# GN 26 (BIMC Response to IR's PDF page 14 of 587)</li> <li>• IR# QIA 01 (BIMC Response to IR's PDF page 44 of 587)</li> <li>• IR# QIA 09 (BIMC Response to IR's PDF page 45 of 587)</li> </ul>
Importance of issue to impact assessment	Baseline and monitoring metrics for Inuit land-use for the Project are inadequate and ineffective for the purpose of assessment of Inuit traditional land use. The assessment does not and should provide an impact footprint for Inuit use in relation to the Project. Assessment has also not included alienation effects as part of Project Effects.
Detailed Review Comment	<p><i>Gap/Issue</i></p> <p>A number of gaps and unsubstantiated assumptions exist in the Proponent's assessment of Inuit Culture, Resources, and Land Use in the FEIS Addendum and TSD 25, Section 9. More detail is required of how the Proponent has come to the conclusion that Inuit are coexisting with the Project, and whether this "coexistence" has had adverse effects on Inuit, and to what degree/magnitude.</p> <p><i>Disagreement with Addendum/TSD Conclusion</i></p> <p>QIA disagrees with Proponent Response to QIA IR 09 that psycho-social impacts and other forms of land alienation have been assessed and described in TSD 25, Section 9. They have not adequately done so, passing over this critical issue in a sentence or two.</p> <p>QIA also disagrees with Proponent's overall suggestion that "Results to date are consistent with FEIS predictions, suggesting, Inuit land use activities coexist with the Project, as local land users continue to access Project sites." (Section 8.3.11.8, PDF p. 101 of 142) given poor site visitation metrics and absence of assessment for alienation of land use due to a variety of potential impact pathways.</p> <p><i>Reason for disagreement with Addendum conclusion</i></p> <p><b>Limited Baseline for Interior Harvesting and Inuit Travel:</b></p> <p>Pre-Project Harvesting is not specifically captured in TSD 25. This gap makes impossible the trend overtime analysis required to adequately assess impacts to Inuit harvesting, travel, and traditional land use. Examples of gaps in assessment for Inuit harvesting and travel in and near the Project area include:</p> <ul style="list-style-type: none"> <li>• According to Proponent response to GN IR 02: "Baffinland did not track public use of the Project area, including the Tote Road, prior to 2013." (PDF p. 4 of 587).</li> <li>• The Proponent claims harvesting will not require additional effort. However, baseline calculations of harvesting return per unit of effort are not provided. The Proponent has not provided evidence that they sought out Inuit concerns on continued use or alienation of harvesting areas in relation to harvesting effort (See TSD 25, s. 9.7.2 PDF p. 137 of 535 1)</li> </ul>



Review Comment	10. Impact of Project Footprint on Traditional Land Use
	<ul style="list-style-type: none"> <li>• IQ informed maps on travel routes and camping in the Project Area (TS 25 Figures 9.1 to 9.3) which demonstrate extensive historical use however similar methods do not appear to have been undertaken for Pre-Project Interior Harvesting.</li> <li>• Response to QIA IR 01 does not include monitoring for impacts to Inuit Culture, resources, and Land Use as part of railroad construction and Tote Road Operations period.</li> </ul> <p>QIA believes the FEIS Addendum and TSDs underestimate effects on trail networks used by Inuit harvesters. The proposed rail route diversion would impact and potentially prevent harvesters' and community members' use of the primary trail into the centre of Baffin, which is used for travel to Igloolik and to the Mary River area. Hunters also face challenges when travelling along this trail due to the impediments of the tote road and associated infrastructure.</p> <p>In the FEIS Addendum Executive Summary (see FEIS Addendum with Appendices document Executive Summary s.7, PDF p, 47 of 512) the Proponent has also stated that, "Concerns were expressed on the overall effect of the Phase 2 Proposal or the Approved Project on harvesting and land-use activities that could arise from the combined interactions of the Phase 2 Proposal or the Approved Project on a wide range of factors. These interacting effects have been carefully considered and the potential for beneficial outcomes on harvesting activities appears to be more likely than overall negative outcomes." The Proponent has not provided details on how this net benefit was calculated and to what degree input from Inuit communities and IQ factored into this calculation. Appropriate baseline data with trend over time analysis must be undertaken before conclusions on impacts to Inuit harvesting and travel can be made.</p> <p><b>Inadequate analysis of Inuit Sensory Experience on the Land:</b></p> <p>Sensory observations are among the primary and most crucial of impacts in Inuit choices on whether and where to go for harvesting activities. IQ is a form of knowledge passed between generations which relies heavily on these observations to keep Inuit fed and safe on the land, water and ice. Any impact assessment on Inuit needs to seriously integrate sensory data and assessment metrics that are calibrated to this very sensitive form of knowledge. The Proponent has not provided evidence that they are effectively monitoring changes in Inuit Sensory Perception and experience on the land nor assessing potential further impacts from the Phase 2 Project.</p> <ul style="list-style-type: none"> <li>• No updates on Inuit concerns for changes in the visual landscape</li> <li>• Proponent has not provided evidence in the FEIS Addendum or TSD 25 that the Local Study Areas for specific VECs and VSECs are calibrated to account for the distance from Project-related activities where any form of sensory disturbance to Inuit is likely to be encountered – visually, auditorily (noise and vibration), smells/odours, among other considerations.</li> <li>• Proponent does not adequately consider impacts to land-users in assessment for noise and vibration (Section 3.2.1.4 of Appendix D of TSD 7)</li> </ul>



Review Comment	10. Impact of Project Footprint on Traditional Land Use
	<ul style="list-style-type: none"> <li>○ In response to GN IR 26 it is assumed that Inuit will not be present near the mine site boundary and therefore not impacted by noise.</li> <li>○ No Evidence that IQ informed receptor locations for noise and vibration (TSD 07) other than analysis of the HTO Cabins.</li> <li>○ No evidence that IQ informed development of Noise Thresholds as Proponent used PSL of 40 dBA based on Alberta Guidelines (See Response to GN IR 26) <ul style="list-style-type: none"> <li>▪ Proponent also notes that maximum predicted noise will be “equivalent to the ambient noise level from human activity in an urban centre during the daytime” (TSD 25 s.9.7.3.2 PDF p. 147 of 535) disregarding the degree of change this could be to a traditional land-user in a remote, tundra environment.</li> </ul> </li> <li>○ Monitoring for noise has only taken place within worker accommodations and not IQ-selected sample sites – e.g., preferred travel routes, camps and harvesting sites (TSD 25 s.9.7.3.2 PDF p. 147 of 535).</li> </ul> <p><b>Inadequate Assessment of Current or Preferred Future Use of Caribou:</b>  The Proponent asserts that, “The caribou currently found in the region are non-migratory and it is not expected that migratory caribou will return to the area until population begins to increase (TSD 10). Given the limited range and low populations of caribou currently present in the Terrestrial Regional Study Area (TRSA), the interaction between caribou and the proposed rail route and road is expected to be limited.” (TSD 25 s. 9.7.2, PDF p.137 of 535). Based on this assumption, the Proponent has underestimated the potential existing and likely future effects on caribou and Inuit caribou harvesting. IQ has demonstrated that the Project area is prime caribou habitat. The Proponent has also not provided discussion on how QIA’s forthcoming IQ collection will inform revisions of the assessment. Future incorporation of IQ is critical as QIA data is showing that harvesters still actively hunt and harvest caribou from the area and expect to do so in future. Hunters observed that the site of the Mary River Project, and the surrounding area has traditionally been an important caribou calving site and an area through which caribou would consistently transit in the past, before the disturbance of the mine and associated activities.</p> <p><b>Inadequate metrics for Inuit Project Area Access:</b>  Proponent has been logging Inuit visits to the PDA by “man-hours” since 2013 (See response to GN IR 02 and Response to QIA IR 09)</p> <ul style="list-style-type: none"> <li>• Man-hour approach has not incorporated or demonstrated Inuit use by season as requested by GN IR 02.</li> <li>• Data collection method does not capture reasons some Inuit may no longer be able to - or willing to - access the PDA</li> <li>• Data collection method does not have an equivalent pre-project baseline to compare against – no way to interpret trends over time</li> <li>• Data collection method does not capture changes in how the PDA may now be used by Inuit</li> </ul>



Review Comment	10. Impact of Project Footprint on Traditional Land Use
	<ul style="list-style-type: none"> <li>• Data collection method does not capture changes in Inuit Sensory Experience, and associated enjoyment/alienation factors or levels of willingness to use the PDA for harvesting</li> <li>• Data collection method has not established any sort of spatial “zone of impact” around the PDA, within which Inuit are less willing or able to travel, camp and harvest</li> <li>• Data collection method does not capture harvest effort or success</li> <li>• No consideration that the log itself, and associated rules as a form of controlled access, may be a deterrent to Inuit land users who could previously access their lands freely.</li> </ul> <p><b>Exclusion of alienation effects in Assessment:</b> The Proponent’s response to QIA IR 09 demonstrates a conflation of willingness to use with physical access. The Proponent also does not recognize that Continued access does not necessarily mean that the traditional practice is unchanged. No evidence has been found in the FEIS addendum, TSD 25 (Section 9), and Proponent response to IRs, that non-physical alienation factors are fully assessed as a barrier to access Alienation effects (e.g. perceptions of contamination, changes in sensory perceptions etc.) can impact several core requirements for continued meaningful practice of Aboriginal rights including but not limited to:</p> <ul style="list-style-type: none"> <li>• Adequate, safe, and well known routes of access and transportation;</li> <li>• Adequate experience of remoteness and solitude on the land and waters;</li> <li>• Feelings of safety and security on the land and waters; and</li> <li>• A relatively unchanged visual landscape.</li> </ul>
Recommendation /Request	1. It is requested that the Proponent, in consultation with QIA, work with the affected Inuit communities to address gaps in the assessment of Culture, Resources, and Land Use by:
	<ol style="list-style-type: none"> <li>1. Expanding the Inuit IQ/traditional land use data collection program for the Project to include more individual interviews to gather data on use and alienation factors.</li> <li>2. Including consideration of the potential for various factors, identified by Inuit themselves, that may be alienating Inuit use within the PDA and Local Study Area, by working with QIA and Inuit communities to conduct studies designed to capture continuity and alienation of use in the Project-affected area. This will likely require the adoption of a multi-variable framework for what Inuit need to be in place in order to peacefully enjoy their traditional activities.</li> <li>3. Providing more information on return per unit of harvesting effort by Inuit and how this has changed over time since major development activities started on Mary River Mine by funding community-led harvesting effort studies.</li> <li>4. Re-assessment of effects on Inuit land and resource use to include identification of preferred Inuit future use and potential long-term effects of the Project on those uses.</li> </ol>





Review Comment	10. Impact of Project Footprint on Traditional Land Use
	<p>2. The Proponent is requested to work with Inuit communities to develop culturally appropriate monitoring for Inuit access to the Project Area and reassess effectiveness of visiting protocols for accessing the PDA. The use of Inuit monitoring on the land to facilitate this data gathering is highly recommended.</p> <p>3. The Proponent is requested to engage QIA and Inuit participation and incorporation of IQ in the forthcoming Acoustic modeling report development in 2019.with input including but not limited to:</p> <ul style="list-style-type: none"> <li>• indicator development;</li> <li>• data collection (including Inuit sensory observations of noise levels); and</li> <li>• development of thresholds of acceptable change from natural background levels for noise, from an Inuit perspective.</li> </ul>
<p>Sept. 23, 2019 Update</p>	<p><b>Unresolved – Pending documents (especially the CRLU Reassessment), further discussion, and additional commitments.</b></p> <p><i>Relevant Proponent Commitments</i></p> <ul style="list-style-type: none"> <li>• BIMC will reconsider project effects on Culture, Resources, and Land Use based on the Tusaqtavut Study, as appropriate.</li> <li>• Baffinland is funding a Community Based Monitoring program that is currently contemplating this type of research i.e. equipping hunters with GPS's and setting up a payment program for data deliveries. How the results of these monitoring programs are considered by Baffinland could be addressed in the Adaptive Management Plan and IQ Collection Protocol.</li> <li>• In relation to Request 1.4, the Proponent indicated the Community Risk Assessment Workshop Sessions 2 and 3 have included a closure component to consider what Inuit want to see of project infrastructure at the end of mine life. Recorded comments will be presented in the Final Report as well as recommendations for how to consider these comments for future planning. <i>This document is not yet available for QIA review.</i></li> </ul> <p><i>Outstanding Gaps/Issues</i></p> <p>The Proponent has not filed its committed-to revised CRLU Assessment as of September 23, 2019, so QIA's concerns related to this document remain outstanding as of this date.</p> <p>The Proponent has not provided a strong commitment to review and assess alienation effects in responses provided to 1.1 to 1.4. The Proponent has not responded to requests 1.1 to 1.4 for studying alienation nor have they provided clarification on how both alienation and future use were discussed at workshops. Language such as "Could be integrated" and "contemplating", indicate a lack of concrete commitments, and are not useful in the context of an environmental assessment. Mitigation measures and monitoring measures need to be defined and committed to before they can be considered as to how they reduce, avoid, or compensate for, an impact pathway and outcome.</p>





Review Comment	10. Impact of Project Footprint on Traditional Land Use
	<p>In response to these gaps and others, QIA recommends that future Project Certificate Conditions in relation to the Mary River Mine include strong requirements for better ongoing updating of IQ and culture, lands and resource use data (including gathering of spatial data), as part of a strong, independent Inuit community-based monitoring system.</p> <p><b>Recommendations/Requests:</b></p> <p>QIA requests the Proponent provide the revised CRLU Assessment on the public record for review at least one month prior to the November hearing.</p> <p>QIA requests the Proponent to commit to and adequately fund a CRLU Monitoring Program, with full revisit of the Program on a maximum three-year interval basis, including updating of Inuit use and value mapping, revisiting of FEIS Addendum effects estimations, and ties to the Adaptive Management Plan for any effects that exceed FEIS Addendum estimations. <i>Further information on the CRLU Monitoring Program identified in the Proponent's September 18, 2019, IQ Management Framework document, is necessary.</i></p> <p>QIA requests the Proponent make a stronger commitment going forward to integrating alienation effects into monitoring as well as the consideration of future use.</p> <p>QIA requests the Proponent commit to adoption of an Inuit Committee/Inuit Panel that is demonstrably agreeable to Inuit parties in scope and powers, including appropriate decision-making authorities, with a timeline set for the development of Terms of Reference for this body.</p>
August 11, 2020 Update	<p><b>Resolved.</b></p> <p>Individual requests from QIA and their status are dealt with below:</p> <ul style="list-style-type: none"> <li>• The first request – for the Proponent to provide its CRLU Assessment Update prior to the November 2020 public hearing – was not adhered to by the Proponent. QIA is on the public record that a CRLU Assessment with meaningful Inuit input is critical to the development of the Phase 2 Proposal. The ICA, through ID6, has a requirement for the joint conduct (including QIA, Inuit communities, and Baffinland) of a CRLU Assessment for Phase 2 prior to the beginning of major construction activities for the Project. It is recognized by QIA that the timelines for the CRLU Assessment may extend beyond the time frame for the NIRB process; the ICA indicates that in such a case, the evidence on the public record for the Phase 2 assessment will stand to inform NIRB's decision.</li> <li>• The second request – for the Proponent to fund a CRLU Monitoring Program and to tie this to the adaptive management system for the Project – has been adhered to (pending adequate resourcing by Baffinland) through IDs 1, 2, and 4 of the Inuit Certainty Agreement.</li> <li>• The third request – to focus more on Inuit alienation from lands, waters and resources – will be accomplished through the Inuit-led CRLU Monitoring Program contingent upon proper implementation of that component of the ICA.</li> </ul>



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<b>Review Comment</b>	<p><b>10. Impact of Project Footprint on Traditional Land Use</b></p> <ul style="list-style-type: none"> <li>The fourth request for an Inuit-led Inuit Committee will be accomplished contingent upon proper implementation of ID1 of the ICA.</li> </ul> <p>QIA will update the Board on the status of resourcing and implementation of each of these ICA provisions at the technical meeting and hearing.</p>
<b>Final Status Update</b>	<p><b>Unresolved.</b></p> <ul style="list-style-type: none"> <li>All of the items require full and proper implementation of the ICA to be considered resolved, as per the August, 2020, update. This has not occurred to date; At the time of this submission, based on implementation progress to date this item is unresolved.</li> </ul>



Review Comment	11. Consideration and Integration of IQ; Estimation of Project Effects on Principles of Inuit Culture
Subject	Socio-economic Assessment and other subjects – Integration of IQ: Inadequate Assessment of IQ in Proponent Environmental Assessment
Reference	<ul style="list-style-type: none"> <li>• NIRB EIS Guidelines Section 7.11 Significance Determination</li> <li>• FEIS Addendum Sections 4.2.4, 9.6</li> <li>• IR# QIA 11 (BIMC Response to IR's PDF page 46 of 587)</li> <li>• NIRB Reconsideration Report re: Production Increase Proposal – August 31, 2018; pg. 40 of 60</li> </ul>
Importance of issue to impact assessment	<p>It remains unclear to what extent IQ has been sought and incorporated in the development of the FEIS addendum, most particularly in the determination of assessment boundaries, project interactions, estimation of residual effects and their significance. NIRB expectations for IQ integration standards are not met. Of primary concern is that it appears that Section 7.11 of the EIS Guidelines has not been followed:</p> <p><i>“In the process of significance determination, the Proponent is expected to communicate with potentially-affected communities, including relevant individuals and organizations to solicit input and incorporate their views regarding the value it placed on a VEC or VSEC, as well as associated significance of impacts. The Proponent shall describe how it will ascertain the significance that different parties assigned to each impact, and how it will proceed if different parties ascribe varying significance to VECs, VSECs or the associated impacts. If it is impossible to attain a consensus on the significance of certain impacts, the Proponent shall present the range of viewpoints expressed and shall present and justify its preference, if any.”</i> (EISG s. 7.11, PDF p, 57 of 101).</p> <p>There is no evidence that community views were solicited or incorporated into significance determination.</p>
Detailed Review Comment	<p><i>Gap/Issue</i></p> <p>The Proponent has failed to provide evidence of meaningful incorporation of IQ in determination of assessment boundaries, project interactions, estimation of residual effects and their significance (see response to QIA IR 11). This is problematic especially in the context of the following statement by the Proponent as to what the purpose of the FEIS Addendum is: “The purpose of the EIS is the assessment and determination of the significance of the residual effects and their acceptability to Inuit communities and the Project stakeholders.” (Section 9.6, PDF pg. 201 of 512). This suggests that the EIS itself should have adequate information to characterize the acceptability of residual effects to Inuit communities; there is no evidence that any Inuit community determination of what is acceptable is in the FEIS Addendum.</p> <p><i>Disagreement with Addendum/TSD Conclusion</i></p> <p>QIA disagrees with the Proponent's conclusion that, “IQ has been considered and incorporated in the TSDs and throughout the assessment.” (FEIS Addendum Section 4.2.4, Public Consultation and IQ, PDF p. 62 of 142) as the evidence provided suggests otherwise.</p> <p><i>Reason for disagreement with Addendum conclusion</i></p>



Review Comment	11. Consideration and Integration of IQ; Estimation of Project Effects on Principles of Inuit Culture
	<p><b>Evidence of IQ missing at Key Step in Proponent Assessment Process:</b></p> <p>The Proponent response to QIA IR11 states that:</p> <p>“the methods used [for IQ integration] include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• Identification of potential environmental and socio-economic concerns</li> <li>• Environmental and socio-economic baseline and Inuit knowledge studies</li> <li>• Consultation with north Baffin communities, Inuit organizations and government agencies.</li> <li>• Baseline studies for the Project were conducting using, though not limited to:</li> <li>• Site investigations</li> <li>• Stakeholder, Inuit and government consultation</li> <li>• Inuit knowledge studies.”</li> </ul> <p>This response does not account for IQ in key steps such as determination of assessment boundaries, project interactions, estimation of residual effects and their significance and these stages of assessment should be informed by IQ.</p> <p>As a result of these incorporation gaps there is reason to believe that the Proponent has substantially underestimated the significance of effects on terrestrial and marine wildlife, wildlife and traditional harvesting, when considered from the valid perspectives of the land users themselves. The EISG s. 7.11 (PDF p. 57 of 101) requires the Proponent to identify where there are differences between the effects estimations from IQ and from science, and to make efforts to reconcile or explain these differences. Evidence of any IQ based determination of significance is lacking let alone and explanation of where science and IQ differed. This is a recurring issue with the Proponent, as evidenced by the lack of IQ integration for Project effects noted by NIRB at page. 40 of 60 of the Reconsideration Report:</p> <p>“Although the FEIS Addendum submitted by Baffinland largely conformed to the guidance previously issued by the NIRB, the information provided was at times lacking in detail and data gaps created some uncertainty with respect to the adequacy of the impact predictions for the Production Increase Proposal”.</p> <p><b>IQ required given nature of significance determination:</b></p> <p>Significance is a socially derived construct that needs to be informed by the most affected parties based on their own values. It remains unclear where are the expert opinions of IQ holders in the Proponent’s process of determining significance? How were IQ holders engaged in this process? When or did the Proponent verify with their respondents, Inuit communities and QIA that their effects characterization methods were effective or appropriate?</p> <p>As it appears that significance determination was not informed by Inuit community input or IQ the Mary River Phase 2 Project requires reassessment through an Inuit lens.</p>



Review Comment	11. Consideration and Integration of IQ; Estimation of Project Effects on Principles of Inuit Culture
<b>Recommendation /Request</b>	<p>1. The Proponent is requested, in consultation with QIA, to work with Inuit and or provide funding to Reassess Project Effects and determine significance through an Inuit lens.</p> <p>2. The Mary River Phase 2 EA would also greatly benefit by having additional IQ integrated throughout the assessment. The Proponent, in consultation with QIA, should work with Inuit Communities to perform a gap analysis of IQ required to meaningfully assess Project changes. A preliminary list of some of the key issues in this EA as we understand them today includes a variety of topics that IQ is central to understanding, assessing, and managing. They include but are not limited to the following factors –all of which are likely major issues in the Mary River Phase 2 EA - that call for close examination by Inuit themselves using their IQ not merely as a data input, but as an impact assessment and significance determination tool:</p> <ul style="list-style-type: none"> <li>• Effects on caribou of long linear developments and mining-related activities, and especially impacts of a rail line in North Baffin on caribou;</li> <li>• Effects of increased shipping on marine mammals, including strikes, avoidance behaviour and impacts on preferred habitat;</li> <li>• Effects of increased traffic and a possible rail line on the Tote Road, on Inuit use and occupancy anywhere in the vicinity of the terrestrial transportation route, including consideration of factors influencing risk perception, alienation or loss of use;</li> <li>• Effects of dust and other impact causing agents on lake fishing near the transportation route;</li> <li>• Food security issues, including Project-specific and cumulative effects;</li> <li>• The need for a retrospective assessment of Inuit use in the nearly decade long period of heavy industrial activity along the Tote Road; and</li> <li>• Effects of dust and other sensory changes on wildlife, vegetation, and traditional use.</li> </ul>
<b>Sept. 23, 2019 Update</b>	<p><b>Unresolved, pending documents (especially the CRLU Reassessment), further discussion, and additional commitments.</b></p> <p><i>Relevant Proponent Commitments</i></p> <ul style="list-style-type: none"> <li>• Baffinland has committed to further discussion with QIA on this issue.</li> <li>• BIMC to provide a revised CRLU Assessment</li> </ul> <p>The Proponent indicated the majority of the topics identified have been the subject of the Community Risk Assessment Workshops, and will be further addressed through the Crossing Selection Workshop and Food Security Survey. <i>Those documents have not been provided by Baffinland.</i></p> <p><i>Outstanding Gaps/Issues</i></p>

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Review Comment	11. Consideration and Integration of IQ; Estimation of Project Effects on Principles of Inuit Culture
	<p>QIA requests the Proponent to commit to verification work with Inuit on the CRLU Reassessment that demonstrably indicates efforts to gather significance through an Inuit lens.</p> <p>QIA requests the Proponent commit to adoption of an Inuit Committee/Inuit Panel that is demonstrably agreeable to Inuit parties in scope and powers, including appropriate decision-making authorities, with a timeline set for the development of Terms of Reference for this body. <i>This is relevant because such an Inuit body should be involved in the development of thresholds of acceptable change for future Project effects, to be tied into the monitoring and adaptive management regimes.</i></p>
August 11, 2020 Update	<p><b>Resolved.</b></p> <p>Individual requests from QIA and their status are dealt with below:</p> <ul style="list-style-type: none"> <li>• The first request – for the Proponent to provide its CRLU Assessment Update prior to the November 2020 public hearing – was not adhered to by the Proponent. QIA is on the public record that a CRLU Assessment with meaningful Inuit input is critical to the development of the Phase 2 Proposal. The ICA, through ID6, has a requirement for the joint conduct (including QIA, Inuit communities, and Baffinland) of a CRLU Assessment for Phase 2 prior to the beginning of major construction activities for the Project. It is recognized by QIA that the timelines for the CRLU Assessment may extend beyond the time frame for the NIRB process; the ICA indicates that in such a case, the evidence on the public record for the Phase 2 assessment will stand to inform NIRB's decision.</li> <li>• The second request – to verify CRLU Assessment results with Inuit – will be resolved contingent upon the proper implementation of ID6 of the ICA, which involves joint evaluation of CRLU impacts by QIA, Inuit communities and Baffinland. A reevaluation of CRLU will be completed prior to Phase 2 major construction activities being initiated.</li> <li>• The third request again relates to an Inuit-led Inuit Committee providing oversight to the Project, and this is accomplished through ID1 of the ICA, contingent on adequate resourcing by Baffinland. In addition, the Inuit Committee will have a specified role in finalizing Inuit Objectives, Indicators, Thresholds and Responses to build into the Project's Adaptive Management Plan (ID2 to the ICA), which is related to the spirit and intent of this request. The same applies to the Social Stream of the Inuit Stewardship Plan (ID3), which will have an Inuit Social Oversight Committee.</li> </ul> <p>QIA will update the Board on the status of resourcing and implementation of each of these ICA provisions at the technical meeting and hearing.</p>





Review Comment	11. Consideration and Integration of IQ; Estimation of Project Effects on Principles of Inuit Culture
Final Status Update	<p><b>Unresolved.</b></p> <ul style="list-style-type: none"><li>All of the items require full and proper implementation of the ICA to be considered resolved, as per the August, 2020, update. This has not occurred to date; At the time of this submission, based on progress to date this item is unresolved.</li></ul>



Review Comment	12. Risk Calculations and Consideration of Culture, Resources and Land Use
Subject	Socio-economic Assessment- Culture, Resources and Land Use: Risk Assessment for Traditional Use and Intangible Cultural Heritage
Reference	<ul style="list-style-type: none"> <li>FEIS Addendum Sections 10.2.3, Table 10-2</li> <li>TSD 25 Section 9</li> </ul>
Importance of issue to impact assessment	While risks associated with worst case scenarios have been calculated for other VCs this has not been the case for Inuit Culture, Resources, and Land use, a substantial gap in the risk assessment for this Project.
Detailed Review Comment	<p><i>Gap/Issue</i></p> <p>Potential Impacts to Culture, Resources, and Land Use have not been described in risk calculations. Impacts to Inuit Culture, Resources, and Land use need to be assessed for all accident scenarios, especially worst case scenarios.</p> <p><i>Disagreement with Addendum/TSD Conclusion</i></p> <p>QIA disagrees with the omission of Project risk calculations for Inuit Culture, Resources, and Land use.</p> <p><i>Reason for disagreement with Addendum conclusion</i></p> <p><b>Lack of Transparency for Risk Assessment Calculations:</b></p> <p>Section 9 of TSD 25 identifies accidents as a potential impact to Cultural Heritage Resources including train derailment, embankment failure, and accidental detonation of explosions (pdf pg. 125 of 535). The risk has been estimated by the Proponent as negligible. However, how this determination was made has not been provided.</p> <p>The proposed Project calls for larger vessels, increased total shipping and shipping during periods of ice formation, yet the assessment notes no change in likelihood or consequence ratings for shipping (FEIS Addendum Section 10.2.3, PDF p. 114 of 142). No calculations are provided to support this assertion.</p> <p><b>No Risk Calculations for Impacts to Culture, Resources, and Land Use:</b></p> <p>Effects listed associated with a spill includes “changes to or loss of habitat, changes to or loss of food sources, or direct health effects to marine biota, including seabirds, fish, and marine mammals” (FEIS Addendum Section 10.2.3, PDF p. 114 of 142). Potential Impacts to Culture, Resources, and Land Use have not been described. Impacts to Inuit Culture, Resources, and Land use need to be assessed for all accident scenarios.</p>
Recommendation /Request	<p>Proponent provide more details on methods behind and risk calculations associated with:</p> <ol style="list-style-type: none"> <li>Changes to Marine shipping including assessment of any and all potential impacts to Inuit Culture, Resources, and Land Use.</li> <li>Potential Impacts to Cultural Heritage resources, including intangible cultural heritage, from all possible accidents including worst-case scenario.</li> </ol> <p>In order to accomplish the above, the Proponent is requested to work in consultation with QIA and affected Inuit communities to develop and update Table 10-2 of the FEIS -Risk Summary.</p>



Review Comment	12. Risk Calculations and Consideration of Culture, Resources and Land Use
Sept. 23, 2019 Update	<b>Resolved.</b>  As of June 28,2019, QIA considers QIA 12 resolved. Our concerns can hopefully be addressed through the resolution of our other IQ-related technical comments.
Final Status Update	<b>Resolved.</b>



Review Comment	13. Commitment to Continued Funding of Monitoring and Implementation of TEMMP
Subject	Terrestrial Wildlife and Habitat - Environmental Monitoring
Reference	<ul style="list-style-type: none"> <li>Mary River Project Phase 2 Terrestrial Wildlife Technical Support Document, TSD 10, Sections 3.4.1.1 and 3.4.1.2</li> <li>BIMC (2017), Terrestrial Environment Mitigation and Monitoring Plan, Sections 3.3.1, 3.3.3</li> <li>BIMC (2018), 2017 Mary River Project Terrestrial Environment Annual Monitoring Report</li> </ul>
Importance of issue to impact assessment	Assurance of BIMC's commitment to diligent and effective monitoring, mitigation, and adaptive management to avoid and/or minimize the Project's potential effects on caribou, to the extent possible.
Detailed Review Comment	<p><i>Issue</i></p> <p>Regarding BIMC's responses to QIA IRs 01-03 pertaining to the potential effects of the combined proposed rail route construction and Tote Road activities on:</p> <ul style="list-style-type: none"> <li>caribou disturbance and movement,</li> <li>caribou calving, and</li> <li>caribou mortality</li> </ul> <p>The QIA acknowledges that Section 3.3 of the Terrestrial Environment Mitigation and Monitoring Plan (TEMMP) outlines the range of mitigation and monitoring measures available for the protection of terrestrial wildlife for the Mary River Project.</p> <p>However, as previously noted by the QIA in its IRs, it will be critically important for BIMC to be particularly diligent in effectively monitoring and implementing the appropriate mitigation measures to minimize disturbance to caribou, caribou calving and/or caribou mortality, if any of these circumstances arise in the vicinity of the proposed rail route construction activities and the operating Tote Road for the duration of the construction program.</p> <p>Subsequently when the proposed rail route becomes operational, diligent monitoring and mitigation of the combined Tote Road and proposed rail route operations will need to be continued to ensure that caribou and/or or caribou calving activities (if occurring near these operations) remain fully protected.</p>
Recommendation /Request	BIMC is therefore requested to provide its assurance that the Mary River Project is and remains fully committed to providing the necessary human and financial resources to diligently and effectively monitor and implement the appropriate mitigation measures to minimize disturbance to caribou, caribou calving and/or caribou mortality, if any of these circumstances were to arise during the combined proposed rail route construction and ongoing operational Tote Road activities for the duration of the construction program and the longer term operations period.
Sept. 23, 2019 Update	<b>Amalgamated into QIA – 01 and QIA – 02.</b> Outstanding concerns with respect to monitoring impacts of the project and adaptive management are covered under QIA-01 and 02.
Final Status Update	<b>No update.</b>



Review Comment	14. Caribou Crossings along Alignment
Subject	Terrestrial Wildlife and Habitat - Residual effects
Reference	<ul style="list-style-type: none"> <li>Mary River Project Phase 2 Terrestrial Wildlife Technical Support Document, TSD 10, Sections 2.3.1.1, 3.2.2, 3.3.2, 3.4.1.2, and 3.4.1.5.</li> <li>BIMC (2017), Terrestrial Environment Mitigation and Monitoring Plan, Sections 3.3.3, 3.3.5, and 3.3.6.</li> </ul>
Importance of issue to impact assessment	Residual effects assessment based on potential physical barriers only partially evaluates caribou movement across the proposed rail route
Detailed Review Comment	<p><i>Issue</i></p> <p>Residual effects on caribou movement were assessed based on potential physical barriers at 14 known trails along the 110 km proposed rail route. The QIA is concerned that potential effects on caribou movement are not adequately represented by physical barriers alone, and thus, residual effects on movement are only partially evaluated. BIMC indicates that the infrastructure of the Phase 2 Proposal “does not intersect traditional movement corridors, and therefore will not present substantial barriers to caribou movement”.</p> <p>QIA’s concern regarding the use of physical barriers alone as a measurable parameter to evaluate residual effects on movement include:</p> <ol style="list-style-type: none"> <li>1) Trails reflect a “larger herd” movement to important parts of their traditional range, and once there, constantly move to find food (i.e., not necessarily moving along well-worn trails). Caribou are predicted to start making predictable long-distance movements when caribou return to population highs, thus overlooking current (and the progression to “larger herd”) conditions. Currently, caribou occupying the area are dispersed and make very few focused directional movements (i.e., unpredictable). A trail system is not necessarily used;</li> <li>2) BIMC indicated that “deflection from transportation-related berms or embankments is believed to be a response to other sensory disturbances (i.e., sight and noise of vehicles) rather than the height of the barrier”; and</li> <li>3) Details of the early warning mechanisms and operational protocols to avoid/minimize caribou movement effects from the proposed rail route are unclear, especially outside the predictable migratory periods.</li> </ol>
Recommendation /Request	<p>Update the effects assessment using a parameter that fully represents potential caribou movement effects across the proposed rail route.</p> <p>Describe how the early warning mechanisms and operational protocols avoid and or minimize the proposed rail route effects on caribou movement, including those off trails.</p>
Sept. 23, 2019 Update	<b>Amalgamated into QIA – 01 and QIA – 02.</b> This TRC is now considered resolved. Remaining outstanding QIA concerns with respect to impacts to caribou movement are addressed under QIA-01 and 02, above.



Review Comment	14. Caribou Crossings along Alignment
Final Status Update	No update.



<b>Review Comment</b>	<b>15. Cumulative Effects of Rail Line and Tote Road in Close Proximity</b>
<b>Subject</b>	Terrestrial Wildlife and Habitat - Residual effects
<b>Reference</b>	<ul style="list-style-type: none"> <li>Mary River Project Phase 2 Terrestrial Wildlife Technical Support Document, TSD 10, Section 3.3.2, 3.4.1.2</li> </ul>
<b>Importance of issue to impact assessment</b>	Clarity on the combined impacts of the road and rail embankments in proximity to each other on caribou movement.
<b>Detailed Review Comment</b>	<p><i>Issue</i></p> <p>The proposed rail route will parallel the Tote Road. Effects on caribou may be influenced by adjacent infrastructure combined. For example, two structures in proximity to each other may produce a combined effect greater than when evaluated separately.</p> <p>BIMC did assess potential impacts based on the combined traffic volume of the Tote Road and proposed rail route, and the physical barrier (i.e., embankment) of the proposed rail route alone. However, did not address potential impacts associated with disturbances of the infrastructures combined (e.g., visual disturbances associated with the road and proposed rail route, combined).</p> <p>Potential combined effects of the proposed rail route in proximity to the Tote Road may augment potential movement effects described by BIMC.</p>
<b>Recommendation /Request</b>	Comment on the potential effects of the Tote Road and proposed rail route combined to wildlife movement and were these potential effects (if any) considered in the design stage of the proposed rail route.
<b>Sept. 23, 2019 Update</b>	<b>Amalgamated into QIA – 01 and QIA – 02.</b> This TRC is now considered resolved; remaining outstanding concerns on wildlife are covered under QIA-01 and 02.
<b>Final Status Update</b>	<b>No Update.</b>





<b>Review Comment</b>	<b>16. Caribou Mortality Risk and Mitigation</b>
<b>Subject</b>	Terrestrial Wildlife and Habitat - Residual effects
<b>Reference</b>	<ul style="list-style-type: none"> <li>Mary River Project Phase 2 Terrestrial Wildlife Technical Support Document, TSD 10, Sections 3.4.1.3 and 3.4.1.5.</li> </ul>
<b>Importance of issue to impact assessment</b>	Clarity on the mortality risk of caribou and associated mitigation.
<b>Detailed Review Comment</b>	<p><i>Issue</i></p> <p>BIMC predicts the Phase 2 Proposal may slightly increase the risk of caribou mortality but that risk is readily mitigated by traffic controls and a no-hunting policy for Project personnel while on-site. Caribou are also currently in very low numbers and thus, encounters with the proposed rail route are seldom expected. When caribou numbers increase, seasonal shut downs are possible to allow caribou to pass during migratory movements. The effect on North Baffin caribou mortality is predicted to be not significant.</p> <p>QIA acknowledges the proposed mitigations, including shut downs during migratory movements, and current low numbers of caribou. However, QIA is also concerned about caribou mortality risk outside the migration period and as caribou abundance progressively increases. At low population levels, especially while a harvest limit is in place, mortality risk of even a few individuals is a concern.</p> <p>Along the North Transportation Corridor, caribou movement is mostly described as a broad zone of north/south movement parallel to the direction of the existing Tote Road and proposed rail route. Trombulak and Frissell (2001) has indicated that caribou in Alaska preferentially travelled along cleared winter roads that led in the direction of their migration and could lead to a higher risk of caribou mortality.</p> <p>BIMC indicated that knowledge holders involved in the workshops did not know if caribou would be aware of moving locomotives and be capable of getting off the rail tracks. Relevant information from known reindeer effects could be used to predict effects from the Phase 2 proposal. Train operators in Sweden report poor visibility (e.g., fog), poor light conditions (i.e., winter period at the Phase 2 project), and deep snow as main causes of wildlife-train collisions (including collisions with reindeer, Seiler and Olsson 2017).</p>
<b>Recommendation /Request</b>	Provide additional information to predict the nature and extent of the proposed rail route effects on caribou mortality, describe how the surveillance system will be used to avoid collisions, and suggest additional mitigation (if required) including reporting to regulators should caribou injury and mortality occur.
<b>Sept. 23, 2019 Update</b>	<b>Amalgamated into QIA – 01 and QIA – 02.</b> This TRC is considered resolved. Remaining outstanding concerns with respect to monitoring and mitigating impacts to caribou mortality risk are covered under QIA-01 and 02, above.
<b>Final Status Update</b>	<b>No update.</b>



<b>Review Comment</b>	<b>17. Effects of Wind Turbines on Birds</b>
<b>Subject</b>	Terrestrial Wildlife and Habitat - Project Description
<b>Reference</b>	<ul style="list-style-type: none"> <li>• Mary River Project Phase 2 Project Description Technical Support Document, TSD 02</li> <li>• Mary River Project Phase 2 Migratory Birds Technical Support Document, TSD 12</li> <li>• IR Responses Phase 2 Proposal, QIA 05 and ECCC 01</li> </ul>
<b>Importance of issue to impact assessment</b>	Effects of wind turbines on avian species a gap in the impact assessment.
<b>Detailed Review Comment</b>	<p><i>Gap</i></p> <p>In response to QIA 05 and ECCC 01 IRs on wind turbine effects on avian species, including species at risk, BIMC committed to conducting a risk assessment including any surveys required for informing site sensitivity. Mitigation and monitoring requirements will also be later developed following results of the assessment.</p> <p>QIA welcomes this commitment; however, effects of wind turbines are clearly a gap in the Phase 2 project proposal assessment.</p>
<b>Recommendation /Request</b>	QIA requests the wind turbines be removed from the project proposal for the Phase 2 review to continue.
<b>Final Status Update</b>	<p><b>Resolved.</b></p> <p>Wind turbines were removed from the Phase 2 Development Proposal. This TRC is considered resolved.</p>



Review Comment	18. Steaming of Culverts During Freshet
Subject	Hydrology and Hydrogeology - Groundwater/Surface Waters - Environmental Mitigation and Management
Reference	<ul style="list-style-type: none"> <li>EIS, page 4.3</li> <li>Section 5.2.6.5 of the May 1 ICRP, page 131 of 455</li> </ul>
Importance of issue to impact assessment	The comment highlights a gap in the assessment. Phase 2 introduces a requirement for an action to be completed, in order to not impact the environment. However, there is a gap in the assessment because the impacts of not taking the action are not assessed.
Detailed Review Comment	<p>In response to QIA IR#33, BIMC states that railroad culverts will be steamed prior to freshet to maintain water conveyance.</p> <p>The potential impacts associated with a culvert not being steamed are not discussed. This may occur if maintenance is not conducted, or poorly conducted, and/or in a situation where the site is no longer occupied (e.g., temporary and/or permanent closure).</p>
Recommendation /Request	Provide a description of the likely and worst-case potential impacts to the receiving environment for a scenario where a culvert is not steamed prior to freshet. Specifically address the potential impacts if culverts are not steamed in a closure situation.
Sept. 23, 2019 Update	<p>Given the new information provided, QIA's update is as follows.</p> <p>BIMC included that all culverts will be removed from the Rail Line during closure in the May 1, 2019 submission of the ICRP.</p> <p>BIMC has responded with adequate information.</p>
August 11, 2020 Update	<p><b>Resolved.</b></p> <p>Given the forthcoming regulatory process, and Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p> <p>QIA is satisfied with Baffinland's commitments to further develop adaptive management objective, indicators, thresholds, and responses with Inuit and QIA's approval. Baffinland has further committed to remedies and remedial compensation where actions taken do not avoid, mitigate, or eliminate impacts. Baffinland has recognized and agrees that managing and monitoring the Mary River Project is not limited to achievement of applicable guidelines, and standards; applicable guidelines and standards may form a basis from which more protective and Inuit site specific criteria will also be developed and respected.</p>
Final Status Update	<b>Resolved.</b>



Review Comment	19. Closure and Reclamation for Phase 2 – Residual Landform and Esthetics
Subject	Landform Soils and Permafrost - Water Licence, including relevant sections - Regulatory Regime
Reference	<ul style="list-style-type: none"> <li>EIS, Section 4.1.6, page 4.7</li> <li>Draft ICRP (May 1, 2019), Section 5.2.6.5, Page 131</li> </ul>
Importance of issue to impact assessment	The comment highlights a gap in the assessment. There is insufficient information regarding reclamation and closure activities and final landscape to support the Phase 2 assessment.
Detailed Review Comment	<p>BIMC's response to QIA's IR#35 causes an increased concern regarding the final landscape features that will remain after closure and reclamation is complete. A one paragraph description as a response to IR#35 is insufficient to understand the closure and reclamation approach and the residual landform and aesthetic conditions for the Phase 2 Project. An updated ICRP should include a full description of closure activities and final state; an evaluation of the potential impacts; and further recommendations.</p> <p>QIA acknowledges discussions between the parties on what is required in an updated ICRP have occurred. However, these discussions have not been completed, nor has a final document been provided.</p>
Recommendation /Request	Provide an updated ICRP that includes all elements of the Phase 2 proposal for review. At that time, QIA can provide more direct recommendations on this topic. The review of the ICRP will be required within this environmental assessment process.
Sept. 23, 2019 Update	<p>Given the new information provided, QIA's update is as follows.</p> <p>BIMC submitted an updated ICRP to support the Phase 2 EA on May 8, 2019. QIA acknowledges that discussions between the parties on what is required for reclamation and closure activities and final landscape in an updated ICRP have occurred. However, these discussions have not been completed, nor has a final document been provided.</p> <p><b>Resolved.</b> No further recommendation or requests are required for the EA process. However, this item will be ongoing as BIMC and QIA have agreed to review the Draft ICRP through the Commercial Lease Approval process.</p>
August 11, 2020 Update	<p><b>Resolved.</b></p> <p>Given the forthcoming regulatory process, and Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p> <p>QIA is satisfied with Baffinland's commitments to further develop adaptive management objective, indicators, thresholds, and responses with Inuit and QIA's approval. Baffinland has further committed to remedies and remedial compensation where actions taken do not avoid, mitigate, or eliminate impacts. Baffinland has recognized and agrees that managing and monitoring the Mary River Project is not limited to achievement of applicable guidelines, and standards; applicable guidelines and standards may form a basis</p>



Review Comment	19. Closure and Reclamation for Phase 2 – Residual Landform and Esthetics
	from which more protective and Inuit site specific criteria will also be developed and respected.
Final Status Update	Resolved.



Review Comment	20. Consideration of Land and Water Use in Route Selection
Subject	Hydrology and Hydrogeology - Groundwater/Surface Waters - Landform Soils and Permafrost - Freshwater Aquatic Environment - Terrestrial Wildlife and Habitat - Project Description
Reference	<ul style="list-style-type: none"> <li>EIS, Section 6.3, page 6.1</li> <li>Tusaqtavut for Phase 2 Application of the Mary River Project</li> </ul>
Importance of issue to impact assessment	<p>The comment highlights a disagreement QIA has with BIMC's proposed Rail Route and its methods for choosing between alternatives.</p> <p>QIA believes local land and water uses should have had a greater influence on the proposed Rail Route.</p>
Detailed Review Comment	<p>In response to QIA IR #36, BIMC states that "no land and water uses were identified that could have influenced the routing at a local level".</p> <p>QIA notes that there are Inuit land and water uses in the local vicinity of the proposed Rail Route. From BIMC's response, it implies these uses were not a prime factor in the route selection. For the proposed Rail Route, the potential impacts to land use and water use by Inuit use is not fully understood.</p>
Recommendation /Request	<ol style="list-style-type: none"> <li>Clarify how land and water use by Inuit were factored into proposed Rail Route selection.</li> <li>Describe how land use and water use by Inuit will be influenced by the proposed Rail Route.</li> </ol>
Sept. 23, 2019 Update	<p>Given the new information provided, QIA's update is as follows.</p> <p>QIA submitted the Pond Inlet Tusaqtavut Study to BIMC on June 14, 2019. Further engagement with the MHTO, QIA, and community members led BIMC to propose an alternative Rail Route in late August to factor in Inuit land and water use. However, the alternative Rail Route has not been assessed for impacts.</p> <p><b>Status</b> <b>Unresolved – pending further discussion and commitments.</b></p> <p>If the alternative Rail Route is not considered, then the impact of the Rail Route to Inuit land and water use remains uncertain and Inuit considerations may not have adequately been addressed through the EA. However, if the Project were to be approved then QIA believes certain revisions to the IIBA, Water Compensation Agreement, Water Licence, and/or Commercial Lease would be required.</p> <p><i>New Comment</i> If the alternative Rail Route is considered, BIMC should provide an update to the assessment of the alternative northern Rail Route that includes the following information, at a minimum.</p> <ol style="list-style-type: none"> <li>How land and water use by Inuit were factored into the alternative and proposed Rail Route selection.</li> <li>Describe how land use and water use by Inuit will be influenced by both Rail Routes.</li> </ol>



Review Comment	20. Consideration of Land and Water Use in Route Selection
	<ol style="list-style-type: none"> <li>3. Animal and human crossings.</li> <li>4. Provide an update to impact area boundaries, if any.</li> <li>5. Provide a process for which the Rail Route would be constructed to ensure satisfactory environmental and engineering parameters are accounted for in the alternative northern Rail Route.</li> <li>6. Provide clear trigger points that would require BIMC to change the proposed alternative route, including discovery of archaeological sites and places of importance, and parameters around permafrost sensitivity and ice lenses, etc.</li> </ol>
<b>August 11, 2020 Update</b>	<p><b>Resolved.</b></p> <p>Given the forthcoming regulatory process, and Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p> <p>QIA is satisfied with Baffinland's commitments to further develop adaptive management objective, indicators, thresholds, and responses with Inuit and QIA's approval. Baffinland has further committed to remedies and remedial compensation where actions taken do not avoid, mitigate, or eliminate impacts. Baffinland has recognized and agrees that managing and monitoring the Mary River Project is not limited to achievement of applicable guidelines, and standards; applicable guidelines and standards may form a basis from which more protective and Inuit site specific criteria will also be developed and respected.</p>
<b>Final Status Update</b>	<p><b>Resolved.</b></p>





Review Comment	21. Inuit Water Use Along Tote Road and Rail Route
Subject	Hydrology and Hydrogeology, Groundwater/Surface Waters, Landform Soils and Permafrost, Freshwater Aquatic Environment, Terrestrial Wildlife and Habitat, Project Description
Reference	<ul style="list-style-type: none"> <li>EIS, Section 6.3, page 6.1</li> <li>Response to Technical Review Comment QIA 21 – Water Quality Assessments - Magnitude Ratings and Quantitative Assessments</li> <li>FEIS Volume 7, Section 3.4.1.5</li> </ul>
Importance of issue to impact assessment	The comment highlights a gap in the assessment. QIA believes the impact assessment is incomplete for the water quality, quantity and/or flow along the Tote Road and proposed Rail Route.
Detailed Review Comment	Inuit water use near the Tote Road and proposed Rail Route may be impacted as a result of construction, operations and closure of the Project. The predicted/assessed changes to water quantity, quality and flow are uncertain for the Phase 2 Tote Road and proposed Rail Route during the construction, operations and closure phases.
Recommendation /Request	<ol style="list-style-type: none"> <li>Summarize the predicted changes to water quality, quantity and/or flow for this Phase 2 for the construction, operations and closure phases of the Tote Road and proposed Rail Route. If this assessment has not been completed to date, the assessment should be performed, and the results made available to intervenors prior to the submission of final comments. Note: specific quantities are requested for the predicted changes quality, quantity and/or flow, as well as, the spatial extent of the prediction.</li> <li>Describe how the predicted changes to water quality, quantity and flow may: <ol style="list-style-type: none"> <li>Result in adverse effects to Inuit water users, including potential health effects and reduced desirability to use and consume the water</li> <li>Result in nuisance, inconvenience or other disturbance to Inuit users</li> <li>Result in a change to cultural use to Inuit lands and water</li> <li>Result in a change to a peculiar and special value of Inuit lands and water</li> <li>Result in an interference with Inuit rights as noted in the Nunavut Agreement, Article 20 s.20.3.3</li> </ol> </li> </ol>
Sept. 23, 2019 Update	<p>Given the new information provided, QIA's update is as follows.</p> <p>QIA requested clarification of the assessment of water quality during the first technical session that resulted in BIMC indicating there was an error in the EA. QIA did not ask further questions on TRC 21 during the second technical meeting as BIMC submitted its memo detailing the error on June 15, 2019 and this did not allow sufficient time to review the memo during the June Technical Meeting.</p> <p>Since then, QIA has reviewed the memo; its concerns are listed below. To support these concerns, QIA has included Table 1 (below) that summarizes the calculated Water Quality Impacts based on BIMC's FEIS and EA. The derivation of each value is the Water Quality Objective (WQO) as per the FEIS that are typically based on the Canadian Water Quality Guidelines to be Protective of Aquatic Life, or a site specific WQO developed from baseline testing. The WQO was then multiplied by the updated magnitude level. For a magnitude level II, this is a 100x multiplier. It is QIA's understanding that BIMC has considered these to be the predicted effects assessed in the EA.</p>



Review Comment	21. Inuit Water Use Along Tote Road and Rail Route																																																								
	<p>QIA's concerns with BIMC's assessment is that water quality could be impacted up to the concentrations shown in Table 1 (below), and may not be reversible, yet are considered not significant. This concern is elaborated in the following examples:</p> <ol style="list-style-type: none"><li>1. BIMC has indicated, as consistent with its FEIS assessment, that <i>All instances where the effectiveness of the mitigation was in question resulted in a magnitude of Level II</i> (FEIS Volume 7, Section 3.4.1.5). BIMC elaborated that the adjustment was made because mitigation efforts for sedimentation effects due to the release of total suspended solids (TSS) do not have a high level of certainty in terms of implementation and effectiveness. QIA considers this a known concern and one that may be adaptively managed. It is unclear when mitigation measures would be implemented as the current Roads Management Plan adaptive management framework may not implement mitigation measures prior to exceeding Water Licence Water Quality Criteria. Furthermore, the effectiveness of these mitigation measures is noted to be uncertain. Therefore, proactive management is essential.</li><li>2. The Residual Effect of <i>Increase in metal concentrations in Mine Site water and sediment due to dust deposition</i> (BIMC response to TRC 21, page 3 of 7) is Not Significant. The magnitude of the effect is level II and is not reversible. This would indicate that the concentrations included in Table 1 (below)are predicted. Select predicted impact concentrations exceed Canada's Drinking Water Guidelines and Guidelines for the protection of aquatic life.</li><li>3. The two Residual Effects with magnitudes increased from I to II, being <i>Construction phase erosion and sedimentation causing elevated TSS in local watercourses (site-wide)</i> and <i>Operation phase dust deposition and sedimentation causing elevated TSS in local watercourses (site-wide)</i> are considered Not Significant. The increase in magnitudes indicates that the concentrations in the water in the LSA could reach those listed in Table 1. Select predicted impact concentrations exceed Canada's Drinking Water Guidelines and Guidelines for the protection of aquatic life.</li></ol> <p><i>Table 1: Predicted Impacts to Water Quality.</i></p> <table><tr><th>Parameter</th><th>Mine Site LSA</th><th>Milne Port LSA</th><th>Tote Road LSA</th></tr><tr><td>pH</td><td>6.5-9.0</td><td>6.5-9.0</td><td>6.5-9.0</td></tr><tr><td>TSS</td><td>5,000 mg/L</td><td>5,000 mg/L</td><td>5,800 mg/L</td></tr><tr><td>Chloride</td><td>12,000 mg/L</td><td>12,000 mg/L</td><td>12,000 mg/L</td></tr><tr><td>Sulphate</td><td>21,800 mg/L</td><td>21,800 mg/L</td><td>21,800 mg/L</td></tr><tr><td>Ammonia</td><td>85.5 mg/L</td><td>85.5 mg/L</td><td>85.5 mg/L</td></tr><tr><td>Nitrate</td><td>1,300 mg/L</td><td>1,300 mg/L</td><td>1,300 mg/L</td></tr><tr><td>Nitrite</td><td>6 mg/L</td><td>6 mg/L</td><td>6 mg/L</td></tr><tr><td>Total Phosphorus</td><td>1 mg/L</td><td>1 mg/L</td><td>1 mg/L</td></tr><tr><td>Aluminum</td><td>96.6 mg/L</td><td>94 mg/L</td><td>94 mg/L</td></tr><tr><td>Arsenic</td><td>0.5 mg/L</td><td>0.5 mg/L</td><td>0.5 mg/L</td></tr><tr><td>Cadmium</td><td>0.01 mg/L</td><td>0.01 mg/L</td><td>0.01 mg/L</td></tr><tr><td>Total Chromium</td><td>0.23 mg/L</td><td>0.47 mg/L</td><td>0.47 mg/L</td></tr><tr><td>Chromium (III)</td><td>0.89 mg/L</td><td>0.89 mg/L</td><td>0.89 mg/L</td></tr></table>	Parameter	Mine Site LSA	Milne Port LSA	Tote Road LSA	pH	6.5-9.0	6.5-9.0	6.5-9.0	TSS	5,000 mg/L	5,000 mg/L	5,800 mg/L	Chloride	12,000 mg/L	12,000 mg/L	12,000 mg/L	Sulphate	21,800 mg/L	21,800 mg/L	21,800 mg/L	Ammonia	85.5 mg/L	85.5 mg/L	85.5 mg/L	Nitrate	1,300 mg/L	1,300 mg/L	1,300 mg/L	Nitrite	6 mg/L	6 mg/L	6 mg/L	Total Phosphorus	1 mg/L	1 mg/L	1 mg/L	Aluminum	96.6 mg/L	94 mg/L	94 mg/L	Arsenic	0.5 mg/L	0.5 mg/L	0.5 mg/L	Cadmium	0.01 mg/L	0.01 mg/L	0.01 mg/L	Total Chromium	0.23 mg/L	0.47 mg/L	0.47 mg/L	Chromium (III)	0.89 mg/L	0.89 mg/L	0.89 mg/L
Parameter	Mine Site LSA	Milne Port LSA	Tote Road LSA																																																						
pH	6.5-9.0	6.5-9.0	6.5-9.0																																																						
TSS	5,000 mg/L	5,000 mg/L	5,800 mg/L																																																						
Chloride	12,000 mg/L	12,000 mg/L	12,000 mg/L																																																						
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Chromium (III)	0.89 mg/L	0.89 mg/L	0.89 mg/L																																																						



Review Comment	21. Inuit Water Use Along Tote Road and Rail Route			
	Chromium (VI)	0.3 mg/L	0.3 mg/L	0.3 mg/L
	Cobalt	0.4 mg/L	0.4 mg/L	0.4 mg/L
	Copper	0.47 mg/L	0.47 mg/L	0.4 mg/L
	Iron	87 mg/L	120 mg/L	120 mg/L
	Lead	0.1 mg/L	0.1 mg/L	0.1 mg/L
	Nickel	2.5 mg/L	2.5 mg/L	2.5 mg/L
	Silver	0.01 mg/L	0.01 mg/L	0.01 mg/L
	Thallium	0.08 mg/L	0.08 mg/L	0.08 mg/L
	Vanadium	0.6 mg/L	0.6 mg/L	0.06 mg/L
	Zinc	3 mg/L	3 mg/L	3 mg/L
	<p><b>Unresolved – pending commitments and further discussion.</b></p> <p>QIA requests a commitment by the Proponent to defining triggers for compensation in the new Water Compensation Agreement, that consider Inuit use, IQ, baseline data, and relevant government guidelines for the Project. Baffinland and QIA have scheduled a meeting on October 2, 2019 to discuss the new WCA.</p> <p>QIA requests the Proponent commit to managing changes to water quality by implementing mitigative measures as per an approved adaptive management framework.</p>			
August 11, 2020 Update	<p><b>Resolved.</b></p> <p>Given the forthcoming regulatory process, and Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p> <p>QIA is satisfied with Baffinland's commitments to further develop adaptive management objective, indicators, thresholds, and responses with Inuit and QIA's approval. Baffinland has further committed to remedies and remedial compensation where actions taken do not avoid, mitigate, or eliminate impacts. Baffinland has recognized and agrees that managing and monitoring the Mary River Project is not limited to achievement of applicable guidelines, and standards; applicable guidelines and standards may form a basis from which more protective and Inuit site specific criteria will also be developed and respected.</p>			
Final Status Update	<b>Resolved.</b>			



Review Comment	22. Exceedances in Water License Criteria and Tote Road IFC Drawings
Subject	Groundwater/Surface Waters, Freshwater Aquatic Environment, Water License, including relevant sections, Regulatory Regime, Environmental Monitoring
Reference	<ul style="list-style-type: none"> <li>EIS, Section 8.3.4</li> <li>Draft Revised Project Certificate No. 005 for Phase 2, Page 88, Project Certificate No. 179b.</li> <li>EIS, Table 1-1, page 1.8</li> <li>Draft Roads Management Plan (May 13, 2019), Section C.1.5, Page 41</li> <li>Adaptive Management Plan (draft) (August 23, 2019)</li> </ul>
Importance of issue to impact assessment	The comment highlights an issue with the assessment. BIMC has not provided the necessary management and monitoring information to validate the assessment of potential impacts to water, specifically along the Tote Road.
Detailed Review Comment	In response to QIA IR#37, BIMC confirms there have been Water Licence criteria exceedances along the Tote Road between years 2016 and 2018. This may potentially be attributed to the Tote Road not being constructed as designed in the Issued For Construction (IFC) drawings submitted with the ERP proposal. Further, until recently, BIMC's management plans were limited in their use of monitoring data to establish triggers and resulting actions to mitigate against an exceedance from occurring. There is concern that Phase 2 Tote Road traffic on the existing road will impact water. Specifically, a concern that the number of exceedances to water quality criteria will increase unless additional efforts are taken by BIMC. Efforts that should be considered include but are not limited to upgrading the Tote Road to the Approved design conditions (i.e., achieve the IFC design); and developing management plans with clearly defined triggers utilizing monitoring data; and action thresholds to implement additional mitigation measures before an exceedance of a water quality criteria occurs. If the Tote Road is not constructed to design, there remains a gap in this impact assessment with regards to the potential environmental impacts associated with utilizing a Tote Road for Phase 2 that is not constructed or operated to the Approved design.
Recommendation /Request	<ol style="list-style-type: none"> <li>1. Present the triggers based on monitoring data, and thresholds that will be implemented to mitigate against an exceedance of a water quality criteria.</li> <li>2. Update all applicable water quality monitoring plans associated with the Tote Road corridor to include triggers, based on monitoring data, and thresholds to implement the mitigation measures to avoid exceedance of water quality criteria and potential impacts to the receiving environment.</li> <li>3. Present the predicted impacts to the receiving environment associated for the Tote Road for a condition where the road is not constructed and operated to the permitted/licenced IFC design standard.</li> <li>4. Describe how the proposed measures will mitigate the occurrence of an exceedance to water quality criteria.</li> <li>5. Detail the frequency and likelihood of an exceedance water quality to occur for the Tote Road in Phase 2 if the road is not constructed or operated to the IFC drawings.</li> </ol>
Sept. 23, 2019 Update	<p>Given the new information provided, QIA's update is as follows.</p> <p>The Roads Management Plan includes thresholds for implementation of mitigation measures. However, these thresholds are not in line with the current Water Licence water quality criteria. This would not normally be an issue as the water quality criteria would be</p>



Review Comment	22. Exceedances in Water License Criteria and Tote Road IFC Drawings
	<p>set following a successful EA. However, BIMC is an operating mine with established water quality criteria and furthermore has not applied to update the water quality criteria in the Water Licence amendment process as originally discussed. Therefore, there may be a gap in administering the management and monitoring of impacts and their mitigative measures.</p> <p>QIA acknowledges the mitigative measures included in the Surface Water and Aquatic Ecosystems Management Plan and Environmental Protection Plan. However, these plans do not indicate when these mitigative measures would be triggered, nor how they would mitigate against the impact of a water quality exceedance. QIA has discussed with BIMC the need of improved adaptive management that resulted in BIMC's August 23, 2019 submission of a draft Adaptive Management Plan. The Adaptive Management Plan includes much of the content and theory that QIA has been requesting and believes is required to perform adaptive management, as required of BIMC by the current Project Certificate. Furthermore, BIMC has done a self-assessment of five management plans to the standards of its Adaptive Management Plan. However, this assessment indicates that a multitude of its plans include indicators, thresholds, and integrate IQ without demonstrating where or how. As this plan was submitted August 23, 2019, QIA has not had an opportunity to discuss with BIMC the impacts of the Adaptive Management Plan or how the assessment was performed to include in this intervention.</p> <p>In response to QIA IR#37, BIMC confirms there have been Water Licence criteria exceedances along the Tote Road between years 2016 and 2018. This may potentially be attributed to the Tote Road not being constructed as per the Issued For Construction (IFC) drawings submitted with the ERP proposal. Further, until recently, BIMC's management plans were limited in their use of monitoring data to establish triggers and resulting actions to mitigate against an exceedance from occurring.</p> <p>There is concern that Phase 2 Tote Road traffic on the existing road will impact water. Specifically, a concern that the number of exceedances to water quality criteria will increase unless additional efforts are taken by BIMC. Efforts that should be considered include but are not limited to upgrading the Tote Road to the Approved design conditions (i.e., achieve the IFC design); and developing management plans with clearly defined triggers utilizing monitoring data and action thresholds to implement additional mitigation measures before an exceedance of a water quality criteria occurs.</p> <p>BIMC and QIA have been in communication on this topic but it remains outstanding.</p> <p>The increase in traffic from construction vehicles as well as the increase in haulage of ore along the Tote Road while the Rail Line is being constructed is expected to be non-negligible. The Tote Road has not been assessed for impacts for use in a non-designed state, nor has it been assessed for haulage greater than 4.2 Mtpa. Further, BIMC has been inconsistent in its description of haulage of iron ore by ore haul truck. BIMC's proposed changes to PC Term and Condition 179a include a switch from ore hauled to truck transits. Propagating BIMC's proposed changes to PC Term and Condition 179a, as BIMC changed</p>





Review Comment	22. Exceedances in Water License Criteria and Tote Road IFC Drawings
	<p>from a Mtpa limit to a truck transit limit, BIMC has requested to haul 24 Mtpa. The impact of this level of traffic along the Tote Road has not been assessed.</p> <p>If the Tote Road is not constructed to design, there remains a gap in this impact assessment with regards to the potential environmental impacts associated with utilizing a Tote Road for Phase 2 that is not constructed or operated to the Approved design.</p> <p><b>Status</b> <b>Unresolved – pending further discussion and commitments.</b></p> <p>QIA remains concerned with the predictions and assessment made by BIMC. However, if the Project were to be approved then QIA believes certain mitigations and activities should be required in the next regulatory phase i.e. the Water Licence and Commercial Lease.</p> <p>QIA requests commitment to the following path forward which requires:</p> <ol style="list-style-type: none"> <li>1. The Proponent to update the Roads Management Plan to have mitigative measures prior to the Water Quality Criteria in the approved Water Licence.</li> <li>2. The Proponent to monitor and report on the areas of concern identified in the Inspection of the Mine Inlet Tote Road and Associated Borrow Sources Report.</li> <li>3. NIRB to update Project Certificate Condition No. 179b to:             <ol style="list-style-type: none"> <li>a. <i>Unless otherwise approved by the NIRB, in any given day, the total number of truck transits along the Milne Inlet Tote Road should not exceed an average of 180 truck transits per day until the first deposit of Iron Ore at Milne Port by Rail has occurred. Following that time, unless otherwise approved by NIRB, the number of truck transits should diminish to 0 truck transits per day after 3 years. Following commissioning of the Railway from Milne Port to Mary River, unless otherwise approved by the NIRB, in any given day, the total number of train transits along the Railway should not exceed 20.</i></li> </ol> </li> <li>4. NIRB add the following Project Certificate Condition:             <ol style="list-style-type: none"> <li>a. <i>Should BIMC not commission the Railway in the first three years following Amendment 2 to the Project Certificate, BIMC shall construct the Tote Road to the design included in Amendment 1. Should this design no longer be valid, the Tote Road shall be designed for its intended uses.</i></li> </ol> </li> </ol>
<p><b>August 11, 2020 Update</b></p>	<p><b>Resolved.</b></p> <p>Given the forthcoming regulatory process, and Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p> <p>QIA is satisfied with Baffinland's commitments to further develop adaptive management objective, indicators, thresholds, and responses with Inuit and QIA's approval. Baffinland has further committed to remedies and remedial compensation where actions taken do not avoid, mitigate, or eliminate impacts. Baffinland has recognized and agrees that</p>



Review Comment	22. Exceedances in Water License Criteria and Tote Road IFC Drawings
	managing and monitoring the Mary River Project is not limited to achievement of applicable guidelines, and standards; applicable guidelines and standards may form a basis from which more protective and Inuit site specific criteria will also be developed and respected.
Final Status Update	Resolved.





Review Comment	23. Undisturbed Buffer Between Tote Road and Rail Route, and License Boundary
Subject	Landform Soils and Permafrost, Regulatory Regime, Land use
Reference	<ul style="list-style-type: none"> <li>EIS Section 9.3.1, Page 9.29</li> <li>Water Licence Amendment Package, Attachment 10 – North Railway Detailed Figured</li> </ul>
Importance of issue to impact assessment	The comment highlights a disagreement with the assessment. BIMC has not contemplated nor assessed the potential impacts of their plans for leasing Inuit Owned Lands.
Detailed Review Comment	<p>In response to QIA IR#38, BIMC states that the current Commercial Lease requires a 50m undisturbed buffer between the Lease boundary and the Tote Road. QIA notes that this 50 m buffer is associated with the Tote Road corridor and further consideration will be needed to assess its applicability for the proposed Rail Route.</p> <p>It is acknowledged that BIMC has provided updated figures that depict the proposed Lease area about the Rail Route.</p> <p>The width of the disturbed impact area and land Lease area about the Rail Route is uncertain.</p> <p>Within TSD-02 Appendix B, Figure B.4, maps are provided that show the existing Lease boundaries associated with the Tote Road corridor and the new proposed Lease boundaries associated with the Rail Route. Due to alignment differences between the Tote Road and the proposed Rail Route, the Tote Road Lease boundary and the proposed rail boundary results in isolated pockets of land that is not proposed to be captured within BIMC's Lease. Thus, it is implied that there will be non-leased Inuit Owned Land surrounded by BIMC Leased land (e.g., see Figure B.4.5 near Tower #3). This has potential to result in reduced land and water use within these isolated areas. QIA considers this a Project impact that results from the Project.</p>
Recommendation /Request	<ol style="list-style-type: none"> <li>Clarify the proposed buffer to apply for the proposed Rail Route. What is the width of this buffer and is it relative to the embankment centreline or toe of embankment?</li> <li>Clarify the proposed width of the Rail Route corridor.</li> <li>Describe how the potential impacts to the land and land use been considered in selecting the Lease boundaries in instances where there is a proposed non-Lease land isolated between the Tote Road Lease land and proposed Rail Route Lease boundary. Please address the anticipated potential impacts to land and water uses within the isolated areas of non-Lease land sounded by Leased land.</li> </ol>
Sept. 23, 2019 Update	<p><b>Resolved.</b></p> <p>Given the new information provided, QIA's update is as follows.</p> <p>BIMC has provided proposed Lease Boundaries for consideration as part of Attachment 10 of the Water Licence Proposal.</p> <p>QIA will manage the Lease Boundaries as part of the Commercial Lease process.</p>
August 11, 2020 Update	<p><b>Resolved.</b></p> <p>Given the forthcoming regulatory process, and Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p>



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<b>Review Comment</b>	<b>24. Unresolved IR#40 – Mitigation Measures on Sensitive Landforms</b>
<b>Subject</b>	Landform Soils and Permafrost, Environmental Mitigation and Management
<b>Reference</b>	<ul style="list-style-type: none"> <li>TSD 09, page 5</li> <li>Adaptive Management Plan (draft) (August 23, 2019)</li> </ul>
<b>Importance of issue to impact assessment</b>	The comment highlights a gap in the assessment. Mitigation measures are not provided preventing an adequate evaluation of BIMC's assessment, and specifically its conclusions.
<b>Detailed Review Comment</b>	In response to QIA IR#40, BIMC directed QIA to TSD-09, Section 2.5.2.3 to address mitigation measures on sensitive landforms. Section 2.5.2.3 does not exist and appears this is an error. Thus, QIA IR#40 remains unresolved.
<b>Recommendation /Request</b>	Address QIA IR#40. Note, the key item initially requested pertains to the triggers, based on monitoring data, and thresholds that will dictate when adaptive management/mitigation measures are to be implemented. Please address this specific item.
<b>Sept. 23, 2019 Update</b>	<p><b>Unresolved – Pending further discussion and commitments.</b></p> <p>Given the new information provided, QIA's update is as follows.</p> <p>QIA is not able to evaluate BIMC's assessment of impacts because this assessment relies on monitoring and mitigation that was not provided.</p> <p>BIMC and QIA discussed adaptive management prior to the second Technical Meeting that resulted in the submission of the Adaptive Management Plan on August 23, 2019. However, as detailed above in the QIA TRC 22: Exceedances in Water License Criteria and Tote Road IFC Drawings table, the impact of the Adaptive Management Plan on corresponding management plans, or the geotechnical monitoring program has not been discussed between BIMC and QIA and is unknown.</p> <p>QIA remains concerned with the predictions and assessment made by BIMC. However, if the Project were to be approved then QIA believes certain mitigation and activities should be required in the next regulatory phase i.e. the Water Licence and Commercial Lease.</p> <p>At minimum, QIA recommends a plan that follows theory consistent with BIMC's Adaptive Management Plan for the construction and operation of the Rail Line be completed that requires regulatory approval.</p> <p>For construction, this would include baseline geotechnical assessment of permafrost along the route to identify potential problem areas and identify strategic locations for ground temperature sensors (typically cuts and bridge abutments) and settlement plates. Furthermore, a monitoring plan including detailed adaptive management that has a minimum that would trigger BIMC to implement mitigative measures, such as if unexpected permafrost, ice lenses, thermokarsts, cracking etc., are discovered during construction.</p> <p>For operations, this would include an adaptive management plan that at minimum includes:</p>



Review Comment	24. Unresolved IR#40 – Mitigation Measures on Sensitive Landforms
	<ul style="list-style-type: none"> <li>• When ground temperature sensors are to be installed</li> <li>• A defined period of visual inspections, to identify: <ul style="list-style-type: none"> <li>○ Erosion or ponding in borrow sources</li> <li>○ Scarring of winter roads during summer</li> <li>○ Thermokarsts</li> <li>○ Areas with wet, fine-grained soils</li> <li>○ Cracking</li> <li>○ Sloughing</li> <li>○ Ponding water</li> <li>○ Aufeis (winter icings)</li> </ul> </li> </ul>
<b>August 11, 2020 Update</b>	<p><b>Resolved.</b></p> <p>Given the forthcoming regulatory process, and Baffinland and QIA’s intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p> <p>QIA is satisfied with Baffinland’s commitments to further develop adaptive management objective, indicators, thresholds, and responses with Inuit and QIA’s approval. Baffinland has further committed to remedies and remedial compensation where actions taken do not avoid, mitigate, or eliminate impacts. Baffinland has recognized and agrees that managing and monitoring the Mary River Project is not limited to achievement of applicable guidelines, and standards; applicable guidelines and standards may form a basis from which more protective and Inuit site specific criteria will also be developed and respected.</p>
<b>Final Status Update</b>	<p><b>Resolved.</b></p>



<b>Review Comment</b>	<b>25. Final Design of Rail Embankment</b>
<b>Subject</b>	Landform Soils and Permafrost, Environmental Mitigation and Management
<b>Reference</b>	<ul style="list-style-type: none"> <li>TSD 08, page 14</li> <li>Advance Technical Comment Responses, Phase 2 Proposal - Mary River Project</li> </ul>
<b>Importance of issue to impact assessment</b>	The comment highlights a gap in the assessment. BIMC has not provided all its engineering and design data; preventing QIA from completing its evaluation of BIMC's assessment, and specifically its conclusions.
<b>Detailed Review Comments</b>	In response to QIA IR#42, BIMC anticipated completion of additional studies regarding the final design of the rail embankment in February 2019. Said information is pending receipt and review to provide any review comments.
<b>Recommendation /Request</b>	Provide the geotechnical/thermal analysis as noted in QIA IR#42, IR#43 and IR#40.
<b>Sept. 23, 2019 Update</b>	<p><b>Resolved.</b></p> <p>BIMC provided a geotechnical bridge design and the Geotechnical Recommendations Report for the Rail Line that described embankment settlement calculations. A Thermal Analysis Model was provided in the Advance Technical Comment Responses, Phase 2 Proposal - Mary River Project, submitted in January 2019.</p>
<b>August 11, 2020 Update</b>	<p><b>Resolved.</b></p> <p>Given the forthcoming regulatory process, and Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p> <p>QIA is satisfied with Baffinland's commitments to further develop adaptive management objective, indicators, thresholds, and responses with Inuit and QIA's approval. Baffinland has further committed to remedies and remedial compensation where actions taken do not avoid, mitigate, or eliminate impacts. Baffinland has recognized and agrees that managing and monitoring the Mary River Project is not limited to achievement of applicable guidelines, and standards; applicable guidelines and standards may form a basis from which more protective and Inuit site specific criteria will also be developed and respected.</p>
<b>Final Status Update</b>	<b>Resolved.</b>



<b>Review Comment</b>	<b>26. Rail Settlement; Triggers for Actions</b>
<b>Subject</b>	Landform Soils and Permafrost, Environmental Mitigation and Management
<b>Reference</b>	<ul style="list-style-type: none"> <li>TSD 08, page 16</li> </ul>
<b>Importance of issue to impact assessment</b>	The comment highlights a gap in the assessment. Mitigation measures are not provided preventing QIA from completing its evaluation of BIMC's assessment, and specifically its conclusions.
<b>Detailed Review Comments</b>	QIA's IR #43 requested information regarding the triggers, based on monitoring data, and thresholds that will be applied to implement mitigation measures to address rail settlement concerns. Methods to mitigate against settlement are described; however, the triggers, based on monitoring data, and thresholds that will be used to determine when a mitigation is to be implemented are not described.
<b>Recommendation /Request</b>	Regarding rail settlement, provide the triggers, based on monitoring data, and thresholds that will be used to determine when a mitigation action is to be implemented.
<b>Sept. 23, 2019 Update</b>	<p><b>Unresolved, pending further discussion and commitments.</b></p> <p>Given the new information provided, QIA's update is as follows.</p> <p>BIMC provided an extensive response about the monitoring that will be completed, however, the triggers and thresholds were not provided. The triggers and thresholds were requested and therefore remain outstanding. BIMC has stated that the triggers and thresholds will be included in a geotechnical instrumentation and monitoring plan that has not been provided.</p> <p>If the Project were to be approved, then QIA believes certain mitigation and activities should be required in the next regulatory phase i.e., the Water Licence and Commercial Lease.</p> <p>At minimum, QIA recommends a plan that follows theory consistent with BIMC's Adaptive Management Plan for the construction and operation of the Railway be completed for regulatory approval.</p> <p>For construction, this would include baseline geotechnical assessment of permafrost along the route to identify potential problem areas and identify strategic locations for ground temperature sensors (typically cuts and bridge abutments) and settlement plates. Furthermore, a monitoring plan include detailed adaptive management that includes at minimum what would trigger BIMC to implement mitigative measures, such as if unexpected permafrost, ice lenses, thermokarsts, cracking etc., are discovered during construction.</p> <p>For operations, this would include an adaptive management plan that at minimum includes:</p> <ul style="list-style-type: none"> <li>When ground temperature sensors are to be installed</li> <li>A defined period of visual inspections, to identify: <ul style="list-style-type: none"> <li>Erosion or ponding in borrow sources</li> <li>Scarring of winter roads during summer</li> </ul> </li> </ul>



Review Comment	26. Rail Settlement; Triggers for Actions
	<ul style="list-style-type: none"> <li>○ Thermokarsts</li> <li>○ Areas with wet, fine-grained soils</li> <li>○ Cracking</li> <li>○ Sloughing</li> <li>○ Ponding water</li> <li>○ Aufeis (winter icings)</li> </ul>
August 11, 2020 Update	<p><b>Resolved.</b></p> <p>Given the forthcoming regulatory process, and Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p> <p>QIA is satisfied with Baffinland's commitments to further develop adaptive management objective, indicators, thresholds, and responses with Inuit and QIA's approval. Baffinland has further committed to remedies and remedial compensation where actions taken do not avoid, mitigate, or eliminate impacts. Baffinland has recognized and agrees that managing and monitoring the Mary River Project is not limited to achievement of applicable guidelines, and standards; applicable guidelines and standards may form a basis from which more protective and Inuit site specific criteria will also be developed and respected.</p>
Final Status Update	<b>Resolved.</b>





<b>Review Comment</b>	<b>27. Disposal Locations for PAG Rock</b>
<b>Subject</b>	Freshwater Aquatic Environment, Environmental Mitigation and Management
<b>Reference</b>	<ul style="list-style-type: none"> <li>TSD 08, page 17</li> </ul>
<b>Importance of issue to impact assessment</b>	The comment highlights a gap in the assessment. BIMC has not provided a complete project description preventing QIA from completing its evaluation of BIMC's assessment, and specifically its conclusions.
<b>Detailed Review Comment</b>	In response to QIA IR#45, BIMC states that if PAG rock is extracted from a rock cut, it will be disposed of at a location where it can be encapsulated with permafrost and will be covered with non-PAG cover material. An example location was the Waste Rock pile; however, it is unknown if there are other locations. The thickness of non-PAG rock cover is specified to know if this is an appropriate mitigation method.
<b>Recommendation /Request</b>	<ol style="list-style-type: none"> <li>Specify all locations considered for PAG rock disposal that are considered.</li> <li>Will PAG rock disposal locations outside of the waste rock pile be considered a waste disposal location?</li> <li>Specify the thickness of non-PAG rock cover to be applied to disposed PAG rock.</li> </ol>
<b>Sept. 23, 2019 Update</b>	<p><b>Resolved, pending enshrining of commitments into a Project Certificate Condition.</b></p> <p>Given the new information provided, QIA's update is as follows.</p> <p>Following the first Technical Meeting, BIMC committed to storing all PAG rock in the waste rock facility. This would indicate that if any PAG rock is uncovered in any BIMC operations, regardless of location, that the uncovered PAG rock would require transportation to the waste rock facility. This commitment is sweeping, removing the possible impact of PAG management to one location designed for that impact.</p> <p>The BIMC commitment to storing all Potentially Acid Generating rock in the waste rock facility is requested to be enshrined as a Project Certificate Term and Condition. Draft language as follows:</p> <p><i>All potentially acid generating rock, as defined in the FEIS or as agreed to by the Landowner, shall be transported and stored in the Waste Rock Facility next to Deposit 1.</i></p>
<b>August 11, 2020 Update</b>	<p><b>Resolved.</b></p> <p>Given the forthcoming regulatory process, and Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p> <p>QIA is satisfied with Baffinland's commitments to further develop adaptive management objective, indicators, thresholds, and responses with Inuit and QIA's approval. Baffinland has further committed to remedies and remedial compensation where actions taken do not avoid, mitigate, or eliminate impacts. Baffinland has recognized and agrees that managing and monitoring the Mary River Project is not limited to achievement of applicable guidelines, and standards; applicable guidelines and standards may form a basis from which more protective and Inuit site specific criteria will also be developed and respected.</p>



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<b>Review Comment</b>	<b>28. Clarification of Culvert Installation Along Tote Road</b>
<b>Subject</b>	Hydrology and Hydrogeology, Groundwater/Surface Waters, Environmental Mitigation and Management
<b>Reference</b>	<ul style="list-style-type: none"> <li>TSD 13 page 8</li> </ul>
<b>Importance of issue to impact assessment</b>	The comment highlights a gap in the assessment. BIMC has not provided a complete project description preventing QIA from completing its evaluation of BIMC's assessment, and specifically its conclusions.
<b>Detailed Review Comment</b>	In response to QIA IR#47, BIMC states that "New Tote Road culverts" will be designed to a 1 in 25-year storm event. There is uncertainty as to what "new" culverts are being referenced by BIMC and/or if this differs from the existing culverts that may be upgraded.
<b>Recommendation /Request</b>	<ol style="list-style-type: none"> <li>Clarify if new culverts will be installed in the existing Tote Road and where. Or clarify if "new" culverts are referring to the existing culverts currently installed and upgraded for Phase 2.</li> <li>Clarify the culverts and locations for the Tote Road will be constructed for Phase 2.</li> <li>Clarify when the Tote Road culverts will be constructed</li> </ol>
<b>Sept. 23, 2019 Update</b>	<p><b>Resolved.</b></p> <p>Given the new information provided, QIA's update is as follows.</p> <p>BIMC responded to QIA concerns regarding culvert installation along the Tote Road with adequate information.</p>
<b>August 11, 2020 Update</b>	<p><b>Resolved.</b></p> <p>Given the forthcoming regulatory process, and Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p> <p>QIA is satisfied with Baffinland's commitments to further develop adaptive management objective, indicators, thresholds, and responses with Inuit and QIA's approval. Baffinland has further committed to remedies and remedial compensation where actions taken do not avoid, mitigate, or eliminate impacts. Baffinland has recognized and agrees that managing and monitoring the Mary River Project is not limited to achievement of applicable guidelines, and standards; applicable guidelines and standards may form a basis from which more protective and Inuit site specific criteria will also be developed and respected.</p>
<b>Final Status Update</b>	<b>Resolved.</b>



Review Comment	29. Assessment of Waste Rock Management
Subject	Freshwater Aquatic Environment Assessment Methods
Reference	<ul style="list-style-type: none"> <li>TSD 13 page 29</li> </ul>
Importance of issue to impact assessment	The comment highlights an issue with the assessment. QIA requires further information prior to completing its evaluation of BIMC's assessment, and specifically its conclusions.
Detailed Review Comment	In response to QIA IR #48, BIMC states the changes to the waste rock management or open pit do not require a new assessment of the potential impacts of these components for Phase 2. However, QIA notes that Phase 2 will result in greater amount of ore mined per year compared to the current permitted level. As such, the timeline for waste rock development and open pit expansion will change in Phase 2 compared to the Approved Project. To further understand BIMC's position, a comparison of the timelines for waste rock pile expansion and open pit expansion is needed.
Recommendation /Request	Compare the current waste rock pile and open pit expansions between the Approved Project and Phase 2.
Sept. 23, 2019 Update	<p><b>Resolved.</b></p> <p>Given the new information provided, QIA's update is as follows.</p> <p>BIMC provided reference to a table comparing the waste rock production schedules of the Original 18 Mtpa Project, the Early Revenue Phase, the Actual Project, and the Phase 2 Proposal.</p>
August 11, 2020 Update	<p><b>Resolved.</b></p> <p>Given the forthcoming regulatory process, and Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p> <p>QIA is satisfied with Baffinland's commitments to further develop adaptive management objective, indicators, thresholds, and responses with Inuit and QIA's approval. Baffinland has further committed to remedies and remedial compensation where actions taken do not avoid, mitigate, or eliminate impacts. Baffinland has recognized and agrees that managing and monitoring the Mary River Project is not limited to achievement of applicable guidelines, and standards; applicable guidelines and standards may form a basis from which more protective and Inuit site specific criteria will also be developed and respected.</p>
Final Status Update	<b>Resolved.</b>



Review Comment	30. Pre-Establishment of Mitigation Measure Triggers
Subject	Air Quality Hydrology and Hydrogeology Groundwater/Surface Waters Landform Soils and Permafrost Water Licence, including relevant sections Project Description
Reference	<ul style="list-style-type: none"> <li>TSD 02 page 1.13</li> </ul>
Importance of issue to impact assessment	The comment highlights a gap in the assessment. BIMC has not provided the necessary information to understand what, when, why and how actions will be triggered in order to mitigate environmental impacts. This is preventing QIA from completing its evaluation of BIMC's assessment, and specifically its conclusions.
Detailed Review Comment	In response to QIA IR#51, BIMC states that the Tote Road will only be constructed to IFC design if required by Operations. How BIMC will determine if construction is required by Operations is unknown. QIA believes that triggers and actions should be predetermined and should monitoring data indicate that these thresholds have been met or exceeded then BIMC will complete the actions.
Recommendation /Request	Specify the triggers, based on monitoring data, and thresholds that will be implemented to determine when upgrades to the Tote Road will be needed.
Sept. 23, 2019 Update	<p><b>Unresolved, pending Further Commitments or Conditions.</b></p> <p>Given the new information provided, QIA's update is as follows.</p> <p>In response to QIA IR#51, BIMC states that the Tote Road will only be constructed to IFC design if required by Operations. How BIMC will determine if construction is required by Operations is unknown. QIA believes that triggers and actions should be predetermined and that if monitoring data indicate that these thresholds have been met or exceeded then BIMC will complete the necessary mitigative actions.</p> <p>As BIMC has not provided a threshold for constructing the Milne Inlet Tote Road to design, QIA's concern is that BIMC will operate the Milne Inlet Tote Road that has not been assessed for impacts without constructing the Railway. Therefore, QIA requests the following PC Term and Condition be added:</p> <p><i>Should BIMC not commission the Railway in the first three years following Amendment 2 to the Project Certificate, BIMC shall construct the Tote Road to the design included in Amendment 1. Should this design no longer be valid, the Tote Road shall be designed for its intended uses.</i></p>
August 11, 2020 Update	<p><b>Resolved.</b></p> <p>Given the forthcoming regulatory process, and Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p>



Review Comment	30. Pre-Establishment of Mitigation Measure Triggers
	QIA is satisfied with Baffinland's commitments to further develop adaptive management objective, indicators, thresholds, and responses with Inuit and QIA's approval. Baffinland has further committed to remedies and remedial compensation where actions taken do not avoid, mitigate, or eliminate impacts. Baffinland has recognized and agrees that managing and monitoring the Mary River Project is not limited to achievement of applicable guidelines, and standards; applicable guidelines and standards may form a basis from which more protective and Inuit site specific criteria will also be developed and respected.
Final Status Update	Resolved.



Review Comment	31. Monitoring of Receiving Environment During Construction
Subject	Hydrology and Hydrogeology Groundwater/Surface Waters Landform Soils and Permafrost Water Licence, including relevant sections Project Description
Reference	<ul style="list-style-type: none"> <li>TSD 02 page 1.13</li> </ul>
Importance of issue to impact assessment	The comment highlights a gap in the assessment. BIMC has not provided enough details regarding Phase 2 monitoring. This prevents QIA from completing its evaluation of BIMC's assessment, and specifically its conclusions.
Detailed Review Comment	Monitoring of the receiving environment during construction of the proposed rail route and any Tote Road changes is uncertain. Construction monitoring will very likely be different than monitoring needed during operations to address the site-specific characteristics and intensity of the activity.
Recommendation /Request	Provide a description of the environmental monitoring activities that will be completed during construction of the proposed Rail Line and Tote Road, including a detailed list of parameters and specific locations that will be monitored.
Sept. 23, 2019 Update	<p><b>Unresolved, pending further discussion and commitments or conditions.</b></p> <p>Given the new information provided, QIA's update is as follows.</p> <p>BIMC provided a detailed response to what parameters will be monitored during construction and operations. However, BIMC's response did not identify specific monitoring locations or provide the methodology for how monitoring locations will be identified, i.e., referencing site-specific conditions and the potential risk to local watercourses. BIMC has been operating at up to 6 Mtpa since 2014 and could have used this understanding of site-specific conditions and the potential risks to local watercourses to inform monitoring locations. This information was expected to be included. An understanding of how the monitoring locations were selected is necessary to support adaptive management – why something is being monitored and if it is different than expected, and how BIMC will adapt to ensure the Project impacts are managed.</p> <p>If the Project were to be approved then QIA believes conditions should be required in the next regulatory phase, i.e. the Water Licence and Commercial Lease, and require approval prior to construction such as:</p> <ol style="list-style-type: none"> <li>1. A construction plan that indicates specific monitoring locations and site-specific conditions that would lead to additional monitoring locations.</li> <li>2. What construction monitoring results would trigger additional monitoring during operations.</li> </ol>
August 11, 2020 Update	<p><b>Resolved.</b></p> <p>Given the forthcoming regulatory process, and Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p>





Review Comment	31. Monitoring of Receiving Environment During Construction
	QIA is satisfied with Baffinland's commitments to further develop adaptive management objective, indicators, thresholds, and responses with Inuit and QIA's approval. Baffinland has further committed to remedies and remedial compensation where actions taken do not avoid, mitigate, or eliminate impacts. Baffinland has recognized and agrees that managing and monitoring the Mary River Project is not limited to achievement of applicable guidelines, and standards; applicable guidelines and standards may form a basis from which more protective and Inuit site specific criteria will also be developed and respected.
Final Status Update	Resolved.



Review Comment	32. Aggregation of Training Hours and Delivery of Training
Subject	Socioeconomic - Existing conditions and baseline
Reference	<ul style="list-style-type: none"> <li>EIS Guideline: Evaluation of training programs, associated challenges and likelihood of success</li> <li>TSD 25 Socioeconomic Assessment Section 3.4</li> <li>Comment Request for Baffinland Iron Mines Corp.'s Mary River Project, 2017 Annual Monitoring Report. May 14, 2018.</li> </ul>
Importance of issue to impact assessment	The comment highlights a gap in the assessment. BIMC has not complied with NIRB Guidelines. Without an evaluation of BIMC's training programs QIA cannot complete its evaluation of BIMC's assessment, and specifically BIMC's conclusions.
Detailed Review Comment	<p>BIMC has been operating the Mary River Project for six years, and significant new data regarding successes and deficiencies with respect to Inuit skills and employment training has not been presented.</p> <p>BIMC provides only an aggregate number of hours of training completed by Inuit and non-Inuit. QIA understands from previous comments on NIRB annual reporting<sup>6</sup> that the majority of Inuit training is mandatory orientation and similar courses that simply allow an individual to work at the Project.</p> <p>Until the QIA led, and federally funded, Q-STEP program was initiated, BIMC had no or limited Inuit training programs designed to increase and provide positive socioeconomic effects from the Project to Inuit.</p> <p>QIA disagrees with BIMC's conclusion that the monitoring to date supports the approved Project predictions of positive effects of the Project on education and training.</p> <p>BIMC presents only the sum of formal training hours. There is no evaluation of success or deficiency of the current training programs as required by NIRB's guidelines. Further, evidence supporting that BIMC's formal training has provided an overall positive effect is lacking. While it is true some Inuit have received training, however details of the content and outcomes have not been presented. It is unknown to QIA how many Inuit that have received training of continued to receive promotions or increase their employability outside of the Project, through BIMC programs.</p>
Recommendation /Request	<p>Provide an evaluation of BIMC's training programs for Inuit and non-Inuit, which were completed since 2013. The evaluation should include, at a minimum, the following:</p> <ol style="list-style-type: none"> <li>Dates of training</li> <li>Objective of the training</li> <li>Delivery method of the training</li> <li>Inuit and non-Inuit pass rate</li> <li>Breakdown of the number of male and female Inuit participants by community</li> <li>Data and discussion regarding how the training can/will/has led to the advancement of the participants career.</li> <li>Statement regarding if training certification is transferable outside of the Approved Project</li> </ol>

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Review Comment	32. Aggregation of Training Hours and Delivery of Training
	<p>positive socioeconomic effects from the Project to Inuit. QIA is therefore concerned that when the federal Q-STEP funding is gone, so too will be the substantive Inuit training programs. It is BIMC's responsibility to discuss how their training programs will be adapted to maximize Inuit success during Phase 2.</p>
<p><b>August 11, 2020 Update</b></p>	<p><b>Resolved.</b></p> <p>Given Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p> <p>QIA will continue to work with Baffinland through the implementation of their commitments that are being recorded in the IIBA.</p> <p>Specifically, Baffinland has committed to several new and enhanced initiatives. Examples include the following initiatives. Baffinland will fund QIA's monitoring of socio-economic impacts to Inuit within their communities. This will increase the understanding of impacts to Inuit well-being. Further Baffinland funding will support early childhood care (a known barrier to Inuit women working at the project). Baffinland and QIA have agreed to contract specific benefits to help develop the capacity of Inuit Firms and unlock more project opportunities. Baffinland committed to improve current employment and training initiatives improving upon the Inuit career paths that support the lateral and upward mobility of Inuit Employees.</p> <p>Furthermore, Baffinland has committed to ensuring benefits are realized by Inuit. An improved goal setting system will be developed that will better allow the benefits and opportunities Inuit are receiving to be measured and reported. If Baffinland does not meet the minimum goals, there will be a set amount of compensation given to the impacted communities.</p>
<p><b>Final Status Update</b></p>	<p><b>Resolved.</b></p> <p>QIA and Baffinland have continued to develop Inuit training requirements and are completing a Qikiqtani specific Labour Market Analysis.</p>



Review Comment	33. Inference of Training Benefits
Subject	Socioeconomic Assessment Methods
Reference	<ul style="list-style-type: none"> <li>TSD 25 Socioeconomic Assessment Section 3.6</li> </ul>
Importance of issue to impact assessment	<p>The comment highlights a gap in the assessment.</p> <p>BIMC does not provide a plan for Phase 2, based on experiences to date, to ensure Inuit will have access to opportunities related to Phase 2. As such, QIA cannot complete its evaluation of BIMC's assessment.</p>
Detailed Review Comment	<p>QIA and BIMC are parties to an IIBA; there are training requirements set out in this agreement, however BIMC is responsible for the delivery of this benefit under the IIBA. QIA is not satisfied that BIMC's reference to the fact that QIA and BIMC are parties to an agreement infers that training will be provided to Inuit.</p> <p>A concentrated effort is required to deliver successful training to Inuit. QIA feels that this effort has not been satisfactory or adequate in the previous years of operation of the Approved Project. This was acknowledged by BIMC when they agreed that the objectives of the original IIBA had not been met and a renegotiation was completed.</p>
Recommendation /Request	<p>Present a detailed Inuit Training Plan that covers the period between Phase 2 construction and the first three years of operations. This plan should detail the programs that will be offered and how BIMC will maximize the Inuit labour market relative to the projections identified in TSD 26. This has the potential to substantiate BIMC's assessment for Phase 2.</p>
Sept. 23, 2019 Update	<p><b>Unresolved, pending further discussion and commitments.</b></p> <p>Given the new information provided, QIA's update is as follows.</p> <p>BIMC's Phase 2 Construction Training Plan provides information as to the proposed Inuit hiring targets and training programs for each of the three potential contractors. The Inuit Hiring Targets have not yet been broken down by skills categories; this information is needed to evaluate the hiring targets as per the IIBA. BIMC should work with the contractors to adjust their training plans so that they are in accordance with the IIBA and utilize existing resources and processes such as Tuttarvik.</p> <p>The plan also does not provide a comprehensive and coordinated plan for the construction of Phase 2 and the first three years of its operations. QIA is concerned that more Inuit will not be trained prior to the ramp up in production, resulting in substantial lost wages and employment opportunities for Inuit. BIMC needs to provide a detailed plan describing how its training programs will address the shifting of positions between skill categories (e.g., the anticipated increase in Skill Level B+ positions and decrease in Level C positions).</p> <p>Although there are still concerns regarding the socioeconomic assessment, specifically how Inuit may benefit from the Project, QIA is committed to working with BIMC to mitigate negative impacts and enhance positive Project opportunities and benefits through the revised IIBA.</p> <p>For example, BIMC and QIA can work to develop a detailed Inuit Training Plan (for Baffinland and contractors) that covers the period between Phase 2 construction and the first three years of operations. This plan should detail the programs that will be offered</p>



Review Comment	33. Inference of Training Benefits
	and how BIMC will maximize the Inuit labour market relative to the projections identified in TSD 26. This has the potential to substantiate BIMC's assessment for Phase 2.
August 11, 2020 Update	<p><b>Resolved.</b></p> <p>Given Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p> <p>QIA will continue to work with Baffinland through the implementation of their commitments that are being recorded in the IIBA.</p> <p>Specifically, Baffinland has committed to several new and enhanced initiatives. Examples include the following initiatives. Baffinland will fund QIA's monitoring of socio-economic impacts to Inuit within their communities. This will increase the understanding of impacts to Inuit well-being. Further Baffinland funding will support early childhood care (a known barrier to Inuit women working at the project). Baffinland and QIA have agreed to contract specific benefits to help develop the capacity of Inuit Firms and unlock more project opportunities. Baffinland committed to improve current employment and training initiatives improving upon the Inuit career paths that support the lateral and upward mobility of Inuit Employees.</p> <p>Furthermore, Baffinland has committed to ensuring benefits are realized by Inuit. An improved goal setting system will be developed that will better allow the benefits and opportunities Inuit are receiving to be measured and reported. If Baffinland does not meet the minimum goals, there will be a set amount of compensation given to the impacted communities.</p>
Final Status Update	<p><b>Resolved.</b></p> <p>QIA and Baffinland have continued to develop Inuit training requirements and are completing a Qikiqtani specific Labour Market Analysis.</p>



<b>Review Comment</b>	<b>34. Unclear Benefit Flow from Project</b>
<b>Subject</b>	Socioeconomic - Environmental Mitigation and Management
<b>Reference</b>	<ul style="list-style-type: none"> <li>TSD 25 Socioeconomic Assessment Section 3.6.3</li> </ul>
<b>Importance of issue to impact assessment</b>	<p>The comment highlights a gap in the assessment.</p> <p>BIMC does not provide a plan for Phase 2, based on experiences to date, to ensure Inuit will have access to opportunities related to Phase 2. As such, QIA cannot complete its evaluation of BIMC's assessment.</p>
<b>Detailed Review Comment</b>	<p>BIMC does not have a plan related to the training required for Phase 2 to secure benefits for Inuit and improve Inuit capacity.</p> <p>On Page 24 of TSD 25 BIMC states:</p> <p><i>This shift in skill levels will require BIMC's training programs to be adapted accordingly and will affect the types of training to be provided.</i></p> <p>QIA does not agree with BIMC's assessment that significant positive effects occur because BIMC has not described the proposed changes. The training programs are a tool that may augment benefits of Phase 2. Without Inuit training programs the data of the Approved Project has demonstrated that benefits will be lost.</p>
<b>Recommendation /Request</b>	Present a detailed Inuit Training Plan that covers the period between Phase 2 construction and the first three years of operations. This plan should detail the programs that will be offered and how BIMC will maximize the Inuit labour market relative to the projections identified in TSD 26. This has the potential to substantiate BIMC's assessment for Phase 2.
<b>Sept. 23, 2019 Update</b>	<p>Given the new information provided, QIA's update is as follows.</p> <p><b>Status – Amalgamated with QIA – 33.</b></p>
<b>Final Status Update</b>	<b>No update.</b>





Review Comment	35. IHRS as Training Strategy; Career Path Development Still Outstanding
Subject	Socioeconomic Management and monitoring
Reference	<ul style="list-style-type: none"> <li>NIRB Guideline: <i>Identify the precise training programs that will upgrade employee's skill levels from D to C to B positions.</i> Recognizing the reduced overall employment level of Phase 2 compared to the fully approved Project (i.e., original, ERP), discuss how the training programs will address the potential oversupply of local labour by skill level for available positions</li> <li>TSD 25 Socioeconomic Assessment Section 3.4</li> </ul>
Importance of issue to impact assessment	The comment highlights a gap in the assessment. BIMC has not complied with NIRB Guidelines. BIMC does not provide a plan for Phase 2, based on experiences to date, to ensure Inuit will have access to opportunities related to Phase 2. As such, QIA cannot complete its evaluation of BIMC's assessment.
Detailed Review Comment	On page 27 of TSD 25, BIMC does not provide any precise training programs that will upgrade employees' capacity or skill levels. QIA does not agree that the Inuit Human Resources Strategy (IHRS) is as precise of a training program as BIMC claims. Currently, Q-STEP is the only specific training program being initiated that BIMC receives significant reimbursements for. The previous IIBA also called for an IHRS and career path development for Inuit employees. However, the former was significantly delayed by BIMC, and the latter never occurred. Given this, QIA does not agree that these actions are likely to occur until a plan is presented providing details of planned implementation. Furthermore, based on current IIBA work planning, BIMC may not be capable of completing these tasks within a timeline that will allow Inuit to fully benefit from Phase 2.
Recommendation /Request	Present a detailed Inuit Training Plan that covers the period between Phase 2 construction and the first three years of operations. This plan should detail the programs that will be offered and how BIMC will maximize the Inuit labour market relative to the projections identified in TSD 26. This has the potential to substantiate BIMC's assessment for Phase 2.
Sept. 23, 2019 Update	<p>Given the new information provided, QIA's update is as follows.</p> <p>On page 27 of TSD 25, BIMC does not provide any precise training programs that will upgrade employees' capacity or skill level.</p> <p>QIA does not agree that the Inuit Human Resources Strategy (IHRS) is as precise of a training program as BIMC claims. Currently, Q-STEP is the only specific training program being initiated.</p> <p>The previous IIBA also called for an IHRS and career path development for Inuit employees. However, the former was significantly delayed by BIMC, and the latter never occurred. Given this, QIA does not agree that these actions are likely to occur until a plan is presented providing details of planned implementation. Furthermore, based on current IIBA work planning, BIMC may not be capable of completing these tasks within a timeline that will allow Inuit to fully benefit from Phase 2.</p>



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<b>Review Comment</b>	<b>37. Phase 2 as a Continuation of Approved Project</b>
<b>Subject</b>	Socioeconomic - Assessment Methodology
<b>Reference</b>	<ul style="list-style-type: none"> <li>TSD 25 Socioeconomic Assessment Sections</li> </ul>
<b>Importance of issue to impact assessment</b>	The comment highlights a disagreement with the assessment methods. QIA would believe a more robust assessment could be completed, one that is specific to Phase 2. Not a continuation of the Approved Project.
<b>Detailed Review Comment</b>	<p>BIMC's level of effort is not apparent in the assessment of the socioeconomic environment and impacts of Phase 1.</p> <p>BIMC's assessment of the socioeconomic components of Phase 2 follows the same basic principles:</p> <ol style="list-style-type: none"> <li>The Approved Project was assessed to have positive benefits.</li> <li>Phase 2 is the next step in the Approved Project.</li> </ol> <p>Therefore Phase 2 will also have positive benefits like the Approved Project.</p> <p>QIA does not agree with the logic flow or assessment methods provided. Simply put, Phase 2 is NOT the next step in the approved Project, it is a significant change to the Project as indicated by the NIRB Project review process. Yes, it includes Open Pit Iron ore mining and a Rail Route, but it is not the same. Otherwise, we would not be assessing Phase 2.</p> <p>Although this approach may have been acceptable for the ERP, QIA does not believe it is an acceptable approach to Phase 2. QIA would expect that BIMC could provide concrete evidence in the form of benefits delivered to Inuit to date and the impact (improved or worsened) by Phase 2.</p> <p>Further, BIMC has added several new appendices to the assessment; such as the 2016 report from Brubacher. However, BIMC has not used this information in TDS 25, to substantiate BIMC's conclusions or proposed next steps. This highlights a minimalistic approach BIMC has decided to take regarding Phase 2.</p>
<b>Recommendation /Request</b>	For every aspect of the socioeconomic assessment, a standalone assessment should be made. If references to the Approved Project are used, then this assessment should make use of actual BIMC data which clearly demonstrates their efforts in delivering Benefits to Inuit rather than substantiating this assessment with the previous assessment.
<b>Sept. 23, 2019 Update</b>	<p><b>Unresolved, pending further discussions.</b></p> <p>BIMC disagreed with QIA's comments regarding the Phase 2 assessment stating that a more robust assessment is not required.</p> <p>QIA does not agree with the logic flow or assessment methods provided. QIA expected that BIMC could provide concrete evidence in the form of benefits delivered to Inuit to date and the impact (improved or worsened) of Phase 2.</p> <p>Although there are still concerns regarding the socioeconomic assessment, specifically how Inuit may benefit from the Project, QIA is committed to working with BIMC to mitigate negative impacts and enhance positive Project opportunities and benefits through the revised IIBA.</p>
<b>August 11, 2020 Update</b>	<b>Resolved.</b>



Review Comment	37. Phase 2 as a Continuation of Approved Project
	<p>Given Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p> <p>QIA will continue to work with Baffinland through the implementation of their commitments that are being recorded in the IIBA.</p> <p>Specifically, Baffinland has committed to several new and enhanced initiatives. Examples include the following initiatives. Baffinland will fund QIA's monitoring of socio-economic impacts to Inuit within their communities. This will increase the understanding of impacts to Inuit well-being. Further Baffinland funding will support early childhood care (a known barrier to Inuit women working at the project). Baffinland and QIA have agreed to contract specific benefits to help develop the capacity of Inuit Firms and unlock more project opportunities. Baffinland committed to improve current employment and training initiatives improving upon the Inuit career paths that support the lateral and upward mobility of Inuit Employees.</p> <p>Furthermore, Baffinland has committed to ensuring benefits are realized by Inuit. An improved goal setting system will be developed that will better allow the benefits and opportunities Inuit are receiving to be measured and reported. If Baffinland does not meet the minimum goals, there will be a set amount of compensation given to the impacted communities.</p>
<b>Final Status Update</b>	<b>Resolved.</b>



<b>Review Comment</b>	<b>38. Adaptive Management Triggers</b>
<b>Subject</b>	Socioeconomic - Assessment Methodology
<b>Reference</b>	<ul style="list-style-type: none"> <li>TSD 25 Socioeconomic Management and Monitoring Sections</li> </ul>
<b>Importance of issue to impact assessment</b>	<p>The comment highlights an issue with the assessment.</p> <p>BIMC has not provided the necessary management and monitoring information to evaluate the socioeconomic assessment.</p>
<b>Detailed Review Comment</b>	<p>BIMC states it believes in Adaptive Management; however, QIA does not agree with the approach described in the Advanced Response Phase 2 documents<sup>7</sup>.</p> <p>BIMC should have triggers that describe the actions to be taken when they are met. This is not currently done in QIA's opinion and is a key element of Adaptive Management or Continuous Improvement. BIMC provided a cycle which is overly reliant on the Nunavut regulatory system. In fact, QIA would argue without triggers and actions this approach is a reactive management style that has been relabelled to what is now becoming colloquial term in regulatory forums.</p> <p>In QIA's opinion, BIMC has not been able to demonstrate a proactive Adaptive Management approach to the Approved Project that would provide QIA with the belief that they can complete adaptive management in a successful way when it comes to the socioeconomic environment.</p>
<b>Recommendation /Request</b>	Provide the methods for establishing socioeconomic triggers and actions. As well as, DRAFT triggers and actions for each socioeconomic component for evaluation through the NIRB process.
<b>Sept. 23, 2019 Update</b>	<p><b>Unresolved, pending further discussions.</b></p> <p>Given the new information provided, QIA's update is as follows.</p> <p>As a first step towards the possible development of a new assessment method, BIMC prepared a series of presentation slides on this topic for the May 2019 meetings of the Qikiqtaaluk Socio-Economic Monitoring Committee (QSEMC) and Mary River Socio-Economic Monitoring Working Group (SEMWG). SEMWG members were able to provide feedback but the Working Group acknowledged this topic required further thought and discussion. BIMC committed to keeping the SEMWG informed of their progress in this area and sharing relevant information with the SEMWG to review. Due to time restrictions, discussion with the QSEMC was limited.</p> <p>Although there are still concerns regarding the socioeconomic assessment, specifically how Inuit may benefit from the Project, QIA is committed to working with BIMC to mitigate negative impacts and enhance positive Project opportunities and benefits through the revised IIBA.</p>
<b>August 11, 2020 Update</b>	<p><b>Resolved.</b></p> <p>Given Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p>

<sup>7</sup> Baffinland (2019). Advance Technical Comment Responses Phase 2 Proposal – Mary River Project. January 30, 2019.



Review Comment	38. Adaptive Management Triggers
	<p>QIA will continue to work with Baffinland through the implementation of their commitments that are being recorded in the IIBA.</p> <p>Specifically, Baffinland has committed to several new and enhanced initiatives. Examples include the following initiatives. Baffinland will fund QIA's monitoring of socio-economic impacts to Inuit within their communities. This will increase the understanding of impacts to Inuit well-being. Further Baffinland funding will support early childhood care (a known barrier to Inuit women working at the project). Baffinland and QIA have agreed to contract specific benefits to help develop the capacity of Inuit Firms and unlock more project opportunities. Baffinland committed to improve current employment and training initiatives improving upon the Inuit career paths that support the lateral and upward mobility of Inuit Employees.</p> <p>Furthermore, Baffinland has committed to ensuring benefits are realized by Inuit. An improved goal setting system will be developed that will better allow the benefits and opportunities Inuit are receiving to be measured and reported. If Baffinland does not meet the minimum goals, there will be a set amount of compensation given to the impacted communities.</p>
Final Status Update	Resolved.





Review Comment	39. Specific Plan for Phase 2 Socio-Economic Engagement
Subject	Socioeconomic - Assessment Methodology
Reference	<ul style="list-style-type: none"> <li>TSD 25 Socioeconomic Management and Monitoring Sections</li> </ul>
Importance of issue to impact assessment	<p>The comment highlights an issue with the assessment.</p> <p>BIMC has not provided the necessary management and monitoring information to evaluate the socioeconomic assessment.</p>
Detailed Review Comment	<p>BIMC does not appear to have a plan to manage the socioeconomic environment for Phase 2.</p> <p>BIMC does not seem to have a specific approach and plan that details how they will work with Inuit, QIA, GN or Federal Government regarding Phase 2. BIMC simply states what they are doing is what they will continue to do. QIA does not believe the amended IIBA reflects the realities of Phase 2. Rather, the IIBA was amended because its objectives were not met. QIA believes a new IIBA should be amended for Phase 2.</p> <p>Regardless of the IIBA's status, the lack of plans for delivering benefits as they relate to Phase 2 either do not exist, or are poorly described in the FEIS</p> <p>Inuit employment will not rise without a concentrated effort by BIMC, no matter how many times the IIBA is amended. The same can be said for the protection of Inuit tradition and language, capacity building of Inuit businesses and sustainable use of Inuit resources.</p>
Recommendation /Request	Provide the actions BIMC intends being considered to promote the benefits and mitigate negative impacts on the socioeconomic environment for Phase 2.
Sept. 23, 2019 Update	<p><b>Unresolved, pending further discussions.</b></p> <p>Given the new information provided, QIA's update is as follows.</p> <p>BIMC provided the requested information. However, the actions described to promote the benefits and mitigate the negative impacts on the socioeconomic environment are already requirements of the IIBA. Some of these actions have yet to be implemented, such as on-site Adult Education.</p> <p>BIMC does not seem to have a specific approach and plan that details how they will work with Inuit, QIA, GN, or Federal Government regarding Phase 2. BIMC simply states what they are doing is what they will continue to do. QIA does not believe the amended IIBA reflects the realities of Phase 2. Rather, the IIBA was amended because its objectives were not met. QIA believes a new IIBA should be amended for Phase 2.</p> <p>Although there are still concerns regarding the socioeconomic assessment, specifically how Inuit may benefit from the Project, QIA is committed to working with BIMC to mitigate negative impacts and enhance positive Project opportunities and benefits through the revised IIBA.</p>
August 11, 2020 Update	<p><b>Resolved.</b></p> <p>Given Baffinland and QIA's intentions to edit the Mary River Project Inuit Impacts and Benefits Agreement (IIBA) for Phase 2, QIA considers this technical comment resolved.</p>



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Review Comment	39. Specific Plan for Phase 2 Socio-Economic Engagement
	<p>QIA will continue to work with Baffinland through the implementation of their commitments that are being recorded in the IIBA.</p> <p>Specifically, Baffinland has committed to several new and enhanced initiatives. Examples include the following initiatives. Baffinland will fund QIA’s monitoring of socio-economic impacts to Inuit within their communities. This will increase the understanding of impacts to Inuit well-being. Further Baffinland funding will support early childhood care (a known barrier to Inuit women working at the project). Baffinland and QIA have agreed to contract specific benefits to help develop the capacity of Inuit Firms and unlock more project opportunities. Baffinland committed to improve current employment and training initiatives improving upon the Inuit career paths that support the lateral and upward mobility of Inuit Employees.</p> <p>Furthermore, Baffinland has committed to ensuring benefits are realized by Inuit. An improved goal setting system will be developed that will better allow the benefits and opportunities Inuit are receiving to be measured and reported. If Baffinland does not meet the minimum goals, there will be a set amount of compensation given to the impacted communities.</p>
Final Status Update	<p><b>Resolved.</b></p> <p>QIA and Baffinland have continued to develop Inuit training requirements and are completing a Qikiqtani specific Labour Market Analysis.</p>



Review Comment	40. Development of Climate Change Strategy
Subject	Meteorology and Climate Change - Assessment Methods, Environmental Mitigation and Management, Environmental Monitoring
Reference	<ul style="list-style-type: none"> <li>Baffinland Addendum to the Final Environmental Impact Statement Mary River Project – Phase 2 Proposal, s. 4.2.2, s.6.3</li> <li>TSD 6 - Climate Change Assessment (Phase 2)</li> <li>Baffinland Iron Mines 2017 Annual Report to the Nunavut Impact Review Board (180403-08MN053-2017 Annual Report-IA2E.pdf) s.4.6.1, s.4.6.2.</li> <li>Air Quality and Noise Abatement Management Plan (Rev. 6)</li> <li>QIA Review of 2017 Annual Report comments General 12-17, 20, 22; Marine &amp; Aquatic Environment 3 (and associated Project Certificate Conditions) (also see QIA review of 2016 Annual Report)</li> <li>NIRB 2017-2018 Annual Monitoring Report for Baffinland Iron Mine Corporation's (Baffinland) Mary River Project</li> <li>Production Increase Application (Stantec 2018: s.2.2 and s.2.3)</li> <li>Baffinland Climate Change Policy (190211-08MN053-Baffinland Climate Change Strategy-IA1E.pdf, distributed by NIRB in February 2019)</li> <li>(also see Phase 2 Information Requests from World Wildlife Fund (WWF-IR #6 - emissions from shipping activities) and Environment and Climate Change Canada (ECCC-IRs 2-5 - Climate change)</li> </ul> <p>Additional documents (post Technical Review comments)</p> <ul style="list-style-type: none"> <li>Draft Climate Change Action Plan (Document ID No.: 323892, file name "190329-08MN053-BIMC Tech Review Comments Response-IA1E.pdf), provided via NIRB distribution list on 29 March 2019)</li> <li>(also see relevant materials [memos, email submissions, technical review comments, etc.] from other parties [WWF, ECCC] on climate change and GHG emissions)</li> </ul>
Importance of issue to impact assessment	A detailed and prescriptive Climate Change Strategy is needed to ensure effective monitoring, management and mitigation of greenhouse gas emissions and climate change effects.
Detailed Review Comment	<p>1. <i>Gap/Issue</i></p> <p>The Project Certificate for the Mary River Project requires that the Proponent develop a climate change strategy, which was non-compliant as per the Nunavut Impact Review Board (NIRB) Annual Review of the Baffinland Iron Mines 2017 Annual Report to the Nunavut Impact Review Board, and had been for several years (and as noted by QIA through several review processes). The Phase 2 FEIS (Main Document s. 6.3, p. 6.2) refers to TSD 06 for the Climate Change Strategy, but there is no detailed strategy in the document (it does contain an assessment of climate change aspects and refers to other strategies, e.g., that developed by the Government of Nunavut). The strategy provided by the Proponent in February 2019 lacks the necessary detail to be effective.</p>



Review Comment	40. Development of Climate Change Strategy
	<p><i>2. Disagreement with Addendum/TDS Conclusion</i></p> <p>On November 8, 2018 the NIRB issued its 2017-2018 Annual Monitoring Report for the Mary River Project, and the Board's recommendations included requests to the Proponent to provide responses by requested deadlines. Recommendation # 1 required that Baffinland report on its development and implementation of a Climate Change Strategy for the Early Revenue Phase (ERP) of the Project, and provide a discussion of any efforts made to comply with Project Certificate Term and Condition No. 3. QIA notes that the Climate Change Strategy was a requirement for the original project, not just the ERP, and this strategy would be relevant to ongoing and proposed activities such as the Production Increase Request and Phase 2.</p> <p>On February 11, 2019 the NIRB received correspondence from the Proponent in response to the Board's recommendation. The Proponent notes that they have undertaken several initiatives (e.g., idling policy, use of solar power generators, high efficiency lighting) to comply with the objectives of Term and Condition No. 3, but these have not been done under a formal 'Climate Change Strategy'.</p> <p>The Proponent's Climate Change Strategy was provided to the NIRB for distribution (file name "190211-08MN053-Baffinland Climate Change Strategy-IA1E.pdf"). The strategy is extremely limited however, as it is a single page with bullet-form points and lacks the necessary detail to meet Project Conditions. For example, one of the activities listed is the implementation of "comprehensive monitoring and management programs that are based on a combination of scientific data and <i>Inuit Quajimajatuqangit</i> to safeguard the environment". No information is provided on how <i>Inuit Quajimajatuqangit</i> is, or will be, incorporated into climate change monitoring and management programs. A detailed strategy is required to chart future activities and guide the development of appropriate monitoring and mitigation.</p> <p><i>3. Reason for disagreement with Addendum conclusion</i></p> <p>In past reviews (e.g., Annual Reports, Production Increase) QIA has noted deficiencies with the Proponent's climate change monitoring and mitigation programs, and a comprehensive plan would help address many of the issues raised by QIA and other intervenors (see for example ECCC IRs regarding the Phase 2 EIS).</p>
<b>Recommendation /Request</b>	<p>The proposed Phase 2 activities (and permitted Production Increase) will lead to associated increases in greenhouse gas emissions, and a detailed climate change strategy should be developed to monitor and mitigate these increases.</p> <p>QIA recommends that the Proponent develop a detailed strategy that expands on the limited information provided in the current document.</p>
<b>Sept. 23, 2019 Update</b>	<p><b>Unresolved, pending further document provision and discussion.</b></p>



Review Comment	40. Development of Climate Change Strategy
	<p>During the technical review process QIA recommended that the Proponent develop a detailed Climate Change plan that builds upon the brief (one page) strategy document that was provided in February 2019.</p> <p>On March 29, 2019, NIRB received a Draft Climate Change Action Plan (Document ID No.: 323892) from the Proponent, submitted in relation to the Phase 2 assessment. The document, titled "Climate Change Action Plan, Annotated Table of Contents (draft)" is short and provides little detail. As noted in the Purpose (s. 1), this document is only a "draft outline and annotated content for the development of Baffinland's Climate Change Action Plan", and that "the development of this action plan is in progress". What is the current progress on this Action Plan?</p> <p>QIA recommends that the Proponent provide an update on this progress and submit a full draft for review at least one month prior to the November hearing. It is important for the Proponent to build upon the annotated outline to meet the Objectives (described in s. 2), including engagement with parties and the development of adaptive management strategies (s. 3), placing the action plan within the required regulatory context (s. 4), and providing a clear path forward to completing the actions and meeting the objectives (s. 5) that they have committed to in the outline.</p> <p>In addition, QIA supports the technical review comments and on-going review and engagement on issues related to climate change and GHG emissions by other parties, including WWF and ECCC. We are appreciative of their efforts and their technical expertise throughout the review process.</p>
August 11, 2020 Update	<b>Unresolved, pending further document provision and discussion. This Technical Comment was incorrectly labelled as resolved in previous correspondence with Baffinland.</b>
Final Status Update	<p><b>Unresolved.</b></p> <p>QIA is still waiting on the climate change strategy. The Proponent has made relevant commitments (1, 72, 101, 139, 221, 235, 250), but has not reported any significant progress. Commitment 221 is to provide a Climate Change Strategy within 30 days of the issuance of a positive NIRB Recommendation, but QIA notes that a strategy should be in place for the existing Project. Commitments 72 and 101 on black carbon reduction measures were to be reported in the 2020 Annual Report, but QIA was unable to find this information.</p>



Review Comment	41. Waterbodies and Effects of Fugitive Dust Deposition and Sediment Transport
Subject	Freshwater Aquatic Environment - Environmental Monitoring
Reference	<ul style="list-style-type: none"> <li>NIRB Amended Phase 2 EIS Guidelines s. 8.1.6.2 Impact Assessment s.8.1.9.2 Freshwater Aquatic Environment Including Biota and Habitat, s.9.4.13 Aquatic Ecosystem Management Plan</li> <li>NIRB Project Certificate Terms and Conditions 21 and 83a</li> <li>Ministers Approval Re Production Increase (181001-08MN053-Ministers Approval Re Production Increase-IA2E.pdf)</li> <li>NIRB 2018 Monitoring Recommendations (181108-08MN053-NIRB Ltr to Baffinland Re 2018 Board Monitoring Recommendations-OT5E.pdf)</li> <li>TSD 7 Atmospheric Assessments, s.2.4.1, Appendix D (181003-08MN053-TSD 7-Atmospheric Assessment Report-IA2E.pdf)</li> <li>Freshet 2018 Monitoring Report Final Part 1 (190219 2AM-MRY1325 Freshet 2018 Monitoring Report Final Part 1 of 2-ILAE.pdf)</li> </ul> <p>Additional documents (post Technical Review comments)</p> <ul style="list-style-type: none"> <li>Tote Road Monitoring Program draft (i.e., Roads Management Plan, Appendix D; 08MN053_BAF-PH1-830-P16-0023_Roads_Management_Plan-DRAFT-PHASE-2</li> <li>BIMC 2018 Annual Report to NIRB (201903312018-nirb-annual-report_2019-04-56-56.pdf)</li> <li>BIMC Response to QIA comments on BIMC 2018 Annual Report to NIRB, table A.1, p. 17-35 of 37 (190712-08MN053-BIMC Response to Comments Re 2018 AR-IA2E)</li> <li>NIRB 2019a Marine Monitoring and Marine Mitigation Workshop Summary Report Pond Inlet, May 1-2, 2019 (190530-08MN053-Marine Monitoring Workshop Smry Rprt-OT5E.pdf)</li> <li>NIRB 2019b. 2019 Winter Site Visit Report for the Nunavut Impact Review Board's Monitoring of Baffinland Iron Mines Corp.'s Mary River Project (NIRB File No. 08MN053) (190828-08MN053-2019-Winter Site Visit Report-OT5E)</li> </ul>
Summary	<p>The amount of dust entering aquatic environments directly, or in runoff from surrounding areas is unknown. The effects of this dust and associated suppressants when they sediment out in fish-bearing streams and lakes along the tote road are also unknown. Neither the amount of sediment nor its effects are monitored and both are likely to increase with the proposed increase in truck traffic until the proposed railway is in full operation and then decrease. The North Railway will contribute fugitive dust and eroded sediment to the same streams during its construction and operation. Dustfall modelling should be updated and monitoring conducted to assess the magnitude and effects of sediment loading on aquatic receiving environments and inform adaptive management. Validation of a sediment impact threshold for Arctic char egg survival is also needed for this assessment.</p>
Importance of issue to impact assessment	The potential impacts on freshwater habitats and biota from dustfall and sediment mobilized by existing and proposed Project activities cannot be assessed based on the current monitoring program.
Detailed Review Comment	1. <i>Gap/Issue</i>





Review Comment	41. Waterbodies and Effects of Fugitive Dust Deposition and Sediment Transport
	<p>The Proponent has not adequately assessed the potential impacts on freshwater habitats and biota of dust and sediment mobilized by existing and proposed Project activities.</p> <p><i>2. Disagreement with Addendum/TDS Conclusion</i></p> <p>The Proponent's conclusions cannot be adequately assessed based on the information provided in the Phase 2 FEIS.</p> <p><i>3. Reasons for disagreement with FEIS Addendum conclusion</i></p> <p>In 2017 annual terrestrial dustfall exceeded the predicted threshold levels at all but one of the monitoring sites at Milne Port and within 30 m and 1000 m on either side of the tote road (Baffinland 2017, Table 4.6, p. 41, p. 62 of 440; see also EDI 2018, p. 13-30). Dustfall measurements at sites 30 m from the tote road ranged from 121 to 408 g/m<sup>2</sup>/yr, and those at 100 m from 47 to 60 g/m<sup>2</sup>/yr (EDI 2018, Table 6). The management plan threshold for corrective action is 4.6 g/m<sup>2</sup>/yr (TSD 28, Table 9, p. 443 of 565). These exceedances occurred at a much lower level of truck traffic than is proposed, despite dust suppression efforts using applications of water and calcium chloride (CaCl).</p> <p>Despite terrestrial dustfall monitoring and modelling (TSD 7, s.2.4.1, Appendix D, Figures D-12 to D-15) the amount and effects of dust and sediment entering freshwater receiving environments directly, as dustfall, and in runoff from surrounding areas is unknown. Information is also lacking on how the elevated dustfall and applications of CaCl dust suppressant, which increased substantially in 2018, may be affecting aquatic sedimentation rates and aquatic biota in fish-bearing waters along the tote road and in Phillips Creek, which drains into Milne Inlet.</p> <p>If the Phase 2 proposal is approved truck traffic would increase until the proposed North Railway is in full operation and then decline. During its construction and operation, the railway would contribute fugitive dust and eroded sediment to the same streams as the tote road. Fugitive dust is generated by Project activities such as the mining, transport, milling, stockpiling, and transfer of iron ore; disturbance of road surfaces by traffic and for maintenance or realignment; railway bed construction and maintenance; rail traffic; and quarry operations. Other sediments are mobilized by activities such as culvert installation and replacement, road and railway bed erosion, and snow clearing (e.g., Freshet 2018 Monitoring Report Final Part 1). Streamflow, particularly associated with rainfall events and the spring freshet, can collect and transport the terrestrial dustfall and other sediment from these activities downstream until they are deposited on the bottom. Aquatic monitoring is needed to assess the magnitude and effects of this sediment loading on aquatic receiving environments and inform adaptive management.</p> <p>Community groups have raised concerns about dust management and monitoring along the tote road related to current and future activities and are seeking commitments from the Proponent to address these issues (see letter and associated table from MHTO, Hamlet of Pond Inlet, QIA, MRCG, provided by NIRB on 16 July, 2018 (file names "180711-</p>





Review Comment	41. Waterbodies and Effects of Fugitive Dust Deposition and Sediment Transport
	<p>08MN053-QIA,MHTO,MRCG Ltr NIRB Re Commitments-IA2E.pdf" and "180711-08MN053-QIA,MHTO,MRCG Ltr NIRB Re Commitment Table-IA2E.pdf"). Concerns were also expressed by local participants at the Pond Inlet Monitoring Workshop (NIRB 2019a), and NIRB documented dustfall along the tote road and in the Milne Port area during its winter site visit (NIRB 2019b).</p> <p>When approving the Production Increase Application the Ministers added a requirement for implementation to Project Certificate Term and Condition (PCTC) 10: <i>"The Proponent shall implement its Dust Management and Monitoring Plan, report all monitoring data to the NIRB annually, and take all adaptive management measures described in its Dust Management and Monitoring Plan if monitoring indicates that dust in the ambient air or dust deposition from the increased traffic associated with the increased volume of ore being shipped is greater than initially predicted."</i> (181001-08MN053-Ministers Approval Re Production Increase-IA2E. pdf, p. 3 of 7). Adaptive management measures for monitoring effects of increased dustfall, as required under PCTC 10, have not been identified for affected aquatic environments.</p> <p>Validation of a sediment impact threshold for Arctic char egg survival is also needed for this assessment (see also QIA DEIS TC D-09). Under Project Certificate Term and Condition 21, measures for dustfall monitoring were to be designed to facilitate comparison with existing guidelines and potentially with thresholds to be established using studies of Arctic char egg survival and/or other studies recommended by the Terrestrial Environmental Working Group (TEWG). Sedimentation rates at Sheardown Lake NW have been elevated relative to the mine baseline period since the winter of 2015 (Baffinland 2018, s. 4.1, p. 11, p. 20 of 187). Adverse effects on fish egg survival have been documented for a sediment accumulation thickness exceeding about 1 mm during the egg incubation period (Fudge and Bodaly 1984; Greig et al. 2006). This 1 mm figure is being used as the effects threshold for sediment on char eggs but it is not based on char eggs, which incubate over the winter, or on local sediment. Fine sediment (silt) can cause egg mortality at thicknesses of &lt;1 mm, and at 1 mm can effectively smother salmonid eggs causing high mortality (Lapointe et al. 2004; Louhi et al. 2008). The sensitivity of Arctic char eggs to further increases in dustfall, and thereby sedimentation, is also uncertain. Better information is needed on the effects of local sediment deposition on survival of Arctic char eggs and larvae.</p> <p>The environmental costs and benefits of using CaCl dust suppressant to reduce dust dispersal have not been clearly presented in the Phase 2 FEIS. This adds uncertainty to the predictions of dust impacts. It is not clear whether differential application has been considered in dust dispersion modeling, or whether potential chemical impacts on receiving waters have been considered. CCME Guidelines for the protection of aquatic life limit long-term exposure to 120 mg Cl/L, and short term to 640 mg Cl/L (CCME 2011).</p> <p>The potential impacts of dust dispersal on affected aquatic environments are uncertain. They will be determined in large part by the quantity, quality, location and seasonality of dust deposition during the life of the Project. Sediment deposition could alter benthic communities and reduce productivity, including egg survival. Dust in sufficient quantity</p>



Review Comment	41. Waterbodies and Effects of Fugitive Dust Deposition and Sediment Transport
	<p>can reduce light transmission through ice (Light et al. 1998) and thereby reduce biological productivity under the ice and advance the timing of the spring melt, possibly reducing breeding success of ringed seals in the Milne Port area. Contaminants in sufficient quantity could also harm aquatic biota.</p> <p>In 2018 NIRB made three monitoring recommendations pertinent to fugitive dust and sediment effects on the aquatic environment. <i>Recommendation 2 “requires that Baffinland revise the dustfall modelling predictions from the 2013 FEIS (ERP)... and reassess the potential impacts of dust on the aquatic receiving environment to inform ongoing dust management efforts onsite.”</i> and directs the Proponent “to implement long-term monitoring programs for dustfall and specifically assess potential sediment deposition, impacts on water quality, impacts to biota at fish-bearing streams and lakes along the tote road (including at Phillips Creek), and in the marine environment downstream of the creek outlet” (NIRB 2018 Monitoring Recommendations, p. 2 of 11; delivery 2018 Annu. Rep.). <i>Recommendation 3 “requests that Baffinland revise the dust isopleth model using existing dustfall collection data and make revisions to the existing Dust Management and Roads Management Plan to include “specific adaptive management measures” to be implemented should monitoring observations confirm that dust deposition from the Project be greater than initially predicted.”</i> (p. 3 of 11). <i>Recommendation 11 “requires that Baffinland conduct sediment sampling in 2018 and subsequent years to further evaluate temporal trends and monitor annual sediment transport via Phillips Creek into Milne Inlet, as well as to learn how alluvial transport may be affecting sediment deposition and composition near the head of Milne Inlet.”</i> (p. 6 of 11; delivery 2018 Annu. Rep.).</p> <p>The Proponent will take NIRB Recommendation 11 into consideration during the planning for 2019 programs and following analysis of the 2018 sediment sampling data set (Baffinland Response to NIRB Recommendations, p. 2 of 4).</p> <p><u>References</u></p> <p>Fudge, R.J.P., and Bodaly, R.A. 1984. Postimpoundment winter sedimentation and survival of lake whitefish (<i>Coregonus clupeaformis</i>) eggs in Southern Indian Lake, Manitoba. Can. J. Fish. Aquat. Sci. 41: 701-701.</p> <p>Greig, S.M., Sear, D.A., Smallman, D., and Carling, P.A. 2006. Impact of clay particles on the cutaneous exchange of oxygen across the chorion of Atlantic salmon eggs. J. Fish Biol. 66: 1681–1691.</p> <p>Lapointe, M.F., Bergeron, N.E., Bérubé, F., Pouliot, M.-A., and Johnston, P. 2004. Interactive effects of substrate sand and silt contents, redd-scale hydraulic gradients, and interstitial velocities on egg-to-emergence survival of Atlantic salmon (<i>Salmo salar</i>). Can. J. Fish. Aquat. Sci. 61: 2271–2277.</p> <p>Light, B., Eicken, H., Maykut, G.A., and Grenfell, T.C. 1998. The effect of included particulates on the spectral albedo of sea ice. Journal of Geophysical Research 103(C12): 27,739-27,752.</p> <p>Louhi, P., Maki-Petays, A., and Erkinaro J. 2008. Spawning habitat of Atlantic salmon and brown trout: general criteria and intragravel factors. River. Res. Applic. 24: 330–339.</p>



Review Comment	41. Waterbodies and Effects of Fugitive Dust Deposition and Sediment Transport
<b>Recommendation /Request</b>	<p>QIA supports the 2018 NIRB recommendations related to Dust Management (2 and 3) and Shoreline effects and Sediment Redistribution (11) and recommends that Recommendation 2, in particular, be stringently applied to both the tote road, where crossing adjustments may be required if Phase 2 is approved, <u>and</u> to any future railway development as these parallel linear developments may have additive or cumulative effects on stream crossing habitats and Arctic char,</p> <p>QIA recommends that the Proponent establish long-term monitoring sites to assess impacts on the water quality, sediment deposition, and biota at representative fish-bearing streams along the tote road and proposed railway, at a site near the mouth of Phillips Creek, and in the marine environment downstream of the creek outlet;</p> <p>QIA recommends that the Proponent conduct further studies at Sheardown Lake to establish the actual depth of annual sediment deposition; and</p> <p>QIA recommends that the Proponent establish a meaningful sedimentation threshold based on mortality rates of Arctic char eggs exposed to project-generated dust sediment.</p>
<b>Sept. 23, 2019 Update</b>	<p><b>Unresolved – ongoing discussions of multiple issues.</b></p> <p>In June 2019, and again on 13 and 20 September, 2019, QIA and BIMC discussed issues related to TC 41. QIA identified the need to better understand the aquatic effects of Project generated sediment and dust. The Tote Road Monitoring Program draft (i.e., Roads Management Plan, Appendix D; 08MN053_BAF-PH1-830-P16-0023_Roads_Management_Plan-DRAFT-PHASE-2), developed by BIMC and QIA, will not provide the information needed to identify sediment source (erosion cf. dustfall) and may underestimate Project-related inputs. Additional sampling sites are needed along the creeks to enable differentiation of natural and Project-related inputs from erosion and dustfall, and to assess their magnitude and extent. Factors in addition to distance up or down stream must be considered when establishing sampling sites (e.g., extent of project dustfall). Concentrating these greater efforts on a few representative creeks due to safety and logistical considerations should be considered.</p> <p>The assessment of potential biological effects (e.g. Arctic char health) remain to be discussed. QIA did not agree with the BIMC argument that Project-related inputs are unlikely cause harm as they will be within the range of natural variation. This argument ignores the fact that ongoing Project-related inputs effectively raise the base inputs and thereby also the maxima.</p> <p>QIA also emphasized the need for a continuous monitoring site upstream from the mouth of Phillips Creek to gather data on key parameters (e.g., TSS, NTU, conductivity, flow rate, water depth) needed to estimate alluvial sediment transport into Milne Inlet (see also BIMC 2018, s.4.6.4, p. 79; BIMC Response to QIA comments 7and 8 (p. 20 of 370 on BIMC 2018 Annual Report to NIRB; TC 43)).</p>



Review Comment	41. Waterbodies and Effects of Fugitive Dust Deposition and Sediment Transport
	<p>QIA also identified the need for laboratory or in situ studies to verify sediment thresholds for Arctic char egg survival, using Arctic char and Project-generated sediment. Useful new data have been gathered on the dry bulk density of these sediments for use in estimating seasonal deposition but percentage of fine sediment, an important determinant of egg survival, may be more important. The current threshold is based on data from bass, whitefish and winter flounder, and on different sediment.</p> <p><b>Recommendations/Requests:</b></p> <p>QIA recommends that 2018 NIRB monitoring recommendation 2 related to dust management be stringently applied to both the tote road, where crossing adjustments may be required if Phase 2 is approved, <u>and</u> to any future railway development, as these parallel linear developments may have additive or cumulative effects on stream crossing habitats and Arctic char.</p> <p>QIA requests that the Proponent commit to establishing long-term monitoring sites to assess Project impacts on the water quality, sediment deposition, and biota in Phillips Creek.</p> <p>QIA requests that the Proponent commit to conducting further studies at Sheardown Lake to establish the actual depth of annual sediment deposition.</p> <p>QIA requests that the Proponent commit to establishing a meaningful sedimentation threshold based on mortality rates of Arctic char eggs exposed to Project-generated dust sediment.</p>
<p><b>August 11, 2020 Update</b></p>	<p><b>Unresolved.</b> Related to PCTC 21 and 83a</p> <p>The amount of Project-related dust and sediment that enters tote road waterbodies—particularly Phillips Creek, from Project-related activities, the fate of these materials, and their effects on the aquatic receiving environments are still unknown.</p> <p>The Proponent has conducted modelling to estimate inputs of ore dust to Phillips Creek (Phase 2 FEIS Addendum, TSD 17) but has not estimated the concurrent inputs of road dust, dust suppressant, and eroded sediment that enters the creek from the tote road. Despite increasing dust suppression efforts, dustfall along the tote road remains elevated relative to predicted values (2019 Annual Report to NIRB, Appendix G.12) and inputs of eroded sediments are ongoing (Appendix G.15). The Proponent has been improving its estimates of annual sediment deposition in Sheardown Lake (2019 Annual Report to NIRB, Appendix G.2) but the sediment threshold used for impact assessment on char eggs is still not based on Arctic char or Project dust and sediment. QIA recommends that these ongoing concerns related to dust and sediment from Project operations be addressed regardless of the Phase 2 assessment outcome.</p>
<p><b>Final Status Update</b></p>	<p><b>Unresolved.</b></p> <p>Related to Project Certificate Conditions 21 and 83a and BIMC Commitment ID# 148</p>



Review Comment	41. Waterbodies and Effects of Fugitive Dust Deposition and Sediment Transport
	<p>QIA TC 41 remains unresolved because information is lacking on Project-related dustfall (runoff). Despite increasing dust suppression efforts, dustfall along the tote road remains elevated relative to predicted values (EDI 2021: Table 8-4, p. 99 of 533) and inputs of eroded sediments are ongoing (2019 Annual Report to NIRB, Appendix G.15). The Proponent has not committed to conducting a study to address this concern, despite NIRB Recommendation 2 (NIRB 2018 Monitoring Recommendations, p. 2 of 11; delivery 2018 Annu. Rep.)</p> <p>An emerging issue related to Project-generated sediments entering tote road streams is that chemicals from rubber tire wear can harm fish. Rubber tires contain chemicals (e.g., antioxidants) that can be acutely toxic to aquatic biota and have caused mass mortality of salmonid fishes in streams when mobilized by runoff (e.g., Tian et al 2021). This is a concern due to the magnitude of Project truck traffic along the tote road and unexpectedly high rate of tire wear, both of which are expected to continue. Aquatic monitoring is needed for toxic chemicals released by rubber particles worn from tires of vehicles travelling the tote road.</p> <p>Since the August 2020 update (above), the Proponent has committed (ID# 148) to using more precautionary response thresholds for sediment deposition depth on Arctic char eggs (Low = 0.15 mm, Moderate = 0.54 mm, High = 1.0 mm). These thresholds are an improvement on the previous Moderate threshold (1.0 mm) but have not been validated for Project-related sediment on Arctic char. The Proponent has agreed to collect data on sediment grain size, which has been linked to egg mortality rate in other salmonid species.</p> <p>EDI (Environmental Dynamics Inc.) 2021a. Mary River Project terrestrial environment: 2020 annual monitoring report. Prepared for Baffinland Iron Mines Corporation, Oakville, ON April 2021. Draft 533 pp. [Baffinland Kiteworks file: 2020 Terrestrial Environment Annual Monitoring Report Draft for TEWG.pdf]</p> <p>Tian, Z., Zhao, H., Peter, K.T., and 24 others. 2021. A ubiquitous tire rubber-derived chemical induces acute mortality in coho salmon. Science 371: 185-189.]</p>





Review Comment	42. Impediment of Juvenile Fish Through Water Crossings
Subject	Freshwater Aquatic Environment - Environmental Monitoring
Reference	<ul style="list-style-type: none"> <li>NIRB Amended Phase 2 EIS Guidelines s.8.1.9.2 Freshwater Aquatic Environment Including Biota and Habitat, s.9.4.13 Aquatic Ecosystem Management Plan</li> <li>QIA Comments Re Baffinland 2017 Annual Report-part 1, Comments 13 and 18</li> <li>BIMC 2017. Fish Habitat Monitoring 2017 Annual Report Early Revenue Phase – Tote Road Upgrades (20171231dfotote-road-annual-report-2017as-sent-00000002_2018-16-55-30 Tote Road.pdf</li> <li>Baffinland Addendum to the Final Environmental Impact Statement Mary River Project – Phase 2 Proposal, V.1 Main Document, s.4.2.10 Protection of the Aquatic Environment</li> <li>Project Certificate Terms and Conditions 47 and 48a</li> <li>TSD 13, Flow Diversions at Stream Crossings along the North Railway, s.2.5.3</li> <li>TSD 14 Freshwater Biota and Habitat Assessment, s.2.2.2 Tote road, s. 2.5.1.2 Construction of North Rail Watercourse Crossings, Pond/Lake Encroachments/ Infilling, and Diversions Along the North Railway, s.4.2.3.2 Stream Crossings: Culvert Installations</li> <li>TSD 15 Conceptual Freshwater Offsetting plan, s.5.3.2</li> <li>Freshet 2018 Monitoring Report Final Part 1 (190219 2AM-MRY1325 Freshet 2018 Monitoring Report Final Part 1 of 2-ILAE.pdf)</li> <li>DFO (Fisheries and Oceans Canada) Information Requests Submission, Baffinland Iron Mines Corporation Mary River “Phase 2 Development” Project Proposal and Water Licence Application, IR 3.3.1</li> </ul> <p>Additional documents (post Technical Review comments)</p> <ul style="list-style-type: none"> <li>NSC. 2019a. North railway freshwater habitat survey: 2018. Prepared for Baffinland Iron Mines Corporation by North/South Consultants Inc., Winnipeg, Manitoba. April 2019 (04i_North_Rail_fieldreport_2018.pdf and Appendices)</li> <li>NSC. 2019b. Mary River Phase 2 Proposal Update: Project Infrastructure Interactions with Fresh Water Streams and Ponds. Technical Memorandum prepared for Baffinland Iron Mines Corporation by North/South Consultants Inc., Winnipeg, Manitoba. May 1, 2019.</li> <li>BIMC 2019a. Annual Report to NIRB (201903312018-nirb-annual-report_2019-04-56-56.pdf)</li> </ul>



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	<ul style="list-style-type: none"> <li>BIMC 2019b. BIMC 2018 QIA and NWB Annual Report for Operations, Appendix C.3 DFO Tote Road Annual Report, 77 pp. (NWB site: 190331 2AM-MRY1325 2018 QIA-NWB Annual Report for Ops-Appendix C (Tote Road DFO)- 3of3-ILAE)</li> <li>BIMC Response to QIA comments on BIMC 2018 Annual Report to NIRB, table A.1, p. 17-35 of 37 (190712-08MN053-BIMC Response to Comments Re 2018 AR-IA2E)</li> <li>Knight Piésold. 2019. Fish passage risk assessment of water crossings and stream diversions– proposed North Railway – Mary River Project – Phase 2 Proposal. Prepared by Knight-Piésold Consulting Ltd., for Baffinland Iron Mines Corporation, Oakville ON. 37 pp. (Fish Passage Risk Assessment Update (KP Ref VA19-00838).pdf)</li> <li>BIMC alternative railway route (190830 - Ph2 Potential Alt Route.pdf)</li> </ul>
Summary	<p>The tote road crosses numerous fish-bearing streams and the proposed northern rail line will also cross many of the same streams. The Proponent has been monitoring fish passage in these streams, which provide summering habitat for juvenile Arctic char, but these studies have not always been reported in detail. Further baseline monitoring should be conducted at crossings along the proposed rail line, prior to further development and during and following rail line construction if approved. The results should be provided in a timely manner in annual monitoring reports. These reports should provide sufficient detail for QIA and others to assess the methodology, whether seasonal fish passage is unimpeded, and whether healthy populations persist.</p>
Importance of issue to impact assessment	<p>Culverts or other installations that restrict fish movements may fragment aquatic habitats and harm fish populations by blocking access to habitats they require to complete their life processes.</p>
Detailed Review Comment	<p>1. <i>Gap/Issue</i></p> <p>QIA is concerned by the number of crossings, diversions, and encroachments that may impede or prevent fish passage.</p> <p>2. <i>Disagreement with Addendum/TSD Conclusion</i></p> <p>QIA disagrees with the Proponent's view that "<i>with implementation of design and mitigation measures, effects of culvert installations on fish passage are assumed to be negligible</i>" (TSD 15, s.5.3.2, p. 19 of 39; 24 of 78).</p> <p>3. <i>Reason for disagreement with Addendum conclusion</i></p> <p>"Construction of the railway will involve 142 crossings on streams with juvenile Arctic char and four pond encroachment/infill sites where fish passage would be required to ensure connectivity between stream and pond habitat." (TSD 14, s. 4.2.3.2, pg. 31, pg. 84 of 120). Mitigation measures that the Proponent has identified for maintaining fish passage at</p>



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	<p>QIA recommends that additional baseline data be gathered on fish habitat (e.g., water quality, sediment) and fish use of potential stream crossings prior to any future railway development; that monitoring be conducted to ensure that fish passage, populations, and habitat quality are maintained.</p>
<p><b>Sept. 23, 2019 Update</b></p>	<p><b>Unresolved – Pending further discussions and commitments (note new additions to QIA recommendations/requests above).</b></p> <p>The 2018 a survey of the freshwater habitat along the North Railway route was conducted to provide empirical assessments of the presence/absence of fish, identify barriers to fish passage, and document aquatic habitat in the vicinity of the proposed railway alignment footprint in freshwater systems (NSC 2019a, NSC 2019b). It provides more detail on fish habitat use than has been reported in the tote road monitoring studies (e.g., BIMC 2017, BIMC 2019b). However, past studies of fish passage at tote road stream crossings include data (e.g., fish catch per unit of sampling effort - CPUE) that were not reported in the DFO Annual Tote Road Reports (e.g., BIMC 2017, BIMC 2019). In a June 2019 phone discussion with BIMC, QIA recommended these data be compiled for possible use in trend analyses. The Proponent agreed to look into compiling the data.</p> <p>Monitoring requirements related to fish passage at proposed rail crossings were also discussed. These will be determined by DFO if the Project is approved, but QIA has requested the opportunity to provide input, perhaps via the TEWG or a working group established to deal with freshwater issues. Future fish passage studies (tote road and rail line), including monitoring, should be designed to gather the data needed to assess trends in abundance and health of the juvenile Arctic char that summer in these streams. This will require the development of sampling protocols that provide a simple metric for assessing the health of small fish while avoiding or minimizing exposure and handling. It could involve one or a number of factors such as observational and/or catch effort, age/size class persistence, activity rates, and apparent physical condition. Opportunities for community-based monitoring should be explored.</p> <p>In 2019 the Proponent released a fish passage risk assessment study (Knight Piésold 2019). It reported that "[b]ased on calculated culvert cross-section average velocities, 88 mm class Arctic char may have reduced fish passage at approximately 50% of the crossings in July and 23% in August." (pg. 10 of 37). Of 93 fish bearing stream crossings along the proposed railway route, "46 are predicted to be moderate risk and 31 high risk", based on their ability to pass 88 mm char in July. Mitigation recommendations with respect to culvert installations (pg. 10 of 37) included: "1. Install at least one culvert at each fish bearing crossing as an embedded culvert, such that slope, bed material and discharge per unit width are sufficiently comparable to upstream and downstream conditions. A Qualified Professional (QP) with sufficient experience and training should supervise design and installation. 2. At the highest risk crossings, site-specific assessment (e.g. assess baseline depths, velocities and discharge, channel morphology and fish use) will be conducted. If required, site-specific design and construction (e.g. embedded box or arch culverts, or fish passage culverts) will be used to mitigate risk. 3. A monitoring program will</p>



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	<p><i>be developed to monitor conditions at the highest risk crossings.</i>" With respect to diversions (pg. 12 of 37): <i>"Site specific assessments should be undertaken at this diversion during detailed engineering design of the railway. The assessments should consider fish use and length of impacted channel, and potential mitigation options can be identified and incorporated into the final design."</i> This new information supports the need for long-term monitoring of fish passage and fish health at existing stream crossings. It also supports QIA concerns regarding risks related to construction and operation of the proposed rail line. QIA supports the recommendations.</p> <p>At the end of August 2019, the Proponent identified a possible alternative rail routing. This routing was not assessed in the Phase 2 EIS, or in the recent stream crossing studies. Further discussions were held between QIA and BIMC on September 13 and 20, 2019.</p> <p><b>Recommendations/Requests:</b></p> <p>QIA requests a commitment by the Proponent that 2018 NIRB monitoring recommendations regarding Restriction of Fish Passage (8) and Survey and Monitoring of Arctic Char (16), will be stringently applied to both the tote road, where crossing adjustments may be required if Phase 2 is approved, <u>and</u> to any future railway development.</p> <p>QIA requests that the Proponent commit to gathering additional baseline data on fish habitat (e.g., water quality, sediment) and fish use of potential stream crossings prior to any future railway development; conducting monitoring to ensure that fish passage, populations, and habitat quality are maintained; and developing and using non-lethal metrics to monitor Arctic char health over the long term at these stream crossings.</p> <p>QIA requests that BIMC provide information at least two weeks prior to the November hearings on how use of the alternative rail line route may affect fish passage.</p>
<p><b>August 11, 2020 Update</b></p>	<p><b>Resolved.</b> Related to PCTCs 47 and 48a</p> <p>The northern railway, if approved, and the Tote Road will cross many of the same streams, possibly with cumulative effects on fish passage and fish health. Effective mitigation, monitoring and adaptive management are required to ensure that healthy Arctic char populations are maintained. Will the Proponent commit to gathering additional baseline information as requested above? The health of juvenile Arctic char that summer in these streams is not monitored. QIA has recommended the Proponent develop a metric for monitoring fish health in the streams. Is such a metric in use and, if not, will the Proponent commit to implementing one prior to the 2021 field season, regardless of whether Phase 2 is approved?</p> <p>The current tote road monitoring program gathers data on a range of parameters such as char presence, catch-per-unit of fishing effort (CPUE), and fish length (2019 Annual Report to NIRB, Appendix G.20). Not all of the data are presented in the public reporting. QIA has recommended that all data collected by the tote road stream monitoring programs be</p>



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	<p>compiled and archived for future comparison. In particular, this should include raw data on the catch composition that could indicate loss of upstream access by smaller, younger fish, and data on physical condition that could indicate a change in health (e.g., lesions, injuries, activity). Has the Proponent complied such an archive or will it commit to doing so in 2021, regardless of whether Phase 2 is approved?</p> <p>The Proponent monitors fish passage at tote road stream crossings in the spring. In late June and early July 2019 this work included both fish-bearing streams and those that previous sampling has not shown to be fish bearing. QIA recognizes the extra effort required for the latter sampling and the value of this approach for reducing uncertainty related to crossing effects on fish. Culvert perching that limits fish passage continues to be a concern, particularly along the tote road (Appendices G.6 and G.20). QIA recommends the Proponent consider proactive approaches to design, installation, and remediation that could prevent perching and reduce the need for remediation.</p>
Final Status Update	<p><b>Resolved.</b></p> <p>Related to Project Certificate Conditions 47 and 48a and BIMC Commitment ID#s 102 -104, 145, 147, 201, and 202</p> <p>The Proponent has made commitments that together resolve QIA TC 42.</p> <p>Fish passage is an ongoing concern since some blockage or perching of culverts occurs each year at stream crossings along the tote road. This issue is subject to DFO regulatory oversight, and the Proponent has made commitments in response DFO and intervenor recommendations designed to reduce future fish passage issues. Under these commitments it will provide an updated hydrological assessment of proposed watercourse crossings (Commitment ID# 102), analyze monitoring reports related to existing tote road stream crossings and provide a comprehensive “lessons learned” report (ID# 103), and provide decision criteria and a decision matrix for the selection of water crossing methods for fish bearing watercourses in support of any regulatory permit applications made to DFO (ID#104). The Proponent has also committed (ID# 145) to providing QIA, the Mittimatalik Hunters and Trappers Organization, and Hamlet of Pond Inlet each with a copy of the of the “lessons learned” report.</p> <p>The health of Arctic char using streams crossed by the tote road has not been monitored. In response to QIA’s recommendation that the Proponent develop a metric for monitoring Arctic char health, the Proponent has committed (ID# 201) to add observations regarding physical condition of fish (e.g., lesions, injuries, activity level) to its current sampling (presence, CPUE, length distributions, etc.), and to work with QIA to develop a metric to serve as an early warning indicator and for monitoring trends over time.</p> <p>In response to recommendations by QIA supported by other intervenors, the Proponent has committed (ID# 202) to develop Terms of Reference for a Freshwater Environment Working Group (FEWG) that will provide a regular forum for intervenors, regulatory</p>



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	authorities and the Proponent to share information and provide advice on freshwater issues.



Review Comment	43. Sediment Redistribution
Subject	Marine Environment - Environmental Monitoring
Reference	<ul style="list-style-type: none"> <li>NIRB Amended Phase 2 EIS Guidelines: s.8.1.6.2, s.8.1.9.2 (151006-08MN053-Amended EIS Guidelines for Mary River Phase 2 Project Proposal-OT5E)</li> <li>NIRB Project Certificate Terms and Conditions 83a</li> <li>EDI. 2018. 2017 Mary River Project Terrestrial Environment Annual Monitoring Report</li> <li>NIRB Letter to Baffinland Re 2018 Board Monitoring Recommendations</li> <li>Baffinland Cover Letter NIRB Re Response to Board Recommendations (181207-08MN053-Baffinland Cover Letter NIRB Re Response to Board Recommendations-IA2E.pdf)</li> <li>Baffinland IR Responses Phase 2 Proposal – Mary River Project, Appendix 12: Overview of Marine Operations, p. 396 of 587 (181219 2AM-MRY1325 BIM Info Request Responses-IMLE)</li> <li>Phase 2 FEIS Addendum, s.8.2.1.2 Air quality, s.8.3.2.1 Air quality</li> <li>TSD 2 Project Description, s. 4.2.2; Table 1.1, p. 10, 17 of 87; App. C, p. 2 of 4 (181003-08MN053-TSD 2-Project Description-App C-IA2E.pdf)</li> <li>TSD 7 Atmospheric assessments, s. 2.4.1; Appendix D, Figures D-12 to D-14, p. 156-158 of 269 (181003-08MN053-TSD 7-Atmospheric Assessment Report-IA2E.pdf)</li> <li>TSD 28, Appendix X, Table 9 (181005-08MN053-TSD 28-Management Plans-App U-Y-IA2E.pdf)</li> <li>Golder 2018, p. 109</li> </ul> <p>Additional documents (post Technical Review comments)</p> <ul style="list-style-type: none"> <li>BIMC 2018 Annual Report to NIRB (201903312018-nirb-annual-report_2019-04-56-56.pdf)</li> <li>BIMC Response to QIA comments on BIMC 2018 Annual Report to NIRB, table A.1, p. 17-35 of 37 (190712-08MN053-BIMC Response to Comments Re 2018 AR-IA2E)</li> <li>Golder 2019a</li> <li>QIA-Comments-MEEMP-draft-24Mar2019.pdf</li> <li>NIRB 2019a. Marine Monitoring and Marine Mitigation Workshop Summary Report Pond Inlet, May 1-2, 2019 (190530-08MN053-Marine Monitoring Workshop Smry Rprt-OT5E.pdf)</li> </ul>





Review Comment	43. Sediment Redistribution
	<ul style="list-style-type: none"> <li>NIRB 2019b. 2019 Winter Site Visit Report for the Nunavut Impact Review Board's Monitoring of Baffinland Iron Mines Corp.'s Mary River Project (NIRB File No. 08MN053) (190828-08MN053-2019-Winter Site Visit Report-OT5E)</li> </ul>
Summary	<p>Project activities may be redistributing sediment in the area west of Milne Port. The Port, Project shipping and alluvial transport from Phillips Creek are possible sources of this fine sediment. Proposed construction of Ore Dock 2 and the North Railway, tote road adjustments, relocation of crushing facilities to Milne Port, ore stockpiling, and very large increases in ore transport that require large increases in heavy truck and ore carrier traffic are some of the activities that may increase transport of fugitive dust and sediment into the area where it is currently accumulating. Further studies are needed to identify the sources and magnitudes of these inputs to inform adaptive management.</p>
Importance of issue to impact assessment	<p>The potential impacts on marine habitats and biota of dustfall, alluvial transport of sediment, and sediment mobilized by existing and proposed Project activities cannot be assessed based on the current monitoring program.</p>
Detailed Review Comment	<p><i>1. Gap/Issue</i></p> <p>The Proponent has not adequately assessed the potential impacts on marine habitats and biota of dustfall, alluvial transport of sediment, and sediment mobilized by existing and proposed Project activities.</p> <p><i>2. Disagreement with Addendum/TDS Conclusion</i></p> <p>The Proponent's conclusions cannot be adequately assessed based on the information provided in the FEIS (Phase 2).</p> <p><i>3. Reasons for disagreement with FEIS Addendum conclusion</i></p> <p>Under Project Certificate Term and Condition 83a the Proponent is required to conduct hydrodynamic modelling in the Milne Inlet Port area to determine the potential impacts arising from disturbance to sediments including re-suspension and subsequent transport and deposition. The required modelling is ongoing. Sampling in 2017 suggested there was a significant increase in the percentage of fine sediment at far-field sampling stations (500 m, 1,000 m, and 1,500 m) along the West Transect from 2014 to 2017, possibly associated with marine shipping or port infrastructure and/or alluvial depositions from Phillips Creek (Golder 2018, p. 109). The Proponent has identified various adaptive management measures that could be applied if sediment redistribution effects exceed those predicted in the FEIS (QIA 2018).</p> <p>If the Phase 2 proposal is approved the infrastructure and operations at Milne Port will be modified to include ore crushing, larger ore stockpiles, and an increase in annual ore transfer to Project vessels from 4.2 Mt approved under the ERP FEIS to 12 Mt (TSD 2 Project Description, Table 1.1, p. 10, 17 of 87). The number of ore carriers loaded annually</p>





Review Comment	43. Sediment Redistribution
	<p>will increase from 53 to 176, including larger Cape size vessels and the number of support vessels (e.g., tugs, cargo vessels, tankers) will also increase (Baffinland IR Responses, p. 4, p. 400 of 587). A second ore dock will need to be constructed to facilitate the greater ore transfer and larger vessels. These changes are likely to increase fugitive dust emissions, despite mitigation efforts such as a covered crushing facility. Dust deposition from Port activities will extend from stockpiling and loading ore around the Port area and NW across the bay (TSD 7, Figures D-12 to D-14, p. 156-158 of 269), Dock construction will mobilize some marine sediment, despite use of a sediment curtain, and the deep-draft ship's propellers may mobilize seabed sediment at distances of up to 100 m, despite stone armouring of the docking area (TSD 2 Project Description, s.4.2.3, p. 4.4, p. 63 of 87).</p> <p>The amount of Project-generated dust and sediment that enters Milne Inlet directly or in runoff from surrounding areas is unknown but may also increase if Phase 2 is approved. Ore truck traffic along the tote road would increase from 196 per day under the ERP FEIS (EDI 2018, s.2.2.1.2, p. 11, p. 29 of 205) to 560 (TSD 2, App. C, p. 2 of 4) until the proposed North Railway is in full operation, generating substantial dust. Road adjustments and construction and operation of the proposed North railway would also contribute sediment to the creek directly as dustfall, entrained in runoff, and through erosion. About 60% of the tote road lies within the Phillips Creek drainage (DEIS v.7, fig.7-1.2, p.16 of 355), as would the proposed railway, so sediment transport by the creek into Milne Inlet could be substantial.</p> <p>In 2017 annual terrestrial dustfall exceeded the predicted threshold levels at all but one of the monitoring sites at Milne Port and within 30 m and 1000 m on either side of the Tote Road (Baffinland 2017, Table 4.6, p. 41, p. 552 of 440; see also EDI 2018, p. 13-30). Dustfall measurements at sites 30 m from the Tote Road ranged from 121 to 408 g/m<sup>2</sup>/yr, and those at 100 m from 47 to 60 g/m<sup>2</sup>/yr (EDI 2018, Table 6). The management plan threshold for corrective action is 4.6 g/m<sup>2</sup>/yr (TSD 28, Table 9, p. 443 of 565). These exceedances occurred despite dust suppression efforts using applications of water and calcium chloride (CaCl), and suggest modeling predictions have badly underestimated dustfall.</p> <p>The potential impacts of dust dispersal on affected marine environments are uncertain. They will be determined in large part by the quantity, quality, location and seasonality of dust deposition during the life of the Project. Pond Inlet hunters (Mittimatalik HTO) have expressed concern over fugitive dust that winds spread widely over the snow and sea ice (TSD 7, p. 4 of 40, 13 of 269; also, TEWG meeting June 2018; NIRB 2019b) and NIRB (2019a, p. 19) has reported dustfall along the tote road and in the Milne Port area. Data are needed to properly assess the potential impacts of this dustfall and for comparison with sedimentation thresholds. Dust particles can have a substantial effect on light transmission through the ice (Light et al.1998), and in sufficient quantity could thereby reduce biological productivity under the ice and advance the timing of the spring melt, possibly reducing breeding success of ringed seals in the Milne Port area. Sediment deposition could alter benthic communities and productivity.</p>



Review Comment	43. Sediment Redistribution
	<p>In its 2018 monitoring recommendations NIRB (Recommendation 11) <i>“requires that Baffinland conduct sediment sampling in 2018 and subsequent years to further evaluate temporal trends and monitor annual sediment transport via Phillips Creek into Milne Inlet, as well as to learn how alluvial transport may be affecting sediment deposition and composition near the head of Milne Inlet.”</i> (NIRB 2018 Monitoring Recommendations, p. 6 of 11). The Proponent will take NIRB Recommendation 11 into consideration during the planning for 2019 programs and following analysis of the 2018 sediment sampling data set (Baffinland Response to NIRB 2018 Monitoring Recommendations, p. 2 of 4).</p> <p><u>References</u></p> <p>Golder Associates Ltd. (Golder). 2018. Mary River Project 2017 Marine Environmental Effects Monitoring Program (MEEMP) and Aquatic Invasive Species (AIS) Monitoring Program. Report No. 1663724-048-R-Rev0. February 20, 2018.</p> <p>Golder 2019a. 2018 Milne Inlet Environmental Effects Monitoring Program (MEEMP) and Aquatic Invasive Species (AIS) Monitoring Program Report. (2018-milne-inlet-marine-environmental-effects-monitoring-program-and-aquatic-invasive-species-monitoring-final-report_2019-23-10-39.pdf)</p> <p>Light, B., Eicken, H., Maykut, G.A., and Grenfell, T.C. 1998. The effect of included particulates on the spectral albedo of sea ice. Journal of Geophysical Research 103(C12): 27,739-27,752.</p>
<b>Recommendation /Request</b>	<p>QIA supports the 2018 NIRB requirement that the Proponent monitor annual sediment transport via Phillips Creek into Milne Inlet to learn how alluvial transport may be affecting sediment deposition and composition near the head of Mine Inlet.</p> <p>QIA recommends that the Proponent, in consultation with the MEWG, consider expanding its marine sediment monitoring program to ensure that the potential effects and contributions of alluvial transport and marine sediment redistribution by proposed shipping increases and dock construction (freight and ore dock 2) are understood and to inform adaptive management.</p> <p>QIA recommends that the Proponent revise its Marine Environmental Effects Monitoring Plan to include these studies.</p>
<b>Sept. 23, 2019 Update</b>	<p><b>Unresolved – Pending further discussions.</b></p> <p>In QIA TC 43 and comments on annual reports, QIA recommended that the Proponent, in consultation with the MEWG, consider expanding its marine sediment monitoring program to ensure that the potential effects and contributions of alluvial transport and marine sediment redistribution by proposed shipping increases and dock construction (freight and ore dock 2) are understood, and to inform adaptive management (QIA TC 43; QIA comment 21, p. 10 related to draft MEEMP s.3.1.4; QIA comment 19, p.28 on BIMC 2018 Annual Report s.4.6.10 and BIMC response). QIA discussed this recommendation at</p>



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	<p>the first Phase 2 technical meeting, Pond Inlet monitoring workshop, on a June phone call with BIMC, and at the June MEWG meeting. At the MEWG meeting BIMC proposed adding sampling stations to the west transect, in the area of the proposed Ore Dock 2, and along a transect parallel to the existing offshore transect. QIA recommended that the west extension be extended and include a station offshore the plume of Philips Creek to monitor alluvial transport; also, that the new offshore transect be better situated to capture effects from possible construction and operation of Ore Dock 2. Further discussions with BIMC and Golder on September 13 and 16, and follow-up information provided on September 18 (Golder email), indicate BIMC is redesigning its sediment and benthic monitoring program in response to QIA and DFO comments. These changes should increase the power of this monitoring to detect project-related changes. Field studies in late September 2019 are expected to implement these changes to the sampling program. BIMC is also working on a desktop exercise to better understand alluvial transport. QIA welcomes these improvements and looks forward to seeing the results.</p> <p><b>Recommendations/Requests:</b></p> <p>QIA requests a commitment that the Proponent, in consultation with the MEWG, expand its marine sediment monitoring program to ensure that the potential effects and contributions of alluvial transport and marine sediment redistribution by proposed shipping increases and dock construction (freight and ore dock 2) are understood and to inform adaptive management.</p> <p>QIA recommends that the Proponent revise its Marine Environmental Effects Monitoring Plan prior to the 2020 field season to include changes to its marine monitoring program.</p>
August 11, 2020 Update	<p><b>Unresolved - ongoing discussion</b>, related to PCTC 83a</p> <p>The Proponent has augmented its marine sampling program to better detect Project-related effects on sediment and benthic biota (2019 Annual Report to NIRB, Appendix O), and conducted a desk-top exercise to assess alluvial sediment inputs (Appendix M of Appendix G.8). These are positive steps.</p> <p>The 2019 marine sampling program did not meet its sampling design targets of 60 sites sampled for both sediment and benthos due to logistical issues, sampling 40 sites for sediment and 32 for benthos. Once the design targets are being met the power analysis should be rerun to determine the power of this monitoring to detect changes over time and with distance from the ore dock and to inform adaptive management. QIA also recommends that power analyses be conducted on the marine fish sampling programs to ensure they are capable of detecting change at an acceptable level (see also DFO 2020).</p> <p>The desktop exercise provides useful information on the geomorphology and hydrology of Phillips Creek, which has a delta that appears to be changing rapidly. Information is still lacking on how much Project-generated ore dust, road dust, and road sediment enters Phillips Creek, the fate of these materials, and their effects on aquatic receiving environments. (See QIA TC41 recommendations)</p>



Review Comment	43. Sediment Redistribution
	<p>-----</p> <p>DFO. 2020. Science Review of Additional Documents submitted October 8, 2019 – January 8, 2020 for the Final Environmental Impact Statement Addendum for the Baffinland Mary River Project Phase 2. DFO Can. Sci. Advis. Sec. Sci. Resp. 2020/018.[NIRB Public Registry File: 200310-08MN053-BIMC Final FEIS Re P2-IA2E.pdf]</p>
Final Status Update	<p><b>Resolved.</b></p> <p>Related to Project Certificate Condition 83a and BIMC Commitment ID#s 18 and 208</p> <p>In response to recommendations from DFO and QIA, the Proponent has committed (ID# 208) to updating the monitoring plan (MMP) in consultation with MEWG members and this will be completed prior to the start of the 2022 shipping season and again prior to any Phase 2 shipping. The updated MMP will detail the revised Marine Environment Effects Monitoring Program Plan (MEEMP) design which includes greater seasonal and spatial coverage and increased effort and sample sizes to address DFO concerns related to achieving sufficient statistical power for detection of project effects (<math>\geq 0.8</math>, as per recommendations in DFO 2020, pages 4-7). The updated MMP will include clear protocols for determining identity and status of species collected as part of this program.</p>



Review Comment	44. Ballast Water Dispersal
Subject	Marine Environment - Marine Water/Ice and Sediment Quality, Assessment Methods
Reference	<ul style="list-style-type: none"> <li>• NIRB Amended Phase 2 EIS Guidelines: s.6.1, s.6.5.7.2, s.6.5.8, s.7.8, s.8.1.12.1, s.8.1.12.2, s.8.1.13.2, s.9.4.15 (151006-08MN053-Amended EIS Guidelines for Mary River Phase 2 Project Proposal-OT5E)</li> <li>• NIRB Project Certificate Terms and Conditions (PCTC) 86, 87, 88, 89, and 90 (140528-08MN053-NIRB Project Certificate No 005 Amendment 1-ODTE.pdf)</li> <li>• ERP FEIS (ERP) Addendum v.8, s.3.5.2.3, app.8B-3 and 8B-4.</li> <li>• NIRB 2018 Monitoring Recommendations, 9 (181108-08MN053-NIRB Ltr to Baffinland Re 2018 Board Monitoring Recommendations-OT5E.pdf)</li> <li>• Baffinland Phase 2 FEIS Sec. 4.2.10 Protection of the Aquatic Environment, p. 4.11, p. 63 of 142 (181005-08MN053-FEIS Addendum-Main Document-IA2E)</li> <li>• Baffinland IR BIM Info Request Responses, Appendix 12 Overview of Marine Operations, p. 402 of 587 (BIM Info Request Responses-IMLE.pdf)</li> <li>• Baffinland Advance Technical Comment Responses Phase 2 Proposal – Mary River Project, Response to QIA IR 71, p. 29; 33 of 890 (08MN053_mrp2_TC-responses advanced.pdf)</li> <li>• TSD 17, s.2.6.4 Ballast Water Discharges (TSD 17 Marine Environmental Effects Assmt-IA2E.pdf)</li> <li>• TSD 18 Ballast water dispersion modelling report (TSD 18-Ballast Water Dispersion Modelling Report-IA2E.pdf)</li> <li>• TSD 20 Hydrodynamic Modelling Report (181003-08MN053-TSD 20-Hydrodynamics Modelling Report-IA2E.pdf)</li> <li>• TSD 21 Risk Assessment Aquatic Invasive Species (181003-08MN053-TSD 21-Risk Assessment Aquatic Invasive Species-IA2E.pdf)</li> <li>• Fednav Limited. 2018. Standing instructions and general information for masters of vessels loading at Milne Inlet Port. Prepared for Arcelormittal Shipping Limited - Baffinland. 162 pp. (181219 2AM-MRY1325 Standing Instructions to Masters-IMLE.pdf)</li> <li>• QIA Phase 2 TC 44 Ballast water dispersal, p. 71-76</li> <li>• See relevant TCs from other parties TCs (PC, DFO)</li> </ul> <p>Additional documents (post Technical Review comments)</p>



Review Comment	44. Ballast Water Dispersal
	<ul style="list-style-type: none"> <li>BIMC Ballast Water Management Plan (08MN053_BAF-PH1-830-P16-0050_Ballast-Water-MP.pdf)</li> <li>Golder 2019b. Ballast water dispersion sensitivity simulations. Technical Memorandum Ref. No. 1663724-127-TM-Rev0, dated 14 June 2019, prepared for Baffinland Iron Mines Limited. 15 pp. (1663724-127-TM-Rev0-Ballast Water Dispersion 14JUN_19.pdf)</li> <li>BIMC Response to QIA comments on BIMC 2018 Annual Report to NIRB, table A.1, p. 17-35 of 37 (190712-08MN053-BIMC Response to Comments Re 2018 AR-IA2E)</li> <li>Baffinland Mary River Project - Phase II Ballast water modelling presentation for phone discussion with PC, DFO, BIMC, and Golder. September 6, 2019</li> </ul>
Summary	Risks associated with the release of much larger volumes of ballast water by ore carriers into Milne Inlet were not adequately assessed in the Phase 2 EIS. Ore carriers require ballast water for stability. This water will be loaded from foreign ports as the ore is offloaded, exchanged in mid-ocean and/or treated, and then discharged into Milne Port. The water discharged will have different physical and chemical properties than water in the inlet and may alter biological communities and productivity in the receiving environment.
Importance of issue to impact assessment	Better understanding of the physical and chemical properties of ballast water transported by Project ore carriers, and its behavior upon discharge into Milne Port, is needed to mitigate effects on the marine receiving environment.
Detailed Review Comment	<p><i>1. Gap/Issue</i></p> <p>The International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention), now in force, requires ships to transition from mid-ocean exchange to treatment of ballast water. The Proponent has not considered how different ballast water sources and the implementation of treatment or treatment plus exchange by Project shipping would change the physical and chemical properties of ballast water and, together with more frequent and often simultaneous discharges at the Milne Port anchorages and docks, its dispersal and associated environmental effects.</p> <p><i>2. Disagreement with FEIS Addendum conclusion</i></p> <p>This information is needed to properly assess potential impacts of ballast water discharges.</p> <p><i>3. Reasons for disagreement with FEIS Addendum conclusion</i></p> <p><u>a) Transition to ballast water treatment</u></p> <p>Project ore carriers load coastal ballast water in foreign ports as they offload ore, exchange this water in mid-ocean (e.g., North Atlantic/Labrador Sea), and discharge it</p>





Review Comment	44. Ballast Water Dispersal
	<p>while loading ore at Milne Port. Under the BWM Convention existing vessels must transition, by 2024, from mid-ocean exchange (D1 standard, salinity at least 30 ppt) to onboard treatment of ballast water (D2 standard, based on numbers of viable organisms) to reduce the spread of coastal biota. New vessels must be equipped for treating ballast water (IMO 2017). There are a variety of physical (e.g., filtration, cavitation, UV light, thermal, electric/plasma pulse, magnetic field) and chemical (e.g., oxidizing and non-oxidizing biocides, deoxygenation) treatment technologies available (Raunek 2017; DFO 2019a). To ensure the ballast water meets IMO standards a typical shipboard ballast water treatment system uses at least two different technologies.</p> <p>The physical (e.g., temperature, density), chemical (e.g., salinity, nutrients, oxygen, suspended sediment), and biological (e.g., species composition and survival) properties of the ballast water discharged will be different than those of the receiving environment. These properties will depend upon where and when the ballast water is loaded and whether it was fully exchanged and/or treated; they may vary from tank to tank within each ship and from one ship to another.</p> <p>It is not clear from the Phase 2 EIS or its supporting documents how the transition from exchange to treatment or exchange plus treatment may affect the quality of ballast water entering Milne Inlet or its dispersal (e.g., TSD 18, TSD 20, TSD 21, Golder 2019b, Ballast Water Management Plan). In particular, whether all vessels that treat their ballast water must conduct mid-ocean exchange. If so, the physical and chemical characteristics of water discharged into Milne Inlet should resemble open ocean conditions of the recommended exchange area; If not, they will resemble the conditions at their last offloading port(s) and these physical and chemical characteristics could have much broader ranges.</p> <p>b) <u>Discharge volume</u></p> <p>In Phase 2 of the Project, The Proponent plans to increase the annual discharge of ballast water into the Milne Port area by Project shipping from about 662,000 cubic meters for the ERP to at least 4,080,000 cubic meters for Phase 2 [<i>i.e., ERP: 12,500 cubic m x 53 ships; 80% of it in Milne Port (ERP FEIS v.8, app.8B-4, s.3.1.1, p.6 ) cf. Phase 2: 34% of DWT based on 2018 shipping (BIMC Response to QIA comments on BIMC 2018 Annual Report to NIRB, table A.1, p.25 of 37; see also DFO 2019b, p. 38); 176 ships, types and tonnages as specified totalled 11,585,000 DWT so prorated to 12,000,000 DWT (Baffinland IR responses, p. 400 of 587; TSD 18, Table 3.1, p. 14 of 57)</i>]. This amount is about 35% greater than BIMC's initial estimate for the assessment of 3,023,750 tonnes. The Phase 2 discharges could be further underestimated as the percentage of ballast water tends to increase with the use of larger vessels (David et al. 2012), and when ice is present. Such frequent, large discharges of ballast water could have physical and chemical differences from the water in Milne Inlet that alter the biological communities and their productivity (DFO 2019c, p. 32). The volume used for dispersal modelling is unclear (TSD 18).</p> <p>c) <u>Water quality</u></p>





Review Comment	44. Ballast Water Dispersal
	<p>Little is known about the chemical and physical properties of incoming ballast water, with or without treatment. The only monitoring reported has been the salinity of one ballast water tank per ore carrier that BIMC samples to monitor ballast water exchange compliance and adherence to the Ballast Water Management Regulations (Baffinland Phase 2 EIS Sec. 4.2.10, p. 63 of 142). Testing a single tank does little to verify compliance since large ore carriers can have 20 or so separate ballast water tanks. Testing only 1 in 20 (i.e., 5%) means that uncertainty remains as to whether exchange has been conducted in the other 19 tanks (i.e., 95%) (Bailey et al. 2011: pg. 2558). Despite the low probability of detecting non-compliance, testing of a single tank in the <i>Nordic Oden</i> in 2019 did find it to be non-compliant (J. Bastick pers. comm. August 8, 2019). This raises the question of how many other non-compliant vessels may have been or will be missed.</p> <p>This salinity measurement does little to protect water quality. Some treatments may alter other chemical and physical properties of the ballast water (DFO 2019a). It is not clear how the Proponent plans to verify that ballast water discharged by Project vessels (i.e., all project-related shipping) does not contain treatment residuals (e.g., biocides, chlorine, anoxia) or contaminants from other ports that pose a risk to the environment (TSD 17, s.2.6.4, p. 38 of 160).</p> <p>d) <u>Dispersal modeling</u></p> <p>The Phase 2 ballast water dispersal model does not consider the whole period of seasonal operation or effects of the shift to ballast water treatment that is required within the life of the project and can alter its physical (e.g., temperature) and/or chemical (e.g., anoxia) properties. A better understanding of this localized ballast water dispersal and accumulation, and its sensitivity to discharge volumes, is needed to predict environmental effects related to differences in treatment and source water; and to inform baseline data collection, mitigation, monitoring, and adaptive management.</p> <p>Limitations in the available oceanographical data have increased uncertainty in the dispersal modeling results. The majority of conductivity – temperature – density (CTD) profiles were taken in August, with a few later in the open water season in October (TSD 18, p. 30 of 57). Calibration of the hydrodynamic model has been hampered by limited availability of near surface measurements away from complex bathymetry, uncertainty with respect to measurement locations, lack of useful measurement from the area near Milne Port, and inadequate inputs and verification data regarding salinity and temperature structure in the appropriate locations of the domain to verify the model (p. 56 of 57). Since TSD 18 was prepared BIMC has been working to address these limitations, with a weather resolution forecasting model, oceanographic data from moorings at Bruce Head and Milne Port to verify the model, and some freshwater discharge data from Phillips Creek (BIMC Phone meeting September 6, 2019). Modeling is still limited by the topographical and bathymetric complexity of Milne Inlet, lack of heat flux data for modeling salinity/temperature structure, and other factors.</p>



Review Comment	44. Ballast Water Dispersal
	<p>The accuracy of results from predictive models relies on the quality of the data used for the calculations. Where data quality may be uncertain, sensitivity of the results to higher or lower data values is often tested to inform interpretation of the results and risk related to uncertainty. QIA IR 71 requested that the Proponent clarify whether, and if so how, ballast water dispersal modeling was tested for sensitivity to assessment parameters such as ballast water volume, exchange efficiency and compliance, changes in source ports, differences in salinity/temperature, and the presence of sea ice. The Proponent responded that no systematic sensitivity testing has been conducted of the parameters identified by QIA (Baffinland Advance Technical Response to QIA IR 71, p. 29; 33 of 890). In response to QIA TC 44 sensitivity testing was conducted using selected salinity (range 30-36 psu) and temperature (2-13°C) combinations at one Anchorage (#1), with discharges based on the average from 2018 shipping (Golder 2019b). The densities of the combinations tested suggest all but the 36 psu/6°C water would mix readily into the subpycnocline layer.</p> <p>Unfortunately, this modeling does not address the sensitivity of ballast water discharge behaviour to broader range of salinities and temperatures that would occur if vessels treat rather than both treat and exchange their ballast water, despite repeated requests from QIA to do so. The discharges tested also do not consider the proposed increases in ballast water volume, changes in discharge rates and frequencies, longer discharge season, under ice discharges, simultaneous discharges at multiple docks and anchorages, and other factors that would change in Phase 2. Lack of sensitivity testing of the hydrodynamic model was also discussed in the September 6, 2019 phone call with BIMC, and remains a source of uncertainty in the reliability of the ballast water modeling predictions.</p> <p>The behaviour of ballast water that is discharged at the dock(s) is unclear. Dispersion modeling conducted for the ERP FEIS (v.8, app.8B-3, p. 2) suggested that relatively dense, saline ballast water from the Labrador Sea discharged from the vicinity of the existing ore dock would flow downslope at speeds of up to 0.24 m/s and pool on the ocean floor at a depth of ca. 100 m ca. 1 km offshore. On the September 6, 2019 phone call with BIMC, Golder representatives were skeptical that ballast water released at the dock would behave in this manner.</p> <p>If vessels follow the “Instructions to Masters”, they would exchange ballast water in the North Atlantic Drift or Gulf Stream (Fednav Limited 2018), areas with warmer, saltier water that affect its dispersal. This may alter bottom sediment and impact benthic communities. These effects could increase with the proposed increases in ballast water discharge volume and frequency. They may also change when the water is discharged at proposed Ore Dock 2, with the source of the ballast water, implementation of ballast water treatment, and method of treatment. Water from other sources may behave differently on release, with different effects on the receiving environment. The effects of these differences have not been considered in the modeling and remain a source of uncertainty.</p> <p>In its 2018 monitoring recommendations report NIRB <u>Recommendation 9</u> requested that the Proponent update its ballast water dispersal modeling (delivery Baffinland 2018 Annu.</p>

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<b>Recommendation /Request</b>	<p>QIA recommends that the Proponent monitor the physical and chemical properties of incoming ballast water, treated and untreated, to inform risk assessment and adaptive management.</p> <p>QIA recommends that the Proponent continue gathering seasonal CTD profiles and other data (e.g., wind, current, freshwater runoff) needed to calibrate and verify the hydrodynamic model.</p> <p>QIA recommends the Proponent update and rerun the ballast water dispersal model to assess the physical and chemical effects on the marine environment (including any downslope currents and pooling) of exchange, treatment, or both together to inform mitigation and monitoring.</p>
<b>Sept. 23, 2019 Update</b>	<p><b>Unresolved – pending further document submissions and discussions.</b></p> <p>All outstanding recommendations meriting further discussion are included in the “Recommendations” row above.</p>
<b>August 11, 2020 Update</b>	<p><b>Unresolved.</b> Related to PCTCs 86, 87, 88, 89, and 90.</p> <p>DFO (2020a,b) has recommended the Proponent rerun the ballast water dispersion model incorporating particle tracking, new oceanographical data, and data from biological sampling of Project vessels on the number of individuals of non-indigenous species released with ballast water (propagule pressure) to update and refine the ballast water risk assessment. QIA supports this recommendation.</p> <p>Recent hydrodynamic modeling overestimates the current speed and underestimates the stratification of the water column, which would result in overestimating the dispersion of ballast water close to the discharge location (BIMC Response to DFO FWS 3.10.1). This could lead to underestimation of the risk of introduction via releases of ballast water or hull fouling, since the longer non-indigenous species remain concentrated in the Milne Port area the more likely they are to establish reproducing populations. QIA recommends that further oceanographic data be collected on currents and seasonal changes in the Milne Port area to improve dispersal modelling and invasive species risk assessment.</p> <p>The Proponent currently expects that any Project ore vessels capable of treating their ballast water will use both treatment and exchange to reduce the risk of introducing invasive species. If Project vessels begin switching to treatment alone the ballast water released into Milne Port will most likely be transported directly from foreign ports and receive various physical and/or chemical treatments enroute. This change may alter the quality of water released into Milne Port (anchorage and dock(s)), particularly the temperature, salinity, and contaminants (e.g., treatment residuals, persistent pollutants). QIA recommends that the Proponent conduct physical and chemical testing of incoming vessels that treat but do not exchange their ballast water and use the data to update dispersal modelling and inform risk and adaptive management.</p> <p>-----</p>



Review Comment	44. Ballast Water Dispersal
	<p>DFO. 2020a. Science Review of Additional Documents submitted October 8, 2019 – January 8, 2020 for the Final Environmental Impact Statement Addendum for the Baffinland Mary River Project Phase 2. DFO Can. Sci. Advis. Sec. Sci. Resp. 2020/018: 31 pp.</p> <p>DFO. 2020b. Updated Technical Comments Baffinland Iron Mines Corporation Mary River “Phase 2 Development” Project Proposal Submitted to: Nunavut Impact Review Board February 6, 2020 DFO File No.: 07-HCAA-CA7-00050 NIRB File No.: 08MN053 [pgs. 44-122 in NIRB Public Registry file: 200206-08MN053-Gov Can Add Tech Sub Re P2-IOCE.pdf]</p>
<b>Final Status Update</b>	<p><b>Resolved.</b></p> <p>Related to Project Certificate Conditions 86- 90 and BIMC Commitment ID#s 114, 203-208.</p> <p>The Proponent has made numerous commitments, in response to recommendations by DFO, QIA, Parks Canada Agency and other organizations, designed to improve understanding and limit the of ballast water discharges by Project vessels. These commitments address QIA TC 44 recommendations that were outstanding.</p> <p>The Proponent will require (Commitment ID# 205) all vessels calling on Milne Port that treat their ballast under the D2 Standard to also perform a ballast water exchange prior to treatment. By 2024, for ore carriers originating from Canadian waters (i.e., domestic trips), it will only charter vessels equipped with treatment systems, and will require those vessels to treat their ballast under the D2 Standard and to also perform a ballast water exchange prior to treatment. These measures should reduce the risk of introducing invasive species from other coastal ports. Project vessels will be limited (ID#s 114, 203) to releasing ballast water at one of the three anchorage locations at Milne Port, or while berthed at the ore dock. Prior to any, D-1 compliance testing must be completed. These instructions will be provided to all ship operators in Baffinland’s Standing Instruction to Masters (SITM).</p> <p>To support the risk-based assessment of ballast water (ID# 109), discharge coordinates and the durations and volumes of discharges at each discharge point will be recorded, and provided to MEWG members as part of annual reporting (ID# 204). The risk-based methodology and associated ballast water compliance sampling plan (ID# 109) will include a component for the monitoring of contaminants from each port and treatment type to assess potential chemical risks (e.g., from foreign ports or treatment residuals) (ID# 207). Further risk-based assessment of contaminants will be conducted, using methodology and approaches developed under the sampling plan, in the event Project vessels switch from exchange plus treatment to just treatment of ballast water.</p> <p>The Proponent will consider discontinuing exchange plus treatment requirements should treatment system efficacy reach a point that makes the benefits of an exchange plus treatment system negligible. In this event it has committed (ID# 206) to update ballast water dispersion modelling to more accurately reflect the spectrum of salinity, temperature, and discharge volumes that can be expected to be discharged at Milne Port under Phase 2 operations if prior exchange were to be discontinued, and to conduct a risk-</p>



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Subject	Marine Wildlife and Marine Habitat - Assessment Methods, Environmental Mitigation and Management, Environmental Monitoring, Residual effects
Reference	<ul style="list-style-type: none"> <li>• NIRB Amended Phase 2 EIS Guidelines: s.6.1, s.6.5.7.2, s.6.5.8, s.7.8, s.8.1.12.1, s.8.1.12.2, s.8.1.13.2, s.9.4.15 (151006-08MN053-Amended EIS Guidelines for Mary River Phase 2 Project Proposal-OT5E)</li> <li>• Project Certificate Terms and Conditions (PCTC) 86, 87, 88, 89, 90, and 91)</li> <li>• NIRB 2018 Monitoring Recommendations, 10 and 16 (181108-08MN053-NIRB Ltr to Baffinland Re 2018 Board Monitoring Recommendations-OT5E.pdf)</li> <li>• FEIS, Vol. 9, s. 3.1 Identification of Risks and Methodology</li> <li>• ERP FEIS addendum v.8, app.8B-4, s.3.1.1, p.6</li> <li>• QIA ERP TC FM-03</li> <li>• Production Increase Application (Stantec 2018, s.2.2 and s.2.3)</li> <li>• Baffinland Iron Mines 2017 Annual Report to the Nunavut Impact Review Board s.4.6.10 Marine Environment, pp. 193-205, pp. 214-226 of 440 (180403-08MN053-2017 Annual Report-IA2E.pdf)</li> <li>• QIA Review of 2017 Annual Report, Marine and Aquatic comments 31-38</li> <li>• Phase 2 FEIS Addendum Vol. 1 Main Document, s. 4.2.10 Protection of the Aquatic Environment; s. 8.2.6.2 Marine Wildlife and Marine Habitat; Table 10-2 Major Accident and Malfunctions Risk Summary; Table 10-5 Summary of Residual Effects (181005-08MN053-FEIS Addendum-Main Document-IA2E.pdf)</li> <li>• TSD 17 Marine Environmental Effects Assessment, s.3.3 Project monitoring; s. 3.6.4 Introduction of Invasive Species with Ballast Water (TSD 17-Marine Environmental Effects Assmt-IA2E.pdf)</li> <li>• TSD 18 Ballast Water Dispersion Modelling Report (TSD 18-Ballast Water Dispersion Modelling Report-IA2E.pdf)</li> <li>• TSD 21 Risk Assessment of Aquatic Invasive species, s. 3.1.1, s. 4.0 (TSD 21-Risk Assmt Aquatic Invasive Species-IA2E.pdf)</li> <li>• Baffinland IR Responses, Appendix 12 Overview of Marine Operations (181219 2AM-MRY1325 BIM Info Request Responses-IMLE.pdf)</li> <li>• Baffinland Supplementary IR Responses, Commitment 118, p. 19 of 27, p. 49 of 57 (181221 2AM-MRY1325 08MN053_mrp2_IR-supplementary_responses-IMLE.pdf)</li> </ul>



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	<ul style="list-style-type: none"> <li>• Baffinland Advance Technical Comment Responses Phase 2 Proposal – Mary River Project, Response to QIA IRs 71 to 73, pp. 29 and 30; pp. 33 and 34 of 890 (08MN053_mrp2_TC-responses advanced.pdf)</li> <li>• Fednav Limited. 2018. Standing instructions and general information for masters of vessels loading at Milne Inlet Port. Prepared for Arcelormittal Shipping Limited - Baffinland. 162 pp. (181219 2AM-MRY1325 Standing Instructions to Masters-IMLE.pdf)</li> <li>• Golder Associates Ltd. (Golder), 2018. Mary River Project 2017 Marine Environmental Effects Monitoring Program (MEEMP) and Aquatic Invasive Species (AIS) Monitoring Program. Report No. 1663724-048-R-Rev0. February 20, 2018.</li> <li>• Golder 2018 Field Program presentation to MEWG December 2018</li> <li>• QIA Phase 2 IRs 71 to 73</li> <li>• QIA Phase 2 TC 44 Ballast water dispersal and TC 45 Species introductions</li> <li>• BIMC response to QIA TC 45</li> <li>• See relevant TCs from other parties TCs (PC, DFO)</li> </ul> <p>Additional documents (post Technical Review comments)</p> <ul style="list-style-type: none"> <li>• BIMC Ballast Water Management Plan (08MN053_BAF-PH1-830-P16-0050_Ballast-Water-MP.pdf)</li> <li>• Golder 2019a. 2018 Milne Inlet Environmental Effects Monitoring Program (MEEMP) and Aquatic Invasive Species (AIS) Monitoring Program Report. (2018-milne-inlet-marine-environmental-effects-monitoring-program-and-aquatic-invasive-species-monitoring-final-report_2019-23-10-39.pdf)</li> <li>• QIA-Comments-MEEMP-draft-24Mar2019</li> <li>• BIMC 2018 Annual Report to NIRB (201903312018-nirb-annual-report_2019-04-56-56.pdf)</li> <li>• BIMC Response to QIA comments on BIMC 2018 Annual Report to NIRB, table A.1, p. 17-35 of 37 (190712-08MN053-BIMC Response to Comments Re 2018 AR-IA2E)</li> <li>• Golder 2019b. Ballast water dispersion sensitivity simulations. Technical Memorandum Ref. No. 1663724-127-TM-Rev0, dated 14 June 2019, prepared for Baffinland Iron Mines Limited. 15 pp. (1663724-127-TM-Rev0-Ballast Water Dispersion 14JUN_19.pdf)</li> </ul>



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	<ul style="list-style-type: none"> <li>Baffinland Mary River Project - Phase II Ballast water modelling presentation for phone discussion with PC, DFO, BIMC, and Golder. September 6, 2019</li> </ul>
Summary	<p>Environmental risks posed by non-indigenous species (NIS) released into the Canadian Arctic by shipping for the Mary River Project are unknown because species' composition and abundance are not monitored in ballast water or on hulls of vessels visiting Milne Port. The Phase 2 FEIS relies on vessel compliance to Canadian Ballast Water Regulations to prevent the introduction of non-indigenous species. Under these regulations international vessels must exchange their ballast water outside Canada's Exclusive Economic Zone (EEZ), except in unusual circumstances. Under the recently ratified International Convention for the Control and Management of Ship's Ballast and Sediments (BWM Convention) vessels must transition from exchange to treatment of ballast water by 2024. Rate of vessel compliance with these regulations is uncertain, as are corrective measures required of non-compliant Project vessels. The Phase 2 FEIS considers the introduction of invasive species to be <b>LIKELY</b>, consequences <b>MINOR</b>, and risk <b>LOW</b>. QIA does not agree. Monitoring and mitigation currently conducted under the conditions of NIRB Project Certificate 005 are inadequate to inform risk assessment or prevent species introductions at current shipping levels, let alone those proposed for Phase 2, and require revision.</p>
Importance of issue to impact assessment	<p>If invasive species are introduced to Milne Inlet by Project shipping and establish reproducing populations they may alter biological communities and productivity, possibly irreversibly and over a large area. The environmental and socio-economic risks associated with the large, long-term releases of ballast water, such as those for the Mary River Project, can be far-reaching (Davidson et al. 2018).</p>
Detailed Review Comment	<p><i>1. Gap/Issue</i></p> <p>Failure to prevent species introductions could have far-reaching, unpredictable, lasting, and possibly harmful effects on the marine environment and resource use. The efficacy and offsetting environmental effects of ballast water treatment options have not been considered in detail as part of this EIS. Better understanding is needed of regulatory compliance by Project vessels and of the presence and abundance of live, foreign species (i.e., non-indigenous) in their ballast water and on their hulls, to inform mitigation and adaptive management efforts designed to prevent species introductions.</p> <p><i>2. Disagreement with FEIS Addendum conclusion</i></p> <p>QIA does not agree with the Proponent that risk associated with discharge of ballast water by Project ore carriers and fouling on hulls of Project vessels has been adequately assessed or that the risks are <b>LOW</b> (Phase 2 FEIS).</p> <p><i>3. Reasons for disagreement with FEIS Addendum conclusion</i></p> <p>In its <i>Risk Assessment for Introduction of Aquatic Invasive Species from Ballast Water</i>, Golder calculated the probability of aquatic invasive species arriving in Milne Inlet to be <b>HIGH</b>, surviving once they arrived to be <b>VERY HIGH</b> and, based on these, that the probability was <b>VERY HIGH</b> that foreign species would be successfully introduced (TSD 21,</p>



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	<p>s. 4.0, p. 12; p. 20 of 24). Given the number of potentially harmful aquatic invasive species (166) in a subset of source ports the magnitude of the consequences was ranked as VERY HIGH. Based on the probability of introduction and magnitude of consequences the invasion risk was ranked HIGH, with MODERATE uncertainty. Golder noted that using the actual number of species and abundance of AIS present in each ship's ballast water would have reduced uncertainty related to invasive species risk (TSD 21, s.3.1.1, p. 9; p. 17 of 24).</p> <p>The Phase 2 FEIS assessment contrasts sharply with Golder's, rating introduction of invasive species LIKELY, consequences MINOR, and risk LOW (Table 10-2, p. 10.5; p. 113 of 142). The rating definitions for consequence and likelihood and the risk matrix were unchanged from the FEIS (FEIS Phase 1, Vol. 9, s. 3.1, p. 77-78 of 144; p. 92-93 of 161), which should place the risk not at LOW but MODERATE. Furthermore, the Phase 2 FEIS characterized the residual effects with "a high level of confidence" as "adverse in direction", "low given planned magnitude", not geographically confined to the LSA, "continuous", "of a duration...extending beyond the life of the Project", and irreversible (FEIS Phase 2, p. 10.18; p. 126 of 142). This characterization, the lack of information on the biota arriving in ballast water, and the proposed scale of the vessel traffic and ballast water releases do not support the assessment of severity of the consequences as LOW and confidence as HIGH.</p> <p>Reasons for QIA's disagreement with these rankings include:</p> <p>a) <u>Inadequate verification of exchange and treatment compliance</u></p> <p>Project vessels have been discharging ballast water into Milne Inlet since the first ore carriers loaded in 2008, during the bulk sample program (BIMC 2008), but their ballast water has not been tested to assess the efficacy of exchange or the rate of compliance with mid-ocean exchange requirements. QIA has repeatedly identified these shortcomings and emphasized the need to address them so as to better understand species introduction risk (Phase 1 DEIS, Phase 1 FEIS, ERP FEIS Addendum, Production Increase Application, Comments on Annual Reports; Comments on PCTCs). QIA has similar concerns related to the lack of biological monitoring of hull fouling, which can affect all Project vessels. Given the limited effort to understand risk and prevent species introductions, it seems incongruous to assess potential species introductions as an "accident or malfunction" (Phase 2 FEIS Addendum v.1, Table 10-2, p. 111 of 142).</p> <p>Thorough testing of ballast water exchange compliance is needed to verify and encourage compliance, and to inform risk assessment and mitigation. Little is known about the organisms in incoming ballast water, with or without treatment.</p> <p>BIMC has repeatedly characterized the salinity testing of a single ballast water tank as "due diligence", the implication being that this provides reasonable certainty that Project vessels (i.e., all project-related shipping) are compliant with mid-ocean ballast water exchange regulations (D1 standard). QIA does not consider this to be sufficient. The Proponent tests the salinity of one randomly-selected ballast water tank per ore carrier to</p>



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	<p>verify vessel adherence to the Ballast Water Management Regulations (Phase 2 FEIS Addendum v.1, s. 4.2.10, p. 4.1.1, p. 63 of 142). Testing a single tank does little to verify compliance, since large ore carriers can have 20 or so separate ballast water tanks. Testing only 1 in 20 (i.e., 5%) means that uncertainty remains as to whether water in the other 19 tanks (i.e., 95%) was exchanged (Bailey et al. 2011: pg. 2558). This test also does little to prevent species introductions.</p> <p>Project vessels are expected to comply fully with ballast water management regulations (Fednav Limited 2018). Their records of ballast water exchange may be examined for verification but these records may not guarantee compliance. When vessels entering the Great Lakes submitted their ballast water reporting forms and then had all of their ballast tanks tested, 65% had at least 1 tank that had not been properly exchanged (Bailey et al. 2011; Bailey pers. comm. 2019). Implementation of full testing has resulted in fuller compliance. Full inspections have been conducted on 100% of the ballast water tanks of 100% of the vessels in the Great Lakes-St. Lawrence River region since ca. 2005.</p> <p>In 2019, when the <i>Nordic Odin</i> arrived in ballast, salinity sampling of one tank found it to be non-compliant with the Ballast Water Regulations, so additional tanks were checked. They too were non-compliant, so the vessel lost its loading position and was sent away to conduct a proper exchange (location?). It had to refile its ballast water management report before being allowed to re-enter the loading queue (BIMC phone call September 6, 2019). While it is not clear in the Ballast Water Management Plan what action the Proponent and Transport Canada will take when vessels have not complied with the Ballast Water Regulations, sending the non-compliant vessel away to conduct proper exchange is a positive sign.</p> <p>b) <u>Lack of biological testing</u></p> <p>QIA recommends that BIMC exercise due diligence with respect to testing for the efficacy of vessel's ballast water exchange, treatment, and exchange plus treatment for reducing the risk of species introductions (D2 standard). The Proponent has not identified what measures it will take to ensure the D2 standards are met and plans to postpone testing until the IMO has approved methods for that purpose (Ballast Water Management Plan s.1.5.1.2, p. 7 and s.3.2, p. 13). Given that the Proponent is unique in Canadian Arctic waters in terms of the volume of ballast water discharged by its Project vessels, has approval to greatly increase this volume, and seeks approval for further increases it is essential that BIMC participate in: 1) assessing the effectiveness of various treatment and exchange strategies for meeting D2 standards, and 2) in the development and testing of quick, effective methods of testing to ensure ballast water tanks of vessels in Arctic waters meet D2 standards (see also DFO 2019a).</p> <p>The Proponent has not collected biological samples from ballast water tanks, as it was not required to do so (Baffinland Advanced TC response to QIA IR 73). Consequently, the identity and abundance of species released into Milne Port and the risks they pose are unknown. The risk of species introductions via hull fouling is also unknown. In 2018 the</p>





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	<p>hulls of three Project vessels were examined using underwater video (Golder 2019a). Taxonomic identifications were limited by low video resolution and sample collection was not conducted due to safety considerations. Settlement baskets recovered in 2018 were examined for foreign encrusting epifauna. Data from work conducted in 2019 are not yet available.</p> <p>Under the BWM Convention biological monitoring will be required to verify the efficacy of treatment methods. At the February 2019 MEWG a Fednav representative indicated that such testing would not begin until the International Maritime Organization (IMO) identifies the best method of testing. Since the efficacy of recently developed treatment methods in vessels travelling into Arctic waters is unknown a more constructive approach would be for the Proponent to actively participate in the testing and development of tools and methods for quickly testing the efficacy of ballast water treatment under Arctic shipping conditions. There are a number of promising approaches (e.g., Bradie et al. 2018; First et al. 2018; Moser et al. 2018; Vanden Byllaardt et al. 2018). This approach should help to inform mitigation and adaptive management, particularly if some methods of treatment and testing are superior under Arctic shipping conditions.</p> <p>The Proponent has reserved the right to draw any ballast water tank samples considered necessary from Project vessels visiting Milne Inlet Port prior to discharge of ballast water (Fednav Limited 2018, p. 16 of 162). There is value in testing the efficacy of exchange for reducing species introduction risk, despite the transition to treatment, to facilitate comparison among the alternatives and inform mitigation and adaptive management.</p> <p>Testing the efficacy of the various combinations of ballast water treatment and exchange methods ships employ will inform adaptive management, and enable BIMC to engage vessels that use the methods most effective for operation in Arctic waters. Once vessels are in service regular testing is needed to ensure they meet D2 standards, since systems failures can occur, backup systems are seldom in place, and components such as the widely-used 40-micron mesh screens deteriorate over time (Reid 2015; Coldharbour Marine Limited 2018).</p> <p>BIMC does not plan to implement testing of ballast water in vessels that have made the transition from exchange to treatment until IMO approved testing methods are in place, the timing of which is unknown (Ballast Water Management Plan s.1.5.1.2, p. 7). QIA does not agree with postponement of testing, given that BIMC already has vessels in operation.</p> <p>c) <u>Increasing vessel traffic and ballast water discharge</u></p> <p>In Phase 2 of the Project, The Proponent plans to increase the annual discharge of ballast water into the Milne Port area by Project shipping from about 662,000 cubic meters for the ERP to at least 4,080,000 cubic meters for Phase 2 [i.e., ERP: 12,500 cubic m x 53 ships; 80% of it in Milne Port (ERP FEIS v.8, app.8B-4, s.3.1.1, p.6 ) cf. Phase 2: 34% of DWT based on 2018 shipping (BIMC Response to QIA comments on BIMC 2018 Annual Report to NIRB, table A.1, p.25 of 37; see also DFO 2019b, p. 38); 176 ships, types and tonnages as</p>



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	<p><i>provide more accurate information for the risk assessment of aquatic invasive species”, and that “Implications and potential consequences of shipping ballast water treatment options (IMO 2017c) will be carefully examined to provide the best outcome...” (TSD 21, p. 20 of 24). This information should have been provided for consideration by the Phase 2 FEIS review.</i></p> <p>Sensitivity of the risk analysis to factors such as greater than predicted releases of ballast water, higher than expected numbers of live organisms in the discharges, changes in source ports, presence of particularly invasive species, changes in vessel routings and exchange locations, and use of different treatment technologies was not considered in detail (see QIA Phase 2 IR 72 and Baffinland Advance Technical Response p. 29, p. 33 of 890). The latter is important as approval of a treatment system does not mean it is fit to operate under Project conditions (Reid 2015; Coldharbour Marine Limited 2018). For example, ultraviolet systems can struggle to meet D2 standards in waters of high turbidity; and electro-chlorination may not be as effective in waters of low temperature and/or salinity. While the modeling suggests risk from species introductions is HIGH, lack of these considerations suggests both risk and uncertainty may be higher than expected.</p> <p>DFO strongly recommends that all Project vessels conduct exchange plus treatment of their ballast water to reduce the risk of species introductions compared to the use of exchange or treatment (DFO 2019b, DFO 2019c). It also recommends that BIMC include, in its monitoring program, biological sampling of ballast water for all arriving ships. QIA supports these recommendations as they would enable BIMC to evaluate the numbers and types of organisms being discharged, to assess the efficacy of using exchange plus various methods of treatment, and thereby inform risk assessment and adaptive management.</p> <p>f) <u>Gaps in Regulatory Oversight</u></p> <p>Neither the information in the Phase 2 FEIS Addendum, ongoing reporting (e.g., Annual Reports), nor monitoring required by the Project Certificate Terms and Conditions provide the information needed to properly assess the risks of and related to foreign species introductions. This deficiency applies to current and proposed levels of shipping. The resulting uncertainty is a concern for QIA given the potential longevity of this Project. Project Certificate Terms and Conditions 86 to 91 related to ballast water and hull fouling are not achieving their intended purposes and should be reconsidered to address the needs for effective compliance and biological monitoring.</p> <p>Under the Project Certificate Terms and Conditions (PCTC 91) the Proponent must develop a detailed plan for monitoring biofouling species on Project vessels. Prior to the 2019 shipping season only 3 hulls had been examined and few data were available. This is a concern as ship biofouling is a major transport vector of nonindigenous species in coastal ecosystems globally (Chan et al. 2015, 2016). While biofouling species assemblages can have poor survivorship during Arctic voyages, at least six taxa new to the Canadian Arctic appeared to have survived transits from temperate to Arctic Ports (Churchill, Nanisivik,</p>



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	<p>and Iqaluit), including the invasive barnacle <i>Amphibalanus improvisus</i> (Chan et al. 2015, 2016).</p> <p>In its 2018 monitoring recommendations report NIRB <u>Recommendation 10</u> requested (#10) that BIMC actively monitor ballast water discharges to determine efficacy of exchange and treatment and use this information to update the invasive species risk analysis and inform adaptive management measures designed to prevent invasive species introductions (delivery BIMC 2018 Annual Report). QIA supports NIRBs request but suggests that sampling prior to rather than during discharge be considered as a means of preventing discharges that do not meet acceptable standards of exchange or treatment. NIRB <u>Recommendation 16</u> directed BIMC to develop an action plan to address required (PCC-91) monitoring of fouling on hulls of Project vessels (delivery within 60 days), and to implement the plan and provide annual results (delivery BIMC 2018 Annual Report). QIA requests that the action plan be made available for the technical review.</p> <p>g) <u>Ballast Water Management Plan</u></p> <p>BIMC committed to developing “<i>a stand alone ballast water management plan to be included as a separate appendix in the SMWMP [Shipping and Marine Wildlife Management Plan] to address the increased risk from invasive species and D-2 requirements of the International Convention for the Control and Management of Ships' Ballast Water and Sediments (Ballast Water Convention), to prescribe ballast water monitoring and reporting requirements specific to the Project, and to identify management procedures in the event of any non-compliance events</i>” (Commitment 118; Baffinland Supplementary IR Response 118, p. 19 of 27, p. 49 of 57). BIMC has provided a draft of this plan, which QIA welcomes, but this plan requires detailed revisions to clarify, for example:</p> <ul style="list-style-type: none"> <li>• whether vessels treating their ballast water must also meet the D1 salinity standards (Ballast Water Management Plan s. 1.5.1.2, p.7)</li> <li>• regulatory gaps and how, as a matter of due diligence, BIMC will address these gaps through compliance and efficacy testing to inform and reduce risk of invasive species introductions. (s.1.5, p.8; see also DFO 2019b)</li> <li>• why only one ballast water tank per vessel is tested for exchange compliance when there could be numerous others that do not comply with the D1 salinity standards. (s.3.2, p. 13)</li> <li>• measures BIMC will require of vessels arriving in ballast from Canadian ports and of Canadian vessels arriving from foreign ports to undertake to reduce risk of species introductions [Use of the term “foreign flag vessels” is confusing.]. (s.2, p.9)</li> <li>• how the ballast water of vessels using treatment will be tested to ensure that their systems are meeting the D2 standards, and inform adaptive management regarding optimal treatment technologies and the value of using exchange plus treatment. (s.4, p. 14)</li> <li>• options available when salinity testing (D1) indicates that ballast water has not been</li> </ul>



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	<p>properly exchanged or biological testing (D2) indicates that treatment, or treatment plus exchange, have not met the D2 standards for reducing biota, and what action BIMC and/or Transport Canada will take to avoid species introductions (s.4, p. 14).</p> <ul style="list-style-type: none"> <li>options available for adaptive management to reduce risk of species introduction in ballast water for vessels that do not comply with the D1 or D2 standards [QIA does not consider regulatory enforcement described in this section to be adaptive management]. (s.4, p. 14)</li> </ul> <p><u>References</u></p> <p>Bailey, S.A., Deneau, M.G., Jean, L., Wiley, C.J., Leung, B., and MacIsaac, H.J. 2011. Evaluating efficacy of an environmental policy to prevent biological invasions. <i>Environ. Sci. Technol.</i> 45, 2554–2561 dx.doi.org/10.1021/es102655j.</p> <p>BIMC (Baffinland Iron Mines Corporation). 2008. Baffinland details arrival of trial cargos in Europe. News Release 6 November 2008. 3 pp.</p> <p>BIMC (Baffinland Iron Mines Corporation). 2015. First shipment of Baffinland’s Mary River iron ore. (<a href="http://www.baffinland.com/latest-news/first-shipment-of-baffinlands-mary-river-iron-ore/?lang=en">http://www.baffinland.com/latest-news/first-shipment-of-baffinlands-mary-river-iron-ore/?lang=en</a>)</p> <p>Bradie, J., Broeg, K., Gianoli, C., He, J., Heitmüller, S., Curto, A.L., Nakata, A., Rolke, M., Schillak, L., Stehouwer, P., Vanden Byllaardt, J., Veldhuis, M., Welschmeyer, N., Younan, L., Zaake, A., and Bailey, S. 2018 A shipboard comparison of analytic methods for ballast water compliance monitoring. <i>Journal of Sea Research</i> 133: 11–19, <a href="https://doi.org/10.1016/j.seares.2017.01.006">https://doi.org/10.1016/j.seares.2017.01.006</a></p> <p>Chan, F. T, MacIsaac, H.J., and Bailey, S.A. 2015. Relative importance of vessel hull fouling and ballast water as transport vectors of nonindigenous species to the Canadian Arctic. <i>Can. J. Fish. Aquat. Sci</i> 72: 1230–1242.</p> <p>Chan F. T., MacIsaac H.J., and Bailey S.A. 2016. Survival of ship biofouling assemblages during and after voyages to the Canadian Arctic. <i>Marine Biology</i> 163: 250. DOI 10.1007/s00227-016-3029-1</p> <p><u>Coldharbour Marine Limited. 2018. Lack of due diligence on ballast water treatment could prove expensive. The Maritime Executive 2018-02-01 21:15:00. Accessed September 8, 2019 available online at: <a href="https://www.maritime-executive.com/corporate/lack-of-due-diligence-on-ballast-water-treatment-could-prove-expensive">https://www.maritime-executive.com/corporate/lack-of-due-diligence-on-ballast-water-treatment-could-prove-expensive</a></u></p> <p>David, M., Perkovic, M., Suban, V., and Gollasch, S. 2012. A generic ballast water discharge assessment model as a decision supporting tool in ballast water management. <i>Decision Support Systems</i> 53:175-185.</p>

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<b>Recommendation/ Request</b>	<p>The Proponent has now had 5 years of operational ore shipments (BIMC 2015) to gather biological information on ship's ballast water being discharged into Milne Port and did not because it was not required by the BWM regulations or Project Certificate Conditions, despite the need for this information to inform risk assessment. While this should have been available for the Phase 2 Review, it is still early in the Proponent's potential mine development and Arctic shipping. It is best to understand risk of species introductions and deal with it now to prevent unnecessary environmental effects than to avoid the issue, which is having global effects (e.g., Davidson et al. 2018; Nong et al. 2018; Gollasch and David 2019).</p> <p>QIA recommends that NIRB reconsider Project Certificate Conditions related to ballast water and hull fouling (PCCs 86 through 91) and revise them based on the best available information from experts at Fisheries and Oceans Canada, Transport Canada and the MEWG to ensure that they better serve their intended purposes, particularly preventing the introduction of foreign species.</p> <p>QIA recommends that prior to any further increase in Project ore shipments, the Proponent commit to monitoring ballast water of Project vessels to determine the efficacy of exchange and treatment methods, including the use of both, and use this and other new information to update the invasive species risk analysis and inform adaptive management designed to prevent invasive species introductions, as required under PCC 88.</p> <p>QIA requests that the Proponent commit to working with the MEWG, Transport Canada and other parties to develop a scientifically defensible monitoring program for assessing the presence and abundance of foreign species on the hulls of Project vessels, determining the efficacy of their antifouling measures, and informing adaptive management to prevent introduction of invasive fouling species at Project ports and anchorages and revise Section 5.2.2 of the SMWMP accordingly.</p> <p>QIA requests that the Proponent commit to working with the MEWG to consider: a) how best to collect hull fouling species for taxonomic identification; b) expanding AIS monitoring to include monitoring of the ballast water of incoming project vessels at Ragged Island and/or Milne Port for species presence and abundance; and c) using DNA barcoding to help identify invasive species collected by monitoring programs.</p> <p>QIA recommends that NIRB revisit the requirements of PCC 89 to ensure that this monitoring program provides greater certainty regarding the efficacy of mid-ocean exchange and treatment, and provides the data necessary to better understand and mitigate risks from foreign species transported in ballast water of Project vessels.</p> <p>QIA requests that the Proponent commit to providing, in the Ballast Water Management Plan, information on what actions have been taken in the past, and will be taken in the future, when a vessel is found to contain ballast water that is non-compliant with Federal regulations.</p>





Review Comment	45. Species introductions
	<p>QIA supports the Golder (2018) recommendation that future Aquatic Invasive Species (AIS) studies continue to monitor for introduced species. Greater effort should be made to confirm species' identifications and learn whether they are likely to be foreign.</p>
<p><b>Sept. 23, 2019 Update</b></p>	<p><b>Unresolved, ongoing discussion.</b></p> <p>The recommendations provided above are still outstanding. An additional new recommendation is:</p> <p>QIA recommends that the draft Ballast Water Management Plan be revised to address comments from QIA and other reviewers.</p>
<p><b>August 11, 2020 Update</b></p>	<p><b>Partially resolved.</b> Related to PCTCs 86, 87, 88, 89, 90, and 91.</p> <p>The recommendations above are still outstanding.</p> <p>In response to recommendations from DFO (2020b; TC 3.6.1-3.6.10) the Proponent is considering a number of commitments related to ballast water and hull fouling. QIA welcomes these discussions but has not been involved in them, and looks forward to learning the outcomes and providing input.</p> <p>DFO (2020b) has recommended the Proponent take a risk-based approach to ballast water testing. This makes sense provided the sampling conducted is adequate to assess risk related to various treatment methods under Project operating conditions, so that information is available to inform mitigation and adaptive management. Sampling should gather information on the presence of live species and their abundance in ballast water arriving at Milne Port from the various source ports. While these data are collected the ballast water should also be tested to determine whether it meets D2 standards. ICEM protocols should be used to verify the results of the ballast water compliance monitoring devices (Tamburri et al. 2020) to ensure they are suitable for Project operating conditions.</p> <p>Once sufficient data are available on actual species abundance, Project ballast water volumes from different ports, and a dispersal model that incorporates particle tracking and is updated with the latest oceanographic data should be used to reassess risk of invasion. Based on the results the sampling program might then be modified to concentrate on monitoring vessels that are likely to pose the greatest risk of species introduction (NIS/AIS). Ore vessels that use the treatment methods most effective and reliable under Project operating conditions, and pose the least risk of adverse effects (physical, chemical, biological), could be contracted as an adaptive management measure.</p> <p>Risk of invasion by species fouling the hulls of Project vessels is not well understood. Biota fouling the hulls of Project vessels and growing on settlement plates and baskets should be identified to species. Alternatives to species collections may have to be considered for identifying these species (e.g., eDNA, eRNA).</p>



Review Comment	45. Species introductions
	<p>Biological sampling programs for ballast water and hull fouling are needed to address existing gaps in monitoring and mitigation and should be implemented in 2021 regardless of whether Phase 2 is approved.</p> <p>-----</p> <p>DFO. 2020b. Updated Technical Comments Baffinland Iron Mines Corporation Mary River “Phase 2 Development” Project Proposal Submitted to: Nunavut Impact Review Board February 6, 2020 DFO File No.: 07-HCAA-CA7-00050 NIRB File No.: 08MN053 [pgs. 44-122 in NIRB Public Registry file: 200206-08MN053-Gov Can Add Tech Sub Re P2-IOCE.pdf]</p> <p>Tamburri, M.N., Bailey, S.A., Everett, R.A., First, M.R., Gollasch, S., Outinen, O., and Drake, L.A. 2020. Protocol for the verification of ballast water compliance monitoring devices. ICES Techniques in Marine Environmental Sciences, Vol. 63. 13 pp. <a href="http://doi.org/10.17895/ices.pub.5465">http://doi.org/10.17895/ices.pub.5465</a></p>
Final Status Update	<p><b>Resolved.</b></p> <p>Related to Project Certificate Conditions 86-91, and BIMC Commitment ID#s 144, 193-197, 204-209</p> <p>Intervenors and regulators (e.g., QIA, DFO, Transport Canada, Parks Canada Agency) have pushed for biological testing of ballast water and hull biofouling (fouling) to inform risk and adaptive management. In response, the Proponent has made numerous commitments to improve understanding and limit the risks of invasive species introductions by Project vessels. These commitments address QIA recommendations that were outstanding.</p> <p>The commitments to work with DFO to undertake risk-based assessments of ballast water (Commitment ID# 109) and of hull fouling (ID# 195) are particularly important. The study designs are works in progress, however. Their objectives are to identify factors related to the risk of nonindigenous species introduction, and to develop risk assessment tools specific to Milne Inlet. The latter will facilitate future targeting of higher risk ships for monitoring risk/compliance and support development of species-specific rapid response plans, based on risk factors identified through results of biological sampling. Both study plans will be reviewed by the MEWG. The Proponent has committed to work with the MEWG and DFO to develop a trigger list of high biological risk species or groupings of species of concern (ID# 209), and to establish species-specific Rapid Response Plans (ID# 113). Community involvement and capacity development have important roles in the draft DFO study plan for ballast water. The marine monitoring plan (MMP) will be updated prior to the start of the 2022 shipping season and prior to any Phase 2 shipping (ID# 208).</p> <p>The Proponent will require (ID# 205) all vessels calling on Milne Port that treat their ballast under the D2 Standard to also perform a ballast water exchange prior to treatment. By 2024, for ore carriers originating from Canadian waters (i.e., domestic trips), it will only charter vessels equipped with treatment systems, and will require those vessels to treat</p>



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	<p>their ballast under the D2 Standard and to also perform a ballast water exchange prior to treatment. These measures should reduce the risk of introducing invasive species from other domestic and international ports. Project vessels will be limited to releasing ballast water at one of the three anchorage locations at Milne Port, or while berthed at the ore dock (ID#s 114 and 203). Prior to any ballast water discharge, D-1 compliance testing must be completed. These instructions will be provided to all ship operators in Baffinland's Standing Instruction to Masters (SITM). To support the risk-based assessment of ballast water (ID# 109), discharge coordinates and the durations and volumes of discharges at each discharge point will be recorded, and provided to MEWG members as part of annual reporting (ID# 204).</p> <p>The Proponent has committed to develop a risk assessment and establish a risk-based sampling plan for hull fouling to guide future monitoring and management of high risk vessels (ID# 195), and to develop a robust monitoring program design with input from DFO and other relevant parties that describes its plan for conducting remotely operated vehicle (ROV) surveys of vessels to evaluate the extent of biofouling on ship hulls arriving in Milne Port (ID# 196). The Proponent will revisit the state of technology and methods used to assess and conduct biological sampling of vessel biofouling and submit a report to the MEWG, by the end of 2021, on options that exist to conduct this work (ID#194). It will revise and update its risk assessment and risk-based sampling plan once a robust set of biological data has been collected. Any feasible technology or method for biological sampling applied at Milne Port will also be applied at Steensby Port (ID# 194). If modifications to biofouling management practices are proposed, DFO and other relevant parties will be consulted to determine if updates to the risk assessment and risk-based sampling plan are required (ID# 193). The Proponent also commits (ID# 197) to ensuring that vessels arriving to Milne Port and Steensby Port are following IMO International Guidelines for Biofouling Management (and any associated updates to these Guidelines), by including adherence to these Guidelines as a requirement in vessel procurement contracts.</p> <p>Biological sampling to assess the risk of invasive species being introduced by Project ballast water and hull fouling should have been conducted at the outset of Project ore shipments. There is also uncertainty as to whether a potentially invasive invertebrate species of the Genus <i>Marenzelleria</i> has already arrived in ballast water (DFO 2021). The risk-based studies the Proponent has committed to should be conducted, regardless of the Phase 2 review outcome, to ensure concerns regarding ballast water/ invasive species risk with ongoing shipping are dealt with.</p> <p><b>Reference:</b></p> <p>DFO (Fisheries and Oceans Canada). 2021. Mary River Project Phase 2 Development Proposal - DFO Responses to BIM Written Comments. 11 pp. (NIRB Registry: 211018-08MN053-DFO Ltr to NIRB Re Responses on BIM Written Comments-IT1E.pdf)</p>



Review Comment	46. Timing of Report and Plan Submissions
Subject	Marine Wildlife and Marine Habitat - Environmental Mitigation and Management, Environmental Monitoring
Reference	<ul style="list-style-type: none"> <li>Phase 2 EIS Main Document (Sec. 8.3.19 Marine Mammals)</li> <li>TSD 24 - Marine Mammal Effects Assessment</li> <li>TSD 28 Management and Monitoring Plans, s.1.1.3</li> <li>Phase 2 Information Requests QIA-IR 39 (timelines for monitoring plan updates), QIA-IR 82 (outstanding monitoring reports)</li> <li>Baffinland Phase 2 Advance Technical Submission</li> <li>Baffinland Response to Phase 2 Information Requests</li> </ul> <p>Additional documents (post Technical Review comments)</p> <ul style="list-style-type: none"> <li>No specific documents, but refer to substantial volume of material provided throughout the review process.</li> </ul>
Importance of issue to impact assessment	A thorough technical review of the Phase 2 proposal requires a complete understanding of previous monitoring results (previous shipping seasons) and proposed management and mitigation activities. Missing information adds considerable uncertainty to the review.
Detailed Review Comment	<p><i>1. Gap/Issue</i></p> <p>The Proponent plans to distribute updated management plans following the technical meetings (response to QIA-IR 39; also see TSD 28 Management and Monitoring Plans, Section 1.1.3), after tracking changes identified through the review process. A more effective review process would have these updated plans available for review prior to the submission of technical review comments and the technical meetings. While many of these plans are operational (i.e., ERP, Production Increase), substantial edits and additions may be required to support Phase 2 activities.</p> <p>In QIA-IR 82, QIA requested an update on the status of marine mammal monitoring reports that have not yet been provided for review. The IR was not included by NIRB but the Proponent responded in the Advance Technical Submission. In it, the Proponent stated that updates are provided via the Marine Environment Working Group (MEWG), which is correct. However, QIA notes that timelines for report submission (e.g., 2017 narwhal tagging study) have shifted and been delayed on several occasions. MEWG members did receive a presentation on results from the 2017 Narwhal Tagging Program and 2018 monitoring programs at the in-person meeting on December 10, 2018. However, a thorough review of the monitoring program activities requires a detailed report, which was just released to the MEWG on February 19, 2019. There is little time for thorough review prior to the technical meeting. A better understanding of narwhal responses to vessel traffic in 2017 and 2018 is needed to support the Phase 2 review, adaptive management, improvements to monitoring plans, and development of mitigation strategies if necessary.</p>



Review Comment	46. Timing of Report and Plan Submissions
	<p><i>2. Disagreement with Addendum/TDS Conclusion</i></p> <p>Results of 2017 marine mammal monitoring (narwhal tagging program) have just been made available for detailed review. As such, we presently lack the information needed for a thorough review of existing Project effects and adaptive management and mitigation opportunities.</p> <p><i>3. Reason for disagreement with Addendum conclusion</i></p> <p>A full shipping season (2018) has gone by without full reporting of monitoring results from the prior season (2017). This adds considerable uncertainty to QIA's review of the marine mammal effects assessment. Furthermore, a delay in updating management plans, and having them not available prior to the technical meeting, will limit opportunity to provide direction to the Proponent on adaptive management and mitigation needs.</p>
<b>Recommendation /Request</b>	QIA recommends that NIRB consider whether intervenors can provide a comprehensive technical review of the Phase 2 proposal without having a full understanding of past monitoring activities, marine mammal responses to shipping, and planned management plan updates.
<b>Sept. 23, 2019 Update</b>	<p><b>Unresolved.</b></p> <p>A significant volume of additional material has been submitted for review, throughout the environmental assessment process. While we appreciate the Proponent's efforts to supply this additional material, submission timelines have added difficulty to the review process, even with the revised NIRB timelines. Some material (e.g., the updated Community Resources and Land Use document) was not scheduled for completion until after QIA drafted its final submission. Much of the additional material provided (e.g., icebreaking assessments) is substantive, and post-FEIS submissions of this important information has delayed effective review. Ideally, much of this material would have been included in the original FEIS, allowing a full review under established timelines and additional discussion and resolution of issues from the outset. The discussion above focuses on the marine mammals effects assessment, but is relevant to all aspects of the Phase 2 review.</p> <p><b>Recommendations/Requests:</b></p> <p>QIA requests that the Proponent commit to having thresholds and Early Warning Indicators for noise impacts on marine mammals (as required under the Project Certificate) established prior to any shipping activity under Phase 2.</p> <p>QIA requests that the Proponent commit to developing a formalized process for incorporating IQ and CBM into the EWI and thresholds process, as part of the adaptive management process.</p>



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Review Comment	46. Timing of Report and Plan Submissions
August 11, 2020 Update	<p><b>Resolved.</b></p> <p>This recommendation is resolved with agreement to ID 1 and 2. Through the Inuit Stewardship Plan (ID 1) and QIA approval of the Adaptive Management Plan (ID 2) and sub plans, a formalized process for incorporating IQ and Community Based Monitoring into Early Warning Indicators will be established. A draft set of Early Warning Indicators is scheduled to be submitted to the NIRB prior to the Public Hearing. These will be subject to modification as per requirements of ID 1 and 2.</p>
Final Status Update	<p><b>Unresolved.</b></p> <p>QIA lacks confidence that the objectives, indicators, thresholds and responses will be developed, reviewed and finalized prior to planned Phase 2 shipping by virtue of ICA provisions that have not seen substantive progress to date.</p> <p>For example, Baffinland had committed (218) to hosting dedicated workshops throughout 2021 to identify, develop and review objectives, indicators, thresholds and responses to be applied in Baffinland’s adaptive management of project activities in the marine environment, including icebreaking. Until such activities are completed, and until a protocols for working with the MEWG to establish and improve monitoring and reporting for the Early Warning Indicators, are in place and reflected in a complete Inuit Stewardship Plan and Adaptive Management Plan, QIA cannot consider this TC resolved.</p>





Review Comment	47. Ice Breaking During Shoulder Seasons
Subject	Marine Environment, Marine Water/Ice and Sediment Quality; Marine Wildlife and Marine Habitat - Project Description; Assessment Methods; Environmental Mitigation and Management; Environmental Monitoring; Cumulative and Transboundary effects
Reference	<ul style="list-style-type: none"> <li>QIA Information Requests QIA-IRs 26, 65, 66, 70 (also relevant IRs from WWF and GN)</li> <li>Baffinland Response to IR submissions (including Appendix 12 - Overview of Marine Operations)</li> <li>Baffinland Advance Technical Submission</li> <li>TSD 02 - Project Description, Sec. 5.1 Shipping Legislation and Sec. 5.2.1 Proposed Shipping Activities from Milne Port for the Phase 2 Proposal</li> <li>TSD 16 - Ice Conditions Report</li> <li>Main Document, Sec.1.2 Overview of the Phase 2 Proposal</li> </ul> <p>Additional documents (post Technical Review comments)</p> <ul style="list-style-type: none"> <li>BIMC Draft Communications Protocol for Shipping Activities (For Review Purposes Only), August 20, 2019 (file name on Stantec FTP server: "04_dft-comm_protocol_shipping.pdf")</li> </ul>
Importance of issue to impact assessment	Uncertainty in plans for ice management and icebreaking during the shoulder season adds uncertainty to the review of potential impacts, mitigation, and management of environmental effects and Inuit travel.
Detailed Review Comment	<p>1. <i>Gap/Issue</i></p> <p>In QIA-IR 65, QIA requested clarification on autumn shoulder season shipping dates and mitigation of impacts on Inuit travel. In the Proponent's response they directed QIA to the Overview of Marine Operations (provided in Appendix 12 of the IR response package). The Overview of Marine Operations (p. 3, pdf p. 396 of 587 of the IR response package) states that "[b]efore Baffinland commences its shipping season each year it will rely on a protocol with the community of Pond Inlet to inform Baffinland that residents are no longer using the sea ice", and that "the protocol will be jointly developed and finalized with the community of Pond Inlet." No additional information on how this protocol will be established (e.g., schedule for development, lessons learned from 2018 ice management activities, community desires for how the process should work) has been located. As such, QIA lacks the information needed to assess the likelihood that Inuit travel and harvesting activities will not be negatively affected.</p> <p>Table 1 (Predicted voyage and vessel numbers) of Appendix 12 (pp. 4-5, pdf pp. 400-401 of 587) predicts a maximum of 176 ore carrier voyages (i.e., round trip, two "transits"). The Proponent has developed a theoretical shipping model around 176 ore carrier voyages, which "was built utilizing vessel tonnage that is currently available for charter with the</p>



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	<p><i>current loading, transit times and discharge times experienced since 2015"</i> (Appendix 12 p. 5, pdf p. 401 of 587). The model "does not allow for any delays on site, delays discharging in Europe, weather delays or any downtime between vessels" and "assumes a consistent flow of vessels to the port and that all of these vessels will be available for charter during these periods of time. The Proponent has made a number of assumptions when modelling future ship traffic-related season length, including consistent flow of vessels and vessel availability. How will the Proponent adjust in the event one or more of these assumptions is not met, and what mitigation and adaptive management measures would be in place to ensure impact assessment thresholds are not exceeded?</p> <p>For example, the Overview of Marine Operations further states that "[a]ny contingency required would be best served by starting the year earlier and/or ending later in the season." Any increases in shoulder season activity have the potential to affect Inuit travel, and if the Proponent is guaranteeing that no landfast ice breaking will occur, a potentially earlier start date contradicts this commitment, as Inuit use of the sea ice should have priority over marine shipping activities. As such, it is not clear how potential effects of icebreaking and ice management activities, including local land use, will be mitigated during the shoulder seasons.</p> <p>In QIA-IR 70, QIA requested that the Proponent clarify whether additional mitigation or adaptive management measures would be required in the event of a summer of heavy ice conditions such as was seen in 2018. In their Advance Technical Responses package the Proponent again indicated that a communication protocol with the community of Pond Inlet is yet to be developed (p 29, pdf p. 33 of 890). It was also noted that more frequent icebreaking and ice management could be used if heavy ice conditions (e.g., late breakup) prevail. More frequent icebreaking would impact Inuit travel and use of the sea ice environment, and potential effects on Inuit use of landfast ice and the floe edge are unclear.</p> <p>In their response to QIA-IR 26 (use of <i>Inuit Qaujimajatuqangit</i> to inform ice conditions assessment), the Proponent reiterated their commitment to not "engage" with landfast ice. Furthermore, it was noted that Baffinland was "planning a series of workshops that will be held in January, February and March of 2019, which will include discussions around seasonal ice conditions, timing of the open water and shoulder seasons and more generally how the Project interacts with components of the environment that are understood to be of importance to Inuit" (p. 45, pdf p. 48 of 587, Information Response package). The outcomes of these workshops would provide important information to inform the technical review, but will not be available in time for this to occur, again adding uncertainty.</p> <p>In their Information Request package, WWF-Canada (WWF IR-03) asked for clarification on shoulder season shipping activities, and the Proponent's response stated that "[u]nless Polar Class 4 or above vessels are procured, operations will not be executed when landfast ice is present and prevents ore carriers from rendering a positive ice numeral. Current operations do not require use of Polar Class 4 vessel or operations in landfast Ice." Does</p>



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	<p>this mean that if the Proponent is able to procure Class 4 vessels they would then want to extend the shipping season into the landfast ice season? This would increase potential for land use impacts.</p> <p><i>2. Disagreement with Addendum/TDS Conclusion</i></p> <p>QIA is concerned that the potential impacts of shoulder season shipping activities on Inuit travel, land use, and harvesting activities have not been adequately considered, and there is uncertainty as to whether, or how effectively, negative impacts can be successfully mitigated.</p> <p><i>3. Reason for disagreement with Addendum conclusion</i></p> <p>We are lacking the information needed to understand the potential for negative effects and the potential to mitigate said effects should they occur.</p>
<p><b>Recommendation /Request</b></p>	<p>QIA recommends that the Proponent provide more information on the proposed communication protocol with the community of Pond Inlet, including information on a schedule for development, lessons learned from 2018 ice management activities, and community desires for how the process should work.</p> <p>QIA recommends that the Proponent provide more information on their shipping model assumptions including how earlier and/or later shipping could be done in a way that does not impact Inuit land use and commitments to not engage with landfast ice.</p> <p>QIA recommends that the Proponent provide more information on the series of workshops that were scheduled for January, February and March of 2019.</p> <p>QIA recommends that the Proponent provide more information on the potential for securing Polar Class 4 or above vessels, whether future shipping through landfast ice may be proposed, and if so, how potential effects on Inuit land use could be mitigated. The original Project proposed a purpose-built fleet of all-season ore carriers, and QIA recommends that the Proponent provide an update on the status of that plan.</p>
<p><b>Sept. 23, 2019 Update</b></p>	<p><b>Likely resolved – pending confirmation community members are satisfied by Draft Communications Protocol for Shipping re: ice-breaking.</b></p> <p>QIA sought additional information on a number of factors related to shipping during the shoulder season. The Proponent has provided clarity on some of these issues, but uncertainty remains.</p> <p>QIA requested additional information on the proposed communication protocol with the community of Pond Inlet, and a Draft Communications Protocol for Shipping Activities has been provided. QIA's main concern is that the protocol work for the community of Pond Inlet, so it defers to community representatives on this question.</p>



Review Comment	47. Ice Breaking During Shoulder Seasons
	<p>QIA does however recommend that the "[s]ummary of Shipping mitigation and management measures implemented throughout the shipping season" (s. 4.3, p. 8) include information on non-compliance events (e.g., vessel speeds, vessel locations, salinity of ballast water).</p> <p>As noted, the Proponent has committed to not break landfast ice, and not start shipping until community members are no longer using the sea ice. These two constraints are not the same however, as landfast ice can still exist after local harvesters stop using it (due to safety concerns, etc.). There is still uncertainty in how shoulder seasons, and the initiation of shipping, are defined (see updated TC 48).</p>
<b>August 11, 2020 Update</b>	<p><b>Resolved.</b></p> <p>Resolved pending confirmation that community members are satisfied with the shipping communications, efforts to minimize shipping impacts on land use and harvesting activities, and mitigation proposed and implemented. Enhanced efforts to ensure that sea ice is not being used by harvesters prior to the initiation of shipping may be required.</p>
<b>Final Status Update</b>	<p><b>No Update.</b></p> <p>Deferred to community of Pond Inlet</p> <p>Resolution is contingent upon community support for and acceptance of the Proponent's progress to date and commitments regarding shipping communications (e.g., commitments 15, 45, 143, 240), efforts to minimize shipping impacts on land use and harvesting activities (e.g., commitments 89, 142, 143, 214, 240), mitigation proposed and implemented (e.g., commitments 213, 215), consultation (e.g., commitments 45, 89, 143), and reporting (e.g., commitments 122, 123, 213).</p>



Review Comment	48. Ice Break-Up and Freeze-Up Timing
Subject	Marine Environment, Marine Water/Ice and Sediment Quality- Existing conditions and baseline; Assessment Methods
Reference	<ul style="list-style-type: none"> <li>Phase 2 Proposal Information Request Supporting Document: Overview of Marine Operations (Appendix 12), pdf p. 405 of 587</li> <li>TSD 16 Ice Conditions Report</li> <li>Fednav Limited. 2018. Standing instructions and general information for masters of vessels loading at Milne Inlet Port. Prepared for ArcelorMittal Shipping Limited - Baffinland. 162 pp. (181219 2AM-MRY1325 Standing Instructions to Masters-IMLE.pdf)</li> </ul> <p>Additional documents (post Technical Review comments)</p> <ul style="list-style-type: none"> <li>Reference: Clarification – Open Water Period as Related to Polar Bear, File: TM2-GN-NEW1 (July 12, 2019 memo from BIMC to GN) (file name on Stantec FTP site "10_clarification_summer_polar_bear.pdf")</li> <li>Enfotec Memo: Impact of icebreaking activities within the approaches to the Milne Inlet Port Site (Northern Shipping Route to Milne Port) (file name on Stantec FTP site "04_Memo_impacts-of-icebreaking-on-ice.pdf")</li> <li>Reference: Draft Shipping and Marine Wildlife Management Plan. July 2, 2019 memo from BIMC to WWF (file name on Stantec FTP site "07c_Memo_response-wwf-smwmp-questions.pdf")</li> <li>DRAFT Baffinland Early Shipping Season – Operational Guide (file name on Stantec FTP site "05_dft-icebreaking_management_protocol.pdf")</li> <li>Baffinland Iron Mines Corporation DRAFT Spill at Sea Response Plan, Phase 2 Proposal Revisions – FOR REVIEW PURPOSES ONLY (revisions to Document # BAF-PH1-830-P16-0042) (file name on Stantec FTP site "07_dft_spill_at_sea_response_plan.pdf")</li> <li>Re: 2019 Marine Monitoring and Marine Mitigation Summary Report for the Mary River Project and NIRB's Recommendations, memo from BIMC to NIRB (Public Registry file name "190716-08MN053-BIMC Response to NIRB MMaMM Sum Rprt-IA2E.pdf")</li> <li>Reference: Pond Inlet Consultation Approach and Record of Phase 2 Consultation with Pond Inlet, August 23, 2019 memo from BIMC to Pond Inlet (four parts, file names on Stantec FRP site "02_mem-pond-inlet-consultationPart1.pdf", "02_mem-pond-inlet-consultationPart2.pdf", "02_mem-pond-inlet-consultationPart3.pdf", and "02_mem-pond-inlet-consultationPart4.pdf")</li> </ul>



Review Comment	48. Ice Break-Up and Freeze-Up Timing
Importance of issue to impact assessment	Information on sea ice conditions (e.g., average break-up and freeze-up dates, variability in those dates) is needed to assess Project-related interactions. Inconsistencies in the information provided add uncertainty to the impact assessment.
Detailed Review Comment	<p><i>1. Gap/Issue</i></p> <p>There is a difference in the length of the window between average dates for break-up and freeze-up of almost one month between tables in the FEIS and IR responses. Specifically, the Overview of Marine Operations (App. 12 of the Phase 2 Proposal Information Request Supporting Document, pdf p. 405 of 587) extends the average date of fall freeze-up from mid-October (FEIS TSD 16) to mid-November. These inconsistencies add uncertainty to the review of the Phase 2 proposal's potential impacts on sea ice, marine mammals and other wildlife, and Inuit land use.</p> <p><i>2. Disagreement with Addendum/TDS Conclusion</i></p> <p>The Phase 2 FEIS reported average break-up and freeze-up dates over the period of 1997-2016 of July 18 and October 14, respectively (TSD 16, Table 2, p. 11). Similarly, the Standing Instructions to Masters (SITM) reports average breakup and freeze-up dates over the period 2004-2015 as July 18 and October 16, respectively (SITM p. 29 of 162). However, more recent information (Phase 2 Proposal Information Request Supporting Document: Overview of Marine Operations (Appendix 12), pdf p. 405 of 587) also states that the average date (no year range given) of break-up is July 18 (21 days variability), but lists the average date of freeze-up as November 14; 29 days variability), a full month later than the other sources. What is the reason for this inconsistency in reporting average freeze-up dates? What year range contributed to this assessment?</p> <p><i>3. Reason for disagreement with Addendum conclusion</i></p> <p>Inconsistencies in information provided on freeze-up dates and variability (and the years used in calculations) adds to uncertainty in impact assessment and technical review, particularly with respect to Inuit use of the sea ice.</p>
Recommendation /Request	<p>QIA recommends that the Proponent clarify information on sea ice conditions, including average break-up and freeze-up dates, variability in those dates, years of data used in calculations, and data sources.</p> <p>QIA recommends that the Proponent identify any components of the FEIS that used inconsistent information on ice conditions and revise the impact assessment as necessary.</p>
Sept. 23, 2019 Update	<p><b>Unresolved, uncertainty and inconsistencies remain.</b></p> <p>QIA identified inconsistencies in the information provided on sea ice conditions that adds uncertainty to the impact assessment (e.g., average break-up and freeze-up dates, variability in those dates). These inconsistencies, and uncertainty with respect to how ice conditions and shipping season start and end dates are defined, still remain and have been carried forward in the additional materials provided by the Proponent.</p>





Review Comment	48. Ice Break-Up and Freeze-Up Timing
	<p>Other parties have also noted these inconsistencies, and additional information from the Proponent has provided little clarity. For example, a memo from BIMC to the GN (File: TM2-GN-NEW1, July 12, 2019) regarding terminology states that "<i>The open-water season period was conservatively defined as when the entire Northern Shipping Route would be freely navigable water with ice concentrations of less than 1/10. This is conservative because the Canadian Ice Service (CIS) describes ice concentrations up to 3/10 as very open drift (CIS 2019; Enfotec 2016/TSD 16).</i>" While CIS does define "Very Open Ice" as "ice in which the concentration is 1/10 to 3/10 and the proportion of open water dominates over the proportion of ice", it also has a standard definition of what constitutes "Open Water", namely "<i>a large area of freely navigable water in which ice is present in concentrations less than 1/10</i>" (see <a href="https://www.ec.gc.ca/glaces-ice/default.asp?lang=En&amp;n=501D72C1-1&amp;def=hide153777E7A&amp;pedisable=true#wsglossaryO">https://www.ec.gc.ca/glaces-ice/default.asp?lang=En&amp;n=501D72C1-1&amp;def=hide153777E7A&amp;pedisable=true#wsglossaryO</a>). Again, terminology and definitions need to be consistent and standard.</p> <p>The Enfotech memo on icebreaking ("Impact of icebreaking activities within the approaches to the Milne Inlet Port Site (Northern Shipping Route to Milne Port)") states that vessels can enter Pond Inlet "<i>as soon as the fracture of the fast ice occurs (referred to as breakup)</i>" (p. 2). Table 1 in the memo (p. 3) then presents dates of break-up, open water, freeze-up, and fast ice formation for 1997 to 2018, based on Canadian Ice Service daily and weekly ice charts. The memo provides definitions for fast ice, break-up and freeze-up, but lacks clarity on how these events are numerically measured. How are CIS data used to define break-up and freeze-up in Table 1? Is break-up measured as the time that landfast ice first fractures, or does it have to be fractured and loose from shore across the entire route from Pond Inlet to Milne Port? How large does a fracture have to be? What concentration of sea ice is used to define freeze-up, and over what area? What is the definition of "open water" used (i.e., ice concentrations)? For the date of fast ice, is this defined by the first presence of fast ice anywhere along the route from Pond Inlet to Milne port, or does the entire route need to have fast ice present? Without understanding how these terms are defined and measured, it is not possible to fully assess operational plans for shipping season start and end dates, mitigation opportunities, and potential impacts to the marine ecosystem and Inuit land use.</p> <p>In a memo from BIMC to WWF ("Reference: Draft Shipping and Marine Wildlife Management Plan"), the Proponent confirmed that three conditions would all have to be met prior to the start of the shipping season - community members are no longer using the sea ice for travel and harvesting activities, the floe edge is no longer being used by hunters, and no land fast ice is present. The first two factors are straightforward, provided communication between the Proponent and the community is effective. The operational definition for the presence (or conversely absence) of landfast ice is less clear.</p> <p>The Proponent's "Draft Baffinland Early Shipping Season – Operational Guide" provides some additional clarity by stating (s. 5.1.2, p. 6) that "<i>landfast ice must have broken along the entire shipping corridor prior to commencement of icebreaking and ice management operations.</i>" QIA is still not certain however on how "broken" is defined in the context of the entire route through Pond Inlet, Eclipse Sound, and Milne Inlet. For example, does all</p>



Review Comment	48. Ice Break-Up and Freeze-Up Timing
	<p>landfast ice from Pond Inlet to Milne port have to be separated from shore, or are large fractures deemed sufficient? If the latter, where are these fractures expected to occur? How many fractures are required for the landfast ice to be considered "broken"?</p> <p>The revised draft Spill at Sea Response Plan (SSRP, Stantec FTP site file name "07_dft_spill_at_sea_response_plan.pdf") includes tracked edits (s. Context for the SSRP, p. 14 of 74) that changes "open water season, from mid-July to mid-October" to "<i>open water season, nominally July 1 through November 15</i>" in multiple locations. This July to November range is the Phase 2 proposed nominal shipping season, not the open-water season. The entire period is unlikely to reflect conditions required for any standard definition of "open water". QIA considers it very important that terminology be consistent and accurate. The unchanged statement that follows, "<i>At this stage of the Project development, all shipping activities are restricted to the open water season, from mid-July to mid-October, annually</i>", remains accurate with respect to typical open water conditions, as commonly (and objectively) defined.</p> <p>Related to ice conditions, there are also inconsistencies in how vessels and vessel operations have been described. The Proponent's 2018 Shipping and Marine Monitoring Fact Sheet (available in BIMC's response to NIRB's Marine Monitoring and Marine Mitigation Workshop Summary Report – Pond Inlet, May 1-2, 2019; Attachment 8) states "<i>Baffinland will use an ice management vessel to safely escort all vessels along the northern transportation corridor.</i>" The fact sheet further states that the vessel "<i>is <u>not</u> an ice breaker [emphasis added]; the ice management vessel will assist in moving drift ice out of the way for ore carriers to make a safe passage through Milne Inlet.</i>" However, the 2019 Shipping and Marine Monitoring Fact Sheet (Attachment 9 in the same file; also available in "Reference: Pond Inlet Consultation Approach and Record of Phase 2 Consultation with Pond Inlet", dated August 23, 2019) states that "<i>Baffinland has hired an icebreaker vessel, MSV Botnica, to safely escort all other vessels traveling along the Northern Shipping Route</i>", and that the vessel will "<i>assist in breaking non-landfast ice/moving drift ice out of the way for ore carriers to make a safe passage through Milne Inlet.</i>" What changed operationally for the MSV Botnica to not be an icebreaker in 2018, but be an icebreaker in 2019? Why was only ice management required in 2018, and icebreaking anticipated in 2019? Did the MSV Botnica break ice in 2018? How much icebreaking occurred in the 2019 spring shoulder season? Such shifts in descriptions of vessel capabilities and activities confuse understanding of potential Project impacts.</p> <p><b>Recommendations/Requests:</b></p> <p>QIA requests that the Proponent develop a standard set of terminology and quantitative definitions of ice conditions and processes, with Inuktitut terminology as available, to ensure consistency in reporting. As part of this process, QIA recommends that the Proponent provide additional quantitative information on the operational definition for the presence (or conversely absence) of landfast ice, particularly whether all ice must no longer be fast to shore along the Northern Shipping Route.</p>



Review Comment	48. Ice Break-Up and Freeze-Up Timing
	QIA requests that the Proponent provide quantitative, repeatable information on how dates for various sea ice process (including "fast ice" as used in the Enfotech memo) are defined and measured.
August 11, 2020 Update	<p><b>Partially Resolved.</b></p> <p>The Proponent has provided additional materials and there have been advances in resolving this Technical Comment. Among these materials are a Shipping Schedule with Standard Definitions for Ice Conditions, and the text of a reporting commitment regarding criteria for start and close of shipping season (DFO 3.2.1). The Standard Definitions provide greater clarity, but QIA still has questions.</p> <p>For example, the dates of earliest freeze-up and earliest landfast ice indicate that the presence of fast ice is not needed for "freeze-up" to start. Freeze-up is defined as the "moment when the freezing process begins in fall or early winter". QIA seeks clarification on how this moment is defined. For example, is it the formation of "new ice", such as frazil ice, or does it need to reach the nilas stage, or the young ice stage? The Proponent includes "Grey/white ice" (defined as "sea ice between 15 cm and 30 cm") in their legend, but it isn't shown in the Shipping Schedule summary of ice conditions. Is the initial presence of grey-white ice "the moment when the freezing process begins"? Are hunters using ice before it hits the grey/white stage? For example, "grey ice" that is 10-15 cm thick?</p> <p>Break-up is defined as the "moment when ice starts to fracture in late spring or summer". Sea ice can "start to fracture" long before Inuit stop using it, and many fractures can be safely crossed using snowmobile and qamutiq. How is the Proponent defining a "fracture" in the context of operational shipping, and how does this compare/contrast with Inuit use of sea ice and terminology regarding breaks and ruptures in sea ice (landfast and pack)?</p> <p>It is important to identify and address any discrepancies in how the Proponent and community members view the use of sea ice and define the growth and decay processes, particularly in the context of land and resource use.</p> <p>The Proponent's commitment to DFO (DFO 3.2.1) is to provide a summary of information including determinants for opening and closing the shipping season and ecological and cultural (or "Inuit use") factors that influence shipping activities. QIA recommends that this summary include a checklist of information with regard to Inuit use of sea ice in its various forms, not just use of the floe edge.</p>
Final Status Update	<p><b>Unresolved.</b></p> <p>The Proponent has made a number of commitments related to monitoring sea ice conditions (e.g., commitments 89, 217), reporting on ice conditions including definitions and terminology (e.g., commitments 14, 15, 123, 142, 168, 216), and mitigation via seasonal restrictions, transit restrictions based on ice conditions, protocols for Inuit use of sea ice, and consultation (e.g., commitments 45, 89, 143, 213, 214, 215, 240). The</p>



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Review Comment	49. Inconsistency in Thresholds for VEC Populations
Subject	Marine Wildlife and Marine Habitat - Assessment Methods
Reference	<ul style="list-style-type: none"> <li>TSD 24 Marine Mammal Effects Assessment (multiple sections including s. 2.5.6, s.2.6.1, s. 2.6.6)</li> <li>TSD 10 - Terrestrial Wildlife Baseline and Impact Assessment (s. 3.3.5, p. 59)</li> <li>TSD 12 - Migratory Birds Baseline and Impact Assessment (s. 3.4.3, p. 106)</li> </ul> <p>Additional documents (post Technical Review comments)</p> <ul style="list-style-type: none"> <li>No additional documents</li> </ul>
Importance of issue to impact assessment	<p>The marine mammal effects assessment uses different thresholds for magnitude than the assessment of other VECs including terrestrial wildlife and marine birds. A Level III change for marine mammals, as defined in the assessment, requires the complete loss of the VEC (i.e., 100% loss of marine mammal population, habitat, etc.). In comparison, a Level III effect for magnitude for other VECs such as caribou or marine birds uses a 25% threshold. Without a consistent methodology it is not possible to assess all Project activities in a consistent manner.</p>
Detailed Review Comment	<p><i>1. Gap/Issue</i></p> <p>Consistent methodology in the environmental effect's assessment is required for a comprehensive and consistent assessment of the potential effects of the Project on the environment. The assessment methods for marine mammals defines magnitude levels in a vastly different way than was used for other VECs, including marine birds. It is thus not possible to assess Project interactions in a consistent manner.</p> <p><i>2. Disagreement with Addendum/TDS Conclusion</i></p> <p>Potential interactions and residual effects across all Project components cannot be assessed in a consistent manner, and the Level I, II and III magnitude thresholds used for marine mammals are not appropriate given that a Level III effect would require complete loss of the VEC.</p> <p><i>3. Reason for disagreement with Addendum conclusion</i></p> <p>In the marine mammal effects assessment (TSD 24), the threshold levels for Magnitude are defined as follows (e.g., s. 2.5.6, p. 31, Table 2.5; s. 2.6.6, p. 39, Table 2.7)</p> <ul style="list-style-type: none"> <li>Level I = a change that is less than threshold values</li> <li>Level II = a change that is greater than threshold values</li> <li>Level III = a change that is an order of magnitude greater than threshold values; includes consideration of environmental sensitivity</li> </ul> <p>The threshold level was 10% (e.g., see 2.6.1 Change in Habitat, p. 32), which means an "order of magnitude greater than threshold values" is 100%, or complete loss. The complete loss of marine mammal habitat (or populations, etc.) would be catastrophic. The</p>



Review Comment	49. Inconsistency in Thresholds for VEC Populations
	<p>loss of half a population would be similarly catastrophic, and yet only a Level II effect with respect to Magnitude.</p> <p>In contrast, the assessments for terrestrial wildlife like caribou and wolves and marine birds used the following Magnitude criteria for assessing significance (see for e.g., TSD 10, s. 3.3.5, p. 59, Table 7; TSD 12, s.3.4.3, p. 106, Table 39):</p> <ul style="list-style-type: none"> <li>• Level I: &lt;10%</li> <li>• Level II: 10–25%</li> <li>• Level III: &gt;25%</li> </ul> <p>For marine mammals, the loss of 30% of the VEC's population, for example, would be a Level II for magnitude, whereas a similar loss for a marine seabird VEC would be a Level III magnitude. Inconsistent assessment methods add considerable uncertainty and preclude a comprehensive assessment.</p> <p>QIA recognizes that previous assessments (e.g., 2012 FEIS) used similar thresholds, but inconsistent thresholds also hampered the thoroughness of those reviews.</p>
<b>Recommendation /Request</b>	<p>QIA recommends that the Proponent provide justification for why it would take the predicted complete loss of a marine mammal VEC to be a Level III magnitude effect.</p> <p>QIA recommends that the Proponent provide justification for why different significance criteria were used for different VEC groupings.</p> <p>QIA recommends that the NIRB consider whether inconsistent significant ratings in the assessment methods can allow a balanced review of potential Project effects across all Project activities.</p>
<b>Sept. 23, 2019 Update</b>	<p><b>Unresolved.</b></p> <p>There remains fundamental disagreement regarding threshold levels used to determine significance for marine mammal assessment. A "one size fits all approach" to thresholds for different marine mammal VECs masks differences in species ecology, ecosystem role, life history, and population abundance and status. The thresholds used for marine mammal VECs (in comparison to marine birds and terrestrial mammals) may preclude the identification of potential impacts at important biological and ecological scales.</p>
<b>August 11, 2020 Update</b>	<p><b>Resolved.</b></p> <p>This recommendation is resolved with agreement to ID 1 and 2. Through the Inuit Stewardship Plan (ID 1) and QIA approval of the Adaptive Management Plan (ID 2) and sub plans, a formalized process for incorporating IQ and Community Based Monitoring into Early Warning Indicators will be established. A draft set of Early Warning Indicators is scheduled to be submitted to the NIRB prior to the Public Hearing. These will be subject to modification as per requirements of ID 1 and 2.</p>





Review Comment	49. Inconsistency in Thresholds for VEC Populations
Final Status Update	<p><b>Unresolved.</b></p> <p>Commitment 218 called for the Proponent to host dedicated workshops throughout 2021 "to identify, develop and review objectives, indicators, thresholds and responses to be applied in Baffinland's adaptive management of project activities in the marine environment, including icebreaking". These workshops were also to include "working with the MEWG to improve the existing monitoring and reporting for the Early Warning Indicator(s)". No workshops have been held to date.</p>



<b>Review Comment</b>	<b>50. RSA Not Appropriate to Adequately Assess Direct and Indirect Effects on Migratory Narwhal</b>
<b>Subject</b>	Marine Wildlife and Marine Habitat - Assessment Methods; Environmental Mitigation and Management; Environmental Monitoring; Cumulative and Transboundary effects
<b>Reference</b>	<ul style="list-style-type: none"> <li>NIRB EIS Guidelines s.5.4.1, s.5.4.2</li> <li>TSD 24 - Marine Mammal Effects Assessment, s.1.4, p. 6; s.3.1.3.1, p. 24; s.2.8.4, pp. 47-48; also Appendix A Marine Mammal Baseline Report)</li> <li>QIA Information Request 79</li> <li>Government of Nunavut Information Requests 72 (Polar Bears) and 73 (Marine Shipping Routes)</li> </ul> <p>Additional documents (post Technical Review comments)</p> <ul style="list-style-type: none"> <li>GN Technical Comment No. TM2-GN</li> <li>RSA Sea-ice For Polar Bears, July 11, 2019 memo from Golder to BIMC (file name on Stantec FTP site "2_Memo_RSA_sea_ice_for_polar_bears_Final")</li> <li>Reference: Responses to Request for North Water Polynya Mapping, July 3, 2019 memo from BIMC to QIA (file name on Stantec FTP site "03_Memo-north-water-polynya.pdf".</li> </ul>
<b>Importance of issue to impact assessment</b>	A Regional Study Area (RSA) that meets the NIRB Guidelines is needed for a comprehensive assessment of potential impacts of the Phase 2 proposal on marine mammals.
<b>Detailed Review Comment</b>	<p><i>1. Gap/Issue</i></p> <p>The Regional Study Area (RSA) should include "[t]he area within which there exists potential for direct, indirect and/or cumulative biophysical and socio-economic effects... and includes lands, communities, and portions of Nunavut and other regions of Canada that may be relevant to the assessment of wider spread effects of the Project. The Proponent is advised to duly consider the transboundary implications of impacts to identified VEC's as a result of marine shipping for the Project" (NIRB EIS Guidelines s.5.4.1, s.5.4.2). The RSA used for the Phase 2 marine mammal assessment does not meet these guidelines.</p> <p><i>2. Disagreement with Addendum/TDS Conclusion</i></p> <p>The Regional Study Area (RSA) for marine mammals in the Phase 2 assessment "encompasses all waters of Milne Inlet, Navy Board Inlet, Tremblay Sound, Eclipse Sound and Pond Inlet extending to the entrance of Baffin Bay, consistent with the Nunavut Settlement Area Boundary" (TSD 24, s. 1.4, p. 6; also see Figure 1.4, p. 7). The RSA is defined in TSD 24 as "the area where there is potential for direct and indirect incremental effects from Project shipping on marine mammals" (TSD 24, s. 1.4, p. 6). The RSA as currently defined does not adequately cover the area where there is potential for direct</p>



Review Comment	50. RSA Not Appropriate to Adequately Assess Direct and Indirect Effects on Migratory Narwhal
	<p>and indirect incremental effects. This is the case for multiple VECs, of which three are highlighted here - narwhal, bowhead whale, and polar bear.</p> <p><u>Narwhal</u></p> <p>Canadian narwhal stocks are managed by DFO on a stock ("summer stock") basis, using discrete summering aggregations (Richard 2010; Doniol-Valcroze et al. 2015). Within the Baffin Bay population, six summer stocks are recognized, including the Admiralty Inlet and Eclipse Sound summer aggregations, which are currently managed as separate units.</p> <p>Satellite-tagged narwhals tend to remain in the summer aggregation areas where they were captured, rarely visiting other summering areas and usually returning to the same summering areas every year (Dietz et al. 2001; Dietz et al. 2008). Some exceptions have been recorded (Watt et al. 2012; Heide-Jørgensen et al. 2013). For example, there is evidence of movement between the Eclipse Sound and Admiralty Inlet summer aggregation areas. Twelve animals were satellite-tagged in Eclipse Sound in summer 2010 and 2011, and four (25%) travelled into Admiralty Inlet - three that fall, and one narwhal whose tag lasted throughout the winter went to Admiralty Inlet the following summer (Watt et al. 2012). The 2013 abundance estimate for Admiralty Inlet also increased by approximately the same amount that the 2013 Eclipse Sound abundance estimate declined (NAMMCO 2018) (also see TSD 24, App. A, s.3.1.3.1, p. 24). DFO is presently assessing available evidence related to stock definitions (M. Marcoux, DFO, pers. comm.).</p> <p>Given this evidence for movements between the two putative summer stocks and the large changes in abundance estimates (i.e., a ca. 10,000 decrease in one stock and a similar increase in the other), an assessment that doesn't include Admiralty Inlet cannot fully capture the "potential for direct and indirect incremental effects from Project shipping" on this VEC.</p> <p><u>Bowhead whale</u></p> <p>The bowhead whales found in the eastern Canadian Arctic are part of the wide-ranging Eastern Canada - West Greenland (EC-WG) population (COSEWIC 2009). Whales from this population are widely distributed in Nunavut waters throughout the year, but with seasonal movements including circumnavigation of Baffin Island (Ferguson et al. 2010). There is spatiotemporal variation in relative abundance, but whales could be encountered anywhere along the northern shipping route through Milne Inlet, Eclipse Sound, Pond Inlet, Baffin Bay and northern Davis Strait. Encounters with Project vessels could be greatest during the shoulder seasons, when whales are migrating between summer and winter aggregation areas.</p> <p>The most concerning of the potential interaction between Project vessels and bowhead whales is the risk of injury or death due to collisions (Vanderlaan and Taggart 2007; Reeves et al. 2012) (Note: this does not mean other impacts, e.g., noise, are not a concern). The Proponent acknowledges this risk, and suggests that reductions in vessel speeds (to a</p>



Review Comment	50. RSA Not Appropriate to Adequately Assess Direct and Indirect Effects on Migratory Narwhal
	<p>maximum of 9 knots) along the established shipping corridor will be effective mitigation (e.g., TSD 24, s.2.8.4, pp. 47-48). Lethal and severe injury-causing collisions with large whales usually occur at speeds greater than 13 knots (Laist et al. 2001; Jensen and Silber 2003; also see TSD 24). A reduction in vessel speed to below 13 knots is an important mitigation tool, as noted by the Proponent. However, the limitation of Project-related vessels to 9 knots maximum speed is for "the Northern Shipping Route" (and 5 knots in Milne Port), and not does appear to apply to vessels once they depart the RSA. If so, this will not mitigate the potential effects of a collision outside the speed limit zone, where bowhead whales are likely to be encountered. An assessment of collision risk that fully incorporates the area within which there exists potential for direct, indirect and/or cumulative effects would need to consider the entire region through which Project-vessels and bowhead whales would be expected to overlap.</p> <p><u>Polar bear</u></p> <p>With respect to issues with the RSA selection for the polar bear assessment, QIA refers the Board and other parties to the Information Requests submitted by the Government of Nunavut. Specifically, GN IRs 72 and 73 provide a comprehensive summary of this issue, and QIA supports the GN in their concerns.</p> <p><i>3. Reason for disagreement with Addendum conclusion</i></p> <p>The RSA used for the assessment of Phase 2 interactions with marine mammal VECs does not include the entire area within which there exists potential for direct, indirect and/or cumulative effects.</p> <p><u>References</u></p> <p>COSEWIC. 2009. COSEWIC assessment and update status report on the Bowhead Whale <i>Balaena mysticetus</i>, Bering-Chukchi-Beaufort population and Eastern Canada-West Greenland population, in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 49 pp. (<a href="http://www.sararegistry.gc.ca/status/status_e.cfm">www.sararegistry.gc.ca/status/status_e.cfm</a>).</p> <p>Dietz, R., Richard, P.R., and Acquarone, M. 2001. Summer and fall movements of narwhals (<i>Monodon monoceros</i>) from northeastern Baffin Island towards northern Davis Strait. Arctic 54(3): 244–261.</p> <p>Dietz, R., Heide-Jørgensen, M.P., Richard, P., Orr, J., Laidre, K.L., and Schmidt, H.C. 2008. Movements of narwhals (<i>Monodon monoceros</i>) from Admiralty Inlet monitored by satellite telemetry. Polar Biol. 31: 1295-1306.</p> <p>Doniol-Valcroze, T., Gosselin, J.-F., Pike, D., Lawson, J., Asselin, N., Hedges, K., and Ferguson, S. 2015. Abundance estimates of narwhal stocks in the Canadian High Arctic in 2013. DFO Can. Sci. Advis. Sec. Res. Doc. 2015/06: v + 36 pp.</p> <p>Ferguson, S.H., L. Dueck, L. L. Loseto, and S. P. Luque. 2010. Bowhead whale <i>Balaena mysticetus</i> seasonal selection of sea ice. Mar. Ecol. Prog. Ser. 411: 285–297.</p> <p>Heide-Jørgensen, M.P., Richard, P., Dietz, R., and Laidre, K.L. 2013. A metapopulation model for Canadian and West Greenland narwhals. Anim. Conserv. 16: 331–343.</p>



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	<p>Jensen, A.S. and G.K. Silber. 2003. Large Whale Ship Strike Database. U.S. Department of Commerce, NOAA Technical Memorandum. NMFS-OPR- , 37 pp.</p> <p>Laist, D.W., A.R. Knowlton, J.G. Mead, A.S. Collet, and M. Podesta. 2001. Collisions between ships and whales. Marine Mammal Science 17(1):35-75.</p> <p>NAMMCO. 2018. Report of the Global Review of Monodontids. 13-16 March 2017, Hillerød, Denmark.</p> <p>Reeves, R.R., C. Rosa, J. C. George, G. Sheffield, and Michael Moore. 2012. Implications of Arctic industrial growth and strategies to mitigate future vessel and fishing gear impacts on bowhead whales. Marine Policy 36(2): 454-462.</p> <p>Richard, P.R. 2010. Stock definition of belugas and narwhals in Nunavut. DFO Can. Sci. Advis. Sec. Res. Doc. 2010/022. iv + 14p.</p> <p>Vanderlaan, A.S.M., and C.T. Taggart. 2007. Vessel collisions with whales: The probability of lethal injury based on vessel speed. Society for Marine Mammology 23(1): 144-156.</p> <p>Watt, C.A., Orr, J., LeBlanc, B., Richard, P., and Ferguson, S.H. 2012. Satellite tracking of narwhals (<i>Monodon monoceros</i>) from Admiralty Inlet (2009) and Eclipse Sound (2010-2011). DFO Can. Sci. Advis. Sec. Res. Doc. 2012/046: iii + 17 p.</p>
Recommendation /Request	<p>QIA recommends that the NIRB assess the adequacy of the Regional Study Area (RSA) for marine mammal VECs against the EIS Guidelines, specifically whether it is adequate to capture the entire area for "<i>which there exists potential for direct, indirect and/or cumulative biophysical and socio-economic effects... and includes lands, communities, and portions of Nunavut and other regions of Canada that may be relevant to the assessment of wider spread effects of the Project</i>", and whether it adequately considers transboundary implications.</p> <p>QIA recommends that the Proponent re-assess marine mammal VECs using ecologically relevant RSA definitions including, for example but not limited to, the Admiralty Inlet summering aggregation area for narwhal and Baffin Bay for bowhead whale and polar bear.</p> <p>QIA recommends that the Proponent provide information on current and proposed narwhal monitoring activities and their ability to detect movements between the two summering aggregations.</p> <p>QIA recommends that the Proponent clarify whether vessel speed restrictions apply to areas outside the defined RSA.</p> <p>QIA recommends that the Proponent conduct spatially explicit modelling of bowhead whale ship strike risk throughout the area where Phase 2 interactions are possible.</p> <p>QIA recommends that advice from Government of Nunavut specialists be used to inform and improve the assessment for polar bears.</p>
Sept. 23, 2019 Update	Unresolved.



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	<p>QIA submits that the RSA does not meet NIRB Guidelines and does not allow for a comprehensive assessment of potential Project effects on marine VECs, including cumulative effects (see TC 53).</p> <p>A number of parties have raised issues related to the suitability of the marine RSA, in regards to assessing potential impacts, throughout the review process (e.g., (e.g., GN Technical Comment No. TM2-GN and associated response (Golder memo to BIMC: RSA sea-ice for polar bears)). Here, we provide one more example, using more recent (i.e., post-technical Meetings) BIMC submissions, showing how the RSA as chosen does not allow a comprehensive assessment for marine mammal VECs.</p> <p>During the Phase 2 review, both DFO (on a conference call) and QIA (at the second Technical Meeting) noted that some vessels in 2018 appeared to enter the North Water Polynya, based on vessel route maps presented by the Proponent. This area is of critical importance to overwintering marine mammals and seabirds, and the RSA used for the Phase 2 assessment did not include it, and therefore again did not adequately consider "[t]he area within which there exists potential for direct, indirect and/or cumulative biophysical and socio-economic effects" or "the transboundary implications of impacts to identified VEC's as a result of marine shipping for the Project". The Proponent committed to "provide 2018 vessel tracks showing the North Water polynya, which shows how polynya varies from year to year", and that "[f]urther discussions with QIA will be undertaken to clarify QIA's understanding of North Water polynya" (memo p. 1). The memo provided shows ice conditions (from CIS charts) for early July 2014 to 2018, and effectively shows the heavy ice conditions encountered in Baffin Bay in 2018. The 2018 ship tracks have not been included on any maps showing ice conditions and the location of the polynya however, and the commitment has thus not been met. With the information provided, it is not possible to determine whether vessels entered the North Water Polynya during the 2018 spring shoulder season.</p> <p><b>Recommendations/Requests:</b></p> <p>QIA requests the Proponent formally commit to not having vessels go into the North Water Polynya (Pikialasorsuaq), subject to vessel safety.</p> <p>QIA recommends that the Proponent provide information on 2018 (and 2019) vessel transits during the spring shoulder season, showing their routes in relation to observed ice conditions.</p>
<b>August 11, 2020 Update</b>	<b>Resolved</b> with Proponent's commitments to not have vessels go into the North Water Polynya (Pikialasorsuaq) subject to vessel safety, and to provide information on vessel transits during shoulder seasons that show routes in relation to observed ice conditions.
<b>Final Status Update</b>	<p><b>Resolved.</b></p> <p>Resolved as per August 2020 update, and pending implementation of relevant reporting commitments (e.g., commitments 94, 122, 123, 142, 216) and the commitment to avoid</p>





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	Pikialasorsuaq (commitment 13). QIA notes, however, that consideration of this Technical Comment as “Resolved” does not offer support for the Phase 2 effects assessment for transboundary and cumulative effects (see Technical Comment 53).



Review Comment	51. Underwater Noise from Vessels
Subject	Marine Wildlife and Marine Habitat - Assessment Methods; Environmental Mitigation and Management; Environmental Monitoring; Cumulative and Transboundary effects
Reference	<ul style="list-style-type: none"> <li>• Main Document s. 4.1.3 Milne Port</li> <li>• TSD 02 - Project Description s. 4.11.1, s. 4.2, s. 5.1, s. 5.2.1</li> <li>• TSD 16-Ice Conditions Report</li> <li>• TSD 24 - Marine Mammal Effects Assessment (including Appendix B - Underwater Noise Modelling Report)</li> <li>• QIA Information Requests 66, 83, 84</li> <li>• Other agency Information Requests: WWF IRs 2, 3; GN IRs 65, 67, 72, 73; DFO IR 11 (IR 3.2.4); PC IRs 4, 5, 6</li> <li>• BIMC Information Request response</li> <li>• Overview of Marine Operations (BIMC Information Request Response package App. 12)</li> <li>• Advance Technical Comment Responses Phase 2 Proposal – Mary River Project</li> </ul> <p>Additional documents (post Technical Review comments)</p> <ul style="list-style-type: none"> <li>• Assessment of Icebreaking Operations during Shipping Shoulder Seasons on Marine Biophysical Valued Ecosystem Components (VECs). Mary River Project - Phase 2 Proposal. Report by Golder Associates for Baffinland Iron Mines Corporation. 1663724-102-R-Rev1-30000. 17 May 2019 (Stantec FTP site file name "02A_Assessment_Icebreaking_Operations.pdf")</li> <li>• Socio-economic Assessment of Icebreaking Operations during Shipping Shoulder Seasons. Mary River Project Phase 2 proposal. Report by Knight Piésold Ltd. for Baffinland Iron Mines Corporation. Proposal Number: NB102-181/53-2, May 17, 2019 (Stantec FTP file name "02B_Socioeconomic_Assessment_Icebreaking.pdf")</li> <li>• DFO 3.5.6: DAILY SHIP EXPOSURE PERIODS FOR NARWHAL DURING SHOULDER AND OPEN WATER SEASON RELEVANT TO THE 135, 120 AND 110 DECIBEL NOISE FIELDS. Technical Memorandum from Golder to Baffinland Iron Mines Corporation, Reference No. 1663724-135-TM-Rev0, 15 July 2019 (Stantec FTP site file name "1663724-135-TM-Rev0 BIM DFO 3.5.6 15JUL_19.pdf")</li> <li>• SUBJECT: Baffinland Phase 2 Acoustic Modelling: Responses to Technical Comments. Memo from Jasco Applied Sciences (Canada) Ltd to Baffinland iron Mines Corporation, August 14, 2019 (Stantec FTP file name "JASCO Commitments August 2019.pdf")</li> </ul>



Review Comment	51. Underwater Noise from Vessels
<b>Importance of issue to impact assessment</b>	Vessel-generated underwater noise is widely recognized as a threat to marine mammals. Noise disturbance can produce population-level effects, and Project-related shipping will potentially interact with populations of all cetacean (whales) and pinniped (seals and walrus) VECs. A comprehensive analysis of Project shipping is needed to assess the Phase II proposal, and information gaps add uncertainty.
<b>Detailed Review Comment</b>	<p><i>1. Gap/Issue</i></p> <p>Noise disturbance can have population level consequences (Pirodda et al. 2018), and a thorough assessment of Project-generated underwater noise is needed. Vessel (and port) generated noise modelling was conducted in the EIS, but information deficiencies exist. Some of these issues have been identified by the Proponent, and supplementary material is forthcoming but not yet available. This leads to uncertainty in assessing Phase II impacts and could delay the development and application of mitigation and adaptive management strategies. Previous monitoring results (e.g., acoustic monitoring conducted in 2014 and 2015) have not been analyzed to the extent possible, and these data should be used to inform the assessment.</p> <p><i>2. Disagreement with Addendum/TDS Conclusion</i></p> <p>The Phase II assessment recognizes the potential effects of underwater noise generated by the Project, and modelling was conducted (TSD 24, App. B - Acoustic Modelling Report). The modelling does not however provide sufficient information to assess the potential effects of Project-related shipping. In this technical comment we focus on three aspects: missing information on noise associated with shipping through ice; use of vessel-specific data to inform assessment, monitoring, and mitigation; and use of vessel scheduling information to model noise output and explore trade-offs for mitigating impacts.</p> <p><u>Shipping through ice</u></p> <p>QIA IR 83 noted that the modelled scenarios did not consider ice management activities and requested information on the associated noise potential. The Proponent responded to this IR in their supplemental response to IRs ("Advance Technical Comment Responses"), stating "a supplemental modelling report is forthcoming that will include consideration of ice management activities and vessel noise in the presence of ice". The Overview of Marine Operations (BIMC Information Request Response package App. 12; Table 1, p. 4-5) indicates that "[u]p to 1-2 ice breakers could be needed" on an annual basis (operating for 15-20 or more days in both shoulder seasons), but they were "not included in assessment". Without including icebreakers and/or ice management vessels (IMVs), the effects assessment potentially underestimates the impacts of shipping noise on the marine environment. This information gap will presumably be covered by the forthcoming supplemental report (commitment number 156 of the IR response package), but it is not available to inform technical review. It is not clear what will be included in the supplementary report (e.g., sea ice habitat changes and effects on marine mammal VECs), but the Proponent's response to GN IRs 65 (p. 27) and 67 (pp. 28-29) (also see responses to DFO IR 3.2.4 (p. 59-60) and WWF IR 01 (p. 71)) states that it will be a "stand-alone</p>



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	<p>acoustic modelling report and icebreaking assessment" and thus will presumably include other needed information and not be limited to noise generation. The importance of this issue to the technical review is reflected in the volume of information requests received about ice breaking and ice management (WWF IR 3; GN IRs 67, 72, 73; DFO IR 11 (IR 3.2.4); PC IRs 4, 5, 6).</p> <p>Local harvesters have reported lower than usual spring narwhal harvests in 2018 (e.g., Mittimatalik HTO reps at MEWG meeting, June 2018), and relative abundance of narwhal remained low in the area throughout the open-water season, based on observations from both local harvesters (e.g., see WWF IR-02) and field-based researchers (M. Marcoux, DFO, pers. comm.). No large-scale surveys were conducted in 2018 to inform monitoring and mitigation, so we have little information with which to assess this reduction in narwhal abundance. Community-based monitoring and local knowledge could greatly assist in better understanding these impacts, but no program is in place to collect this information. A better understanding of noise disturbance potential at the floe edge and in ice cover is essential for Project effects assessment and technical review.</p> <p><u>Use of vessel-specific data</u></p> <p>In QIA IR 84, information on the variability of noise source levels for different Cape class ore carriers was requested, including an assessment of how well the modelled source levels compared with this variation. In their response (Advance Technical Comment Responses) the Proponent identified an error in s. 2.1.3 of the noise modelling analysis report (TSD 24 Appendix B) which, when corrected, explains how measured noise levels were scaled to vessel lengths comparable to the largest vessel. The IR also requested information on the variability in source levels among Cape class vessels of different sizes, but this information was not provided. Information on vessel source levels across the different vessel classes (size, Ice class) would be useful for mitigation.</p> <p>Sufficient Passive Acoustic Monitoring (PAM) data are available from both Project-specific monitoring (2014, 2015, 2018) and other programs (e.g., Oceans North PAM program, K. Westdal, Oceans North, pers. comm.) to allow for modelling of source levels and variability for vessel types and classes that are currently sailing into Milne port. This could be extended even further to examine source levels of individual vessels, potentially allowing for the identification of vessels that are particularly quiet, or loud, in relation to other vessels, providing additional information that could allow for schedule-based noise impact mitigation.</p> <p><u>Vessel scheduling to enhance mitigation</u></p> <p>QIA IR 66 sought information on the relative availability of ore carriers of different sizes and ice classes for charter. A better understanding of the relative availability of different vessel sizes and ice classes would provide information on scheduling opportunities that could be informative for assessing potential impacts and identifying mitigation needs and opportunities. In their response (IR Response Package, p. 47) the Proponent listed ice class</p>



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	<p>designs and types of carriers (e.g., Supramax, Panamax, Capesize). This did not answer the request, which was designed to learn how vessels of different classes and sizes (and potential noise source levels) could be used during different parts of the shipping season and how/if vessel scheduling could mitigate noise impacts. For example, if the largest, and potentially noisiest, vessels could be used early in the season prior to high use of Milne Inlet by narwhals, this could reduce cumulative acoustic disturbance. Information presented in TSD 24 (s.2.5.2.2, Table 2.4, p. 24) showed that Supramax and Panamax vessels are scheduled for July, but Cape size vessels are not scheduled until August, which suggests that the largest vessels cannot transit the Northern Shipping Route during the shoulder seasons and instead will be in use during the main narwhal harvesting season. This type of information would also indicate how vulnerable Project shipping plans/schedules might be to the availability of suitable vessels for charter, e.g., if lack of availability of suitable vessels might require much more concentrated shipping activities during one period or another and thereby increase the stressors in operation during a particularly sensitive period.</p> <p>Information provided in the Overview of Marine Operations (BIMC Information Request Response package App. 12) does however start to provide the relative vessel availability and scheduling information that could be used to explore mitigation opportunities with regards to vessel noise. Tables 2, 3 and 4 of the Overview of Marine Operations provide three example shipping schedules, with vessel sailings sorted by vessel size and ice class. These schedules can provide the basis for detailed noise modelling that tracks cumulative noise production over the shipping season, to allow for the exploration of different scenarios and potential opportunities to mitigate impacts, particularly when combined with vessel-specific source level information as noted above. The Proponent also notes (Overview of Marine Operations, p. 5) that the example schedules were created "utilizing a large number of the total ice class tonnage vessels available in the market at this time, however additional tonnage is currently under construction and could be called upon to assist with the Project." What additional information is available on vessels currently being constructed (type, class, etc.), as this would also be valuable information for developing potential mitigation opportunities.</p> <p><i>3. Reason for disagreement with Addendum conclusion</i></p> <p>Additional information is needed on noise-related impacts, including additional modelling (which is forthcoming). Recent evidence shows that large ships produce persistent noise at higher frequencies than previously thought, extending to frequencies used by odontocetes (toothed whales) (Veirs et al. 2016). Furthermore, a recent study analyzed the vulnerability of 80 populations of seven endemic Arctic marine mammals and determined that narwhal populations in the Northwest Passage were the most vulnerable to negative impacts from open-water vessel traffic (Hauser et al. 2018), which adds concern, especially when considering reported declines in relative abundance of narwhal in 2018. A better understanding of noise from Project vessels is thus needed to support technical review and the development of appropriate monitoring and mitigation plans.</p>



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	<p>Existing data can be used to greatly inform mitigation opportunities, and shipping schedules can be compared in relation to potential impacts (acknowledging that weather delays, mechanical issues, etc. will influence vessel scheduling). Vessel speed restrictions and exclusion zones have been identified as the most important measures for minimizing shipping-related impacts to Arctic marine mammals of socio-economic and cultural importance to Inuit (McWhinnie et al. 2018; Pine et al. 2018). Vessel speed restrictions are in place, but opportunities for exclusion zones in Milne Inlet are limited, and other opportunities to reduce impacts, such as scheduling louder vessels at times when narwhal are not present in large numbers, should be considered.</p> <p><u>References</u></p> <p>Hauser, D. D. W., K. L. Laidre, and H. L. Stern. 2018. Vulnerability of Arctic marine mammals to vessel traffic in the increasingly ice-free Northwest Passage and Northern Sea Route. <i>Proceedings of the National Academy of Sciences</i> 115(29): 7617-7622.</p> <p>McWhinnie, L. H., Halliday, W. D., Insley, S. J., Hilliard, C., and Canessa, R. R. 2018. Vessel traffic in the Canadian Arctic: Management solutions for minimizing impacts on whales in a changing northern region. <i>Ocean &amp; Coastal Management</i> 160: 1-17</p> <p>Pine, M. K., Hannay, D. E., Insley, S. J., Halliday, W. D., and Juanes, F. 2018. Assessing vessel slowdown for reducing auditory masking for marine mammals and fish of the western Canadian Arctic. <i>Marine Pollution Bulletin</i> 135: 290-302.</p> <p>Pirotta, E., C. G. Booth, D. P. Costa, E. Fleishman, S. D. Kraus, D. Lusseau, D. Moretti, L. F. New, R. S. Schick, L. K. Schwarz, S. E. Simmons, L. Thomas, P. L. Tyack, M. J. Weise, R. S. Wells, and J. Harwood. 2018. Understanding the population consequences of disturbance. <i>Ecology and Evolution</i> 8: 9934–9946.</p> <p>Veirs, S., V. Veirs, and J. D. Wood. 2016. Ship noise extends to frequencies used for echolocation by endangered killer whales. <i>PeerJ</i> 4:e1657 <a href="https://doi.org/10.7717/peerj.1657">https://doi.org/10.7717/peerj.1657</a></p>
<p><b>Recommendation /Request</b></p>	<p>QIA recommends that the Proponent endeavour to complete and provide the supplementary icebreaking and ice management assessment as soon as possible to allow detailed review.</p> <p>QIA recommends that the NIRB consider whether a comprehensive assessment of Project-related shipping can be conducted without this supplementary information.</p> <p>QIA recommends that the Proponent utilize existing PAM data (e.g., 2014, 2015, 2018 monitoring programs; Oceans North data) to inform the assessment of potential shipping-related effects and explore mitigation opportunities.</p> <p>QIA recommends that the Proponent provide an update on the development of the community-based monitoring programs it committed to funding as part of the Production Increase proposal.</p>





Review Comment	51. Underwater Noise from Vessels
	<p>QIA recommends that the Proponent develop a comprehensive narwhal monitoring program that extends from the time of narwhal arrival at the floe edge to narwhal departure from the immediate area and includes the floe edge and approaches to the floe edge in northern Baffin Bay.</p> <p>QIA recommends that the Proponent report on source levels from currently used vessels to identify any that are particularly loud or quiet in comparison to other market vessels.</p> <p>QIA recommends that the Proponent use the example shipping schedules to explore cumulative noise impacts and guide potential mitigation opportunities.</p> <p>QIA recommends that the Proponent provide information on the vessels that are known to be currently under construction (type, class, etc.).</p>
<p><b>Sept. 23, 2019 Update</b></p>	<p><b>Unresolved - numerous questions related to additional noise modeling material remain outstanding.</b></p> <p>Numerous agencies have submitted extensive comments and questions on noise impacts to marine mammals, particularly narwhal, during the review process, and the Proponent has provided a large volume of supplementary material, including an icebreaking assessment and additional noise field modelling. While we appreciate this additional effort, QIA still has a number of concerns related to the assessment of noise impacts and potential impacts to Inuit harvest.</p> <p><u>Narwhal density - data sources and use of draft monitoring reports</u></p> <p>For the assessment of noise impacts to narwhal and other marine mammals in the supplementary icebreaking assessment (Stantec FTP file name "02A_Assessment_Icebreaking_Operations.pdf"), three aerial survey papers are used as data sources throughout the report, including for the density estimates used to estimate the number of animals impacted (e.g., s. 5.3, p. 49). No information is provided on which survey estimates were used for each species, or for each portion of the season. For narwhal for example the report states that corrected density estimates for July/August and October/November were used, with the three papers cited. The available information does not report which estimate for which survey year, or years, was used. There is also no information on variability in the estimates, confidence intervals, the coefficient of variation for the estimates, the range of densities per strata, etc. This information should be provided to reviewers to allow for a properly informed assessment of potential icebreaking impacts.</p> <p>The three sources cited are aerial surveys flown on behalf of the Proponent, between 2013 and 2015. Two of the reports (Elliott et al. 2015 for 2013 surveys, Thomas et al. 2015 for 2014 surveys) are cited as final reports, and these reports have been provided to the MEWG. The third technical report cited, Thomas et al. 2016, for 2015 surveys, is not cited as a final report. This survey was reported to the MEWG in draft form, subjected to a peer</p>



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	<p>review by Golder, and never finalized. MEWG members have asked for the final version of this report on multiple occasions and it has not been provided. If this report has not been finalized, QIA does not consider it appropriate that these data be used in the assessment. If the report has been finalized, it should be provided to the MEWG members and posted on the Public Registry.</p> <p>Related to this, Golder's 2016 peer review (2016, s. 3.0, p. 2) states "<i>Raw data are not presented throughout the report, which makes it difficult for the reader to judge 1) whether the data are distributed well enough throughout the range of observed values or clumped; 2) whether trends exist throughout the dataset, or whether findings are driven by a few surveys; and 3) whether predictions correctly match observed patterns</i>". Based on this criticism, can reviewers assume that the Proponent and Golder will be providing raw data for the planned 2019 aerial survey and other monitoring programs, upon request, so the reader can make these various assessments?</p> <p><u>Use of most recent narwhal abundance estimates</u></p> <p>Section 5.1.3 provides the most current DFO abundance estimate for Baffin Bay narwhal, from the 2013 survey (a little over 140K whales among a number of management stocks). The 2013 abundance estimate for the Eclipse Sound summering stock (10,489; Doniol-Valcroze et al. 2015) is also provided, as well as a note about the 2004 estimate of 20,225 whales (Richard et al. 2010). The report also notes the fact that there is some movement between the Eclipse Sound and Admiralty Inlet summering stocks and that the 2013 estimates showed a shift in abundance of ca. 10K whales in 2013 (i.e., 10K more in Admiralty Inlet, 10K less in Eclipse Sound).</p> <p>Then in s. 5.3.2, the estimated number of Milne Inlet and Eclipse Sound narwhal that are assumed to exhibit avoidance of the icebreaking noise source per icebreaker transit (ca. 1,000 to 2,900 animals) are compared against the Baffin Bay population and the Eclipse Sound stock. For this assessment the most complete 2013 Baffin Bay stock estimate is used, as it should be, since it is the most comprehensive population estimate available. But for the Eclipse Sound stock, the avoidance estimates are compared against the 2004 estimate and not the more recent estimates (i.e., DFO surveys in 2013, and also 2016). The estimated number of narwhals that will exhibit avoidance behaviour, per icebreaker transit, is between 5 and 14 % of the Eclipse Sound narwhal summer stock using the older 2004 estimate.</p> <p>The 2013 aerial surveys conducted by DFO showed a ca. 10,000 animal decline in the Eclipse Sound narwhal population compared to 2004. If that survey is used instead of the outdated 2004 one, &gt; 25% of the stock could exhibit avoidance of the icebreaking noise source per icebreaker transit. More recent information is also available, as DFO conducted a photographic aerial survey of the Eclipse Sound narwhal stock in 2015. DFO estimated stock abundance using the 7-10 August estimates for the various survey strata and have a corrected estimate of 12,039 (CV = 0.23, 95% CI 7,768-18,660) narwhals (Marcoux et al. 2019). Two days of data from this survey were also provided to Golder for analyses</p>



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	<p>(Golder 2018). The 15 August estimate was 20,093 (95% CI 6,449-104,339), the 21 August estimate was 12,995 (95% 7,245-23,166) (Golder 2018). The lower Golder estimate was more reliable (much lower confidence intervals) and similar to that determined by DFO, which adds confidence in the data.</p> <p>Using ca. 12 or 13K (2016 estimate) instead of 10.5K (2013 estimate) still results in an estimate of up to ca. 22% of the summer stock exhibiting avoidance behaviour per icebreaker transit. This is a substantial increase over the Proponent's estimate using outdated survey information, and better reflects the potential risks of noise disturbance to narwhal and Inuit harvesting. This is an issue of considerable importance and concern to Inuit in impacted communities.</p> <p><u>Unrealistic assumptions for floe edge drifting noise models</u></p> <p>Throughout the icebreaking assessment report (multiple report sections for all species), the floe edge drifting scenarios assume 2 knots in 0/10 ice, i.e., that there is zero sea ice past the floe edge. Typical (i.e., median) ice conditions in mid-July just off the floe edge, prior to landfast ice break-up, includes areas with sea ice concentrations from 1/10 to 9+/10s ice (CIS 2013). Most of the pack ice in the region is typically in the 1-3/10s range, but nonetheless, it typically isn't open water throughout the drifting zone (CIS 2013: 54 of 995). What effects could this ice cover, which is often present, have on the resulting noise models? This adds uncertainty to the assessment.</p> <p><u>Factors influencing narwhal harvest levels</u></p> <p>Table 5.3 (s. 5.7.2, p. 46) of the Socio-economic Assessment of Icebreaking Operations report (Stantec FTP file name "02B_Socioeconomic_Assessment_Icebreaking.pdf") summarizes narwhal catch statistics from DFO for the period 1970-2015, but simply reports average harvests divided into three seasons. It gives the average number harvested and the percent of total, for the entire period. The table does an effective job demonstrating how important the shoulder seasons are for narwhal harvesting, but the data are not very meaningful presented this way, with a lot of important context missing. These data should be summarized by year, and linked to moderating factors such as quota limits (by season, if appropriate) that can influence total harvests. This will provide a better understanding of the annual variation in narwhal harvests, whether any trends exist over time, and how quota changes might play a role in changing harvests. Such information is needed to better understand potential interactions and impacts, and help develop plans for mitigation.</p> <p><u>Acoustic thresholds for narwhal and sound exposure level models</u></p> <p>In response to DFO 3.5.6, the tech memo on daily ship exposure periods for narwhal (Stantec FTP site file name "1663724-135-TM-Rev0 BIM DFO 3.5.6 15JUL_19.pdf") summarized the underwater noise field ranges and associated vessel acoustic exposure periods for narwhal during both shoulder season and open water season scenarios, using</p>



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	<p>several thresholds. The memo states (p. 1 of 6) that there is an "<i>avoidance threshold for narwhal (135 dB re 1 <math>\mu</math>Pa SPL; Finley et al. 1990).</i>" QIA has reviewed Finley et al. (1990) (and other reports from the same research program) and we are unable to find any evidence to support a 135 dB re 1 <math>\mu</math>Pa avoidance threshold for narwhal. We request that the Proponent identify where this information can be found in the paper.</p> <p>The study did show that narwhals exhibited strong reactions when ice edge noise levels reached 124 dB, and they left the area of the ship track when the vessels created a noise level of 121 db (Finley et al. 1990). One of the other reports the Proponent's has submitted in support of the Phase 2 proposal (Stantec 2019: 42) states that "<i>[d]isplacement reactions to approaching ships have been observed at received sound levels considered to be low (94 to 105 dB re 1 <math>\mu</math>Pa; 20 to 1,000 Hz</i>". A 135 dB threshold appears to be both arbitrary and unrealistic, and the 120 dB re 1 <math>\mu</math>Pa SPL marine mammal disturbance threshold likely paints a more realistic picture of acoustic disturbance. This threshold is reached at distances of ca. 11 to over 40 km, depending on scenario. If narwhals are even more sensitive to vessel noise (110 dB re 1 <math>\mu</math>Pa ensonification zone), the potential for acoustic disturbance increase greatly, with all scenarios spreading the noise threshold out beyond 30 km, up to 67.5 km. The memo also suggests that the assessment is conservative because there is no accounting for narwhal avoidance of vessel noise, but QIA notes that narwhal avoiding vessels, and potentially being displaced from important habitats, is an impact.</p> <p>The August 14, 2009 memo (Stantec FTP file name "JASCO Commitments August 2019.pdf") presents supplemental acoustic modelling results in response to Technical Comments received during the Technical Meetings held in April and June. In addition to producing an animation of anticipated vessel movements, the data from the animation was used to prepare maps of the total, un-weighted sound exposure level (SEL) throughout the RSA for a selection of days. The memo further states however that "[i]t was not reasonable to produce multiple versions of the animation for different frequency-weighting functions". Readers are expected to estimate the SEL shift "based on a comparison between the Un-weighted and frequency-weighted SEL values presented in Figures E-42 through E-53 in Technical Support Document 24 - Appendix B (and Figures D-39 though D-76 in the Icebreaking EA -Appendix B)". Given the need to understand potential species-specific responses, QIA is surprised that frequency-weighting was not applied for key marine mammal species (e.g., ringed seal, narwhal). Forcing reviewers to refer to multiple documents and mentally apply their own correction due to frequency-weighting only serves to make it more difficult to interpret the modelling results.</p> <p><b>Recommendations/Requests:</b></p> <p>QIA requests that, at least two weeks prior to the Public Hearing, the Proponent provide a tabular summary of the aerial survey-derived density data used in the supplementary icebreaking assessment to estimate the number of animals impacted by icebreaker transits. This summary should include which of the three survey reports were used for</p>



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	<p>each species, for each month, and report the variability in the estimates (confidence intervals, coefficient of variation for the estimates, the range of densities per strata, etc.).</p> <p>QIA requests that the Proponent commit to releasing the report from the 2015 aerial surveys, so it is available on the Public Registry, at least a month prior to the November hearing. If the report is still in draft format, QIA requests that the Proponent commit to having it released for review by the MEWG and subsequent posting to the Public Registry.</p> <p>QIA requests that the Proponent commit to revise the assessment of the proportion of Eclipse Sound narwhals that are assumed to exhibit avoidance of the icebreaking noise source per icebreaker transit using the most recent abundance data for the summer stock, and use that information for adaptive management.</p> <p>QIA requests that the Proponent provide information on how the presence of pack ice east of the floe edge would affect the noise modeling results in the floe edge drifting scenarios.</p> <p>QIA requests that the Proponent provide a more detailed summary of narwhal catch data that puts harvests into the necessary context, summarizing annual harvests linked to moderating factors such as quota limits (by season, if appropriate) that can influence total harvests. This information should be used to inform adaptive management.</p> <p>QIA requests that the Proponent clarify where in Finley et al. (1990) the justification for a 135 dB re 1 µPa SPL threshold for narwhal avoidance can be found.</p> <p><u>References</u></p> <p>CIS. 2013. Sea Ice Climatic Atlas: Northern Canadian Waters 1981-2010. Canadian Ice Service, Environment Canada, Ottawa, ON.</p> <p>Doniol-Valcroze, T., J.F. Gosselin, D. Pike, J. Lawson, N. Asselin, K. Hedges and S. Ferguson. 2015. Abundance estimates of narwhal stocks in the Canadian High Arctic in 2013. DFO Can. Sci. Advis. Sec. Res. Doc. 2015/060. v + 36 pp.</p> <p>Elliott, R.E., S. Raborn, H.R. Smith, and V.D. Moulton. 2015. Marine mammal aerial surveys in Eclipse Sound, Milne Inlet, Navy Board Inlet, and Pond Inlet, 31 August – 18 October 2013. Final LGL Report No. TA8357-3. Prepared by LGL Limited, King City, ON for Baffinland Iron Mines Corporation, Oakville, ON. 61 p.</p> <p>Finley, K.J., G. W. Miller, R. A. Davis, and C. R. Greene. 1990. Reactions of belugas, <i>Delphinapterus leucas</i>, and narwhals, <i>Monodon monoceros</i>, to ice-breaking ships in the Canadian high arctic. Canadian Bulletin of Fisheries and Aquatic Sciences. 224:97-117.</p> <p>Golder. 2016. Peer Review: Marine Mammal Aerial Surveys in Eclipse Sound, Milne Inlet and Pond Inlet, 1 August - 17 September 2015 (15 March 2016). Prepared for Baffinland Iron Mines Corporation. Report Number: 1663724-002-R-RevA.</p> <p>Golder. 2018. 2016 Marine Mammal Aerial Photography Survey - Milne Inlet and Eclipse Sound. For Baffinland iron Mines Corporation, Report Number: 1663724-036-R-Rev0.</p>



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	<p>During the Phase 2 process the Proponent has committed to additional analyses (e.g., commitment 141 to provide a supplementary submission that documents actual vessel noise signatures), which has led to additional commitments related to mitigation (e.g., commitment 227, to investigate additional noise mitigation measures with respect to the <i>Botnica</i> and <i>Sara Desgagnés</i>, which are particularly "noisy" vessels). The Proponent has also committed to conduct a retrospective analysis of the behavioural responses of narwhal to vessels travelling both southbound and northbound, and to integrate this analysis in future monitoring (commitment 228). These commitments are important steps, but much more is required.</p> <p>The existing Early Warning Indicator (EWI), proportion of immature narwhal, failed to provide early warning of a significant decline in the Eclipse Sound narwhal population. This underscores the importance of having EWIs that are effective and provide appropriate early warning prior to significant impacts on marine resources and Inuit harvesting rights. Inuit Qaujimajatuqangit is an effective EWI, as Inuit observed and reported effects on narwhal in the years prior to the significant decline in abundance. Commitments (e.g., 218 re: dedicated workshops throughout 2021) have not been met, and additional work on EWIs and Inuit-derived objectives, indicators, and thresholds is outstanding.</p> <p>The concerns regarding the effects of vessel noise on sensitive marine mammals have been echoed by numerous intervenors throughout this process, and there are numerous peer-reviewed research articles that justify these concerns. Inuit knowledge and Western science provide complimentary information on important habitat areas for cetaceans in the Regional Study Area and highlight areas, such as Eclipse Sound, where species are most at risk from noise disturbance (Kochanowicz et al. 2021). Halliday et al. (2022) examined risk from vessels, including modeled underwater noise levels, to marine wildlife in Tallurutiup Imanga National Marine Conservation Area, and concluded that narwhal (and seabirds) are at high risk in Eclipse Sound and Milne Inlet. The study by Watt et al. (2021) on narwhal stress levels before and during Project shipping has been extensively discussed during the Phase 2 review, and Inuit require assurances that such indicators will be developed for adaptive management. The Proponent has indicated (commitment 249) that it "will include body condition, or an equivalent indicator, in its marine monitoring program", but that "this is not a commitment to use body condition as an Early Warning Indicator or other adaptive management threshold". This does provide the level of confidence required.</p> <p>Given the on-going impacts to narwhal and other marine mammals (e.g., ringed seal) identified by Inuit, the lack of progress on developing adaptive management leads to an unacceptable level of risk to marine mammals in the study area.</p> <p><b>References</b></p> <p>Halliday, W.D., J. Dawson, D.J. Yurkowski, T. Doniol-Valcroze, S.H. Fergusond, C. Gjerdrum, N.E.Hussey, Z. Kochanowicz, M.L. Mallory, M. Marcoux, C.A. Watt, and S.N.P. Wong. 2022. Vessel risks to marine wildlife in the Tallurutiup Imanga National Marine Conservation</p>



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	<p>Area and the eastern entrance to the Northwest Passage. Environmental Science &amp; Policy 127: 181-195. doi: 10.1016/j.envsci.2021.10.026</p> <p>Kochanowicz, Z., J. Dawson, W.D. Halliday, M. Sawada, L. Copland, N. Ann, A. Nicoll, S.H. Ferguson, M. Peter, M. Marcoux, C. Watt, and D.J. Yurkowski. 2021. Using western science and Inuit knowledge to model ship-source noise exposure for cetaceans (marine mammals) in Tallurutiup Imanga (Lancaster Sound), Nunavut, Canada. Marine Policy 130: 104557. doi: 10.1016/j.marpol.2021.104557.</p> <p>Watt, C., J. Simonee, V. L'Herault, R. Zhou, S.H. Ferguson, M. Marcoux, and S. Black. 2021. Cortisol levels in narwhal (<i>Monodon monoceros</i>) blubber from 2000-2019. Arctic Science 9: 1-9. doi: 10.1139/as-2020-0034.</p>



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Subject	Marine Wildlife and Marine Habitat - Environmental Mitigation and Management
Reference	<ul style="list-style-type: none"> <li>• NIRB Amended EIS Guidelines for Mary River Phase 2 project Proposal (file: 151006-08MN053-Amended EIS Guidelines for Mary River Phase 2 Project Proposal-OT5E.pdf): Glossary, p. xi Definition Regional Study Areas, s.2.1; s.2.7, s.5.4., s.6.1, s.6.5.8s.8.1, s.8, s.9</li> <li>• North Baffin Regional Land Use Plan (NBRLUP) s. 3.5.11; Appendices J and K</li> <li>• FEIS V. 1, p. 137 of 328.</li> <li>• ERP EIS Addendum Vol. 1, p. 106 of 239, s.2.5, p. 130 of 239</li> <li>• QIA ERP Technical Review Final Comments: FM-02, FM-03, FM-05, FM-06, FM-09 (140113-08MN053-QIA Final Written Submission-IA2E.pdf),</li> <li>• BIMC ERP Project Certificate Amendments (131115-08MN053-BIMC PC Amendments-IA1E.pdf)</li> <li>• NIRB Project Certificate 005, p. 4, footnote 2</li> <li>• Phase 2 EIS Information Requests GN 73, p. 117-120</li> <li>• TDS 01 Alternatives Analysis Report (181003-08MN053-TSD 1-Alternatives Analysis Report-IA2E.pdf)</li> <li>• TSD 16 Ice conditions report (181003-08MN053-TSD 16-Ice Conditions Report-IA2E.pdf; aka Enfotec 2016)</li> <li>• TSD 27 Supplemental Memo (190517-08MN053-BIMC Tech Mtg-Memo Re Supplemental TSD 27-IA2E.pdf)</li> <li>• Phase 2 EIS Technical Comments GN 23, DFO 3.1.4, QIA 6 BIMC Technical Comment Responses to DFO 3.1.4, GN 23 and QIA 6 (08MN053_mrp2_tech-comment-responses_march.pdf)</li> <li>• BIMC 2019 - September 20, 2019 letter from Lord-Hoyle to NIRB RE: Clarification respecting "Mary River Project: environmental review of shipping through the Northwest Passage (Stantec, July 12, 2019)" (190921-08MN053-BIMC Letter to NIRB re NBI-NWP.pdf)</li> </ul>
Summary	<p>The Proponent has expressed interest in shipping along two alternatives to the nominal northern shipping route that was approved by NIRB for the existing Project. One alternative would route vessels from Milne Port via Navy Board Inlet and Lancaster Sound to Baffin Bay, instead of via Eclipse Sound and Pond Inlet; the other would route vessels west via the Northwest Passage, rather than east via Baffin Bay and Davis Strait. The potential environmental impacts of shipping along these routes were not assessed in the Phase 2 EIS or in the supplemental material provided. This is an important gap in the understanding of potential Project shipping impacts, since both alternative routes provide key habitat for many marine mammals and birds. Differences in species composition and abundance could lead to greater impacts on narwhals (e.g., Somerset Island stock), belugas, walruses and seabird breeding colonies. Lack of this information creates uncertainty regarding the potential future impacts of the Project. QIA recommends that the environmental and socioeconomic impacts of shipping along any alternative to the nominal shipping route be assessed and subject to public review and NIRB approval before the route is used for Project shipping.</p>



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<b>Importance of issue to impact assessment</b>	<p>Shipping-related interactions with marine VECs (including seabirds) constitute a major portion of the impact assessment for the Mary River project and are of considerable importance to Inuit. Phase 2 proposes to substantially increase Project shipping. Alternative shipping routes of interest to the Proponent were not assessed in the Phase 2 EIS, including the route from Milne Port to Baffin Bay via Navy Board Inlet and Lancaster Sound and routes through the Northwest Passage (NWP). Shipping via these routes would greatly increase the Project's impact footprint and potentially impact numerous VECs (particularly when considered cumulatively with future activities included under the existing Project Certificate). Accurate assessments of marine impacts are needed to inform effective mitigation, monitoring, and adaptive management.</p>
<b>Detailed Review Comment</b>	<p><b>1. Gap/Issue</b></p> <p>The Proponent has not adequately assessed the potential environmental and socioeconomic impacts of alternative Project shipping routes.</p> <p><b>2. Disagreement with Phase 2 EIS Addendum conclusion</b></p> <p>It is not possible to complete a meaningful assessment of potential Project shipping-related impacts along alternate routes with the information provided.</p> <p><b>3. Reasons for disagreement with FEIS/Addendum conclusion</b></p> <p>Project Certificate 005 Amendment 1 has approved shipping via the "nominal shipping route" (p. 4, footnote 2). In the FEIS (Vol. 1, p. 137 of 328) and ERP EIS (Vol. 1, p. 106 of 239, s.2.5, p. 130 of 239) the "nominal shipping route" for summer shipping along the Northern Route connects Baffin Bay to Milne Port via Pond Inlet and Eclipse Sound. The route via Lancaster Sound and Navy Board Inlet was identified as an alternative (FEIS Vol. 1; p. 201 of 328; ERP FEIS Vol. 3, p. 152 of 178), but not carried forward for impact assessment. This was an important oversight since the Proponent is clearly interested in shipping via Navy Board Inlet and Lancaster Sound east to Baffin Bay in the short term, and in shipping west via the Northwest Passage (NWP) in the future.</p> <p>The Proponent has repeatedly expressed interest in shipping via alternative routes. When sea ice is present, Enfotec advised that "[a]lternate routing via Navy Board Inlet should not be considered as a primary choice, but rather as an option to be assessed on a case-by-case basis. The risk of old ice occurrence and ridged fast ice is greater in this channel than in Pond Inlet." (TSD 16, p. iv; see also TSD 01, s.3.2, p.3.3). Based on this assessment BIMC stated that "subject to prevailing ice conditions and Arctic Ice Regime Shipping System (AIRSS) calculations, [it] may advise relevant Ice Class Ore Carriers to proceed to Milne Inlet via Navy Board Inlet" (TSD 01, s.3.2, p.3.3), and that it is "also possible that Navy Board Inlet could be used during the open water season to offset the number of ships transiting past Pond Inlet, or to access the Northwest Passage." (BIMC response to DFO TC 3.1.4, p. 15 of 504). The Proponent also mentioned interest in shipping via these routes at the Marine Environmental Working Group meeting on February 7, 2019 (See also GN TC 23, p.</p>



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	<p>93.). The July 12, 2019 Stantec report provides further clarification: “<i>In general, the Project is considering transport of some ore west through Navy Board Inlet and the NWP instead of east through Eclipse Sound and Baffin Bay (as is currently done).</i>” (Stantec 2019, s. 7.0, p. 93). “<i>Pond Inlet will remain the primary transit corridor for the Project; however, some Ore Carriers may proceed through Navy Board Inlet under several specific circumstances and subject to prevailing ice conditions and Arctic Ice Regime Shipping System (AIRSS) calculations to access the North West Passage and customer ports in the Pacific Ocean.</i>” (Stantec 2019, s. 2.1, p. 3; See also TSD 27 Supplemental Memo, s.4.3, p. 19 of 26). No details are provided on the potential shipping volumes along these routes. The Proponent has already shipped ore from Milne Port to Asian markets via the much longer Northern Sea Route along the Arctic coasts of Norway and Russia (Leite 2018; BIMC Response to Phase 2 Technical Comment GN 23).</p> <p>The environmental impacts of shipping via Navy Board Inlet, Lancaster Sound and the Northwest Passage were not assessed in the FEIS, ERP EIS or Phase 2 EIS, or by Stantec (2019). Consequently, the individual and cumulative impacts of shipping along these routes, and ability to effectively mitigate and monitor potential impacts are unknown. These are critical gaps in the impact assessment for Project shipping, which BIMC proposes to increase from 122 to 392 one-way vessel transits annually (Revised addendum to TSD 27, s.4.1, p. 30 of 47). These gaps greatly increase uncertainty related to predictions of the Project shipping impacts on marine mammals, other aspects of the marine and coastal environments, and Inuit land and resource use.</p> <p>During the ERP EIS review, QIA was concerned that potential impacts of rerouting shipping from the “nominal shipping route” had not been assessed. In its ERP Final Submission, QIA recommended NIRB add a Project Certificate Term and Condition that requires “[s]hipping impacts along the northern or southern routes will be reassessed if the Proponent: i. reroutes or plans to reroute shipping from Milne Inlet other than [along] the route described in the ERP...” (QIA ERP Final Submission, p. 18 of 110). The Proponent suggested this condition was not required, as a NIRB screening would be required for a change in shipping routes (BIMC ERP Project Certificate Amendments file ‘131115-08MN053-BIMC PC Amendments-IA1E’). QIA’s recommendation that this condition be included in the amended Project Certificate to ensure NIRB requirements for impact reassessment are clear and explicit (QIA ERP Final Submission, p. 18 of 110) was not accepted.</p> <p>The Stantec report is not a detailed assessment of alternative shipping routes or the potential environmental impacts of their use (Stantec 2019, s.3.0, p. 9). The report does suggest “[t]he use of wider route options would allow for route alterations to avoid coastal areas in use by walrus, polar bear, seals, marine birds, and hunters.” (Stantec 2019, s. 7.0, p. 93). QIA notes that wider route options may also increase impacts to these various VECs. Stantec also suggests that vessel routing might be timed to avoid particularly sensitive seasonal congregation areas and thereby reduce effects to beluga (s. 6.2.4.1, p. 89). One such congregation area on the Northwest Passage occurs at Cunningham Inlet (74°05'N, 93°45'W), where studies in the 1980s found between 762 and 1,741 belugas annually from ca. mid-July through mid-August (Smith et al. 1992). At least 12 more</p>





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	<p>estuaries in the Prince Regent Inlet – Barrow Strait – Peel Sound area are or have traditionally been used by large numbers of belugas (Innes et al. 2002), and these important passages are frequented during the open water and shoulder seasons by thousands of belugas and narwhals (Innes et al. 2002; Doniol-Valcroze et al. 2015), making avoidance difficult.</p> <p>The Proponent has suggested that impacts of shipping via Navy Board Inlet and Lancaster Sound would be similar to those assessed in the Phase 2 Amendment, on the basis that it would “<i>impact the same marine mammal populations</i>” and that it would therefore be acceptable for cumulative effects assessment to have all shipping captured under Eclipse Sound (TSD 27 Supplemental Memo, s.4.3, p. 19 of 26). This approach was not supported in the documentation BIMC provided and may be insupportable. Eastern Lancaster Sound is notable for its biodiversity, biological productivity, and seasonal use by large numbers of migratory marine mammals and birds. These are some of the reasons Tallurutiup Imanga National Marine Conservation Area (NMCA) was created. Heavy use of Lancaster Sound by narwhals, belugas, walrus, bowheads, and polar bears that occur there in much larger numbers than in Eclipse Sound mean that the area may be particularly sensitive to shipping impacts, particularly during the shoulder seasons when they are migrating (see below for selected references). Many of these animals will belong to different stocks than those encountered in Eclipse Sound (e.g., Admiralty Inlet and Somerset Island narwhal stocks; DFO 2019b, p. 7). Habitat in eastern Lancaster Sound and Navy Board Inlet also differs from that enroute from Pond Inlet via Eclipse Sound to Milne Port in offering few fiords for animals to shelter from disturbance. The effects of Project shipping via Navy Board Inlet and Eclipse Sound on narwhal displacement from the RSA are uncertain.</p> <p>In its September 20, 2019 letter to NIRB, BIMC (2019) clarified that it was not “<i>seeking NIRB permission to use Navy Board Inlet or the NWP for the Phase 2 Project at this time, but rather to support ongoing conversations respecting optional alternative shipping routes.</i>” Regarding use of the Northwest Passage, it clarified that “<i>...Baffinland may develop a pilot study in future which would send limited numbers of test vessels to help evaluate feasibility of this option</i>” and “<i>may seek approval for use of this route in the future.</i>” And that, in these cases, it would seek advice from NIRB and the NPC relating to project modifications and follow any required regulatory process as identified.</p> <p>If the Proponent is seriously interested in shipping via Navy Board Inlet, Lancaster Sound, and/or the Northwest Passage the potential environmental and socioeconomic impacts, individual and cumulative, should have been assessed in depth in the Phase 2 EIS. Regardless of the current level of interest, shipping via these routes should not be approved without a prior impact assessment, so if Phase 2 is approved any interest in such routing should trigger a detailed and comprehensive reassessment of Project shipping impacts. This is important because the potential impacts of shipping via the Northwest Passage and the nominal northern (ERP) and southern shipping routes (FEIS) simultaneously are unprecedented, unpredictable, and potentially damaging to marine mammal and bird populations across the Canadian Arctic, and to Inuit who depend upon them.</p>





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	<p><b>References cited:</b></p> <p>Doniol-Valcroze, T, J.-F. Gosselin, D. Pike, J. Lawson, N. Asselin, K. Hedges, and S.H. Ferguson. 2015. Abundance estimates of narwhal stocks in the Canadian High Arctic in 2013. DFO Can. Sci. Advis. Sec. Res. Doc. 2015/060.v + 36 p.</p> <p>Innes, S., M.P. Heide-Jørgensen, J.L. Laake, K. Laidre, H. Cleator, and P. Richard. 2002. Surveys of belugas and narwhals in the Canadian High Arctic in 1996. NAMMCO. Sci. Publ. 4: 169-190.</p> <p>Leite, J. 2018. Baffinland Iron Mines set new 5.1 million tonne shipping record. Posted Thursday November 8, 2018 (<a href="http://www.baffinland.com/latest-news/baffinland-iron-mines-set-new-5-1-million-tonne-shipping-record/?lang=en">http://www.baffinland.com/latest-news/baffinland-iron-mines-set-new-5-1-million-tonne-shipping-record/?lang=en</a>)</p> <p>Smith, T.G., St. Aubin, D.J., and Hammill, M.O. 1992. Rubbing behaviour of belugas, <i>Delphinapterus leucas</i>, in a high Arctic estuary. Can. J. Zool. 70: 2405-2409.</p> <p>Stantec Consulting Ltd. 2019. Mary River Project: environmental review of shipping through the Northwest Passage. Final Report, July 12, 2019, File: 121414789. Prepared for Baffinland Iron Mines Corporation, Oakville, ON. v + 118 p.</p> <p><b>Selected references</b></p> <p>General - multiple species</p> <p>Anonymous. 2017. A National Marine Conservation Area Proposal for Lancaster Sound. Feasibility Assessment Report. Submitted by the Lancaster Sound National Marine Conservation Area Feasibility Assessment Steering Committee, February 2017. Government of Nunavut, Qikiqtani Inuit Association, and Parks Canada Agency. Iqaluit, NU and Ottawa, ON. 66 pp.</p> <p>Read, C.J. and Stephansson, S.E. 1976. Distribution and migration routes of marine mammals in the central Arctic region. Can. Fish. Mar. Serv. Tech. Rep. 667: v + 13 p.</p> <p>Yurick, D., and Mercier, F. 2013. An updated assessment of the ecological values of Lancaster Sound in the eastern Canadian Arctic. Parks Canada Agency, Ottawa. ON. 33 pp. + Annex 1: Biological Inventory Update for Lancaster Sound, Nunavut (23 pp.).</p> <p>Beluga</p> <p>Heide-Jørgensen, M.P., Richard, P., Dietz, R., Laidre, K.L., Orr, J., and Schmidt, H.C. 2003. An estimate of the fraction of belugas (<i>Delphinapterus leucas</i>) in the Canadian high Arctic</p>



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	<p>that winter in West Greenland. Polar Biology 26: 318-326. DOI 10.1007/s00300-003-0488-x</p> <p>Koski, W., Davis, R.A., and Finley, K.J. 2002. Distribution and abundance of Canadian High Arctic belugas. NAMMCO Scientific Publications 4: 87-126.</p> <p>Richard, P., Heide-Jørgensen, M.P., and Aubin, D. 1998. Fall movements of belugas (<i>Delphinapterus leucas</i>) with satellite-linked transmitters in Lancaster Sound, Jones Sound, and northern Baffin Bay. Arctic 51(1): 5-16.</p> <p>Bowhead</p> <p>Dueck, L.P., Heide-Jørgensen, M.P., Jensen, M.V., and Postma, L.D. 2006. Update on investigations of bowhead whale (<i>Balaena mysticetus</i>) movements in the eastern Arctic, 2003-2005, based on satellite-linked telemetry. DFO Can. Sci. Advis. Sec. Res. Doc. 2006/050.</p> <p>Ferguson, S.H., Dueck, L., Loseto, L.L., and Luque, S.P. 2010. Bowhead whale <i>Balaena mysticetus</i> seasonal selection of sea ice. Marine Ecology Progress Series 411: 285-297. DOI: <a href="https://doi.org/10.3354/meps08652">https://doi.org/10.3354/meps08652</a></p> <p>NWMB. 2000. Final Report of the Inuit Bowhead Knowledge Study. Nunavut Wildlife Management Board, Iqaluit, NU. iii + 90 pp (+ printed maps)</p> <p>Reeves, R., Mitchell, E., Mansfield, A., and McLaughlin, M. 1983. Distribution and migration of the Bowhead Whale, <i>Balaena mysticetus</i>, in the eastern North American Arctic. Arctic 36(1): 5-64.</p> <p>Narwhal</p> <p>Dietz, R., Heide-Jørgensen, M.P., Richard, P.R., Orr, J., Laidre, K., and Schmidt, H.C. 2008. Movements of narwhals (<i>Monodon monoceros</i>) from Admiralty Inlet monitored by satellite telemetry. Polar Biol. 31: 1295-1306.</p> <p>Heide-Jørgensen, M.P., Dietz, R., Laidre, K., Richard, P., Orr, J., and Schmidt, H.C. 2003. The migratory behaviour of narwhals (<i>Monodon monoceros</i>). Can. J. Zool. 81: 1298-1305.</p> <p>Richard, P., Weaver, P., Dueck, L. and Barber, D. 1994. Distribution and numbers of Canadian High Arctic narwhals (<i>Monodon monoceros</i>) in August 1984. Medd. Grøn. Biosci. 39: 41-50.</p> <p>Watt, C.A., Orr, J., LeBlanc, B., Richard, P., and Ferguson, S.H. 2012. Satellite tracking of narwhals (<i>Monodon monoceros</i>) from Admiralty Inlet (2009) and Eclipse Sound (2010-2011). DFO Can. Sci. Advis. Sec. Res. Doc. 2012/046. iii + 17 p.</p>



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	<p>Walrus</p> <p>COSEWIC. 2017. COSEWIC assessment and status report on the Atlantic Walrus <i>Odobenus rosmarus rosmarus</i>, High Arctic population, Central-Low Arctic population and Nova Scotia-Newfoundland-Gulf of St. Lawrence population in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxi + 89 pp. (<a href="http://www.registrelep-sararegistry.gc.ca/default.asp?lang=en&amp;n=24F7211B-1">http://www.registrelep-sararegistry.gc.ca/default.asp?lang=en&amp;n=24F7211B-1</a> ).</p>
Recommendation /Request	<p>QIA recommends that prior to Project shipping in Canadian waters via any alternative to the nominal routes identified in the FEIS (Southern Route: Steensby Inlet-Foxe Basin-Hudson Strait-Davis Strait-Labrador Sea) and ERP EIS (Northern Route: Milne Inlet-Eclipse Sound-Pond Inlet-Baffin Bay-Davis Strait-Labrador Sea) the Proponent be required to complete, for public review, a comprehensive environmental effects assessment, including potential cumulative and transboundary effects, of proposed shipping along the alternative route(s).</p> <p>QIA recommends that NIRB include a Project Certificate Condition that requires the Proponent to report the routing and timing of all Project vessel transits in relation to sea ice.</p>
August 11, 2020 Update	<p><b>Resolved.</b></p> <p>The proponent has committed to not attempt any shipments through the Northwest Passage routes without a full impact assessment.</p>
Final Status Update	<p><b>Resolved.</b></p> <p>With commitment 13 (not having vessels go into the North Water Polynya (Pikialasorsuaq), subject to vessel safety) and commitment 44 (no additional shipping routes, including Navy Board Inlet and the Northwest Passage).</p>



Review Comment	53. Cumulative and Transboundary Effects
Subject	Marine Wildlife and Marine Habitat, Cumulative and Transboundary effects
Reference	<ul style="list-style-type: none"> <li>• NIRB Amended EIS Guidelines for Mary River Phase 2 Project Proposal (file: 151006-08MN053-Amended EIS Guidelines for Mary River Phase 2 Project Proposal-OT5E.pdf) Glossary, p. vii Definition of cumulative impacts, p. xi Definition Regional Study Area, s.2.1, 2.4, s.5.4.1, s.6.1, s.6.4, s.7.6, s.7.7, s.7.8 Cumulative Impacts, s.7.9 Transboundary Impacts, s.7.10, s.7.11, s.8.1.13.2, Appendix A, p. A1</li> <li>• North Baffin Regional Land Use Plan (NBRLUP) s.3.5.5 and s. 3.5.11</li> <li>• DEIS IRs: QIA IRs 6 and 18</li> <li>• BIMC IR Response: Mary River Project (April 15 2011) FINAL.pdf</li> <li>• DEIS Technical Review Comments: D-33 (also D-07, D-15, D-17, D-25, D-26, D-28, D-29, D-30, D-35)</li> <li>• Pre-Hearing Conference Commitments: 23 (also see 24)</li> <li>• FEIS IRs: QIA IR-D-04, D-05</li> <li>• BIMC Response to FEIS IRs: 120419-08MN053 BIMC IR Response -IT1E IR response table.pdf</li> <li>• FEIS section numbers: v.1 s.9; v.8 (fig 8-1.1, p. 2 of 318; v.9 s.1</li> <li>• QIA Mary River FEIS Final Written Submission</li> <li>• ERP FEIS v.9.</li> <li>• BIMC Responses to Technical Review Comments (131115-08MN053-BIMC Response TRC-IA1E) and suggestions for PC amendments (131115-08MN053-BIMC PC Amendments-IA1E)</li> <li>• QIA ERP TC FM-9 Cumulative effects (see also FM-03 Ballast water and FM-6 Shipping impacts to marine mammals (140113-08MN053-QIA Final Written Submission-IA2E.pdf)</li> <li>• GN Phase 2 IR 71, p. 110 (181123-08MN053-GN IR-IA2E.pdf)</li> <li>• GN Phase 2 TC 22 Effects of shipping on ice break-up and freeze-up (181123-08MN053-GN IR-IA2E.pdf)</li> <li>• GN Phase 2 TC 23 Marine shipping routes p. 93-94 (181123-08MN053-GN IR-IA2E.pdf)</li> <li>• GN Phase 2 TC 24 Assessment of polar bears, p. 101 (181123-08MN053-GN IR-IA2E.pdf)</li> <li>• TSD 27 Cumulative Transboundary Report, s.4.1, p. 30 of 47 (190826-08MN053-Memo Re Revised CEA Addendum-IA1E.pdf)</li> <li>• TSD 27 Supplemental Memo. s.4.1, p15 of 26, s.4.3, p. 20 of 26 (190517-08MN053-BIMC Tech Mtg-Memo Re Supplemental TSD 27-IA2E.pdf)</li> <li>• TSD 27 Revised CEA Addendum, s.4.1, p. 30 (190826-08MN053-Memo Re Revised CEA Addendum-IA1E)</li> <li>• Golder 2019. p. 136-145 and Appendix A, p. 128-182 of 343 (02A_Assessment_Icebreaking_Operations.pdf) BIMC Response to TC GN 23, p. 76 of 504</li> </ul>



Review Comment	53. Cumulative and Transboundary Effects
<b>Summary</b>	<p>BIMC has not adequately assessed how Project activities may interact over time and space with one another, with the effects of other human activities, and with other factors such as climate change to have cumulative effects, as required by the NIRB Guidelines (s.7.8). The cumulative effects analysis does not provide the quality of information required to adequately understand potential cumulative impacts of the Project. Information deficiencies increase uncertainty related to impact predictions. They also make it difficult to develop appropriate mitigation and monitoring plans, and to assess the ability to adaptively manage unforeseen impacts.</p>
<b>Importance of issue to impact assessment</b>	<p>Assessing Project activities in isolation to one another risks missing potentially significant impacts. Each Project activity may affect numerous VECs and, in turn, each VEC may be affected by numerous Project activities. Other human activities and developments including Project expansion may also affect each VEC. Without clear understanding of the cumulative effects of these impacts and their interactions, the impact assessment is incomplete. This increases uncertainty related to impact predictions, mitigation and monitoring plans, and the ability to adaptively manage unforeseen impacts.</p>
<b>Detailed Review Comment</b>	<p><b>1. Gap/Issue</b></p> <p>To assess the cumulative impacts of the Project, BIMC must consider how the interaction of impacts from the various Project components and activities, and from other past, present and reasonably foreseeable projects, might impact in a cumulative fashion on selected VECs/VSECs (NIRB Guidelines s.7.8).</p> <p><b>2. Disagreement with FEIS/Addendum conclusion</b></p> <p>The Phase 2 EIS does not provide an integrated assessment of how the impacts of Project activities may interact over time and space. Only Project activities BIMC considered likely to have a residual effect were carried forward into the cumulative effect's analysis. When considered alone the impact of a Project activity on a VEC or VSEC may not be significant (e.g., 5% cf. a 10% threshold). But, when the impacts of all the individually non-significant Project activities on the VEC or VSEC are considered their cumulative impact may be significant. In addition, interactions may occur among Project activities and between VECs and VSECs that increase or decrease the cumulative impact of the Project. Other human activities, natural stressors such as climate change, and developments including Project expansion may also impact the VECs and VSECs.</p> <p><b>3. Reasons for disagreement with FEIS/Addendum conclusion</b></p> <p>QIA and regulators (DFO, GN, ECCC) have identified numerous concerns with the Proponent's cumulative effects assessment throughout the review process for the Mary River Project (in DEIS, FEIS and ERP stages). QIA submitted detailed comments on cumulative effects for the Early Revenue Phase (ERP) Addendum review, that still apply to the Phase 2 Addendum. These comments were FM-3 Ballast water, FM-6 Shipping impacts to marine mammals – noise disturbance, and FM-9 Cumulative effects. QIA's technical review comments on the Phase 2 EIS highlighted concerns with the size of the RSA, including issues with respect to assessing cumulative impacts (Technical Comment</p>



Review Comment	53. Cumulative and Transboundary Effects
	<p>50) and the assessment of noise impacts, including cumulative, to marine mammals (Technical Comment 51).</p> <p>QIA is not confident that the cumulative effects assessment accurately reflects potential Project shipping effects on the marine environment and marine mammals. There are key gaps in the cumulative impact assessment of marine shipping with respect to the general approach, regional study area, impacts of current shipping, impacts of future shipping, and the use of alternative shipping routes.</p> <p><u>General approach</u></p> <p>The effects of each Project activity on each valued ecosystem component (VEC) have been assessed separately and only those Project-specific effects that exceed thresholds, some of which were arbitrarily set, have been carried forward into the cumulative effects assessment (CEA). This approach underestimates the effects of Project activities on VECs and these underestimates may be magnified during cumulative effects assessment (see also GN IR 71, p. 110). Interactions can occur among Project activities and between VECs, and among the Project-specific effects and those of other human activities, natural stressors such as climate change, and developments including Project expansion. These factors and interactions influence the cumulative effects assessment of the Project and must be considered for the CEA to support good decision-making with respect the sustainability of valued ecosystem components (Duinker and Greig 2006). In the case of narwhal, the impacts of shipping noise, ice-breaking and potential oil spills, for example, have been assessed in isolation from one another, and from other factors such as hunting and climate change. This approach does not capture the potential effects of these factors acting at the same or different times on the population at the same or different times, within and beyond the RSA (see also DFO 2019a, p. 46; DFO 2019b, p. 49).</p> <p><u>Regional Study area (RSA)</u></p> <p><i>“The Regional Study Area shall be defined as the area within which there exists potential for direct, indirect and/or cumulative biophysical and socio-economic effects. This area includes lands, communities, and portions of Nunavut and other regions of Canada that may be relevant to the assessment of wider spread effects of the Project. The Proponent is advised to duly consider the transboundary implications of impacts to identified VECs as a result of marine shipping for the Project. The Local Study Area’s (LSA) and RSAs may vary between disciplines and between VECs, as they represent the likely distribution of Project effects on individual VECs/VSECs.” (NIRB EIS guidelines, s.5.4.1, p. 15) (see also QIA TC 50)</i></p> <p>Project shipping that currently transits Baffin Bay, Davis Strait, and the Labrador Sea could increase by 270 one-way transits, from 122 approved for the ERP to 392, if Phase 2 is approved (TSD 27 Supplemental Memo, s.4.3, p. 20; TSD 27 Revised CEA Addendum, s.4.1, p. 30). Despite this shipping activity these areas were not included in the Regional Study Area (RSA) used for assessment of Project shipping impacts on marine mammals (FEIS V.8, Fig. 8-1.1, p. 2 of 318; TSD 27 s. 1.2.2, p.1). This approach is contrary to the NIRB’s</p>





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	<p>expectation “that spatial assessment boundaries may cross jurisdictional boundaries for a better understanding of additive and interactive pathways of different types of cumulative effects” (NIRB Guidelines s.7.8, p.40). This RSA should instead have been based on the ecology and habitat use of pertinent population unit(s) of each species (e.g., Baffin Bay narwhal population; Baffin Bay polar bear subpopulation) and on the potential geographical and temporal extents of Project effects (NIRB EIS guidelines, s.5.4.1, p. 15); See also QIA TC 50, GN TC 23, p. 93-94; GN TC 24, p. 101).</p> <p>The RSA used for assessment only provides a partial assessment of cumulative and transboundary effects. One important gap is near the entrance to Pond Inlet, where between 24 July and 4 August 2018, up to 7 or more vessels were often cruising or idling as they waited for breakup or icebreaker support before travelling to Milne Port (Golder 2019. p. 136-145 of 343 02A_Assessment_Icebreaking_Operations.pdf). These vessels were located just outside the RSA, where their impacts on migratory marine mammals are not monitored. Another gap is related to the impacts of Project vessels enroute to or from Milne Inlet that cross ecologically important areas outside the RSA. The areas impacted by shipping vary seasonally with spring traffic in the east and north of Baffin Bay and fall traffic farther west (Golder (2019 Appendix A, p. 128-182 of 343). These routes pass through hotspots of diversity and seasonal abundance for marine mammals (including polar bears) and marine birds (e.g., Watt et al. 2012; Yurkowski et al. 2019b).</p> <p><u>Impacts and risks of current shipping</u></p> <p>Project development activities are moving forward faster than the real impacts of increasing shipping and other activities can be assessed and used to inform cumulative effects assessment, mitigation, monitoring, and adaptive management. Under shipping levels approved for the ERP, neither the effects of disturbances on narwhals nor the risks of species introductions are well understood. We do not, for example, know why narwhals avoided the RSA and LSA in 2018, or whether measures to reduce risk of species’ invasions are being rigorously followed and effective. This approach runs contrary to the principle of sustainable development which is fundamental to NIRB’s primary objectives (NIRB Amended Guidelines s.2.4, p.6).</p> <p><u>Impacts and risks of future shipping</u></p> <p>The cumulative effects of large, concurrent increases in shipping along the southern and northern routes were not considered in TDS 27, TSD 27 Supplemental Memo, or TSD 27 Revised CEA Addendum. If approved, Phase 2 would greatly increase open water shipping activity east and north of Baffin Island, just as the approved project is expected to do year-round along the southern route south and west of Baffin Island (ca. 2024). The noise, site, and smell of each arriving and departing vessel will create a disturbance as the vessel travels along the route. These frequent and lasting pulses of disturbance may cause migratory marine mammals (including polar bears) to disperse from the vicinity of the routes around Baffin Island, and perhaps further if alternative routes are used. Marine mammals, such as bowhead whales that circumnavigate Baffin Island (Ferguson et al.</p>



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	<p>2010), could be impacted by shipping along both routes. The ecological effects of these widespread disruptions are unpredictable and transboundary effects are possible on polar bears and other species, including colonial marine birds given the extensive migrations of these populations.</p> <p>The potential for Project ice-breaking during the shoulder seasons to hasten breakup in the spring and delay it in the fall also was not comprehensively assessed. Seals use the late spring ice for molting; narwhals migrate south as the ice forms in the fall-- both species may be vulnerable to shipping disturbances and unexpected changes in ice habitats, ringed seals because of the energetic costs and narwhals because of the potential for ice entrapments (see also GN TC 22, p. 90).</p> <p>If Phase 2 is approved, the Proponent will be responsible for monitoring impacts along both the north and south shipping routes. In its final submission on the ERP Addendum, QIA recommended an addition to PCC 112, namely “<b>d. Assessment of cumulative effects on migratory Arctic marine mammals of concurrent open water shipping along the north and south routes.</b>” (QIA ERP final submission, TC FM 6, p. 43 of 110). This text was not included in the PCC, but the potential impacts remain a very important concern.</p> <p>The cumulative effects of discharging much larger volumes of ballast water into the head of Milne Inlet, either at the docks and/or nearby anchorages, also have not been adequately assessed (TSD 21). The effects of transitioning from mid-ocean exchange of ballast water to treatment and/or both were not assessed for chemical, physical or biological risks. Despite years of Project-related shipping meaningful data have not been collected on compliance with ballast water exchange, the efficacy of exchange for reducing the abundance of non-indigenous species released, or the presence of invasive species. Consequently, these data are not available to refine predictions of the cumulative effects of the proposed Phase 2 shipping increase, in particular how the change in discharge volumes and frequencies may alter the ability of introduced species to establish reproducing populations; the same is true for species carried on ship’s hulls. Climate change could make establishment easier over time. The cumulative effects of possible treatment methods and value of using both exchange and treatment also were not assessed (See also QIA TC 45 Species Introductions).</p> <p><u>Alternative shipping routes</u></p> <p>The Proponent is interested in routing Project shipping between Baffin Bay and Milne Port via Navy Board Inlet and Lancaster Sound (TSD 27 Supplement s.4.1, p.15 of 26), and from Milne Port via the Northwest Passage to markets in the west (Stantec 2019), but has not assessed the cumulative effects of using these routes. If these routes are under serious consideration for future Project shipping the potential effects of their use should have been assessed in the Phase 2 EIS and in the cumulative effect’s assessment (See also QIA TC 52 Alternative shipping routes).</p>



Review Comment	53. Cumulative and Transboundary Effects
	<p>BIMC has suggested that because the Navy Board Inlet – Lancaster Sound route would impact the “<i>same marine mammal populations, having all project shipping captured under Eclipse Sound is acceptable.</i>” (TSD 27 Supplement s.4.1, p.15 of 26). QIA does not agree. Eastern Lancaster Sound provides critical habitat and/or seasonal migration routes for tens of thousands of narwhals, and for large numbers of belugas, bowheads, and walruses (See selected references listed in QIA TC 52). Use of this route would expand the Project-related shipping disturbances, and affect marine mammals from stocks that do not regularly use Eclipse Sound (see also DFO 2019b, p. 7).</p> <p>Extending Project shipping from the approved northern and southern routes to and across the Beaufort Sea is a particular concern for QIA, given number of ecologically important marine habitats, large seasonal concentrations of marine mammals and birds, and numerous communities. Shipping via the Northwest Passage would fundamentally alter the extents, magnitudes, and receptors of potential impacts along the major passages across Arctic Canada. Their assessment would require a regional study area that extends from the Labrador Sea to the Bering Sea. Alternative routes through the NW Passage would also have to be assessed. Vessel use of the narrower passages could disrupt seasonal movements of marine mammals and displace animals from preferred habitats (Hauser et al. 2018), with possible population level effects and effects on Inuit harvests. (see also QIA TC 52 Alternative shipping routes)</p> <p>Shipping to and from putative markets in the Pacific region, particularly if ships are arriving in ballast from Asia, would alter the transport of non-indigenous species into Milne Inlet and thereby the risks related to species introductions. Milne Port could be receiving non-indigenous species from both the Atlantic and Pacific oceans, and become a node for the transfer of invasive species. (See also QIA TC 45 Species introductions).</p> <p>Collectively, the approaches used to assess the potential cumulative effects of Project-related shipping in Canadian Arctic waters and resultant gaps in coverage, create uncertainty in the assessment. This affects decisions regarding how the Project may affect sustainability of diverse VECs. It also affects efforts to mitigate and monitor shipping effects, and to plan adaptive management.</p> <p><u>References</u></p> <p>DFO. 2019a. Science review of the Phase 2 Addendum to the Final Environmental Impact Statement for the Baffinland Mary River Project. DFO Can. Sci. Advis. Sec. Sci. Resp. 2019/015.</p> <p>DFO. 2019b. Science review of additional documents submitted May 13–June 17, 2019 for the Second Technical Review of the Final Environmental Impact Statement Addendum for the Baffinland Mary River Project Phase 2. DFO Can. Sci. Advis. Sec. Sci. Resp. 2019/031: 58 pp.</p>



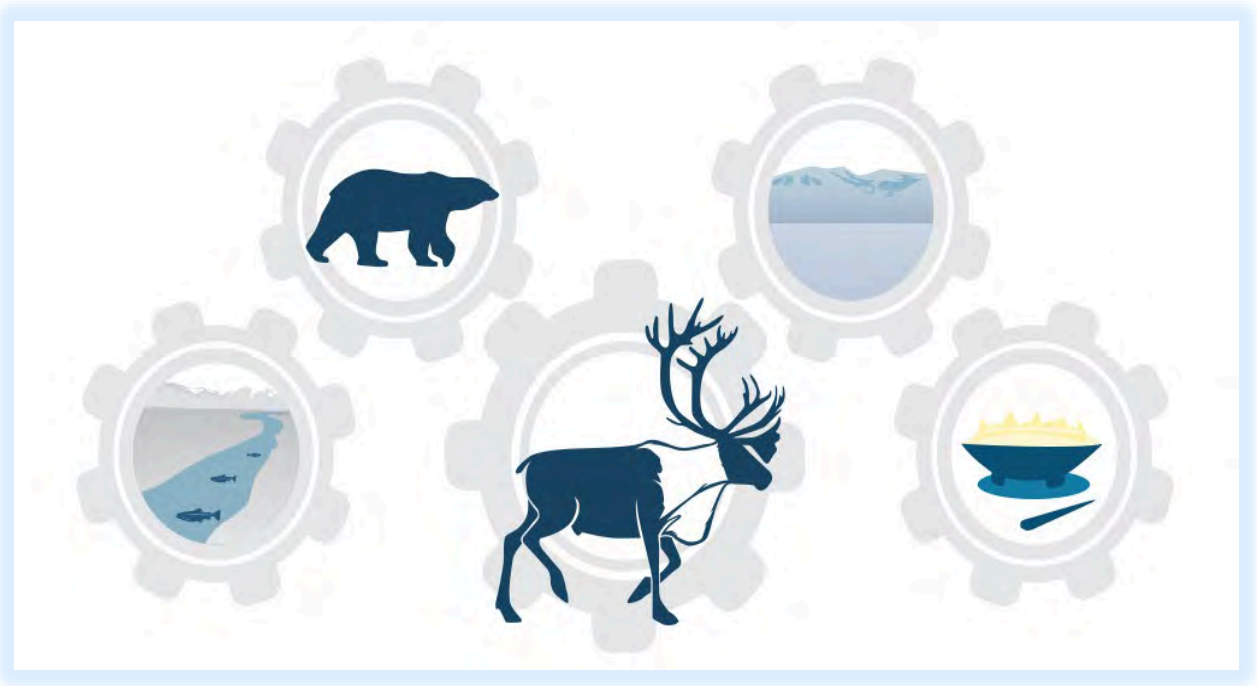
Review Comment	53. Cumulative and Transboundary Effects
	<p>Duinker P. and L. Greig. 2006. The impotence of cumulative effects assessment in Canada: ailments and ideas for redeployment. <i>Environmental Management</i>. 37(2): 153-161.</p> <p>Ferguson, S.H., Dueck, L., Loseto, L.L., and Luque, S.P. 2010. Bowhead whale <i>Balaena mysticetus</i> seasonal selection of sea ice. <i>Marine Ecology Progress Series</i> 411: 285-297. DOI: <a href="https://doi.org/10.3354/meps08652">https://doi.org/10.3354/meps08652</a></p> <p>Golder. 2019. Assessment of icebreaking operations during shipping shoulder seasons on marine biophysical valued ecosystem components (VECs). Prepared by Golder Associates Ltd., [Victoria, BC] for Baffinland Iron Mines Corporation Mary River Project - Phase 2 Proposal (17 May 2019). 343 pp.</p> <p>Hauser, D.L., Laidre, K.L. and Stern, H. 2018. Vulnerability of Arctic marine mammals to vessel traffic in the increasingly ice-free Northwest Passage and Northern Sea Route. <i>Proceedings of the National Academy of Sciences</i>. 115. 201803543. 10.1073/pnas.1803543115.</p> <p>Stantec Consulting Ltd. 2019. Mary River Project: environmental review of shipping through the Northwest Passage. Final Report, July 12, 2019, File: 121414789. Prepared for Baffinland Iron Mines Corporation, Oakville, ON. v + 118 p.</p> <p>Watt, C.A., Orr, J., LeBlanc, B., Richard, P., and Ferguson, S.H. 2012. Satellite tracking of narwhals (<i>Monodon monoceros</i>) from Admiralty Inlet (2009) and Eclipse Sound (2010-2011). <i>DFO Can. Sci. Advis. Sec. Res. Doc.</i> 2012/046. iii + 17 p.</p> <p>Yurkowski, D.J., Auger-Méthé, M., Mallory, M.L., et al. 2019a. Abundance and species diversity hotspots of tracked marine predators across the North American Arctic. <i>Divers Distrib.</i> 25:328–345. <a href="https://doi.org/10.1111/ddi.12860">https://doi.org/10.1111/ddi.12860</a></p>
<b>Recommendation /Request</b>	<p>QIA recommends that NIRB establish a new Project Certificate Condition to ensure that “prior to the onset of ore shipments by Project vessels from Steensby Port, BIMC complete a cumulative impact assessment of approved, existing, and reasonably foreseeable Project shipping that integrates the impacts of all shipping-related Project activities on all VECs and VSECs, in the context of other human activities, natural stressors such as climate change, and developments, and considering all interactions.”</p> <p>QIA requests that the Proponent commit, prior to Phase 2 shipping, to identifying and implementing mitigation and adaptive management measures to prevent shipping-related impacts to marine mammals, including polar bears, in ecologically important areas outside the RSA.</p>
<b>August 11, 2020 Update</b>	<p><b>Resolved, contingent on ICA implementation.</b></p> <p>Resolved pending successful implementation of ICA, specifically ID 9B regarding Project Scope, and amendments to the Mary River IIBA. Any changes in project scope will require</p>



Review Comment	53. Cumulative and Transboundary Effects
	<p>the following obligations to be initiated prior to the filing of a formal proposal to amend the project certificate:</p> <ul style="list-style-type: none"> <li>• Proponent commitment to carry out a Culture Resource and Land Use assessment conducted with QIA and Impacted communities</li> <li>• Commitment to carry out a Cumulative Effects Assessment conducted with QIA and Impacted communities.</li> </ul>
<p><b>Final Status Update</b></p>	<p><b>Unresolved.</b></p> <p>QIA notes that deficiencies in the Proponent's transboundary assessment and cumulative effects assessment have been, and remain, apparent throughout this review process. For example, the recent ESPOO documentation provided by Greenland includes important information for the Board's consideration of transboundary and cumulative impacts of marine shipping. The Proponent's cumulative effects assessment also did not adequately consider the potential for noise generation during the construction of the Small Craft Harbour (SCH) in Pond Inlet, and this has led to delays in investigating the role of various stressors, alone and in concert, in the recent significant decline in Eclipse Sound narwhal abundance.</p> <p>The Proponent has committed (commitments 2, 12) to participating in marine spatial planning and cumulative effects assessments, should they be led by an appropriate regional body such as the Federal government. While useful, these types of exercises, which are not proposed to QIA's knowledge, will not address on-going concerns regarding transboundary and cumulative effects or their monitoring and mitigation.</p>

# Appendix 2

to the Final Written Submission of the  
Qikiqtani Inuit Association



## Proposed Project Certificate Conditions

For the Baffinland Iron Mines Corporation  
08MN053 – Phase 2 Development Proposal



## Inuit Governance and Participation (NEW)

Term and Condition No. [NEW A]	
<b>Category:</b>	Inuit Stewardship Plan
<b>Responsible Parties:</b>	The Proponent; Qikiqtani Inuit Association
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To establish independent, proactive, Inuit led Project monitoring and governance structures in the impacted communities.
<b>Term or Condition:</b>	Prior to the commencement of rail construction, and prior to increasing production beyond 6 Mtpa Baffinland shall finance and shall work with the Qikiqtani Inuit Association and Inuit in the impacted communities to finalize and facilitate the implementation of an Inuit Stewardship Plan. The Inuit Stewardship Plan will be authored by QIA and will detail the ways Inuit will monitor the Project over the life of the project. The ISP will be plan overseen by QIA and Inuit from the impacted communities that identify monitoring and management roles for Inuit in the culture, resources, and land use, and social, impact realms. Findings of the monitoring programs will be integrated into management decisions based on requirements built into the Project's Adaptive Management Plan. This term is in accordance with the Proponent commitments under the Inuit Certainty Agreement,
<b>Reporting Requirements:</b>	Approved Inuit Stewardship Plan to be provided to NIRB prior to rail construction and/or production increase.
<b>Rationale:</b>	QIA believes Project Certificate Conditions should exist that link the Project Certificate to the commitments from the Inuit Certainty Agreement, and that tie construction and production to having an Inuit Stewardship Plan finalized.
<b>Baffinland Commitments</b>	131, 137, 162

Term and Condition No. [NEW B]	
<b>Category:</b>	Inuit Stewardship Plan – Inuit Nauttisuqtiit
<b>Responsible Parties:</b>	The Proponent, Qikiqtani Inuit Association
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To establish independent, proactive, Inuit led Project monitoring and governance structures in the impacted communities.
<b>Term or Condition:</b>	As detailed the Inuit Stewardship Plan, Baffinland shall fund Inuit Nauttisuqtiit in each of the point of hire communities. These positions will be employees of the Qikiqtani Inuit Association, and will be responsible for developing and executing Inuit-led monitoring

	of Project impacts on the Marine, Terrestrial and Socio-economic environments.
<b>Reporting Requirements:</b>	Approved Inuit Stewardship Plan to be provided to NIRB prior to rail construction and/or production increase.
<b>Rationale:</b>	QIA believes Project Certificate Conditions should exist that link the Project Certificate to the commitments from the Inuit Certainty Agreement. It is important that Inuit-led monitoring be in place prior to the impacts of Phase 2 being experienced by Inuit.
<b>Baffinland Commitments</b>	See #245 and #238; may be linked as both promise specific numbers of new positions for Inuit.

<b>Term and Condition No. [NEW C]</b>	
<b>Category:</b>	Adaptive Management
<b>Responsible Parties:</b>	The Proponent; Qikiqtani Inuit Association
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To establish Inuit led Project monitoring and governance structures in the impacted communities.
<b>Term or Condition:</b>	Prior to the commencement of rail construction, and prior to increasing production beyond 6 Mtpa Baffinland shall finance and shall work with the Qikiqtani Inuit Association to finalize and approve an Adaptive Management Plan for the life of the Project. The Adaptive Management Plan will set out the objectives, indicators, thresholds and response (OITR) requirements for all sub-plans, including Inuit OITRs for sub-plans subject to QIA approvals, and will detail how Inuit led monitoring under the Inuit Stewardship Plan will be utilized to inform Project operational and management decisions.
<b>Reporting Requirements:</b>	Approved Adaptive Management Plan to be provided to NIRB prior to rail construction and/or production increase.
<b>Rationale:</b>	QIA believes Project Certificate Conditions should exist that link the Project Certificate to the commitments from the Inuit Certainty Agreement, and that tie construction and production to having an Adaptive Management Plan finalized.
<b>Baffinland Commitments</b>	41, 135, 167, 218

<b>Term and Condition No. [NEW D]</b>	
<b>Category:</b>	Data Ownership and Access

<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To establish Inuit ownership of data generated through Project-related monitoring activities.
<b>Term or Condition:</b>	The Proponent shall recognize that all data and Inuit Qaujimanituqangit generated or collated through Project-related monitoring activities, including both Inuit-led monitoring and that undertaken in accordance with this Project Certificate and all other Agreements and regulatory obligations, is fully owned by Inuit. The Proponent shall ensure full and proper access to all information through the Qikiqtani Inuit Association, and through the relevant Working Groups. For clarity, this condition does not extend to proprietary or otherwise protected information except in accordance with legal requirements.
<b>Reporting Requirements:</b>	Delivery of data to QIA will be at a minimum on an annual basis.
<b>Rationale:</b>	The Inuit-led monitoring contemplated in the Inuit Certainty Agreement and more fully described through the Inuit Stewardship Plan will generate primary data that is unprecedented both in scope and in applicability. QIA believes that the Project Certificate should establish the principle of “Inuit led, Inuit owned” with respect to this data, and confirm that Inuit access to information is tied to compliance.
<b>Baffinland Commitments</b>	51, 229

<b>Term and Condition No. [NEW E]</b>	
<b>Category:</b>	Engagement and Communications
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To ensure that Inuit engagement is transparent and aligned with the objectives of Inuit stewardship and respect for Inuit Societal values.
<b>Term or Condition:</b>	The Proponent shall maintain a publicly accessible online engagement ledger, including past and planned engagements with impacted communities. This shall be accessible via public-facing website hosted by the Proponent. Information to be posted publicly will be date, time, location, agenda, actual topics discussed, participants, and outcomes. The ledger is to be updated monthly
<b>Reporting Requirements:</b>	In Annual Report
<b>Rationale:</b>	Transparency in engagement is of critical importance to Inuit. How the Proponent engages with Inuit will be set out in the Inuit Stewardship Plan, and QIA believes that the Project Certificate

	should echo and validate the expectation that Inuit are involved through the appropriate bodies in all Project-related Inuit engagement.
<b>Baffinland Commitments</b>	131, 137

## Ecosystemic Terms and Conditions

### Meteorology and Climate (including Climate Change)

<b>Term and Condition No.</b>	<b>1</b>
<b>Category:</b>	Meteorology and Climate – Climate Monitoring
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To provide feedback on the impacts that climate change might be having on the port facilities.
<b>Term or Condition:</b>	The Proponent shall use GPS monitoring or a similar means of monitoring at both Steensby Port and Milne Port, with tidal gauges to monitor the relative sea levels and storm surges at these sites.
<b>Reporting Requirements:</b>	The Proponent shall summarize and supply these monitoring results to NIRB in the annual Project report.
<b>Rationale:</b>	Baffinland has proposed deleting this PC Condition. QIA does not object to deleting this condition provided the suggested revisions to PC Condition 83 to include feedback and reporting are accepted.

<b>Term and Condition No.</b>	<b>2</b>
<b>Category:</b>	Meteorology and Climate – Climate Change Validation and Studies
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To provide feedback on the impacts that climate change might be having on the Project.
<b>Term or Condition:</b>	<p>The Proponent shall develop a climate change strategy that will include the following:</p> <ul style="list-style-type: none"> <li>a. Conducting studies that identify Project risks as a result of climate change and Project contributions to climate change</li> <li>b. data collection or research that will assist in defining long-term climate trends, such as: <ul style="list-style-type: none"> <li>• Monitoring sea levels and storm surges at Ports</li> <li>• Weather and temperature changes</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>• Permafrost stability</li> <li>• Engagement with Inuit communities and other relevant stakeholders on climate change initiatives</li> <li>• Investigation of initiatives that may be undertaken to reduce greenhouse gas emissions.</li> </ul>
<b>Reporting Requirements:</b>	The Proponent shall provide new or revised assessments and studies to the NIRB, the affected communities, relevant regulatory authorities, and interested parties.
<b>Rationale:</b>	Baffinland has proposed edits to consolidate PC Conditions 2-4. QIA supports this proposal provided that the wording of this Condition be that the Proponent “shall” rather than “may”.
<b>BIM Commitments</b>	1, 221, 250

<b>Term and Condition No.</b>	<b>3</b>
<b>Category:</b>	Meteorology and Climate – Green House Gas Emissions
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To confirm that the Proponent is exploring and implementing concrete steps to reduce greenhouse gases.
<b>Term or Condition:</b>	The Proponent shall provide interested parties with evidence of continued initiatives undertaken to reduce greenhouse gas emissions.
<b>Reporting Requirements:</b>	The Proponent shall include relevant information in the Annual Report submitted to the NIRB.
<b>Rationale:</b>	Baffinland has proposed edits to consolidate PC Conditions 2-4. QIA has no objection to this proposal provided that the wording of PC Condition 2 be that the Proponent “shall” rather than “may”.

<b>Term and Condition No.</b>	<b>4</b>
<b>Category:</b>	Climate Change – Consultation on Climate
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To promote public awareness and engagement of affected groups.

<b>Term or Condition:</b>	The Proponent shall endeavour to include the participation of Inuit from affected communities and other communities in Nunavut when undertaking climate-change related studies and research.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland has proposed edits to consolidate PC Conditions 2-4. QIA has no objection to this proposal provided that the wording of PC Condition 2 be that the Proponent “shall” rather than “may”.

<b>Term and Condition No.</b>	<b>5</b>
<b>Category:</b>	Meteorology and Climate – Weather Monitoring Data
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To provide families of employees with up to date information.
<b>Term or Condition:</b>	The Proponent shall endeavour to explore and implement reasonable measures to ensure that weather-related information for the various Project sites is readily accessible to the public on a continual basis throughout the life of the Project
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	No change

<b>Term and Condition No.</b>	<b>6</b>
<b>Category:</b>	Meteorology and Climate – Emissions
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To provide feedback on the Project’s emissions.
<b>Term or Condition:</b>	The Proponent shall provide the results of any emissions calculations conducted to determine the level of sulphur dioxide (SO <sub>2</sub> ) emissions, nitrogen oxide (NO <sub>x</sub> ) emissions and greenhouse gases generated by all aspects of the Project (including aircraft) using fuel consumption or other relevant criteria as a basis. The Proponent shall demonstrate through monitoring of air quality at the mine site and at the Steensby Inlet and Milne Inlet port sites that emissions remain within predicted levels and, where applicable, within limits established by all applicable guidelines and regulations. In cases where exceedances are manifested, the Proponent shall provide an



	explanation for the exceedance, implement the adaptive management plan outlined in the Air Quality and Noise Abatement Management Plan, and shall conduct additional monitoring to evaluate the effectiveness of mitigative measures.
<b>Reporting Requirements:</b>	To be included in the Annual Report submitted to the NIRB
<b>Rationale:</b>	Baffinland has proposed deleting PC Conditions 8 and 9. QIA believes that the Project Certificate should provide the appropriate level of detail with respect to air quality and greenhouse gas emission monitoring. With the proposed edits accepted, QIA supports deleting PC Conditions 8 and 9.
<b>BIM CommitmentsCommitment</b>	73, 74, 75, 101, 139, 250

### Air Quality

<b>Term and Condition No.</b>	<b>7</b>
<b>Category:</b>	Air Quality – Monitoring
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To provide feedback on the Project's emissions.
<b>Term or Condition:</b>	The Proponent shall update its Air Quality and Noise Abatement Management Plan to provide for continuous monitoring at land-based monitoring stations designed to capture operations phase ship-generated SO <sub>2</sub> and NO <sub>2</sub> emissions at Steensby Port and Milne Port. Continuous monitoring is to be carried out through several shipping seasons at each port as required to determine that emissions are at acceptable levels.
<b>Reporting Requirements:</b>	The updated plan shall be provided to the NIRB for review and comment at least 60 days prior to commencement of construction activities.
<b>Rationale:</b>	Baffinland has proposed removing this PC Condition as an updated plan was submitted as part of the FEIS and included continuous monitoring of SO <sub>2</sub> , NO <sub>2</sub> and particulates. QIA supports this deletion as long as Baffinland maintains continuous monitoring for of SO <sub>2</sub> , NO <sub>2</sub> and particulates.
<b>BIM Commitments</b>	73, 74, 75, 101, 139

<b>Term and Condition No.</b>	<b>8</b>
<b>Category:</b>	Air Quality – Greenhouse Gas Emissions
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To provide feedback on the Project's emissions.
<b>Term or Condition:</b>	The Proponent shall demonstrate through monitoring of air quality at the mine site and at the Steensby Inlet and Milne Inlet port sites that SO <sub>2</sub> and NO <sub>2</sub> emissions remain within predicted levels and, where applicable, within limits established by all applicable guidelines and regulations. In cases where exceedances are manifested, the Proponent shall provide an explanation for the exceedance, a description of planned mitigation, and shall conduct additional monitoring to evaluate the effectiveness of mitigative measures.
<b>Reporting Requirements:</b>	To be included in the Proponent's annual reporting to the NIRB.
<b>Rationale:</b>	Baffinland has proposed deleting this PC Condition. QIA supports deleting this condition provided the suggested revisions to PC Condition 6 are accepted.

<b>Term and Condition No.</b>	<b>9</b>
<b>Category:</b>	Air Quality – Greenhouse Gas Emissions
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To provide feedback on the Project's emissions.
<b>Term or Condition:</b>	The Proponent shall provide calculations of greenhouse gas emissions generated by activities at the Steensby Inlet and Milne Inlet port sites and other Project sources including aircraft associated with the Project. Calculations shall take into consideration, fuel consumption as measured
	by Baffinland's purchase and use as well as the fuel use of its contractors and sub-contractors.
<b>Reporting Requirements:</b>	To be included in the Proponent's annual reporting to the NIRB.
<b>Rationale:</b>	Baffinland has proposed deleting this PC Condition. QIA supports deleting this condition provided the suggested revisions to PC Condition 6 are accepted.

<b>Term and Condition No.</b>	<b>10</b>
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<b>Category:</b>	Air Quality and Noise Abatement Management Plan (Dustfall Management and Monitoring Plan)
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To prevent impacts to air quality from dust dispersion.
<b>Term or Condition:</b>	<p>The Proponent shall update Air Quality and Noise Abatement Management Plan to address and/or include the following additional items:</p> <ul style="list-style-type: none"> <li>a) The proponent will monitor for dust to accurately capture impacts in the 14km zone of influence around the length of the railway. (14km radius from all points of railway.</li> <li>b) Identify the predicted dust deposition (amount and composition) from trains, using acceptable thresholds as defined in the adaptive management plan and sub-plans and in consideration of the full suite of values that may be impacted by dustfall.</li> <li>c) Identify the specific adaptive management measures to be considered should monitoring indicate that dust deposition from trains transporting along the rail route is greater than acceptable thresholds.</li> <li>d) Outline specific plans for monitoring dustfall at intervals along and in the vicinity of the Milne Inlet Tote Road to determine the amount and extent of dustfall.</li> <li>e) Identify predicted dust deposition (amount and composition) from the road, using acceptable thresholds as in the adaptive management plan and sub-plans and in consideration of the full suite of values that may be impacted by dustfall.</li> <li>f) Identify the specific adaptive management measures to be considered if monitoring indicates that dust deposition from traffic on the Milne Inlet Tote Road is greater than acceptable thresholds.</li> <li>g) Outline specific plans for monitoring dustfall at the mine site and the loading facilities (at Milne Port and Steensby Port).</li> <li>h) Identify predicted dustfall deposition (amount and composition) from these dust sources within acceptable thresholds as defined in the adaptive management plan and sub-plans and in consideration of the full suite of values that may be impacted by dustfall.</li> <li>i) Identify the specific adaptive management measures to be considered if monitoring indicates that dust from these sources is greater than acceptable thresholds.</li> <li>j) Add to this list any other dust sources identified through IQ dustfall studies and/or the audit of dustfall sources being undertaken by Baffinland, and treat them identically (i.e., identify how monitoring will take place, identify predicted dust deposition (amount and composition) using acceptable</li> </ul>

	<p>thresholds, and identify specific adaptive management measures to address exceedances).</p> <ul style="list-style-type: none"> <li>k) Outline specific plans for monitoring dustfall on a regional scale (i.e., within the RSA and beyond).</li> <li>l) Identify predicted regional dustfall levels within acceptable thresholds as defined in the adaptive management plan and sub-plans and in consideration of the full suite of values that may be impacted by dustfall.</li> <li>m) Identify specific adaptive management measures to be considered if monitoring indicates that dust from these sources is greater than acceptable thresholds.</li> <li>n) Describe how dustfall monitoring is coordinated with monitoring deposition on vegetation.</li> <li>o) Describe how dustfall monitoring is coordinated with estimating impacts to caribou from dustfall on lichen, including re-estimating the Zone of Influence (ZOI) around the mine, road and port facilities.</li> <li>p) Describe how dustfall monitoring is coordinated with monitoring impacts on the freshwater and marine ecosystems.</li> </ul> <p>The Air Quality and Noise Abatement Management Plan shall include the following information:</p> <ul style="list-style-type: none"> <li>• Procedures for triggering changes to practices to reduce dustfall</li> <li>• Communication protocols to drivers</li> <li>• Enforcement methods of changes (e.g., monitoring speeds)</li> <li>• Strengthened linkage between dustfall monitoring and the amount of dust on vegetation, including effort that considers monitoring dustfall at ground level.</li> <li>• Regional monitoring of dustfall conducted each year</li> <li>• Adaptive management procedures if dustfall exceedances occur</li> <li>• Process for addressing community-based monitoring concerns about dustfall</li> <li>• Testing and approval requirements for the use of new dust suppressants</li> <li>• Considerations for potential impact pathways to terrestrial values (plants, animals) and aquatic values (freshwater and marine ecosystems) in the suppressant approval process</li> </ul> <p>The Proponent shall implement its AQNAMP, report all monitoring data (including raw data) to the NIRB, the Inuit Committee, the TEWG, and other bodies as requested by these groups on an annual basis (at a minimum), and take all adaptive management measures described in its AQNAMP. If monitoring indicates that dust from activities associated with the project is greater than thresholds adopted into the Project's Adaptive Management Plan, the Proponent will further take any additional adaptive management measures identified by the Inuit Committee and the TEWG.</p>
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<b>Reporting Requirements:</b>	Revised AQNAMP to be provided to the NIRB and the for review and comment at least 90 days prior to commencement of construction activities. Results of this monitoring program, including raw data, shall be reported to the and the TEWG as required under the terms of reference for these groups, and reported annually to the NIRB.
<b>Rationale:</b>	<ul style="list-style-type: none"> <li>Dust and its management is a primary concern of Inuit in relation to the Project. QIA believes that NIRB should consider adding detail that describes the required content of the Air Quality and Noise Abatement Management Plan. In particular, the critical bullets/points contained in the above "Term or Condition" section.</li> </ul>
BIM Commitments	75, 200, 230, 231, 232, 233, 234234, 233, 232, 230, 177, 167, 75, 73, 59

<b>Term and Condition No.</b>	<b>11</b>
<b>Category:</b>	Air Quality – Incineration Management Plan
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate impacts to air quality from incineration activities.
<b>Term or Condition:</b>	The Proponent shall develop and implement an Incineration Management Plan that takes into consideration the recommendations provided in Environment Canada's Technical Document for Batch Waste Incineration (2010).
<b>Reporting Requirements:</b>	Updated Incineration Management Plan to be provided to the NIRB at least 60 days prior to the commencement of construction activities.
<b>Rationale:</b>	Baffinland has proposed removing this PC Condition as it s addressed in the Waste Management Plan. QIA supports removal of this condition if NIRB agrees this commitment is fulfilled by the Proponent

<b>Term and Condition No.</b>	<b>12</b>
<b>Category:</b>	Air Quality – Incineration
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction

<b>Objective:</b>	To mitigate impacts to air quality from incineration activities.
<b>Term or Condition:</b>	Prior to commencing any incineration of on-site Project wastes, the Proponent shall conduct at least one stack test immediately following the commissioning of each temporary and permanent incinerator.
<b>Reporting Requirements:</b>	Stack test results to be reported to the NIRB and Environment Canada annually as required.
<b>Rationale:</b>	QIA defers to Environment and Climate Change Canada and the World Wildlife Fund in considering any proposed revisions to this PC Condition.

## Noise and Vibration

<b>Term and Condition No.</b>	<b>13</b>
<b>Category:</b>	Noise and Vibration-Use of Explosives
<b>Responsible Parties:</b>	The Proponent, Fisheries and Oceans Canada
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To determine appropriate protection of fish and aquatic life in the Arctic.
<b>Term or Condition:</b>	The Proponent is encouraged to work with Fisheries and Oceans Canada at the regulatory phase and to take a precautionary approach when selecting the overpressure threshold to be applied to explosives use for the protection of fish and aquatic life.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	No change

<b>Term and Condition No.</b>	<b>14</b>
<b>Category:</b>	Noise and Vibration- Noise and Vibration Monitoring
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate noise and vibration at Project sites in the terrestrial environment, including impacts of noise to wildlife and people during project construction and operations
<b>Term or Condition:</b>	The Proponent shall include measures related to acceptable thresholds, monitoring measures and adaptive management responses related to noise and vibration generated by the Project in its Air Quality and Noise Abatement Management Plan (AQNAMP).



	<p>The Proponent shall conduct noise and vibration monitoring at Project accommodations sites and other key sensitive areas located at the Mary River mine site, Steensby Inlet Port site, the Milne Inlet Port site, along the transportation corridor, and along helicopter flight routes. Sampling shall be undertaken during the summer and winter months during all phases of Project development.</p> <p>The Proponent shall also implement its AQNAMP, report all noise and vibration monitoring data, including raw data, to the NIRB, the TEWG, and other bodies as requested by these groups on an annual basis (at a minimum), and take all adaptive management measures described in its AQNAMP. If monitoring indicates that noise and vibration from activities associated with the Project are greater than the approved triggers and thresholds the Proponent will further take any additional adaptive management measures identified by QIA, the Inuit Committee and the TEWG.</p>
<b>Reporting Requirements:</b>	Revised AQNAMP to be provided to the NIRB and the for review and comment at least 90 days prior to commencement of construction activities. Results of this monitoring program, including raw data, shall be reported to the and the TEWG as required under the terms of reference for these groups, and reported annually to the NIRB.
<b>Rationale:</b>	Proposed revisions to link noise and vibration monitoring and reporting to commitments with respect to adaptive management commitments described in the Inuit Certainty Agreement. Expanded to include all impacts from noise and vibration in the terrestrial environment (including wildlife and human)
<b>BIM Commitments</b>	N/A

<b>Term and Condition No.</b>	<b>14 (a)</b>
<b>Category:</b>	Noise and Vibration- Noise and Vibration Adaptive Management
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To mitigate potential impacts of noise to marine wildlife during Project construction
<b>Term or Condition:</b>	The Proponent, through coordination with the MEWG, Inuit Committee and others as may be appropriate, shall demonstrate appropriate adaptive management for construction activities at Milne Inlet that have the potential to disrupt marine mammal species, including pile driving and ore dock construction, are undertaken.
<b>Reporting Requirements:</b>	To be included in the Annual Report submitted to the NIRB

<b>Rationale:</b>	<p>Baffinland proposes deleting this PC Condition as work would be conducted in accordance with the Department of Fisheries and Oceans and with the requirements of the Fisheries Act Authorizations.</p> <p>QIA disagrees with deleting this PC Condition. Regulatory requirements may not be sufficient to address Inuit concerns, and MEWG coordination can help address any issues. QIA has revised the language to include the Inuit Committee and other bodies as may be appropriate for reporting.</p>
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<b>Term and Condition No.</b>	<b>14 (b)</b>
<b>Category:</b>	Noise and Vibration- Noise and Vibration Adaptive Management
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Operations
<b>Objective:</b>	To mitigate potential impacts of noise to wildlife and people during project operations
<b>Term or Condition:</b>	<p>The Proponent, through coordination with the TEWG as may be appropriate, shall demonstrate appropriate adaptive management for project activities during operations which have the potential to produce noise and sensory disturbance to wildlife and other users of project areas.</p> <p>The Proponent shall take all adaptive management measures identified by the or otherwise through the Adaptive Management Plan if monitoring indicates that noise and vibration from activities associated with the project are greater than thresholds adopted into the Project's Adaptive Management Plan.</p>
<b>Reporting Requirements:</b>	To be included in the Annual Report submitted to the NIRB
<b>Rationale:</b>	IQ holders have noted that vibrations and noise from explosives are causing caribou to avoid areas near the mine. QIA believes that this PC Condition can be strengthened to reflect the commitments to adaptive management from the Inuit Certainty Agreement.

<b>Term and Condition No.</b>	<b>15</b>

<b>Category:</b>	Noise and Vibration- Noise and Vibration Monitoring
<b>Responsible Parties:</b>	The Proponent, Qikiqtani Inuit Association, impacted communities
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To enhance public safety when travelling around the Project area.
<b>Term or Condition:</b>	The Proponent shall collaborate to the extent possible with the Qikiqtani Inuit Association and impacted communities when undertaking consultation with all affected communities regarding railway, tote road and marine shipping operations. During these consultations, it is recommended that the Proponent provide information including video, audio, and photographic representation as well as any other aids (i.e. models) that may enhance the general public's understanding of railway, tote road and marine shipping operations, as well as all safety considerations for members of the public who may be travelling around the Project area.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland has proposed deleting this condition following an amalgamation of content with PCC 163. QIA does not support deleting this PC Condition. QIA believes it is important to include the impacted communities, as well as specific requirements for consultation to include concerns for the northern railway, Tote Road, and marine shipping and port facility operations.

## Hydrology and Hydrogeology

<b>Term and Condition No.</b>	<b>16</b>
<b>Category:</b>	Hydrology and Hydrogeology – Water Infrastructure
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To provide assurance that the potential impacts to flow and quantity of water in the Project area are minimized.
<b>Term or Condition:</b>	The Proponent shall ensure that the water related infrastructure or facilities that are designed and constructed, including the modification of culverts, diversion of watercourses, and diversion of runoff into watercourses along the railway, access roads, port sites, the Milne Tote Road, and other areas of the Project site, are consistent with those proposed in the FEIS and FEIS Addendum in terms of type, location, and scope and that the requirements of all relevant regulatory authorities are satisfied advance of constructing those facilities.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.

<b>Rationale:</b>	Baffinland has proposed deleting this PC Condition on the basis that it is duplicative of the Type A Water License. QIA disagrees with deleting this PC Condition, as it is a reason for the current Water Licence Terms and Conditions as indicated by Baffinland. This does not warrant the removal of the Project Term. Should this Project Term be removed, the Nunavut Water Board should be committed to being more prescriptive in the Water Licence Terms and Conditions. Considering the current timelines for the Water Licence process that is already underway, this may not be feasible.
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**Commentary:** *It is understood that the term “consistent with those proposed in the FEIS” requires general consistency only in relation to the type, location and scope of this infrastructure and facilities, but does not limit the ability of the Proponent to refine and optimize the design, placement and construction as may become necessary to reflect site-specific conditions encountered during construction.*

<b>Term and Condition No.</b>	<b>17</b>
<b>Category:</b>	Hydrology and Hydrogeology – Effluent Management
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent impacts to water bodies from effluent.
<b>Term or Condition:</b>	The Proponent shall develop and implement effective measures to ensure that effluent from Project-related facilities and/or activities, including sewage treatment plants, ore stockpiles, and mine pit, satisfies all discharge criteria requirement established by the relevant regulatory agencies prior to being discharged into the receiving environment.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland has proposed deleting this PC Condition on the basis that it is duplicative of the Type A Water License. QIA disagrees with deleting this PC Condition, as it is a reason for the current Water Licence Terms and Conditions as indicated by Baffinland. This does not warrant the removal of the Project Term. Should this Project Term be removed, the Nunavut Water Board should be committed to being more prescriptive in the Water Licence Terms and Conditions. Considering the current timelines for the Water Licence process that is already underway, this may not be feasible.

<b>Term and Condition No.</b>	<b>18</b>
<b>Category:</b>	Hydrology and Hydrogeology – Pit Lake Monitoring

<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To enhance predictions for mine site closure conditions.
<b>Term or Condition:</b>	The Proponent shall carry out continued analyses over time to confirm and update, accordingly, the approximate fill time for the mine pit lake identified in the FEIS.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes deleting this PC Condition as it is covered under the Type A Water License. QIA disagrees with deleting this PC Condition. Baffinland has yet to begin studies to confirm and update the approximate fill time for the mine pit lake identified in the FEIS given that a pit was observed during a QIA inspection in 2019 and the QIA Audit in 2020. QIA is aware of a mine site wide water management plan that is in development and was expected from Baffinland on December 31, 2020. Furthermore, the requirement for this specific study is not specifically required in the Lease.

<b>Term and Condition No.</b>	<b>19</b>
<b>Category:</b>	Hydrology and Hydrogeology – Water Infrastructure Monitoring
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate impacts to natural water flow.
<b>Term or Condition:</b>	The Proponent shall ensure that it develops and implements adequate monitoring and maintenance procedures to ensure that the culverts and other conduits that may be prone to blockage do not significantly hinder or alter the natural flow of water from areas associated with the proposed mine. In addition, the Proponent shall monitor, document and report the withdrawal rates for water removed and utilized for all domestic and industrial purposes.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland has proposed deleting this PC Condition on the basis that it is duplicative of the Type A Water License. QIA disagrees with deleting this PC Condition, as it is a reason for the current Water Licence Terms and Conditions as indicated by Baffinland. This does not warrant the removal of the Project Term. Should this Project Term be removed, the Nunavut Water Board should be committed to being more prescriptive in the Water Licence Terms and Conditions. Considering the current timelines for the Water Licence process that is already underway, this may not be feasible.

<b>BIM Commitments</b>	76, 77, 78, 124, 126 [Note: content of 76 and 124 are similar]
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### Groundwater/Surface Waters

<b>Term and Condition No.</b>	<b>20</b>
<b>Category:</b>	Groundwater/Surface Waters - Explosives
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To ensure that the effects associated with the manufacturing, storage, transportation and use of explosives do not negatively impact the areas surrounding the Project.
<b>Term or Condition:</b>	The Proponent shall monitor the effects of explosives residue and related by-products from Project-related blasting activities as well as develop and implement effective preventative and/or mitigation measures, including treatment, if necessary, to ensure that the effects associated with the manufacturing, storage, transportation and use of explosives do not negatively impact the Project and surrounding areas.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland has proposed deleting this PC Condition on the basis that it is duplicative of the Type A Water License. QIA disagrees with deleting this PC Condition, as it is a reason for the current Water Licence Terms and Conditions as indicated by Baffinland. This does not warrant the removal of the Project Term. Should this Project Term be removed, the Nunavut Water Board should be committed to being more prescriptive in the Water Licence Terms and Conditions. Considering the current timelines for the Water Licence process that is already underway, this may not be feasible.

<b>Term and Condition No.</b>	<b>21</b>
<b>Category:</b>	Groundwater/Surface Waters – Aquatic Effects Monitoring Plan and dustfall monitoring
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations
<b>Objective:</b>	To mitigate potential impacts to surface and ground waters.



<b>Term or Condition:</b>	<p>The Proponent shall ensure that the scope of the Aquatic Effects Monitoring Plan (AEMP) includes, at a minimum:</p> <ul style="list-style-type: none"> <li>a. monitoring of non-point sources of discharge, selection of appropriate reference sites, measures to ensure the collection of adequate baseline data and the mechanisms proposed to monitor and treat runoff, and sample sediments; and</li> <li>b. measures for dustfall monitoring designed as follows: <ul style="list-style-type: none"> <li>i. To establish a pre-trucking baseline and collect data during Project operation for comparison;</li> <li>ii. To facilitate comparison with existing guidelines and with thresholds using studies of Arctic char egg survival and/or other studies recommended by the Terrestrial Environment Working Group (TEWG) and/or Freshwater Environment Working Group (FEWG);</li> <li>iii. To assess and monitor inputs and aquatic effects of Project-generated dust and sediment on the water quality, sediment dispositions, and biota of a representative reach(s) of Phillips Creek that is crossed by the Tote Road and rail route and would also be crossed by the proposed railway;</li> <li>iv. To assess the seasonal deposition (rates, quantities) and chemical composition of dust entering aquatic systems along representative distance transects at right angles to the Tote Road and radiating outward from Milne Port and the Mine Site; and</li> <li>v. To assess the presence and potential toxicity to aquatic biota of chemicals entering streams along the tote road from the residues of rubber tire wear. This provision will continue as long as the Tote Road is used to support Project operations.</li> </ul> </li> </ul>
<b>Reporting Requirements:</b>	Annually to NIRB.
<b>Rationale:</b>	<p>Baffinland has proposed deleting this PC Condition on the basis that it is duplicative of the Type A Water License. QIA disagrees with deleting this PC Condition, and has instead proposed revisions and additions.</p> <p>Baffinland has not established a defensible sediment threshold for Arctic char egg survival using Project-generated sediment, and the TEWG has not been dealing with freshwater fisheries issues. Terrestrial dustfall is monitored but the amount of dust and sediment generated by Project activities that enters aquatic systems along the tote road is unknown, as are the aquatic effects. If Phase 2 is approved Project-generated dust could increase in the short term and sediment erosion in the longer term.</p> <p>Further, rubber tires contain chemicals (e.g., antioxidants) that can be acutely toxic to aquatic biota and have caused mass mortality of salmonid fishes in streams when mobilized by runoff (e.g., Tian et al.</p>

	2021). This emerging issue is a concern due to the magnitude of Project truck traffic along the tote road and unexpectedly high rate of tire wear, both of which are expected to continue.
<b>BIM Commitments</b>	20, 146, 148, 200, 202 (FEWG)

<b>Term and Condition No.</b>	<b>22</b>
<b>Category:</b>	Groundwater/Surface Waters – Sediment and Erosion Management Plan
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To develop appropriate sediment and erosion controls to prevent impacts to surface waters.
<b>Term or Condition:</b>	The Proponent shall develop a detailed Sediment and Erosion Management Plan to prevent and/or mitigate sediment loading into surface water within the Project area.
<b>Reporting Requirements:</b>	Plan to be provided to the NIRB for review and comment at least 60 days prior to commencement of construction activities.
<b>Rationale:</b>	Baffinland has proposed deleting this PC Condition on the basis that it is duplicative of the Type A Water License. QIA disagrees with deleting this PC Condition, as it is a reason for the current Water Licence Terms and Conditions as indicated by Baffinland. This does not warrant the removal of the Project Term. Should this Project Term be removed, the Nunavut Water Board should be committed to being more prescriptive in the Water Licence Terms and Conditions. Considering the current timelines for the Water Licence process that is already underway, this may not be feasible.

<b>Term and Condition No.</b>	<b>23</b>
<b>Category:</b>	Groundwater/Surface Waters – Groundwater Monitoring
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To prevent impacts to groundwater quality.
<b>Term or Condition:</b>	The Proponent shall develop and implement a Groundwater Monitoring and Management Plan to monitor, prevent and/or mitigate the potential effects of the Project on groundwater within the Project area.
<b>Reporting Requirements:</b>	Plan to be provided to the NIRB for review and comment at least 60 days prior to commencement of construction activities.

<b>Rationale:</b>	QIA agrees to keeping the wording of this condition as is, however, it is recommended the requirements be further prescribed during the Water Licence process that is currently underway.
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<b>Term and Condition No.</b>	<b>24</b>
<b>Category:</b>	Groundwater/Surface Waters – Effluent Management
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate impacts to groundwater and surface waters from effluent discharge.
<b>Term or Condition:</b>	The Proponent shall monitor as required the relevant parameters of the effluent generated from Project activities and facilities and shall carry out treatment if necessary to ensure that discharge conditions are met at all times.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland has proposed deleting this PC Condition on the basis that it is duplicative of the Type A Water License. QIA disagrees with deleting this PC Condition, as it is a reason for the current Water Licence Terms and Conditions as indicated by Baffinland. This does not warrant the removal of the Project Term. Should this Project Term be removed, the Nunavut Water Board should be committed to being more prescriptive in the Water Licence Terms and Conditions. Considering the current timelines for the Water Licence process that is already underway, this may not be feasible.

### Landforms, Geology and Geomorphology, Soils and Permafrost

<b>Term and Condition No.</b>	<b>25</b>
<b>Category:</b>	Landforms – Additional Geotechnical Investigations
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To mitigate impacts to sensitive landforms.
<b>Term or Condition:</b>	The Proponent shall undertake the additional geotechnical investigations to identify sensitive landforms, modify engineering design for Project infrastructure, develop and implement preventative and/or mitigation and monitoring measures to minimize the impacts of the Project's activities and infrastructure on sensitive landforms.

<b>Reporting Requirements:</b>	Plan to be provided to the NIRB for review and comment at least 60 days prior to commencement of construction activities.
<b>Rationale:</b>	Baffinland has proposed deleting this PC Condition on the basis that it is duplicative of the Type A Water License. QIA disagrees with deleting this PC Condition, as it is a reason for the current Water Licence Terms and Conditions as indicated by Baffinland. This does not warrant the removal of the Project Term. QIA is also concerned that Water quality according to Inuit standards and experience will not be appropriately monitored as part of the Project. Ensuring Inuit involvement in monitoring is a responsibility of NIRB and therefore necessitates a condition in addition to any water licensing requirements. Should this Project Term be removed, the Nunavut Water Board should be committed to being more prescriptive in the Water Licence Terms and Conditions. Considering the current timelines for the Water Licence process that is already underway, this may not be feasible.

<b>Term and Condition No.</b>	<b>26</b>
<b>Category:</b>	Landforms and Soils – Erosion Management Plan
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To develop appropriate measures for preventing destabilization and erosion.
<b>Term or Condition:</b>	The Proponent shall develop and implement a comprehensive erosion management plan to prevent or minimize the effects of destabilization and erosion that may occur due to the Project's construction and operation.
<b>Reporting Requirements:</b>	Plan to be provided to the NIRB for review and comment at least 60 days prior to commencement of construction activities.
<b>Rationale:</b>	Baffinland has proposed deleting this PC Condition on the basis that it is duplicative of the Type A Water License. QIA disagrees with deleting this PC Condition, as it is a reason for the current Water Licence Terms and Conditions as indicated by Baffinland. This does not warrant the removal of the Project Term. Should this Project Term be removed, the Nunavut Water Board should be committed to being more prescriptive in the Water Licence Terms and Conditions. Considering the current timelines for the Water Licence process that is already underway, this may not be feasible.

<b>Term and Condition No.</b>	<b>27</b>
<b>Category:</b>	Landforms, Geology and Geomorphology – Natural Aesthetics
<b>Responsible Parties:</b>	The Proponent

<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate impacts to natural aesthetics.
<b>Term or Condition:</b>	The Proponent shall include within its public consultation report information related to the sentiments expressed by affected communities about the impacts that changes to the topography and landscape have had on the aesthetic value of the Project area.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	<p>Baffinland proposes to remove this PC Condition on the grounds that a public consultation report was submitted to NIRB as part of the Phase 2 FEIS addendum.</p> <p>QIA only agrees with removing this PC condition if QIA New E is added to the Project Certificate. .</p> <p>If this new condition is not added by NIRB, QIA believes this condition should remain. Construction of the North Rail will mean considerable changes to the topography of the landscape, sentiments and concerns expressed after this has been built need to be recorded as per the condition. Describing concerns prior to actual construction is not equivalent. In addition, the landscape around the mine site will continue to change over time, primarily but not exclusively due to earthmoving activities by the Proponent. The original Condition was meant to capture “sentiments” of Inuit through all phases of the Project, and QIA sees no reason why that should be changed, especially with newly proposed infrastructure associated with Phase 2 that was never previously contemplated. The information provided in this condition will also inform closure planning and should therefore not be removed as public consultation of closure of the Project is yet to be completed.</p>

<b>Term and Condition No.</b>	<b>28</b>
<b>Category:</b>	Landforms, Geology and Geomorphology – Permafrost
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To ensure that permafrost integrity is maintained.
<b>Term or Condition:</b>	The Proponent shall monitor the effects of the Project on the permafrost along the railways, the Tote Road, and all other Project affected areas and must implement effective preventative measures to ensure that the integrity of the permafrost is maintained.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister

<b>Rationale:</b>	<p>Baffinland proposes to remove this PC Condition as monitoring and mitigation measures are covered by the Type A Water License. QIA disagrees with deleting this PC Condition, as it is a reason for the current Water Licence Terms and Conditions as indicated by Baffinland. This does not warrant the removal of the Project Term. Should this Project Term be removed, the Nunavut Water Board should be committed to being more prescriptive in the Water Licence Terms and Conditions. Considering the current timelines for the Water Licence process that is already underway, this may not be feasible.</p> <p>Additionally, QIA recommends the following revised wording to ensure the Northern Transportation corridor is included in this condition.</p>
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<b>Term and Condition No.</b>	<b>29</b>
<b>Category:</b>	Landforms, Geology and Geomorphology – Design Plans
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations
<b>Objective:</b>	To confirm constructed components meet design as assessed.
<b>Term or Condition:</b>	The Proponent shall provide to the respective regulatory authorities, for review and acceptance, for-construction engineering design and drawings, specifications and engineering analysis to support design in advance for constructing those facilities. Once Project facilities are constructed, the Proponent shall provide copies of the as-built drawings and design to the appropriate regulatory authorities.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	<p>Baffinland proposes to remove this PC Condition as monitoring and mitigation measures are covered by the Type A Water License. QIA disagrees with deleting this PC Condition, as it is a reason for the current Water Licence Terms and Conditions as indicated by Baffinland. This does not warrant the removal of the Project Term. Should this Project Term be removed, the Nunavut Water Board should be committed to being more prescriptive in the Water Licence Terms and Conditions. Considering the current timelines for the Water Licence process that is already underway, this may not be feasible.</p>

**Commentary:** “Acceptance” by a regulatory authority of for-construction engineering design and drawings, specifications and engineering analysis merely indicates that the authority has received the documentation but does not imply that the authority has approved the design, drawings, specifications or analysis received.



<b>Term and Condition No.</b>	<b>30</b>
<b>Category:</b>	Landforms, Geology and Geomorphology – Quarries
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To provide oversight on quarry design and management.
<b>Term or Condition:</b>	The Proponent shall develop site-specific quarry operation and management plans in advance of the development of any potential quarry site or borrow pit.
<b>Reporting Requirements:</b>	Plans to be provided to the NIRB for review and comment at least 30 days prior to commencement of construction activities.
<b>Rationale:</b>	Baffinland proposes to remove this PC Condition as monitoring and mitigation measures are covered by the Type A Water License. QIA disagrees with deleting this PC Condition, as it is a reason for the current Water Licence Terms and Conditions as indicated by Baffinland. This does not warrant the removal of the Project Term. Should this Project Term be removed, the Nunavut Water Board should be committed to being more prescriptive in the Water Licence Terms and Conditions. Considering the current timelines for the Water Licence process that is already underway, this may not be feasible.

## Vegetation

<b>Term and Condition No.</b>	<b>31</b>
<b>Category:</b>	Vegetation – Construction and Operations
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations
<b>Objective:</b>	To minimize impacts to vegetation.
<b>Term or Condition:</b>	The Proponent shall ensure that Project activities are planned and conducted in such a way as to minimize the Project footprint.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	No Change

<b>Term and Condition No.</b>	<b>32</b>
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<b>Category:</b>	Vegetation – Construction and Operations
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent introduction of invasive species.
<b>Term or Condition:</b>	<p>The Proponent shall ensure that equipment and supplies brought to the Project sites are clean and free of soils that could contain plant seeds not naturally occurring in the area. Vehicle tires and treads in particular must be inspected prior to initial use in Project areas. All sub-contractors must be trained on this requirement.</p> <p>The Proponent shall submit the process and methodology used to meet these requirements to the NIRB, the , and the TEWG. The Proponent shall implement this plan, report all monitoring data (including raw data) to the NIRB, the , the TEWG, and other bodies as requested by these groups on an annual basis (at a minimum), and take all adaptive management measures described in this plan.</p>
<b>Reporting Requirements:</b>	A management plan to meet this requirement shall be provided to the NIRB and the for comment at least 90 days prior to the commencement of construction. Results (including raw data) to be provided to the NIRB, the ANWG and the TEWG annually.
<b>Rationale:</b>	In QIA's experience, it has not been clear how Baffinland ensures that subcontractors adhere to this Project condition. QIA therefore recommends that requirements for sub-contractor adherence to this Condition be strengthened within the condition (including a requirement for information on how BIM employees are involved in inspections for subcontractors).
<b>BIM Commitments</b>	N/A

<b>Term and Condition No.</b>	<b>33</b>
<b>Category:</b>	Vegetation – Monitoring
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To facilitate monitoring.
<b>Term or Condition:</b>	The Proponent shall include relevant Monitoring and Management Plans within its Environmental Management System, Terrestrial Environment Management and Monitoring Plan (TEMMP).

<b>Reporting Requirements:</b>	To be included in the Annual Report submitted to the NIRB .
<b>Rationale:</b>	<p>Baffinland has proposed removing this PC Condition on the grounds that it duplicated PC Condition 38. QIA is concerned that if this condition is removed as proposed by the Proponent, there may be limited opportunities for updating or developing new plans incorporating IQ.</p> <p>That noted, if QIA's proposed revisions to PC Condition 38 are accepted, the proposal to remove this condition is supported.</p>

<b>Term and Condition No.</b>	<b>34</b>
<b>Category:</b>	Vegetation – Monitoring
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Closure and Post-Closure
<b>Objective:</b>	To determine metal levels in soils in close proximity to culturally important plants, including berry-producing plants and lichen.
<b>Term or Condition:</b>	<p>The Proponent shall establish appropriate thresholds for metal concentrations in soils in the TEMMP, and conduct ongoing soil sampling to determine metal levels of soils near project development areas. The focus of this monitoring should be within Inuit preferred harvesting areas near any Project infrastructure or activities, at locations identified in the Inuit Stewardship Plan or by relevant Hunters and Trappers Organizations. Results of this monitoring shall be reported to the Inuit Committee, the TEWG, and other bodies as identified in the Inuit Stewardship Plan.</p> <p>The Proponent shall implement monitoring programs for metal concentrations in soil, report all monitoring data (including raw data) to the NIRB, the , the TEWG, and other bodies as requested by these groups on an annual basis (at a minimum), and take all relevant adaptive management measures described in its TEMMP. If monitoring indicates that metals in soils are higher than thresholds adopted into the Projects, Adaptive Management Plan, the Proponent will further take any additional adaptive management measures identified by the Inuit Committee and the TEWG.</p>
<b>Reporting Requirements:</b>	Results of this monitoring program, including raw data, shall be reported to QIA and the TEWG as required under the terms of reference for these groups, and reported annually to the NIRB.
<b>Rationale:</b>	QIA supports a revision to account for potential environmental monitoring during all phases of the Project. A draft version of these edits has been provided.

<b>PROPOSED Term and Condition No. [NEW F]</b>	<b>QIA Recommended Project Certificate Condition</b>
<b>Category:</b>	Vegetation – Monitoring
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Closure, Post-Closure
<b>Objective:</b>	To determine and monitor the metal concentrations in culturally important plants
<b>Term or Condition:</b>	<p>The Proponent shall establish appropriate thresholds for metal concentrations in vegetation, and conduct ongoing vegetation sampling to determine metal levels in culturally important plants near project development areas. The focus of this monitoring should be within Inuit preferred harvesting areas near any Project infrastructure or activities, at locations identified in the Inuit Stewardship Plan or by relevant Hunters and Trappers Organizations. Results of this monitoring shall be reported to the , the TEWG, and other bodies as identified in the Inuit Stewardship Plan.</p> <p>The Proponent shall take all adaptive management measures identified by the or otherwise through the Inuit Stewardship Plan if monitoring indicates that metals in culturally important vegetation are higher than thresholds adopted into the Project's Adaptive Management Plan.</p>
<b>Reporting Requirements:</b>	To be included in the Annual Report submitted to the NIRB
<b>Rationale:</b>	Baffinland has proposed revisions in their Jan. 2020 submission, which includes monitoring outside of the PDA at the same frequency as soil monitoring under the TEMP. Regarding this proposed addition, QIA requests that the wording of this condition reflect the requirement for monitoring frequency and location to be as directed by Inuit and not subject to these restrictions. In the interests of not repeating measures in PC 34, this PC is now focused on vegetation (rather than soil).

<b>Term and Condition No.</b>	<b>35</b>
<b>Category:</b>	Vegetation – Monitoring
<b>Responsible Parties:</b>	The Proponent, local Hunters and Trappers Organizations

<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To determine baseline metal levels in foraging caribou.
<b>Term or Condition:</b>	<p>The Proponent shall undertake monitoring of baseline metal levels in organ tissue from caribou harvested within the local study area, prior to commencing operations. The Proponent shall make all efforts to coordinate with local Hunters and Trappers Organizations regarding procurement of harvested caribou organs.</p> <p>In addition, the Proponent shall work with the Inuit Committee and HTOs, (and seek advice from the TEWG) to identify an alternate species for sampling of organ tissue if warranted, until such a time as caribou are interacting with the expected area of contaminant dispersion around the Project facilities.</p>
<b>Reporting Requirements:</b>	Appropriate monitoring plan to be provided to the NIRB and the for review and comment at least 90 days prior to commencement of Phase 2 construction activities. Results of this monitoring program, including raw data, shall be reported to the and the TEWG as required under the terms of reference for these groups, and reported annually to the NIRB.
<b>Rationale:</b>	Given the lack of caribou encountered interacting with the area near the mine at the present time, it would be better to sample organ tissue of another animal. QIA recommends an addition to this condition for the Proponent to be required to coordinate with HTOs to determine an alternative to caribou (e.g., hare) until such a time as caribou are interacting with the Project area.

**Commentary:** *It is anticipated that the Terrestrial Environment Working Group members will provide guidance to the Proponent on the specific tissues studied, the methods for testing and mechanics of obtaining samples.*

<b>Term and Condition No.</b>	<b>36</b>
<b>Category:</b>	Vegetation – Monitoring
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Closure, Post-Closure
<b>Objective:</b>	To monitor for Project-induced effects to foraging caribou.
<b>Term or Condition:</b>	<p>The Proponent shall review their existing vegetation monitoring program with the TEWG to determine whether it adequately detects impacts to vegetation species used as caribou forage (specific lichen) near the Project development areas. The Proponent shall adhere to input from the TEWG on revisions to this program and include the revised monitoring protocol in the TEMMP.</p> <p>The Proponent shall implement the monitoring program as described in the TEMMP, report all monitoring data (including raw data) to the</p>

	<p>NIRB, the , the TEWG, and other bodies as requested by these groups on an annual basis (at a minimum), and take all adaptive management measures described in its TEMMP to reduce project impacts on lichen. If monitoring programs suggest concerns about lichen growth relative to control areas, the Proponent shall take any additional adaptive management measures identified by the Inuit Committee and the TEWG.</p> <p>Results of this monitoring program shall be used to re-estimate the zone of influence for caribou associated with this project. The Proponent is required to adhere to input from the TEWG on the appropriate methodology for re-estimating the zone of influence for caribou associated with the Project.</p>
<b>Reporting Requirements:</b>	Revised vegetation monitoring program shall be provided to the NIRB and the for review and comment at least 90 days prior to commencement of construction activities. Results of this monitoring program, including raw data, shall be reported to the and the TEWG as required under the terms of reference for these groups, and reported annually to the NIRB.
<b>Rationale:</b>	QIA believes that this is an important program and it is not clear whether the current methodology has been adequate. Lichen load is very low in the monitoring plots and the approach used by the proponent does not provide much data to look at whether the total load is varying over time. To address the current short coming, QIA requests that the PCC be revised to include a requirement to review and revise the program based on comments from the TEWG, and bring results into considerations of Project effects on caribou, including impacts on energetics and avoidance of the Project area.
<b>BIM Commitments</b>	65, 75

<b>Term and Condition No.</b>	<b>37</b>
<b>Category:</b>	Vegetation – Monitoring
<b>Responsible Parties:</b>	The Proponent, Government of Nunavut Department of Environment
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent establishment of invasive species.
<b>Term or Condition:</b>	The Proponent shall incorporate protocols for monitoring for the potential introduction of invasive vegetation species (e.g. surveys of plant populations in previously disturbed areas) into its Terrestrial Environment and Monitoring Plan. Any introductions of non-indigenous plant species must be promptly reported to the Government of Nunavut Department of Environment.



<b>Reporting Requirements:</b>	To be included in the Annual Report submitted to the NIRB.
<b>Rationale:</b>	No Change
<b>BIM Commitments</b>	N/A

<b>Term and Condition No.</b>	<b>38</b>
<b>Category:</b>	Vegetation – Adaptive Management
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate impacts to vegetation abundance, diversity and health.
<b>Term or Condition:</b>	<p>The Proponent shall include relevant monitoring and management Plans within its Terrestrial Environment Management and Monitoring Plan (TEMMP). These plans shall be reviewed, on an annual basis, along with all monitoring information and the vegetation mitigation and management plans developed under its Environmental Management System, Terrestrial Environment and Monitoring Plan (TEMMP), and adjusted as required to effectively prevent or reduce the potential for significant adverse Project effects on vegetation abundance, diversity and health.</p> <p>The Proponent shall implement relevant plans within the TEMMP, report all relevant monitoring data (including raw data) to the NIRB, the , the TEWG, and other bodies as requested by these groups on an annual basis (at a minimum), and take all adaptive management measures described in its TEMMP relevant to this program. If monitoring indicates that impacts to vegetation abundance, diversity and health are higher than thresholds adopted into the Project's Adaptive Management Plan, the Proponent will further take any additional adaptive management measures identified by the Inuit Committee and the TEWG.</p>
<b>Reporting Requirements:</b>	Revised TEMMP to be provided to the NIRB and the for review and comment at least 90 days prior to commencement of Phase 2 construction activities. Results of this monitoring program, including raw data, shall be reported to the and the TEWG as required under the terms of reference for these groups, and reported annually to the NIRB.
<b>Rationale:</b>	As noted, QIA support for removing PC Condition 33 is contingent upon the proposed edits to this condition being accepted.

	Given the uncertainty about dustfall, contaminants and potential impacts to vegetation in the Project area, as well as an ongoing problem related to lack of response by Baffinland to recommendations put forward by the TEWG to improve monitoring programs, T, strengthening this PCC should help address these concerns for all monitoring programs, as does responding to direction from the Inuit Committee as it relates to Inuit-led components of vegetation monitoring.
<b>BIM Commitments</b>	75

<b>Term and Condition No.</b>	<b>39</b>
<b>Category:</b>	Vegetation – Reclamation and Restoration
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent erosion and promote progressive revegetation of disturbed areas, using culturally appropriate standards
<b>Term or Condition:</b>	<p>The Proponent shall develop a progressive revegetation program for disturbed areas that are no longer required for operations. This program shall incorporate measures for the use of test plots, reseeding and replanting of native plants as necessary. It is further recommended that this program be directly associated with the management plans for erosion control established for the Project. The Proponent shall include revegetation strategies in its Site Reclamation Plan that support progressive reclamation and recovery of disturbed sites compatible with the surrounding natural environment.</p> <p>To incorporate Inuit Qaujimajatuqangit into the revegetation program and Site Reclamation Plan, the Proponent shall work with the Inuit Committee to establish revegetation standards based on IQ. These standards will be used for all ongoing revegetation conducted by the Proponent and will be incorporated in the final closure and reclamation plan.</p> <p>The Proponent shall report the results of revegetation efforts annually to the NIRB, the , the TEWG, and other bodies , and as requested by these groups on an annual basis (at a minimum), to adjust revegetation efforts as required by the Adaptive Management Plan.</p>
<b>Reporting Requirements:</b>	Revised revegetation plan to be provided to the NIRB and the for review and comment at least 90 days prior to commencement of Phase 2 construction activities. Results of this monitoring program, including raw data, shall be reported to the and the TEWG as

	required under the terms of reference for these groups, and reported annually to the NIRB.
<b>Rationale:</b>	<p>Baffinland proposes to remove PC Condition 39 pending revisions to PC Condition 149 to establish a Mine Closure Working Group. QIA does not support removal, as condition 149 addresses economic and social impacts of closure for Inuit and does not specifically include requirements for revegetation. It is not clear how the proposed content of PC 149 will address this requirement to revegetate disturbed sites. Overall, the requirement for revegetating disturbed sites needs to be strengthened. QIA agrees with the establishment of a Mine Closure Working Group. The terms of reference for this working group need to include providing advice on the ongoing revegetation program. The membership of the Mine Closure Working Group, its relationship to existing and proposed new advisory groups, and the requirement for BIM to incorporate IQ into reclamation need to be clearly outlined and strengthened.</p> <p>Proposed revisions reflect a link to the commitments from the Inuit Certainty Agreement. In addition, QIA believes that Inuit communities must have the final say in how reclamation proceeds and what constitutes a reclaimed site, incorporating considerations of returning the area to cultural use over time. Monitoring of reclamation success and adaptive management must include Inuit oversight.</p>
<b>BIM Commitments</b>	156

**Commentary:** *It is understood that revegetation may not be possible for all those areas disturbed by Project development, and that the requirements of progressive revegetation are in relation to only those “disturbed areas” that had vegetative cover prior to Project development.*

<b>Term and Condition No.</b>	<b>40</b>
<b>Category:</b>	Vegetation – Reclamation and Revegetation
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent erosion and promote progressive revegetation of disturbed areas.
<b>Term or Condition:</b>	The Proponent shall include revegetation strategies in its Site Reclamation Plan that support progressive reclamation and that promote natural revegetation and recovery of disturbed areas compatible with the surrounding natural environment.

<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes to remove this PC Condition. QIA supports removal provide the revisions to PC Condition 39 are accepted.

**Commentary:** *It is understood that revegetation may not be possible for all those areas disturbed by Project development, and that the requirements of progressive revegetation are in relation to only those “disturbed areas” that had vegetative cover prior to Project development.*

#### **Freshwater Aquatic Environment including Biota and Habitat**

<b>Term and Condition No.</b>	<b>41</b>
<b>Category:</b>	Freshwater Aquatic Environment – Setbacks
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate impacts of runoff into freshwater aquatic habitat.
<b>Term or Condition:</b>	Unless otherwise approved by regulatory authorities, the Proponent shall maintain a minimum 100-metre naturally-vegetated buffer between the high-water mark of any fish-bearing water bodies and any permanent quarries with potential for acid rock drainage or metal leaching.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	No change

<b>Term and Condition No.</b>	<b>42</b>
<b>Category:</b>	Freshwater Aquatic Environment – Setbacks
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate impacts of runoff into freshwater aquatic habitat.
<b>Term or Condition:</b>	The Proponent shall maintain minimum a 31-metre naturally-vegetated buffer between the mining operation and adjacent water bodies.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland has proposed deleting this PC Condition on the basis that it is duplicative of the Type A Water License. QIA disagrees with deleting this PC Condition, as it is a reason for the current Water

	<p>Licence Terms and Conditions as indicated by Baffinland. This does not warrant the removal of the Project Term. Should this Project Term be removed, the Nunavut Water Board should be committed to being more prescriptive in the Water Licence Terms and Conditions. Considering the current timelines for the Water Licence process that is already underway, this may not be feasible.</p> <p>QIA also recommends that compliance with buffer requirements should be provided in the annual reports to NIRB as this is not simply a water license concern. Overall, removing this and other information (e.g., PCC 45) from reporting to NIRB risks fragmenting the monitoring information, making it more difficult for stakeholders to assess the overall Project effects and compliance rates. QIA also proposes a revision to the buffer distance (30 metre to 31 metre) to coincide with the current Water Licence Term Part D, Item 9.</p>
<b>BIM Commitment</b>	

**Commentary:** As used in the above Term and Condition, “mining operation” is intended to include the site of active ore removal, including excavations resulting from the extraction of ore but does not include quarries, transportation corridors or other mine infrastructure.

<b>Term and Condition No.</b>	<b>43</b>
<b>Category:</b>	Freshwater Aquatic Environment – Drainage
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To mitigate impacts of runoff into freshwater aquatic habitat.
<b>Term or Condition:</b>	Prior to the start of construction, the Proponent must submit a Site Drainage and Silt Control Plan to the appropriate regulatory authorities for approval.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland has proposed deleting this PC Condition on the basis that it is duplicative of the Type A Water License. QIA disagrees with deleting this PC Condition, as it is a reason for the current Water Licence Terms and Conditions as indicated by Baffinland. This does not warrant the removal of the Project Term. Should this Project Term be removed, the Nunavut Water Board should be committed to being more prescriptive in the Water Licence Terms and Conditions. Considering the current timelines for the Water Licence process that is already underway, this may not be feasible.

<b>Term and Condition No.</b>	<b>44</b>
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<b>Category:</b>	Freshwater Aquatic Environment – Explosives
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate impacts of explosives on freshwater aquatic habitat.
<b>Term or Condition:</b>	The Proponent shall meet or exceed the guidelines set by Fisheries and Oceans Canada for blasting thresholds including implementation of an overpressure threshold of 50kPa and implement practical and effective measures to ensure that residue and by-products of blasting do not negatively affect fish and fish habitat.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	<p>Baffinland has proposed deleting this PC Condition on the basis that it is duplicative of the Type A Water License. QIA disagrees with deleting this PC Condition, as it is a reason for the current Water Licence Terms and Conditions as indicated by Baffinland. This does not warrant the removal of the Project Term. Should this Project Term be removed, the Nunavut Water Board should be committed to being more prescriptive in the Water Licence Terms and Conditions. Considering the current timelines for the Water Licence process that is already underway, this may not be feasible.</p> <p>Research by DFO and others has shown that the 1998 guidelines are not sufficiently precautionary and their use could lead to unnecessary mortality of fish and fish eggs. If Baffinland plans to conduct blasting near water, as it may do during railway construction (south and/or north), the more precautionary recommendations of the recent studies should be followed. Baffinland agreed during the Phase 2 review with a request from DFO to apply a more stringent overpressure threshold of 50 kPa, instead of the published 100 kPa threshold identified by Wright and Hopky (1998).</p>
<b>BIM Commitments</b>	

<b>Term and Condition No.</b>	<b>45</b>
<b>Category:</b>	Freshwater Aquatic Environment – General
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate impacts to freshwater aquatic habitat.



<b>Term or Condition:</b>	The Proponent shall adhere to the No-Net-Loss principle at all phases of the Project to prevent or mitigate direct or indirect fish and fish habitat losses. The success of works to compensate for loss of fish and fish habitat will be monitored over periods sufficient to assess their lasting value.
<b>Reporting Requirements:</b>	Annual Report to NIRB and stakeholders that details the results of no net loss fish and fish habitat compensation Projects and archives all related data for future comparison.
<b>Rationale:</b>	Baffinland has proposed deleting this PC Condition on the basis that it is duplicative of the Type A Water License. QIA disagrees with deleting this PC Condition, as QIA has very limited ability to influence Fisheries and Oceans Canada compliance monitoring and enforcement, and this Term and Condition is the primary way QIA can ensure compliance. No net loss information from fish and fish habitat monitoring programs should be provided in the annual reports to NIRB as it is not simply a water license or DFO regulatory concern.
<b>BIM Commitment</b>	

<b>Term and Condition No.</b>	<b>46</b>
<b>Category:</b>	Freshwater Aquatic Environment – Drainage
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate impacts to freshwater aquatic habitat.
<b>Term or Condition:</b>	The Proponent shall ensure that runoff from fuel storage and maintenance facility areas, sewage and wastewater other facilities responsible for generating liquid effluent and runoff meet discharge requirements.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland has proposed deleting this PC Condition on the basis that it is duplicative of the Type A Water License. QIA disagrees with deleting this PC Condition, as it is a reason for the current Water Licence Terms and Conditions as indicated by Baffinland. This does not warrant the removal of the Project Term. Should this Project Term be removed, the Nunavut Water Board should be committed to being more prescriptive in the Water Licence Terms and Conditions. Considering the current timelines for the Water Licence process that is already underway, this may not be feasible.

<b>Term and Condition No.</b>	<b>47</b>
<b>Category:</b>	Freshwater Aquatic Environment – Watercourses
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To prevent blockages or restrictions to fish passage.
<b>Term or Condition:</b>	The Proponent shall ensure that all Project infrastructure in watercourses are designed and constructed, and maintained in such a manner that they do not unduly prevent or limit the movement of water and natural movements of fish in fish bearing streams and rivers.
<b>Reporting Requirements:</b>	Annual Report to NIRB and stakeholders that details crossing remediations completed or required, the results of annual monitoring of fish passage and Arctic char health at Project water crossings, and archives all related fish and stream monitoring data for future comparison. And, in 2022, a report that details “lessons learned” regarding how best to ensure and maintain unimpeded access by Arctic char to and from habitats upstream of stream crossings.
<b>Rationale:</b>	<p>Baffinland has proposed deleting this PC Condition on the basis that it is duplicative of the Type A Water License. QIA disagrees with deleting this PC Condition, as it is a reason for the current Water Licence Terms and Conditions as indicated by Baffinland. This does not warrant the removal of the Project Term. Should this Project Term be removed, the Nunavut Water Board should be committed to being more prescriptive in the Water Licence Terms and Conditions. Considering the current timelines for the Water Licence process that is already underway, this may not be feasible.</p> <p>QIA also recommends the revisions to account for likely blockages and restrictions during operations, as well as the need to change the focus to both “movement of water” and “maintenance of fish passage”. Too much water passing through a culvert can be as limiting to fish passage as too little, so it is important to design stream crossings to maintain fish passage under a range of flows. Monitoring data should be provided to ensure they are reviewed and archived for long-term comparison. And, “lessons learned” regarding the maintenance of fish passage at stream crossings should be reported to inform future crossing design, installation, and maintenance of these structures in the Arctic.</p>
<b>BIM Commitments</b>	19, 67, 80, 81, 102, 145, 201

<b>Term and Condition No.</b>	<b>48</b>

<b>Category:</b>	Freshwater Aquatic Environment – Explosives
<b>Responsible Parties:</b>	The Proponent, Qikiqtani Inuit Association, Fisheries and Oceans Canada
<b>Project Phase:</b>	Construction, Operations
<b>Objective:</b>	To mitigate impacts to freshwater aquatic habitat.
<b>Term or Condition:</b>	The Proponent shall engage with Fisheries and Oceans Canada and the Qikiqtani Inuit Association in exploring possible Project specific thresholds for blasting that would exceed the requirements of Fisheries and Oceans Canada's <i>Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters</i> (D.G. Wright and G.E. Hopky, 1998).
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland has proposed deleting this PC Condition on the basis that it is duplicative of the Type A Water License. QIA is concerned with the proposed removal of condition 48. While the Type A Water license may require following DFO guidance it does not support the spirit of this condition which requires the establishment of thresholds with QIA, better and beyond the minimum regulatory requirements. In addition, PCC 44 and PCC 48 are not duplicative. Research by DFO and others has shown that the 1998 guidelines are not sufficiently precautionary and their use could lead to unnecessary mortality of fish and fish eggs. If BIMC plans to conduct blasting near water, as it may do during railway construction (south and/or north), the more precautionary recommendations of the recent studies should be followed.
<b>BIM Commitments</b>	

<b>Term and Condition No.</b>	<b>48 (a)</b>
<b>Category:</b>	Freshwater Aquatic Environment – Arctic char
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations
<b>Objective:</b>	To determine presence and health of Arctic char in freshwater aquatic habitat.
<b>Term or Condition:</b>	The Proponent shall develop plans to conduct additional surveys for the presence of Arctic char in freshwater bodies and ongoing monitoring of Arctic char health where applicable, within watersheds proximal to the mine, tote road and Milne Inlet Port Project development areas, including but not limited to, Phillips Creek, Tugaat and Qurluktuk (Koluktoo and alternate spellings). The Proponent shall consult with the MHTO regarding the design, timing, and location of proposed surveys and ongoing monitoring.

	Metrics for assessing the health of juvenile Arctic char shall be developed in conjunction with the FEWG, and Inuit Committee and used over the life of the Project to monitor the health of juvenile Arctic char at stream crossings along the tote road and proposed railway route.
<b>Reporting Requirements:</b>	Annual report to NIRB and stakeholders that details crossing remediations completed or required, the results of annual monitoring of fish passage and Arctic char health at Project water crossings, and archives all related fish and stream monitoring data for future comparison.
<b>Rationale:</b>	QIA supports the requirements of this condition however additional requirements are needed to ensure the health of juvenile Arctic char using the tote road streams is monitored. QIA has requested BIMC commit to developing and implementing metrics for monitoring Arctic char health at stream crossings along the tote road (e.g., Phillips Creek). This PC Term and Condition is the primary way QIA can ensure compliance. Fish passage and Arctic char health information should be provided in the annual reports to NIRB as these are not simply a water license or DFO regulatory concern.
<b>BIM Commitments</b>	19, 102, 103, 147, 172, 201, 202 (FEWG)

<b>PROPOSED Term and Condition No. [NEW G]</b>	<b>QIA Recommended Project Certificate Condition</b>
<b>Category:</b>	Freshwater Aquatic Environment - Drainage
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate impacts to freshwater aquatic habitat.
<b>Term or Condition:</b>	The Proponent shall ensure all potentially acid generating rock, as defined in the FEIS or as agreed to by the Landowner, shall be transported and stored in the Waste Rock Facility next to Deposit 1.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	This new PC Condition provides the foundation and framework from which the Parties can negotiate the documents, such as the Water Licence, in the regulatory phase. The location of the waste rock pile has been specified in the FEIS and BIMC committed to this location during Technical Meetings. The purpose of this discussion was to ensure PAG is relegated to

	one location which has been designed for storage, minimizing potential impacts.
<b>BIM commitments</b>	71

<b>PROPOSED Term and Condition No. [NEW H]</b>	<b>QIA Recommended Project Certificate Condition</b>
<b>Category:</b>	Ground Water/ Surface Waters – Inuit Monitoring
<b>Responsible Parties:</b>	The Proponent, North Baffin Communities, QIA
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To ensure Inuit are involved and IQ is considered in water quality monitoring.
<b>Term or Condition:</b>	Proponent to work with QIA, the Inuit Committee and North Baffin Inuit Communities to develop an Inuit-based water quality monitoring program including strong consideration and inclusion of Inuit use and IQ, acceptable to Inuit, and build it into the overall Project monitoring system. Program to include baseline and trend-over-time data collection using IQ-based Indicators and thresholds of acceptable change, with results informing the implementation of the Project's adaptive management system.
<b>Reporting Requirements:</b>	Annual Reporting to NIRB and dedicated engagement with impacted communities.
<b>Rationale:</b>	QIA believes this PC Condition is needed, as there is no current condition that requires IQ or Inuit to be meaningfully integrated into freshwater quality data collection and analysis.

<b>PROPOSED Term and Condition No. [NEW I]</b>	<b>QIA Recommended Project Certificate Condition</b>
<b>Category:</b>	Freshwater Aquatic Environment – Freshwater Environment Working Group

<b>Responsible Parties:</b>	The Proponent, Qikiqtani Inuit Association, Government of Nunavut, Government of Canada, Qikiqtaaluk Wildlife Board, other parties as set out in the Terms of Reference
<b>Project Phase:</b>	All Project Phases
<b>Objective:</b>	To provide responsible environmental oversight of the freshwater environment and effects on aquatic life. To analyze results of project monitoring, and to provide expertise and input into the mitigation, management and monitoring plans associated with the Project. To ensure Inuit perspectives and values are properly integrated into mitigation, management, and monitoring plans.
<b>Term or Condition:</b>	A Freshwater Environment Working Group (FEWG) shall be established as an oversight body to fulfill the intended objectives. The operation of the FEWG shall not duplicate or impede the exercise of regulatory authority of authorizing agencies or government. The FEWG shall have the following permanent members: The Proponent, the Qikiqtani Inuit Association, the Government of Nunavut, the Government of Canada, the Qikiqtaaluk Wildlife Board. A Terms of Reference shall be established that guides additional membership. The FEWG shall be chaired by a member appointed by the Inuit Committee (this chairperson shall be in addition to the Qikiqtani Inuit Association's membership).
<b>Reporting Requirements:</b>	Draft meeting minutes of the FEWG shall be filed on the NIRB registry and circulated to FEWG members not more than 60 days following a meeting. All final meeting minutes shall be included in the Annual Report to the NIRB. Project monitoring reports and relevant data to be considered by the FEWG will be provided to members not less than 2 weeks prior to a scheduled meeting.
<b>Rationale</b>	Observations from other Working Group members have been consistent that current structure is ineffective and inefficient and Freshwater is a gap in the reporting and discussions. Meetings of the TEWG are currently chaired by the Proponent, creating a conflict of interest for responsible environmental effect oversight. The Proponent has committed to a jointly developed Adaptive Management Plan and associated development process with QIA. By forming a direct link between the Inuit Committee and the FEWG, Inuit perspectives and IQ will be brought forward in an integrated fashion and codified into specific monitoring and oversight recommendations for discussion and consideration of project changes. Discussion and consideration of western science remains unchanged, and linking the Inuit Committee will ensure that the FEWG also properly integrates IQ and Inuit perspectives into discussions, and will strengthen the working group's ability to affect change through adaptive management at the Project.



## Terrestrial Wildlife and Habitat

<b>Term and Condition No.</b>	<b>49</b>
<b>Category:</b>	Terrestrial Wildlife and Terrestrial Environment – Terrestrial Environment Working Group
<b>Responsible Parties:</b>	The Proponent, Qikiqtani Inuit Association, Government of Nunavut, Government of Canada, Qikiqtaaluk Wildlife Board, other parties as set out in the Terms of Reference
<b>Project Phase:</b>	All Project Phases
<b>Objective:</b>	To provide responsible environmental oversight of the terrestrial environment and effects on terrestrial wildlife. To analyze results of project monitoring, and to provide expertise and input into the mitigation, management and monitoring plans associated with the Project. To ensure Inuit perspectives and values are properly integrated into mitigation, management, and monitoring plans.
<b>Term or Condition:</b>	A Terrestrial Environment Working Group (TEWG) shall be established as an oversight body to fulfill the intended objectives. The operation of the TEWG shall not duplicate or impede the exercise of regulatory authority of authorizing agencies or government. The TEWG shall have the following permanent members: The Proponent, the Qikiqtani Inuit Association, the Government of Nunavut, the Government of Canada, the Qikiqtaaluk Wildlife Board. A Terms of Reference shall be established that guides additional membership. The TEWG shall be chaired by a member appointed by the Inuit Committee (this chairperson shall be in addition to the Qikiqtani Inuit Association's membership).
<b>Reporting Requirements:</b>	Draft meeting minutes of the TEWG shall be filed on the NIRB registry and circulated to TEWG members not more than 60 days following a meeting. All final meeting minutes shall be included in the Annual Report to the NIRB. Project monitoring reports and relevant data to be considered by the TEWG will be provided to members not less than 2 weeks prior to a scheduled meeting.
<b>Rationale</b>	Observations from TEWG members have been consistent that current TEWG structure is ineffective and inefficient. Meetings of the TEWG are currently chaired by the Proponent, creating a conflict of interest for responsible environmental effect oversight. The Proponent has committed to a jointly developed Adaptive Management Plan and associated development process with QIA. By forming a direct link between the Inuit Committee and the TEWG, Inuit perspectives and IQ will be brought forward in an integrated fashion and codified into specific monitoring and oversight

	<p>recommendations for discussion and consideration of project changes. Discussion and consideration of western science remains unchanged, and linking the Inuit Committee will ensure that the TEWG also properly integrates IQ and Inuit perspectives into discussions, and will strengthen the working group's ability to affect change through adaptive management at the Project.</p> <p>As multiple HTOs are interested in joining the TEWG, it is suggested that QWB be the member and assign a participant to the TEWG. Many terrestrial wildlife are migratory or nomadic; having just one specific HTO sit on the TEWG may not be adequate. The QWB will represent all HTOs through their structure under the Nunavut Agreement.</p>
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<b>Term and Condition No.</b>	<b>50</b>
<b>Category:</b>	Terrestrial Wildlife and Habitat - General
<b>Responsible Parties:</b>	The Proponent and other Parties as appropriate
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To ensure appropriate and responsive adaptive management.
<b>Term or Condition:</b>	<p>The Proponent shall continue to develop and implement Project-specific monitoring for the terrestrial environment, and demonstrate appropriate refinements to design, incorporation of analytical methods and elaboration of methodologies. The monitoring plan shall contain clear thresholds to allow for the assessment of long-term trends and cumulative effects where Project interactions are identified. The Proponent shall adhere to all thresholds through identified adaptive management measures or any other measures deemed appropriate by the Inuit Committee and the TEWG. Coordination and cooperation will be required where data collection, analysis and interpretation, or responsibility for mitigation and management requires the efforts of multiple parties (e.g., government, Qikiqtani Inuit Association, communities).</p> <p>Key areas of focus are:</p> <ul style="list-style-type: none"> <li>• the terrestrial environment, including but not limited to methods and interpretations related to re-estimating the zone of influence for caribou around project components;</li> <li>• design mitigations during construction to ensure permeability of the railway to caribou;</li> <li>• monitoring, mitigations and adaptive management related to impacts of the transportation corridor on caribou;</li> <li>• Project monitoring methods, interpretation, and adaptive management related to caribou avoidance of the project area;</li> <li>• and caribou group sizes required to enact rail and road closures,</li> </ul>

	The Proponent will fund the any and all meetings required to develop this input between the Inuit Committee and the TEWG.
<b>Reporting Requirements:</b>	A revised version of the TEMMP to be provided to the NIRB, the and the TEWG for review and comment at least 90 days prior to commencement of construction activities. Required revisions to the TEMMP based on input from the TEWG (including but not limited to changes to monitoring programs, thresholds, and mitigation measures) will be undertaken annually by the Proponent and provided to the NIRB, the and the TEWG for review and comment on an annual basis.
<b>Rationale:</b>	QIA requests that this condition be strengthened to include a requirement to identify predicted changes in key values due to the Project (e.g., caribou movement patterns and avoidance of the Project area), monitoring to see if predicted changes are accurate, and the introduction of additional mitigations if impacts are beyond what was predicted. QIA has identified concerns regarding the current approach for establishing thresholds (e.g., what constitutes a significant effect to caribou), and how the predicted changes due to the Project have been calculated. Baffinland must be required to revise these predictions based on scientific information and IQ, and develop appropriate monitoring programs to test these predictions. A clear, strong PC related to this need, specific to caribou, must be developed. In reference to this requirement, QIA has proposed two new conditions under PCC No. 51 related to establishing regional IQ-based and science-based monitoring programs and a harvester program.
<b>BIM Commitments</b>	32, 33, 65, 67, 68, 158, 165, 220, 223, 236, 237, 238

<b>Term and Condition No.</b>	<b>51</b>
<b>Category:</b>	Terrestrial Wildlife and Habitat - General
<b>Responsible Parties:</b>	The Proponent and/or TEWG
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To ensure relevant regional monitoring programs are supported by the Proponent and results are incorporated into mitigations and adaptive management
<b>Term or Condition:</b>	The Proponent, shall participate in and resource regional and/or, cooperate with relevant regional and/or community-based monitoring initiatives that raise issues or produce information pertinent to mitigating Project-induced impacts. As directed by the TEWG and the Inuit Committee, the Proponent shall support regional studies of population health and harvest programs for North

	Baffin caribou which help address areas of uncertainty for Project impact predictions.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	QIA supports this condition, however, PCC 51 must be strengthened to include a requirement to participate in and support GN and HTO monitoring efforts to determine regional effects to caribou, given the outstanding issues related to the impacts of the railway on caribou, and the greatly increased likelihood of future cumulative effects to caribou from the construction of the railway. Baffinland must be required to collaboratively revise predicted regional impacts to North Baffin caribou, and respond to the results of monitoring programs if they are beyond the predicted impacts through the introduction of additional mitigations, based on advice from the TEWG and the Inuit Committee/Inuit Panel. The relationship between predicted Project effects, regional monitoring (GN and community-based), the monitoring groups, Inuit Committee/Inuit Panel, and BIM's required response, must be clearly laid out in Project condition(s). QIA recognizes the existence of the Mary River Caribou Protection Measures development in January 2014; as these measures were developed prior to the Phase 2 proposal, reviewing these protection measures and strengthening them is critical at this time.
<b>BIM Commitments</b>	68

<b>Term and Condition No.</b>	<b>52</b>
<b>Category:</b>	Terrestrial Wildlife and Habitat - Caribou
<b>Responsible Parties:</b>	The Proponent, TEWG
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To ensure best practices are used for caribou protection.
<b>Term or Condition:</b>	Within 3 months of issuance of the Project Certificate, the Proponent shall initiate design, and develop the timeline to test and implement means of deterring caribou from pits and other hazardous areas. A review of best practices and techniques will be undertaken at other Northern mines where interactions with caribou occur. Considerations should include temporary ribbon placement, inuksuks, or fencing and subsequent monitoring for effectiveness. These activities shall be reported back to the Terrestrial Environment Working Group.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister; results to be reported back to the Terrestrial Environment Working Group.

<b>Rationale:</b>	Baffinland has proposed removing this PC Condition as it is covered under other conditions. QIA supports removing this PC Condition only if proposed amendments to PC Conditions 50, 51 and 53 are accepted, in addition to QIA proposed new PC Condition related to caribou monitoring.
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<b>Term and Condition No.</b>	<b>53</b>
<b>Category:</b>	Terrestrial Wildlife and Habitat - Caribou
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To mitigate impacts to caribou from Project-related traffic along the railway and the Tote Road
<b>Term or Condition:</b>	<p>The Proponent shall develop a railway construction, operation and maintenance management plan and a roads management plan, which shall contain the following information at a minimum:</p> <ul style="list-style-type: none"> <li>• Steps taken to prevent caribou mortality and injury as a result of train and vehicular traffic, including operational measures meant to maximize the potential for safe traffic relative to operations on the railway, Milne Inlet tote road and associated access roads. <ul style="list-style-type: none"> <li>○ Specific measures intended to address the reduced effectiveness of visual protocols for the Milne Inlet Tote Road and access roads/trails during times of darkness and low visibility must be included.</li> <li>○ Specific measures to reduce the impacts of snow on the ability of caribou to cross the rail and road must be included.</li> </ul> </li> <li>• Monitoring and mitigation measures at points where the railway, roads, trails and flight paths pass through caribou calving areas, particularly during caribou calving times. The details of these monitoring and mitigation measures shall be developed in conjunction with the Terrestrial Environment Working Group, the and otherwise in accordance with the Inuit Stewardship Plan.</li> <li>• Evaluation of the effectiveness of proposed caribou crossings over the railway, Milne Inlet tote road and access roads as well as the appropriate number. The evaluation shall be conducted with the Terrestrial Environment Working Group, the and/or as described in the Inuit Stewardship Plan. The Proponent shall adhere to decisions from the evaluation regarding the location and number of caribou crossings over the railway, the Tote Road and access roads.</li> <li>• Development of a surveillance system along the railway corridor to identify the presence of caribou in proximity to the train tracks and operational protocols for the train to avoid collisions and enable caribou to cross the train tracks unimpeded.</li> </ul>

	<ul style="list-style-type: none"> <li>• Protocols for monitoring, documenting and reporting all caribou collisions and mortalities.               <ul style="list-style-type: none"> <li>a. Thresholds and clear triggers, based on science and IQ knowledge of north Baffin caribou movement patterns and typical group sizes, as well as mechanisms for adaptive management responses designed to address those triggers and prevent detrimental north corridor interactions, including requirements for construction of additional crossing locations if needed.</li> </ul> </li> </ul> <p>The Proponent shall take all relevant adaptive management measures described in the TEMMP based on monitoring results. If monitoring indicates that an identified threshold has been exceeded and/or if additional adaptive management measures are requested by the Inuit Committee to address concerns arising from any related or independent monitoring programs, the Proponent shall further take any additional adaptive management measures identified through consultation with the Inuit Committee and the TEWG.</p> <p>The Proponent is required to adhere to input developed by the Inuit Committee and/or the Terrestrial Environment Working Group for design mitigations during construction to ensure permeability of the railway to caribou; monitoring, mitigations and adaptive management related to impacts of the transportation corridor on caribou; monitoring methods, interpretation, and adaptive management related to caribou avoidance of the project area; and caribou group sizes required to enact rail and road closures. The Proponent will fund the any and all meetings required to develop this input involving the Inuit Committee and the TEWG.</p>
<b>Reporting Requirements:</b>	Revised railway operations management plan and roads management plan to be provided to the NIRB and the for review and comment at least 90 days prior to commencement of construction activities. Results of relevant monitoring programs, including raw data, shall be reported to the and the TEWG as required under the terms of reference for these groups, and reported annually to the NIRB.
<b>Rationale:</b>	QIA believes that revisions are required to ensure that priority consideration is given to adaptive management triggers and responses, and that monitoring of activity near the road and the railway is retained and appropriate standards for this monitoring are met (e.g., frequency of snow tracking surveys).
<b>BIM Commitments</b>	32, 67, 158, 165, 220, 223, 236, 237, 238

<b>PROPOSED Term and Condition No. [NEW J]</b>	<b>QIA Recommended Project Certificate Condition</b>
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<b>Category:</b>	Terrestrial Wildlife and Habitat - Monitoring
<b>Responsible Parties:</b>	The Proponent, North Baffin Communities, QIA, and other relevant parties
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To determine how caribou habitat and movement are being affected by the railway, including developing predictions based on scientific information and IQ, developing appropriate monitoring programs to whether caribou movement is being restricted by the railway, and determining whether habitat loss or restricted movement is affecting caribou population viability.
<b>Term or Condition:</b>	The Proponent shall work with GN, QIA and HTOs to develop and support a regional monitoring program for caribou, to monitor caribou use of habitat, avoidance of the railway, and the zone of influence around project components. The monitoring program must be based on clear science and IQ-based predictions of impacts to caribou from the proposed Phase 2 Project. Pending community agreement, the regional monitoring program must include a community-driven, IQ-based monitoring component, and a science-based program involving an appropriate minimum number of collars for monitoring movement and habitat use. This program will be designed to inform impacts to caribou from the Phase 2 components of the Project, including caribou use of habitat, caribou avoidance of the project area, changes in movement patterns, and changes in caribou health and condition.
<b>Reporting Requirements:</b>	Details of regional monitoring plans shall be provided to the NIRB, the and the TEWG for review and comment at least 90 days prior to commencement of construction activities. Results of monitoring programs, including raw data, shall be reported to the and the TEWG as required under the terms of reference for these groups, and reported annually to the NIRB.
<b>Rationale:</b>	While regional monitoring is the responsibility of the GN, QIA believes that Baffinland must acknowledge that the primary reason for this regional monitoring effort is because of the proposed Mary River Phase 2 Project and associated infrastructure. Baffinland must commit to strong financial support for this regional monitoring effort over a sustained period. The extent of monetary support from Baffinland for regional science-based monitoring must reflect that the primary reason for implementing this invasive and expensive program is to monitor the response of caribou to the railway.
<b>BIM Commitments</b>	68, 171, 223, 238

<b>PROPOSED Term and Condition No. [NEW K]</b>	<b>QIA Recommended Project Certificate Condition</b>
<b>Category:</b>	Terrestrial Wildlife and Habitat – Caribou Monitoring
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To monitor and mitigate impacts to caribou movement and mortality risk in the immediate vicinity of the railway.
<b>Term or Condition:</b>	The Proponent shall develop a local monitoring program in the vicinity of the railway, to identify high collision locations and trigger additional mitigations when caribou are in the area. The Program shall be developed in collaboration with the Inuit Committee, the , and the TEWG. A review of best practices and techniques will be undertaken at other Northern mines where interactions with caribou occur to inform development of the plan. The monitoring program must address IQ-based concerns regarding the potential for the rail embankment to attract caribou and result in an increased risk of direct mortality.
<b>Reporting Requirements:</b>	The local monitoring program shall be designed and included in the TEMMP at least 90 days before construction commences on Phase 2. Results of monitoring program, including raw data, shall be reported to the and the TEWG as required under the terms of reference for these groups, and reported annually to the NIRB.
<b>Rationale:</b>	QIA believes that the importance of this program warrants a standalone PC Condition, and that the role of the Inuit Committee is important to identify in the design of the program.
<b>BIM Commitments</b>	32, 33, 236, 237, 238

<b>Term and Condition No.</b>	<b>54</b>
<b>Category:</b>	Terrestrial Wildlife and Habitat - Caribou
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction – within six (6) months of issuance of Project Certificate
<b>Objective:</b>	To Update the Terrestrial Environmental Management and Monitoring Plan

<b>Term or Condition:</b>	<p>The Proponent, within 6 months of the issuance of any revised Project certificate, shall provide an updated Terrestrial Environment Management and Monitoring Plan that reflects input from Inuit in accordance with the Inuit Stewardship Plan, and the , and shows how inputs from the Culture, Resources, and Land Use Monitoring Program will be integrated into management and monitoring.</p> <p>The revised TEMMP shall incorporate input from the Terrestrial Environment Working Group (TEWG) into all monitoring methods, thresholds, and adaptive management responses.</p>
<b>Reporting Requirements:</b>	Plan to be submitted to the NIRB and the TEWG within 6 months of issuance of a Project Certificate.
<b>Rationale:</b>	Baffinland proposes to remove this PC Condition, and capture further updates to the TEMMP as commitments. QIA's proposed revisions capture the relationship between the TEMMP and the commitments from the Inuit Certainty Agreement.

<b>PROPOSED Term and Condition No. [NEW L]</b>	<b>QIA Recommended Project Certificate Condition</b>
<b>Category:</b>	Category: Terrestrial Wildlife and Habitat – Wildlife Habitat
<b>Responsible Parties:</b>	The Proponent, North Baffin Communities, QIA, and other relevant parties
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To protect caribou habitat in the North Baffin range from further impacts.
<b>Term or Condition:</b>	<p>The Proponent will support the strengthening and enactment of additional protection measures for North Baffin caribou. This condition must include full implementation of the existing protection measures, including the development of a Caribou Protection Map and Project protection zones, in collaboration with the TEWG and Inuit Committee. Activities to support this Project include:</p> <ul style="list-style-type: none"> <li>Conducting an IQ study of caribou use with HTOs and QIA;</li> <li>Reviewing existing protection measures to identify gaps;</li> <li>Fully implement existing protection measures;</li> <li>Working with GN, QIA, HTOs to identify new protection measures in relation to the Project, including the identification of habitat protection areas and Project protection zones.</li> </ul>
<b>Reporting Requirements:</b>	The revised plan, including locations of caribou protection areas and measures to be implemented within these areas immediately, will be provided to the NIRB, the and the TEWG within 6 months of the issuance of the Project certificate. Compliance monitoring to be included in annual reports to the NIRB.

<b>Rationale:</b>	QIA is concerned that the existing caribou protection measures have not been enacted to date, despite the fact that the Project occurs within known calving habitat. Enacting these measures now is important to ensure caribou return. There is value to having this requirement as a PCC to make sure NIRB tracks its status over time.
<b>BIM Commitment</b>	223

<b>Term and Condition No.</b>	<b>55</b>
<b>Category:</b>	Terrestrial Wildlife and Habitat - Wolves
<b>Responsible Parties:</b>	The Proponent, Government of Nunavut Department of Environment
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate potential impacts to wolves.
<b>Term or Condition:</b>	<p>The Proponent shall develop an adaptive management plan applicable to wolves and wolf habitat in collaboration with the Government of Nunavut Department of Environment (GN-DOE) to ensure compliance with the <i>Nunavut Wildlife Act</i>. Consideration must be given to the following:</p> <ul style="list-style-type: none"> <li>a. Monitoring for active wolf dens within a 10 km radius from the mine site, under the direction and prior approval of the GN DOE, and reporting the results through NIRB's Annual Reports on terrestrial wildlife in the Potential Development Area (PDA);</li> <li>b. Estimating the available (glacio-fluvial materials) esker habitat within the Regional Study Area/PDA and identifying such habitat as ecologically sensitive;</li> <li>c. Developing "wolf indices" for presence/abundance of wolves (by conducting studies) to set a baseline pre-construction baseline; and</li> <li>d. Ensuring that wolf monitoring is capable of determining the relative abundance and distribution of wolves in the Project Development Area over time.</li> </ul>
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	No Change
<b>BIM Commitment</b>	N/A

<b>Term and Condition No.</b>	<b>56</b>
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<b>Category:</b>	Terrestrial Wildlife and Habitat – Wildlife Habitat
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To ensure progressive reclamation of disturbed wildlife habitat.
<b>Term or Condition:</b>	The Proponent shall develop a strategy for the recovery of terrestrial wildlife habitat in a progressive manner that is consistent with the <i>Nunavut Wildlife Act</i> . Overall, this will require the integration of a decision-making process and the identification of mitigation responses to cumulative impacts on caribou survival, breeding propensity, and population dynamics.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes removing this PC Condition based on proposed revisions to PC Condition 149 to create a Mine Closure Working Group. QIA does not support removing this PC Condition. QIA does not support removal, as condition 149 addresses economic and social impacts of closure for Inuit and does not specifically include requirements for habitat reclamation. It is not clear how the proposed content of PC 149 will address this requirement to reclaim disturbed wildlife habitat.
<b>BIM Commitment</b>	N/A

<b>Term and Condition No.</b>	<b>57</b>
<b>Category:</b>	Terrestrial Wildlife and Habitat - Reporting
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate and monitor for impacts to wildlife.
<b>Term or Condition:</b>	The Proponent shall report annually regarding its terrestrial environment monitoring efforts, with inclusion of the following information:

	<ul style="list-style-type: none"> <li>a. Description of all updates to terrestrial ecosystem baseline data;</li> <li>b. A description of the involvement of Inuit in the monitoring program;</li> <li>c. An explanation of the annual results relative to the scale of the natural variability of Valued Ecosystem Components in the region, as described in the baseline report;</li> <li>d. A detailed presentation and analysis of the distribution relative to mine structures and activities for caribou and other terrestrial mammals observed during the surveys and incidental sightings;</li> <li>e. Results of the annual monitoring program, including field methodologies and statistical approaches used to support conclusions drawn;</li> <li>f. A summary of the chronology and level of mine activities (such as vehicle frequency and type);</li> <li>g. An assessment and presentation of annual environmental conditions including timing of snowmelt, green-up, as well as standard weather summaries; and</li> <li>h. A discussion of any proposed changes to the monitoring survey methodologies, statistical approaches or proposed adaptive management stemming from the results of the monitoring program.</li> </ul>
<b>Reporting Requirements:</b>	To be included in the Annual Report submitted to the NIRB
<b>Rationale:</b>	QIA does not support Baffinland's proposal to remove the requirement to monitor vehicle traffic and types along the Tote Road. QIA believes the original language of the PC Condition should be retained.
<b>BIM Commitment</b>	N/A

<b>Term and Condition No.</b>	<b>58</b>
<b>Category:</b>	Terrestrial Wildlife and Habitat - Reporting
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate and monitor for impacts to wildlife.



<b>Term or Condition:</b>	<p>Within its annual report to the NIRB, the Proponent shall incorporate a review section which includes:</p> <ul style="list-style-type: none"> <li>a. An examination for trends in the measured natural variability of Valued Ecosystem Components in the region relative to the baseline reporting;</li> <li>b. A detailed analysis of wildlife responses to operations with emphasis on calving and post-calving caribou behaviour and displacements (if any), and caribou responses to and crossing of the railway, the Milne Inlet Tote Road and associated access roads/trails;</li> <li>c. A description of the extent of dust fall based on measured levels of dust fall (fugitive and finer particles such as TSP) on lichens and blueberries, and ash content of caribou fecal pellets;</li> <li>d. A demonstration and description of how the monitoring results, including the railway, road traffic, air traffic and dustfall contribute to cumulative effects of the Project;</li> <li>e. Any proposed changes to the monitoring survey methodologies, statistical approaches or proposed adaptive management stemming from the results of the monitoring program;</li> <li>f. Any updates to information regarding caribou migration trails. Maps of caribou migration trails, primarily obtained through any new collar and snow tracking data, shall be updated (at least annually) in consultation with the Qikiqtani Inuit Association and affected communities, and shall be circulated as new information becomes available.</li> </ul>
<b>Reporting Requirements:</b>	To be included in the Annual Report submitted to the NIRB
<b>Rationale:</b>	Baffinland proposes removing this PC Condition on the grounds that it is duplicative of other conditions. QIA does not support removing this PC Condition. Reporting requirements may be informed by the PC Conditions cited by the Proponent, but QIA does not believe them to be duplicative as this condition requires a review section. 58 f in particular is not duplicated in any other Condition – given likely caribou impacts it will be important to record and share with communities any changes to caribou migration patterns.
<b>BIM Commitment</b>	N/A

<b>Term and Condition No.</b>	<b>59</b>
<b>Category:</b>	Terrestrial Wildlife and Habitat – Aircraft Disturbances
<b>Responsible Parties:</b>	The Proponent

<b>Project Phase:</b>	Construction, Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate aircraft disturbance to wildlife and Inuit harvesting.
<b>Term or Condition:</b>	<p>The Proponent shall ensure that pilots are informed of minimum cruising altitude guidelines and that a daily log or record of flight paths and cruising altitudes of aircraft within all Project Areas is maintained and made available for regulatory authorities such as Transport Canada to monitor adherence and to follow up on complaints.</p> <p>Subject to safety requirements, the Proponent shall require all Project related aircraft to maintain a cruising altitude of at least: 650 m during point to point travel when in areas likely to have migratory birds and when within 1 horizontal km of calving / post calving areas for caribou; 1100 m vertical and 1500 m horizontal distance from observed concentrations of migratory birds; and 1100 m over the area identified as a key site for moulting snow geese during the moulting period (July-August), and if maintaining this altitude is not possible, maintain a lateral distance of at least at least 1500 m from the boundary of this site.</p> <p>The Proponent shall, within 6 months Project Certificate issuance, work with the TEWG and aircraft pilots to identify a minimum short-distance flight altitude that provides a reasonable compromise between safety and avoiding disturbance to wildlife.</p> <p>The Proponent shall work in accordance with the Inuit Stewardship Plan to identify no-fly zones within the Project area, incorporating considerations of human use, wildlife use, and timing windows for wildlife.</p> <p>The Proponent shall report out on compliance with these requirements annually, and take all adaptive management measures identified by the Inuit Committee or otherwise in accordance with the Inuit Stewardship Plan if monitoring indicates that noise and disturbance associated with helicopter flights is greater than thresholds adopted into the Project's Adaptive Management Plan.</p>
<b>Reporting Requirements:</b>	Relevant plans within the TEMMP to be provided to the NIRB and the for review and comment at least 90 days prior to commencement of construction activities. Results of this monitoring program, including raw data, shall be reported to the and the TEWG as required under the terms of reference for these groups, and reported annually to the NIRB.
<b>Rationale:</b>	QIA's revisions help to ensure avoidance of areas of significant wildlife importance, based on input from the TEWG and IQ holders, and include the Inuit Committee as a key party to weigh in on the

	timing and location of helicopter activity within the PDA, including what areas should be avoided and the timing of avoidance.
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**Commentary:** As indicated in the heading and discussion of this section in the Final Hearing Report, the intention of this section is to mitigate aircraft disturbance to wildlife, (including, but not limited to migratory birds, although these are specifically mentioned in the term and condition). It is also anticipated that the Terrestrial Environment Working Group may provide the Proponent with additional direction regarding minimum flight altitude requirements that may differ from these requirements. It is further recognized that the flight altitudes listed are provided as guidance only, and that for compliance purposes, the Proponent shall comply with flight altitude restrictions as may be prescribed by Transport Canada. It is also noted that Term and Condition #71 prescribes a slightly more stringent minimum altitude for migratory birds and unless the Terrestrial Environment Working Group provides additional direction, the minimums set out in Condition #71 will govern with respect to migratory birds specifically.

<b>Term and Condition No.</b>	<b>60</b>
<b>Category:</b>	Terrestrial Wildlife and Habitat – Explosives
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To mitigate impacts to wildlife from explosives.
<b>Term or Condition:</b>	<p>Prior to construction, the Proponent shall develop a detailed blasting program to minimize the effects of blasting on terrestrial wildlife that includes, but is not limited to the restriction of blasting when caribou, carnivores or birds may be negatively affected.</p> <p>The Proponent shall work with the Inuit Committee and the TEWG to identify timing windows to avoid blasting, including seasonal and daily timing windows.</p> <p>The Proponent shall report out on compliance with these requirements annually, and take all adaptive management measures identified by the Inuit Committee or the TEWG if monitoring indicates that noise and disturbance associated with explosives is greater than thresholds adopted into the Project's Adaptive Management Plan.</p>
<b>Reporting Requirements:</b>	Relevant plan within the TEMMP to be provided to the NIRB and the for review and comment at least 90 days prior to commencement of construction activities. Results of the compliance monitoring program shall be reported to the and the TEWG as required under the terms of reference for these groups, and reported annually to the NIRB.
<b>Rationale:</b>	Baffinland proposes to remove this PC Condition on the grounds that it is covered under PC Condition 61. QIA does not support removal of the PC Condition as a stop-work plan does not include management of seasonal windows, timing and other measures that

	can prevent interactions before a stop work is required. QIA's proposed revisions help link this PC Condition with commitments from the Inuit Certainty Agreement.
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<b>Term and Condition No.</b>	<b>61</b>
<b>Category:</b>	Terrestrial Wildlife and Habitat – Operations (General)
<b>Responsible Parties:</b>	The Proponent, TEWG
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate Project impacts to wildlife.
<b>Term or Condition:</b>	Whenever practical and not causing a human safety issue, a stop work policy shall be implemented when wildlife in the area may be endangered by the work being carried out. An operational definition of 'endangered' shall be provided by the Terrestrial Environment Working Group and in accordance with the Inuit Stewardship Plan.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Simple revision to link this PC Condition with the Inuit Stewardship Plan.

<b>Term and Condition No.</b>	<b>62</b>
<b>Category:</b>	Terrestrial Wildlife and Habitat – Operations (General)
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent increased harvesting pressure on wildlife.
<b>Term or Condition:</b>	The Proponent shall prohibit Project employees from transporting firearms to site and from operating firearms in Project areas for the purpose of wildlife harvesting.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	QIA does not object to Baffinland's proposal to remove this PC Condition as it is in conflict with the IIBA and Nunavut Agreement.

<b>Term and Condition No.</b>	<b>63</b>
<b>Category:</b>	Terrestrial Wildlife and Habitat – Public Engagement
<b>Responsible Parties:</b>	The Proponent, local Hunters and Trappers Organizations

<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To keep communities up to date with Project operations.
<b>Term or Condition:</b>	The Proponent shall liaise with local Hunters and Trappers Organizations in advance of carrying out terrestrial wildlife surveys. At a minimum, The Proponent shall also meet annually in person with Hunters and Trappers Organizations to discuss wildlife monitoring and mitigation plans and address community concerns regarding wildlife interactions. The Proponent may be required to facilitate these meetings through payment of honoraria and meeting costs.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	No change. QIA defers to the local Hunters and Trappers Organizations if they have any recommended revisions to improve this PC Condition.

<b>Term and Condition No.</b>	<b>64</b>
<b>Category:</b>	Terrestrial Wildlife and Habitat – Waste Management
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent human-carnivore interactions.
<b>Term or Condition:</b>	<p>The Proponent shall ensure that its Waste Management Plan incorporates waste management provisions to prevent carnivores from being attracted to the Project site(s). Consideration must be given to the following measures:</p> <ul style="list-style-type: none"> <li>a. Installation of an incinerator beside the kitchen that will help to keep the food waste management process simple and will minimize the opportunity for human error (i.e. storage of garbage outside, hauling in a truck (odours remain in truck), hauling some distance to a landfill site, incomplete combustion at landfill, fencing of landfill, etc.); and</li> <li>b. Installation of solid carnivore-proof skirting on all kitchen and accommodation buildings (i.e., heavy-duty steel mesh that would drop down from the edge of the buildings/trailers and buried about a half meter into the ground to prevent animals from digging under the skirting).</li> </ul>
<b>Reporting Requirements:</b>	Revised Waste Management Plan to be provided to the NIRB and the for review and comment at least 90 days prior to commencement of construction activities. Results of relevant monitoring programs shall be reported to the and the TEWG as required under the terms of reference for these groups, and reported annually to the NIRB.

<b>Rationale:</b>	Revised to identify Waste Management Plan
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**Commentary:** The use of the phrase “consideration must be given” requires that if the Proponent chooses not to implement the suggested measures, the Proponent must provide an indication of the rationale for not implementing the suggested measure and for choosing an alternative measure.

## Birds

<b>Term and Condition No.</b>	<b>65</b>
<b>Category:</b>	Birds – Awareness
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent disturbance to birds and bird habitat.
<b>Term or Condition:</b>	The Proponent shall ensure all employees working at Project sites receive awareness training regarding the importance of avoiding known nests and nesting areas and large concentrations of foraging and moulting birds.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	No change.

<b>Term and Condition No.</b>	<b>66</b>
<b>Category:</b>	Birds – Species at Risk
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent impacts to sensitive bird species.
<b>Term or Condition:</b>	<p>If Species at Risk or their nests and eggs are encountered during Project activities or monitoring programs, the primary mitigation measure must be avoidance. The Proponent shall establish clear zones of avoidance on the basis of the species-specific nest setback distances outlined in the Terrestrial Environment Management and Monitoring Plan.</p> <p>The Proponent shall report out on compliance with these requirements in accordance with the Inuit Stewardship Plan, and take all adaptive management measures identified by the Inuit</p>



	Committee and the if monitoring indicates unacceptable impacts to bird species.
<b>Reporting Requirements:</b>	To be included within the revised TEMMP and provided to the NIRB and the for review and comment at least 90 days prior to commencement of construction activities. Results of this monitoring program, including raw data, shall be reported to the and the TEWG as required under the terms of reference for these groups, and reported annually to the NIRB.
<b>Rationale:</b>	Proposed revisions to link this PC Condition with the commitments in the Inuit Certainty Agreement.

<b>Term and Condition No.</b>	<b>67</b>
<b>Category:</b>	Birds – Species at Risk
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent impacts to sensitive bird species.
<b>Term or Condition:</b>	The Proponent shall ensure that the mitigation and monitoring strategies developed for Species at Risk are updated as necessary to maintain consistency with any applicable status reports, recovery strategies, action plans and management plans that may become available during the duration of the Project.
<b>Reporting Requirements:</b>	To be included within the revised TEMMP and provided to the NIRB and for review and comment at least 90 days prior to commencement of construction activities. Results of this monitoring program, including raw data, shall be reported to the and the TEWG as required under the terms of reference for these groups, and reported annually to the NIRB.
<b>Rationale:</b>	No change.

<b>Term and Condition No.</b>	<b>68</b>
<b>Category:</b>	Birds – Project Infrastructure
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent potential injuries to birds.

<b>Term or Condition:</b>	The Proponent shall ensure flashing red, red strobe or white strobe lights and guy-wire deterrents are used on communications towers established for the Project. Consideration should also be given to reducing lighting when possible in areas where it may serve as an attractant to birds or other wildlife.
<b>Reporting Requirements:</b>	To be included within the revised TEMMP and provided to the NIRB and the for review and comment at least 90 days prior to commencement of construction activities. Results of this monitoring program, including raw data, shall be reported to the and the TEWG as required under the terms of reference for these groups, and reported annually to the NIRB.
<b>Rationale:</b>	Wording of this PC Condition reflects revisions proposed by Baffinland, which QIA supports.

**Commentary:** *The first sentence in the above term and condition refers to the use of appropriate lighting to make communications and guy-wires visible to birds to ensure birds can avoid such obstacles, while the second sentence indicates that in other circumstances, where lighting of Project areas could serve as an attractant to birds or other wildlife, consideration should be given to reducing such lighting.*

<b>Term and Condition No.</b>	<b>69</b>
<b>Category:</b>	Birds – Construction/Clearing Activities
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent nesting by birds in active Project areas.
<b>Term or Condition:</b>	Prior to bird migrations and commencement of nesting, the Proponent shall identify and install nesting deterrents (e.g. flagging) to discourage birds from nesting in areas likely to be disturbed by construction/clearing activities taking place during the nesting season.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	No change.

<b>Term and Condition No.</b>	<b>70</b>
<b>Category:</b>	Birds – Construction/Clearing Activities
<b>Responsible Parties:</b>	The Proponent

<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent impacts to birds and nesting areas.
<b>Term or Condition:</b>	The Proponent shall protect any nests found (or indicated nests) with a buffer zone determined by the setback distances outlined in its Terrestrial Environment Mitigation and Monitoring Plan, until the young have fledged. If it is determined that observance of these setbacks is not feasible, the Proponent will develop nest-specific guidelines and procedures to ensure bird's nests and their young are protected.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	No change.

<b>Term and Condition No.</b>	<b>71</b>
<b>Category:</b>	Birds – Flight Altitude Requirements
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate aircraft disturbance to birds.
<b>Term or Condition:</b>	Subject to safety requirements, the Proponent shall require all Project related aircraft to maintain a cruising altitude of at least: <ul style="list-style-type: none"> <li>a. 650 m during point to point travel when in areas likely to have migratory birds</li> <li>b. 1100 m vertical and 1500 m horizontal distance from observed concentrations of migratory birds</li> <li>c. 1100 m over the area identified as a key site for moulting snow geese during the moulting period (July-August), and if maintaining this altitude is not possible, maintain a lateral distance of at least at least 1500 m from the boundary of this site.</li> </ul>
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	QIA and Baffinland agree to remove this PC Condition, as it is now covered in PC Condition 59.

**Commentary:** As noted under the Commentary in Term and Condition #59 the Terrestrial Environment Working Group may provide the Proponent with additional direction regarding minimum flight altitude requirements that may differ from these requirements, but unless the Terrestrial Environment Working Group provides additional direction, the minimum flight altitudes set out above will govern with respect to migratory birds specifically.

<b>Term and Condition No.</b>	<b>72</b>
<b>Category:</b>	Birds – Flight Altitude Requirements
<b>Responsible Parties:</b>	The Proponent, Transport Canada
<b>Project Phase:</b>	Construction, Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate aircraft disturbance to birds.
<b>Term or Condition:</b>	The Proponent shall ensure that pilots are informed of minimum cruising altitude guidelines and that a daily log or record of flight paths and cruising altitudes of aircraft within all Project Areas is maintained and made available for regulatory authorities such as Transport Canada to monitor adherence and to follow up on complaints.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	QIA and Baffinland agree to remove this PC Condition, as it is now covered in PC Condition 59.

<b>Term and Condition No.</b>	<b>73</b>
<b>Category:</b>	Birds – Monitoring
<b>Responsible Parties:</b>	The Proponent, Qikiqtani Inuit Organization, TEWG, MEWG
<b>Project Phase:</b>	Construction, Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To develop appropriate mitigation and monitoring of impacts to birds.
<b>Term or Condition:</b>	The Proponent shall develop detailed and robust mitigation and monitoring plans for migratory birds, reflecting input from relevant agencies, the Qikiqtani Inuit Organization and communities as part of the Terrestrial Environment Working Group and to the extent applicable the Marine Environment Working Group.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	QIA and Baffinland agree to remove this PC Condition, as it is now covered in PC Condition 74.

<b>Term and Condition No.</b>	<b>74</b>
<b>Category:</b>	Birds – Monitoring
<b>Responsible Parties:</b>	The Proponent

<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To develop appropriate mitigation and monitoring of impacts to birds.
<b>Term or Condition:</b>	<p>The Proponent shall continue to develop and update relevant monitoring and management plans for migratory birds under the Proponent's Environmental Management System, Terrestrial Environment Mitigation and Monitoring Plan prior to construction. The key indicators for follow up monitoring under this plan will include: peregrine falcon, gyrfalcon, common and king eider, red knot, seabird migration and wintering, and songbird and shorebird diversity.</p> <p>The Proponent shall report on compliance with these requirements annually, and take all adaptive management measures identified by the and in accordance with the Inuit Stewardship Plan if monitoring indicates unacceptable impacts to bird species.</p>
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Proposed revisions link this PC Condition to the commitments in the Inuit Certainty Agreement.

<b>Term and Condition No.</b>	<b>75</b>
<b>Category:</b>	Birds – Monitoring
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To assess the extent of terrestrial habitat loss.
<b>Term or Condition:</b>	The Proponent's monitoring program shall assess and report, on annual basis, the extent of terrestrial habitat loss due to the Project to verify impact predictions and provide updated estimates of the total Project footprint.
<b>Reporting Requirements:</b>	To be provided within the Annual Report to the NIRB.
<b>Rationale:</b>	No change.

### Marine Environment, Marine Water/Ice and Sediment Quality

<b>Term and Condition No.</b>	<b>76</b>
<b>Category:</b>	Marine Environment – General

<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate potential impacts to the marine environment.
<b>Term or Condition:</b>	<p>The Proponent shall work with regulators, intervenors, the Inuit Committee, and the MEWG to determine when updates to the MMP are required.</p> <p>The Proponent shall update the marine monitoring plan (MMP) in consultation with MEWG members and this will be completed prior to the start of the first shipping season following issuance of an amended project certificate, and prior to any Phase 2 shipping. The updated MMP will detail, at minimum, the revised MEEMP sampling design which includes greater seasonal and spatial coverage and increased sampling effort and sample sizes to address DFO concerns related to achieving sufficient statistical power for detection of Project effects (<math>\geq 0.8</math>, as per recommendations in DFO 2020, pages 4-7). Further details and context are provided in BIMC Commitment 208 and associated intervenor comments (e.g., DFO 3.6.7 NEW).</p>
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	QIA's proposed revisions add clarity and direction with respect to updates and the involvement of the MEWG, as well as addressing known DFO concerns.

<b>Term and Condition No. BIM Commitments</b>	<b>77 208</b>
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<b>Term and Condition No.</b>	<b>77</b>
<b>Category:</b>	Marine Wildlife and Marine Environment – Marine Environmental Working Group
<b>Responsible Parties:</b>	The Proponent, Qikiqtani Inuit Association, Government of Nunavut, Government of Canada, Qikiqtaaluk Wildlife Board, Mittimatalik Hunters and Trappers Organization, other parties as set out in the Terms of Reference
<b>Project Phase:</b>	All Project Phases

<b>Objective:</b>	To provide responsible environmental oversight of the marine environment and effects on marine wildlife. To analyze results of project monitoring, and to provide expertise and input into the mitigation, management and monitoring plans associated with the Project. To ensure Inuit perspectives and values are properly integrated into mitigation, management, and monitoring plans.
<b>Term or Condition:</b>	A Marine Environment Working Group (MEWG) shall be established as an oversight body to fulfill the intended objectives. The operation of the TEWG shall not duplicate or impede the exercise of regulatory authority of authorizing agencies or government. The MEWG shall have the following permanent members: The Proponent, the Qikiqtani Inuit Association, the Government of Nunavut, the Government of Canada, the Qikiqtaaluk Wildlife Board, and the Mittimatalik Hunters and Trappers Association. A Terms of Reference shall be established that guides additional membership. The MEWG shall be chaired by a member appointed by the Inuit Committee (this chairperson shall be in addition to the Qikiqtani Inuit Association's membership).
<b>Reporting Requirements:</b>	Draft meeting minutes of the MEWG shall be filed on the NIRB registry and circulated to MEWG members not more than 60 days following a meeting. All final meeting minutes shall be included in the Annual Report to the NIRB. Project monitoring reports and relevant data to be considered by the MEWG will be provided to members not less than 2 weeks prior to a scheduled meeting.
<b>Rationale</b>	Observations from MEWG members have been that the current MEWG structure is ineffective and inefficient. Meetings of the MEWG are currently chaired by the Proponent, creating a conflict of interest for responsible environmental effect oversight. The Proponent has committed to a jointly developed Adaptive Management Plan and associated development process with QIA. By forming a direct link between the Inuit Committee and the TEWG, Inuit perspectives and IQ will be brought forward in an integrated fashion and codified into specific monitoring and oversight recommendations for discussion and consideration of project changes. Discussion and consideration of western science remains unchanged, and linking the Inuit Committee will ensure that the MEWG also properly integrates IQ and Inuit perspectives into discussions, and will strengthen the working group's ability to effect change through adaptive management at the Project. As multiple HTOs are interested in joining the MEWG, it is suggested that QWB be the member and assign a participant to the MEWG. The QWB will represent all HTOs through their structure under the Nunavut Agreement. The MHTO and community of Pond Inlet are specifically and directly affected by marine shipping. It is recommended the MHTO have their own seat on the MEWG.



<b>Term and Condition No.</b>	<b>78</b>
<b>Category:</b>	Marine Environment – Ice Breaking and Shipping
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To obtain accurate and current ice information.
<b>Term or Condition:</b>	The Proponent shall update the baseline information for landfast and pack ice using a long-term dataset (30 years), and with information on inter-annual variation. The analysis for pack and landfast ice shall be updated and reported annually using annual sea ice data (floe size, cover, concentration) and synthesized and reported in the most appropriate management plan.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Simple update to database requirements. Annual sea ice data analyses and reporting are needed for comparison with marine wildlife monitoring data, to assess Project impacts on sea ice habitat, interactions, etc. Given the lack of survey etc. data in 2018 and changes observed by harvesters in the distribution of narwhal, collection of ice data for comparison with future observations may be more important than ever for understanding why these changes occur (environmental cf. anthropogenic).
<b>BIM Commitments</b>	9, 14, 89, 94, 142, 143, 168, 169, 190, 191, 213, 215, 216, 217, 218, 239, 240

**Commentary:** The annual update for pack and landfast ice includes not only identification of naturally occurring effects, but also must include information on effects on floe size, cover and concentration of pack and landfast ice that may be attributed to icebreaking activities.

<b>Term and Condition No.</b>	<b>79</b>
<b>Category:</b>	Marine Environment – Ice Breaking and Shipping
<b>Responsible Parties:</b>	The Proponent, Canadian Hydrographic Services
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To assist in the development of nautical charts for Canadian waters.
<b>Term or Condition:</b>	The Proponent shall provide the Canadian Hydrographic Services with bathymetric data and other relevant information collected in support of Project shipping where possible, to assist in the development of nautical charts for Canadian waters.

<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	No change.

<b>Term and Condition No.</b>	<b>80</b>
<b>Category:</b>	Marine Environment – Ice Breaking and Shipping
<b>Responsible Parties:</b>	The Proponent, Canadian Hydrographic Services
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To identify areas of risk along the shipping route.
<b>Term or Condition:</b>	Prior to commercial shipping of iron ore, the Proponent shall conduct a detailed risk assessment for Project-related shipping accidents, noting areas along the ship tracks where vessels may be particularly vulnerable to environmental conditions such as sea ice, and any seasonal differences in risk. This assessment shall inform mitigation and adaptive management plans.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	No change. QIA notes that the requirements of this PC Condition remain outstanding.

<b>Term and Condition No.</b>	<b>81</b>
<b>Category:</b>	Marine Environment – Shoreline Effects and Sediment Redistribution
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To mitigate potential shoreline effects from shipping.
<b>Term or Condition:</b>	The Proponent shall reassess the potential for ship wake impacts to cause coastal change following any further changes to the proposed shipping routes.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes to remove this PC Condition as it is duplicative of PC Condition 84. QIA does not support removal of this PC Condition. PCC 81 covers wave effects while PCC 84 covers sediment redistribution by ships propellers. The wave effects are a concern to coastal nesting birds (e.g., eiders), whereas sediment redistribution is a concern to marine benthic organisms. Both are greater issues along the southern route.

<b>Term and Condition No.</b>	<b>82</b>
<b>Category:</b>	Marine Environment – Shoreline Effects and Sediment Redistribution
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To mitigate potential shoreline effects from shipping.
<b>Term or Condition:</b>	The Proponent shall provide observed and measured data for each mode/type of its ore carriers, or ore carriers it commissions on wake characteristics at various vessel speeds and distances from the vessel.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Revisions to ensure that this PC Condition applies to commissioned and/or chartered vessels.

<b>Term and Condition No.</b>	<b>83</b>
<b>Category:</b>	Marine Environment – Shoreline Effects and Sediment Redistribution
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations
<b>Objective:</b>	To monitor relative sea level and storm surges, and to provide detailed feedback and reporting on the impacts that climate change might be having on the port facilities.
<b>Term or Condition:</b>	The Proponent shall install tidal gauges at the Steensby Inlet Port and Milne Inlet Port sites to monitor relative sea level and storm surges. The Proponent shall provide annual reporting to NIRB, the MEWG and in accordance with the Inuit Stewardship Plan on the results of this monitoring and detailed analysis of how climate change may be impacting the port facilities. Any observed anomalous activity will be reported at the next MEWG meeting following the event.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Proposed revisions to link this PC Condition with commitments in the Inuit Certainty Agreement and to involve the MEWG in a clearer and more fulsome way.

**Commentary:** Note that the requirement for installation of tidal gauges may be subject to the Navigation Protection Program.

<b>Term and Condition No.</b>	<b>83(a)</b>
<b>Category:</b>	Marine Environment – Shoreline Effects and Sediment Redistribution
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations
<b>Objective:</b>	To identify potential for and conduct monitoring to identify effects of sediment redistribution associated with construction and operation of the Milne Port.
<b>Term or Condition:</b>	The Proponent shall conduct hydrodynamic modelling in the Milne Inlet Port area to determine the potential impacts arising from disturbance to sediments including re-suspension and subsequent transport and deposition of sediment. The modelling results shall be used to update the marine water and sediment quality monitoring and mitigation program to include activities associated with the construction and operation of the Milne Inlet Port. The monitoring program shall include an ongoing assessment of the potential introduction of metals that bio-accumulate in the marine food chain. The Proponent shall provide annual reporting to NIRB and MEWG, and in accordance with the Inuit Stewardship Plan on the results of this monitoring and detailed analysis of the effects of sediment distribution on marine life.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes to remove this PC Condition, citing a hydrodynamic modelling report for Milne Port submitted as part of the FEIS Addendum. QIA does not support removal of this PC Condition. Rather, this PC Condition should be revised to require periodic updates (at a schedule to be determined). The hydrodynamic modeling is just one aspect of this PC Condition. It may require revisiting for the risk-based assessment of Project vessel's ballast water and if there is interest in switching from both exchange and treatment of ballast water to just treatment. Use of larger cape-size vessels and a second ore dock will affect ballast water inputs and sediment redistribution. And, the Marine Monitoring Plan (MMP) requires substantial revisions to reflect changes to the monitoring program since it was last revised.
<b>BIM Commitments</b>	208

<b>Term and Condition No.</b>	<b>84</b>

<b>Category:</b>	Marine Environment – Shoreline Effects and Sediment Redistribution
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To prevent sediment redistribution along the shipping route.
<b>Term or Condition:</b>	The Proponent shall update its sediment redistribution modeling once ship design has been completed and sampling should be undertaken to validate the model and to inform sampling sites and the monitoring plan.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes to remove this PC Condition, citing a ship wake and propeller wash assessment for the Northern portion of the Project submitted as part of the FEIS Addendum. QIA does not support removal of this PC Condition. This PC Condition applies mainly to the southern shipping route, which tends to be shallower and have more coastal bird colonies. Purpose-built Cape Class ore carriers capable of year-round operation were to be built for use on the southern route and still need to be assessed, so the PC Condition should be kept.

<b>Term and Condition No.</b>	<b>85</b>
<b>Category:</b>	Marine Environment – Shoreline Effects and Sediment Redistribution
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To prevent sediment redistribution along the shipping route.
<b>Term or Condition:</b>	The Proponent shall develop a monitoring plan to verify its impact predictions associated with sediment redistribution resulting from propeller wash in shallow water locations along the shipping route. If monitoring detects negative impacts from sediment redistribution, additional mitigation measures will need to be developed and implemented.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	No change.

<b>Term and Condition No.</b>	<b>86</b>
<b>Category:</b>	Marine Environment – Ballast Water (Dispersion)

<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operation
<b>Objective:</b>	To update ballast water discharge impact predictions.
<b>Term or Condition:</b>	<p>Prior to commercial shipping of iron ore, the Proponent shall use more detailed bathymetry collected from Steensby Inlet and Milne Inlet to model the anticipated ballast water discharges from ore carriers. The results from this modeling shall be used to update ballast water discharge impact predictions and should account for density dependent flow and annual timescales over the Project life. Additional sampling should also be undertaken to validate the model and to inform sampling sites and the monitoring plan.</p> <p>To facilitate dispersion and risk modelling the Proponent shall:</p> <ol style="list-style-type: none"> <li>1) in its Standing Instructions to Masters (SITM) instruct all ship operators to not release ballast water within the Regional Study Area (RSA) prior to arrival at the Milne Port anchorages or ore dock(s) and completion of D-1 ballast water testing,</li> <li>2) report the duration and volume of ballast water discharge that occurs at each discharge point concurrent with biological testing that will be conducted to support the risk-based methodology under DFO 3.6.5 (see PCC 89), prior to Phase 2 shipping and for one additional year following commissioning of the second ore dock, if required, and</li> <li>3) provide MEWG members a dataset with discharge coordinates and the durations and volumes of discharges at each discharge point as part of annual reporting.</li> </ol> <p>Prior to any discontinuation of ballast water exchange the Proponent shall update ballast water dispersion modelling to more accurately reflect the spectrum of salinity, temperature, and discharge volumes that can be expected to be discharged at Milne Port under Phase 2 operations if exchange was to be discontinued.</p>
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Proposed revisions facilitate dispersion and risk modelling, and capture the need for additional modelling should there be interest in switching from ballast water exchange and treatment to just treatment.
<b>BIM Commitments</b>	114, 204, 206

<b>Term and Condition No.</b>	<b>87</b>
<b>Category:</b>	Marine Environment – Aquatic Invasive Species

<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To detect and respond to invasive species introductions resulting from Project shipping.
<b>Term or Condition:</b>	<p>The Proponent shall develop a detailed monitoring program at a number of sites over the long term to evaluate changes to marine habitat and organisms and to monitor for non-native introductions resulting from Project-related shipping. This program needs to be able to detect changes that may have biological consequences. It should be initiated several years prior to any ballast water discharge into Steensby Inlet and Milne Inlet to collect sufficient baseline data, and should continue over the life of the Project.</p> <p>The Proponent shall work with the MEWG and DFO to establish species-specific Rapid Response Plans. These plans will be developed for species identified as high risk through ongoing monitoring for non-indigenous species (NIS) in the receiving environment, the remotely operated vehicle (ROV) or any other future biofouling monitoring program, results from the risk-based study of Project vessel ballast water (and any other monitoring of Project ballast water), examination of existing invasive species databases and lists in key ecoregions where vessels calling originate from, and based on ranking of potential risk using the Canadian Marine Invasive Screening Tool.</p>
<b>Reporting Requirements:</b>	Annually, with adequate time for review by the MEWG, and to inform mitigation requirements for the following shipping season.
<b>Rationale:</b>	QIA's proposed revisions reflect commitments made by Baffinland and provide clarity with respect to how this PC Condition is implemented. This PCC deals with monitoring for species that have been introduced into Milne Port or Steensby Port with ballast water or from biofouling on ship hulls, not ballast water <i>per se</i> . It is reactive, in that it assesses whether measures designed to prevent non-indigenous species introductions are working and, if they are not, to inform risk assessment, response, and adaptive management.
<b>BIM Commitments</b>	113

<b>Term and Condition No.</b>	<b>88</b>
<b>Category:</b>	Marine Environment – Ballast Water (Risk Assessment)
<b>Responsible Parties:</b>	The Proponent



<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent invasive species introductions resulting from Project shipping.
<b>Term or Condition:</b>	<p>Prior to any increase in commercial shipping of iron ore from 6 Mt annually, and in conjunction with the Marine Environment Working Group, the Proponent shall provide an updated risk analysis regarding ballast water discharge to assess the adequacy of treatment and implications on the receiving environment. This risk analysis shall consider, but not be limited to:</p> <ul style="list-style-type: none"> <li>a. Invasive species;</li> <li>b. Seasonal oceanography;</li> <li>c. Ballast water quality and quantity;</li> <li>d. Receiving water quality (e.g., residual physical, chemical, and/or biological effects); and</li> <li>e. Any risk assessment analysis regarding ballast water exchange and treatment efficacy in Arctic waters.</li> </ul> <p>The Proponent's Commitment (109) related to DFO 3.6.5 (and QIA TC 45) addresses the need to better understand risk of invasive species introduction via ballast water discharges. In response, DFO has designed a risk-based assessment of Project shipping to identify which vessels present the greatest risk and why, to inform adaptive management (e.g., vessel selection). The study draft was provided for review on March 24, 2021 (210324-08MN053-DFO Draft Ballast Study Plan-IT4E.pdf). If it proceeds as outlined the study will advance understanding of ballast water/invasive species risk, mitigation, and monitoring. The intention is to conduct biological sampling of at least 30 vessels annually for two shipping seasons. Key objectives are to identify factors related to the risk of nonindigenous species introduction, and to develop a risk assessment tool specific to Milne Inlet. The latter will facilitate future targeting of higher risk ships for monitoring risk/compliance and support development of species-specific rapid response plans (see revised PCC 87), based on risk factors identified through results of biological sampling. Community involvement and capacity development have important roles in the DFO plan.</p> <p>The Proponent will:</p> <ol style="list-style-type: none"> <li>1) support DFO revisions of the draft DFO study plan based on comments received from Transport Canada and the MEWG;</li> <li>2) provide support required by DFO to complete the study with the number and mix of vessel required to properly identify factors related to the risk of nonindigenous species introduction, and to develop a scientifically defensible risk assessment tool specific to Milne Inlet; and</li> <li>3) conduct additional live sampling analysis of vessels using "exchange only" to improve overall understanding of the relative</li> </ol>

	<p>efficacy of exchange only as compared to “treatment plus exchange” and possible future use of just treatment.</p> <p>This condition will remain in place for the southern shipping route, where an updated risk analysis will be provided prior to Project shipping of iron ore.</p>
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	<p>The risk assessment for the introduction of Aquatic Invasive Species from Ballast water for the northern portion of the Project did not consider the compliance rate of Project vessels to ballast water exchange and treatment regulations or the efficacy of exchange and/or treatment for reducing the risk of species introductions. Sampling of the ballast water of approved shipping is needed to inform risk assessment of existing and proposed shipping, and to inform mitigation measures designed to reduce risk of invasive species introduction (e.g., selection of vessels using the most effective methods of treatment for Arctic waters). Statistically and biologically meaningful sampling to inform risk assessment should have begun at the outset of shipping for the ERP but remains outstanding, despite 6 years of operation.</p>
<b>BIM Commitments</b>	109

<b>Term and Condition No.</b>	<b>89</b>
<b>Category:</b>	Marine Environment – Ballast Water (Aquatic Invasive Species)
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent impacts to the marine environment from the introduction of non-indigenous species as a result of Project activities.
<b>Term or Condition:</b>	<p>The Proponent shall develop and implement an effective ballast water management program that may include the treatment and monitoring of ballast water discharges in a manner consistent with applicable regulations and/or exceed those regulations if they are determined to be ineffective for providing the desired and predicted results. The ballast water management program shall include, without limitation, a provision that requires ship owners to test their ballast water to confirm that it meets the salinity requirements of the applicable regulations prior to discharge at the Milne Port, and a requirement noting that the Proponent, in choosing shipping contractors will, whenever feasible, give preference to contractors that use ballast water treatment in addition to ballast water exchange.</p>

	<p>The Proponent shall apply risk-based methodology developed by DFO to evaluate the risk of all vessel ballast water management (D1, D2), with subsequent salinity and D-2 biological compliance sampling conducted on vessels identified as high or very high risk. The respective risk-based methodology and associated ballast water compliance sampling plan will be developed in consultation with DFO and Transport Canada (TC) following completion of DFO's Project-specific sampling conducted on a subset of vessels calling to Milne Port. The risk-based methodology and associated ballast water compliance sampling plan shall include a consideration of other compliance initiatives or research being undertaken elsewhere by TC relative to implementation of the D-2 standard.</p> <p>The Proponent will require all vessels calling on Milne Port that treat their ballast under the D2 Standard to also perform a ballast water exchange prior to treatment. By 2024, for ore carriers originating from Canadian waters (i.e., domestic trips), the Proponent will only charter vessels equipped with treatment systems, and will require those vessels to treat their ballast under the D2 Standard and to also perform a ballast water exchange prior to treatment.</p> <p>For ships unable to conduct exchange as specified in Canadian Ballast Water Regulations (e.g., ships on Canadian domestic trips), exchange is to be conducted as specified in revised ABWEZs for Eastern Arctic as per DFO CSAS advice (see DFO 2015, Stewart et al. 2015 and Goldsmit et al. 2019). This requirement will be reflected in the 2022 Standing Instructions to Masters.</p>
<b>Reporting Requirements:</b>	Annually to NIRB, Transport Canada, and the MEWG.-
<b>Rationale:</b>	Significant Project-related shipping is ongoing and risk of invasive species introductions via ballast water remains unknown. Proposed revisions reflect Baffinland commitments associated with the need to better understand and mitigate the risk of invasive species introduction via ballast water discharges. This work should go ahead regardless of Phase 2 approval.
<b>BIM Commitments</b>	109, 205

<b>Term and Condition No.</b>	<b>90</b>
<b>Category:</b>	Marine Environment – Ballast Water (Water Quality)
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Operation and Closure
<b>Objective:</b>	To prevent impacts to marine water quality resulting from ballast water discharge.

<b>Term or Condition:</b>	<p>The Proponent shall incorporate into its Shipping and Marine Mammals Management Plan provisions to achieve compliance with the requirements under the International Convention for the Control and Management of Ship's Ballast Water and Sediment (2004) or its replacement and as implemented by the <i>Canadian Ballast Water and Control Regulations</i> as may be amended from time to time.</p> <p>As part of the risk-based methodology and associated ballast water compliance sampling plan to be developed in relation to DFO 3.6.5 (see also BIM commitments 206 and 206) the Proponent will include monitoring of contaminants in ballast water from each port and treatment type to assess potential chemical risks (e.g., from foreign ports or treatment residuals). Further risk-based assessment of contaminants will be conducted, using methodology and approaches developed in relation to DFO 3.6.5, in the event Project vessels switch from exchange plus treatment to just treatment of ballast water to assess contaminants (e.g., from source ports and treatments) that could be released into Milne Inlet.</p>
<b>Reporting Requirements:</b>	Annually to NIRB, Transport Canada and MEWG.
<b>Rationale:</b>	Baffinland proposes to remove PC Condition 90. QIA does not support removal of this PC Condition. QIA believes that Regulatory requirements are not sufficient to provide the information needed to assess risk or prevent species introductions. QIA's revisions reflect Baffinland commitments associated with the need to better understand and mitigate impacts to marine water quality.
<b>BIM Commitments</b>	206, 207

<b>Term and Condition No.</b>	<b>91</b>
<b>Category:</b>	Marine Environment –Hull Fouling (Aquatic Invasive Species)
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operation and Closure
<b>Objective:</b>	To prevent impacts to the marine environment from the introduction of non-indigenous species as a result of shipping activities.
<b>Term or Condition:</b>	<p>The Proponent shall:</p> <ol style="list-style-type: none"> <li>1) ensure that vessels arriving to Milne Port and Steensby Port are following IMO International Guidelines for Biofouling Management (and any associated updates to these Guidelines) by including adherence to these Guidelines as a requirement in vessel procurement contracts;</li> <li>2) develop a robust monitoring program design with input from DFO and other relevant parties;</li> </ol>

	<p>3) develop a risk assessment and establish a risk-based sampling plan to guide future monitoring and management of high-risk vessels;</p> <p>4) revisit the state of technology and methods used to assess and conduct biological sampling of vessel biofouling;</p> <p>5) revise and update its risk assessment and risk-based sampling plan (see 3, above) once a robust set of biological data has been collected;</p> <p>6) apply at Steensby Port any feasible technology or method for biological sampling that has been applied at Milne Port; and,</p> <p>7) if modifications to biofouling management practices are proposed, consult with DFO and other relevant parties to determine if updates to the risk assessment and risk-based sampling plan are required.</p>
<b>Reporting Requirements:</b>	Details of the DFO led sampling program to be carried out at Milne Port in 2021 will be shared through the Marine Environment Working Group (MEWG) prior to the 2021 shipping season. A report on options that exist to conduct this work will be submitted to the MEWG by the end of 2021. Reports will be submitted annually thereafter to the MEWG and NIRB on results and findings of the research and monitoring programs.
<b>Rationale:</b>	Baffinland proposes removing PC Condition 91. QIA does not support removal of this PC Condition. QIA revisions reflect that applicable regulations cited in the current wording do not require collection of the data on hull fouling needed to assess risk of invasive species introductions and to inform mitigation and adaptive management.
<b>BIM Commitments</b>	193, 194, 195, 196, 197

**Commentary:** The term “fouling” as used in the context of this term and condition refers specifically to hull fouling on ships.

<b>Term and Condition No.</b>	<b>92</b>
<b>Category:</b>	Marine Environment – Spill Prevention
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To ensure adequate spill response capacity.

<b>Term or Condition:</b>	The Proponent shall ensure that it maintains the necessary equipment and trained personnel to respond to all sizes of potential spills associated with the Project in a self sufficient manner.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes to remove PC Condition 92 as it duplicates Canada Shipping Act, 2021 OPEP-OPPP. QIA believes that it is important that Baffinland be required to report on compliance with these regulatory requirements, given past performance with respect to spill reporting.

<b>Term and Condition No.</b>	<b>93</b>
<b>Category:</b>	Marine Environment – Spill Prevention
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To prevent impacts to the marine environment at Steensby Inlet.
<b>Term or Condition:</b>	Prior to construction, based on vessel selection and if so required, the Proponent shall reassess the risk analysis of using vessel-based fuel storage, including the potential environmental impacts of containment failure under a range of winter ice conditions, how a spill might spread and the impact of fuel if it does not volatilize to the atmosphere.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	No change.

<b>Term and Condition No.</b>	<b>94</b>
<b>Category:</b>	Marine Environment – Spill Prevention
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To promote public awareness of Project activities.
<b>Term or Condition:</b>	The Proponent shall consult directly with affected communities regarding its plans for over-wintering of fuel in Steensby Inlet, with discussion topics to include descriptions of the duration of proposed activities, vessel type, spill preparedness and emergency response protocols, environmental impact predictions and answers to community member questions.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.

<b>Rationale:</b>	No change.
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<b>Term and Condition No.</b>	<b>95</b>
<b>Category:</b>	Marine Environment – Spill Prevention
<b>Responsible Parties:</b>	The Proponent, Transport Canada, Government of Nunavut
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To prevent impacts to the marine environment at Steensby Inlet.
<b>Term or Condition:</b>	The Proponent shall meet or exceed all regulatory regulations and requirements as apply to the practice of overwintering a fuel vessel at Steensby Inlet, with reporting to the NIRB and Transport Canada.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Minor change to add GN as a responsible party.

<b>Term and Condition No.</b>	<b>96</b>
<b>Category:</b>	Marine Environment – Spill Prevention
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To ensure adequate oversight of Project activities is occurring.
<b>Term or Condition:</b>	The Proponent will update the NIRB on the results of all compliance monitoring and site inspections undertaken by government agencies for the overwintering of a fuel vessel in Steensby Inlet.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	QIA supports Baffinland proposal to remove this PC Condition as it duplicates PC Condition 95.

<b>Term and Condition No.</b>	<b>97</b>
<b>Category:</b>	Marine Environment – Spill Prevention
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To prevent impacts to the marine environment along the shipping route.



<b>Term or Condition:</b>	<p>Prior to the commercial shipping of iron ore, the Proponent shall conduct fuel spill dispersion modeling that will, at a minimum, consider:</p> <ul style="list-style-type: none"> <li>a. Modeling of oil spills for both the Northern and Southern Shipping Routes, in representative locations, identified by the Proponent, in consultation with the Marine Environment Working Group along both Shipping Routes, and including: <ul style="list-style-type: none"> <li>i. Pinch points;</li> <li>ii. The approaches into Steensby Inlet and Milne Inlet; iii. Shallow water and shorelines; and,</li> <li>iv. Areas that have been identified as having high flows and/or high concentrations of marine mammals, marine fish or seabirds.</li> </ul> </li> <li>b. Open water and, where applicable, ice-covered conditions;</li> <li>c. Spill volumes up to and including loss of a full tanker cargo; and</li> <li>d. Differences in the quantity and properties of each type of bulk fuel transported by vessels when they are at, or in transit to, the ports at Steensby Inlet and Milne Inlet, and</li> <li>e. Spill models shall be re-examined and reassessed as required following changes to Project shipping (e.g., larger vessels, extended shipping seasons), as determined by the MEWG.</li> </ul>
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	QIA revision to require re-assessments as Project shipping changes (e.g., larger vessels, extended shoulder seasons, etc.).
<b>BIM Commitments</b>	4, 70

<b>Term and Condition No.</b>	<b>98</b>
<b>Category:</b>	Marine Environment – Spill Prevention
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To prevent impacts to the marine environment along the shipping route.
<b>Term or Condition:</b>	The Proponent shall incorporate the results of revised fuel spill dispersion modeling into its impact predictions for the marine environment and its spill response and emergency preparedness plans.

<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	No change.

## Marine Wildlife and Marine Habitat

<b>Term and Condition No.</b>	<b>99</b>
<b>Category:</b>	Marine Environment – Supplemental Baseline Assessments
<b>Responsible Parties:</b>	The Proponent, Marine Environment Working Group
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To supplement baseline information and improve predictions for potential impacts to marine wildlife.
<b>Term or Condition:</b>	<p>The Proponent, working with the Marine Environment Working Group and the Inuit Committee, shall identify priorities for conducting the following supplemental and trend-over-time assessments:</p> <ul style="list-style-type: none"> <li>a. Establish shipping season, inter-annual baseline in Steensby Inlet and Milne Inlet that enables effective monitoring of physical and chemical effects of ballast water releases, sewage outfall, and bottom scour by ship props, particularly downslope and downstream from the docks. This shall include the selection and identification of physical, chemical, and biological community/indicator components. The biological indicators shall include both pelagic and benthic species but with emphasis on relatively sedentary benthic species (e.g., sculpins).</li> <li>b. The collection of additional baseline data: <ul style="list-style-type: none"> <li>i. in Steensby Inlet on walrus, beluga, bearded seal, and anadromous Arctic Char abundance, distribution, ecology, and habitat use; and</li> </ul> </li> <li>c. In Milne Inlet on narwhal, bowhead and anadromous Arctic Char abundance, distribution, ecology, and habitat use.</li> <li>d. Enhance baseline data on marine wildlife (fish, invertebrates, birds, mammals, etc.) and to provide more details on species abundance and distribution found in the Project area. This shall include, but not be limited to the following:</li> <li>e. Aerial surveys for basking ringed seals throughout the landfast ice of Steensby Inlet and at an appropriate control location. Surveys shall be conducted at an appropriate frequency to detect change outside of inter-annual variability;</li> </ul>

	<ul style="list-style-type: none"> <li>f. Monitoring of ringed seal distribution, abundance and habitat use along the Northern Shipping Route;</li> <li>g. Develop a ringed seal monitoring plan that incorporates Inuit perspectives into the design, planning and implementation phases, and includes Inuit-derived objectives, indicators, thresholds, and responses (OITRs) which include low, moderate and high risk thresholds.</li> <li>h. Shore-based observations of pre-Project narwhal and bowhead whale behavior in Milne Inlet that continues at an appropriate frequency throughout the Early Revenue Phase and for not less than three consecutive years;</li> <li>i. Conduct retrospective analysis, using all available monitoring data to date, of the behavioural responses of narwhal to vessels travelling both southbound and northbound, and integrate this analysis in future monitoring and reporting;</li> <li>j. Monitoring of narwhal body condition;</li> <li>k. Enhance the baseline for affected freshwater systems, which includes control sites to detect Project-related changes before they cause significant harm.</li> </ul>
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	The Inuit Committee should be involved in a revisit of this Condition, as IQ is critical to inform baseline data collection and associated monitoring planning and implementation.
<b>BIM Commitments</b>	30, 225, 228, 249

<b>Term and Condition No.</b>	<b>100</b>
<b>Category:</b>	Marine Environment – Supplemental Baseline Assessments
<b>Responsible Parties:</b>	The Proponent, Marine Environment Working Group
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To supplement baseline information and improve predictions for potential impacts to marine wildlife.
<b>Term or Condition:</b>	The Proponent shall update its Shipping and Marine Wildlife Management Plan, to include avoidance of polynyas and mitigation measures designed for potential fuel spills along the shipping lane during the winter months, with consideration for the impact of spilled fuel on marine mammals when they might be less mobile or able to avoid contact with spilt fuel or fumes. This will include a formal commitment to not having vessels go into the North Water Polynya (Pikialasorsuaq), subject to vessel safety, which will be recognized

	in the Shipping and Marine Wildlife Management Plan and the Standing Instructions to Masters.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	No change.
<b>BIM Commitments</b>	13

<b>Term and Condition No.</b>	<b>101</b>
<b>Category:</b>	Marine Environment – Monitoring
<b>Responsible Parties:</b>	The Proponent, Marine Environment Working Group
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To monitor for potential impacts to marine wildlife and marine habitat.
<b>Term or Condition:</b>	<ul style="list-style-type: none"> <li>a. The Proponent shall incorporate into the appropriate monitoring plans the following items:</li> <li>b. A monitoring program that focuses on walrus use of Steensby Inlet and their reaction to disturbance from construction activities, aircraft, and vessels;</li> <li>c. Efforts to involve Inuit in monitoring studies at all levels;</li> <li>d. Monitoring protocols that are responsive to Inuit concerns;</li> <li>e. Marine monitoring protocols are to consider the use of additional detecting devices to ensure adequate monitoring through changing seasonal conditions and daylight;</li> <li>f. Schedule for periodic aerial surveys as recommended by the</li> <li>g. Marine Environment Working Group;</li> <li>h. Periodic aerial surveys for basking ringed seals throughout the landfast ice of Steensby Inlet, and a suitable control location. Surveys shall be conducted at an appropriate frequency to detect change inter-annual variability;</li> <li>i. Monitoring of ringed seal distribution, abundance and habitat use along the Northern Shipping Route;</li> <li>j. Conduct landfast ice monitoring for the duration of the Project Operations phase, which will include:</li> <li>k. The number of ship transits that are able to use the same track; and,</li> <li>l. The area of landfast ice disrupted annually by ship traffic; and</li> <li>m. Monitoring strategy focused on assessing and mitigating interaction between humans and wildlife at the port site(s), and</li> </ul>

	n. Integration of inputs from the Culture, Resources, and Land Use Monitoring Program, the Inuit Committee for the Mary River Project, and Community Environmental Monitoring Programs
<b>Reporting Requirements:</b>	To be provided in the Annual Report to the NIRB.
<b>Rationale:</b>	QIA revisions for clarity, to reflect icebreaking along the northern route, to include ringed seal distribution monitoring, and to capture commitments from the Inuit Certainty Agreement.

<b>Term and Condition No.</b>	<b>102</b>
<b>Category:</b>	Marine Environment – Traffic Log and Shipping Information
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To promote public awareness of Project shipping activities for the general public.
<b>Term or Condition:</b>	The Proponent shall ensure that routing of Project vessels is tracked and recorded for both the southern and northern shipping routes, with data made accessible in real time to communities in Nunavut and Nunavik.
<b>Reporting Requirements:</b>	To be provided in the Annual Report to the NIRB.
<b>Rationale:</b>	QIA supports Baffinland proposal to remove this PC Condition as it is duplicative of PC Condition 164.

**Commentary:** Recognizing that at the time of issuance of Amendment No. 1, the Board was advised that the technology to provide “real time” data is only available at the Port sites, the Proponent is required to provide real time data where technologically feasible and to make best efforts to provide information in as timely a manner as possible where reporting real time data is not yet feasible. As real time data reporting become feasible in areas beyond the Port sites, the Proponent is expected to update its reporting practices to provide real time data in compliance with this Condition.

<b>Term and Condition No.</b>	<b>103</b>
<b>Category:</b>	Marine Environment – Traffic Log and Shipping Information
<b>Responsible Parties:</b>	The Proponent

<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To monitor effectiveness of mitigation of shipping impacts to marine wildlife.
<b>Term or Condition:</b>	<p>The Proponent shall report annually to the NIRB regarding Project-related ship track and sea ice information, including:</p> <ul style="list-style-type: none"> <li>a. A record of all ship tracks taken along both shipping routes covering the entire shipping season;</li> <li>b. When employing ice-breaking, an overlay of ship tracks onto ice imagery to determine whether ships are effectively avoiding shore leads and polynyas;</li> <li>c. A comparison of recorded ship tracks to the expected nominal shipping route, and probable (if any) extent of year-round shipping during periods of ice cover and open-water;</li> <li>d. An assessment of the level of adherence to the nominal shipping route and the spatial extent of the shipping zone of influence; and</li> <li>e. A summary of all incidences of significant deviations from the nominal shipping routes for traffic to/from Milne Port and Steensby Port as presented in the FEIS and FEIS Addendum, with corresponding discussion regarding justification for deviations and any observed environmental impacts.</li> </ul>
<b>Reporting Requirements:</b>	To be provided in the Annual Report to the NIRB.
<b>Rationale:</b>	QIA agrees with Baffinland's proposed amendments to this PC Condition.

<b>Term and Condition No.</b>	<b>104</b>
<b>Category:</b>	Marine Environment – Traffic Log and Shipping Information
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations
<b>Objective:</b>	To prevent impacts to marine wildlife from Project shipping activities.

<b>Term or Condition:</b>	<p>Subject to safety considerations and the potential for conditions as determined by the crew of transiting vessels, to result in route deviations, <b>a.</b> the Proponent shall require, for shipping to/from Steensby Port, Project vessels to maintain a route to the south of Mill Island to prevent disturbance to walrus and walrus habitat on the northern shore of Mill Island. Where Project vessels are required to transit to the north of Mill Island owing to environmental or other conditions, an incident report is to be provided to the Marine Environment Working Group and the NIRB within 30 days, noting all wildlife sightings and interactions as recorded by shipboard monitors.</p> <p><b>b.</b> The Proponent shall summarize all incidences of significant deviations from the nominal shipping routes for traffic to/from Milne Port and Steensby Port as presented in the FEIS and FEIS Addendum to the NIRB annually, with corresponding discussion regarding justification for deviations and any observed environmental impacts.</p>
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	QIA supports Baffinland's proposal to remove this PC Condition pending the revisions to PC Condition 103, which QIA also supports.

<b>Term and Condition No.</b>	<b>105</b>
<b>Category:</b>	Marine Environment – Traffic Log and Shipping Information
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To prevent impacts to marine wildlife from Project shipping activities.
<b>Term or Condition:</b>	<p>The Proponent shall ensure that measures to reduce the potential for interaction with marine mammals, particularly in Hudson Strait and Milne Inlet, are identified and implemented prior to commencement of shipping operations. These measures could include, but are not limited to:</p> <ul style="list-style-type: none"> <li>a. Changes in the frequency and timing (including periodic suspensions) of shipping during winter months in Hudson Strait and during both shoulder season and the open water season in Milne Inlet, i.e., when interactions with marine mammals are likely to be the most problematic;</li> <li>b. Reduced shipping speeds where ship-marine mammal interactions are most likely; and</li> <li>c. Identification of alternate shipping routes through Hudson Strait for use when conflicts between the proposed routes and marine mammals could arise. Repeated winter aerial survey results showing marine mammal distribution and densities in Hudson</li> </ul>



	Strait would greatly assist in this task.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Minor revision to include both shoulder and open water season as appropriate for considering changes to shipping frequency and timing.

**Commentary:** Unless otherwise stated, the term “marine mammals” as used throughout the Project Certificate includes polar bears.

<b>Term and Condition No.</b>	<b>106</b>
<b>Category:</b>	Marine Environment – Shipboard Observers
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To ensure that interactions with marine mammals and Project shipping activities are effectively monitored.
<b>Term or Condition:</b>	<p>The Proponent will develop a comprehensive monitoring program to allow for observations between shipping activities and marine wildlife and seabirds. The design of the program should take into account seasons where shipping occurs and the means for observers to effectively carry out assigned duties. Monitoring will include the use of remote technology during ice breaking and shoulder season shipping activities, to detect and monitor ship strikes and sea ice conditions.</p> <p>The Ship Board Observer Program will monitor and clearly report on a suite of marine mammal and seabird behavioral indicators, initial distance from vessel for all observations, minimum distance from vessel (i.e., closest point of approach), and bearing from vessel and movement direction.</p> <p>Baffinland will also implement an incidental marine mammal monitoring program with vessel operators calling on Milne Port, which will request incidental observations of marine mammals to be recorded and relayed to Baffinland. In support of this program, Baffinland will develop educational materials for vessel crew to assist in marine mammal identification and data recording. Baffinland will provide a draft of the materials and program for review by the MEWG before they are finalized.</p>
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	QIA revision to Baffinland’s proposed wording to emphasize effects-level monitoring over simple surveillance.

<b>BIM Commitments</b>	83, 88, 91, 115, 217
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<b>Term and Condition No.</b>	<b>107</b>
<b>Category:</b>	Marine Environment – Shipboard Observers
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations
<b>Objective:</b>	To determine the presence of, and ensure that interactions with marine mammals, seabirds and seaducks are effectively monitored for, along the northern and southern shipping routes, as applicable.
<b>Term or Condition:</b>	<p>The Proponent shall revise the proposed “surveillance monitoring” to improve the likelihood of detecting strong marine mammal, seabird or seaduck responses occurring too far ahead of the ship to be detectable by observers aboard the ore carriers. Additional surveillance techniques (e.g., remote technology) that can detect potential changes in distribution patterns and behavior shall be considered, with periodic re-assessment of options and opportunities and technology advances. A baseline study early in the shipping operations could employ additional surveillance to detect potential changes in distribution patterns and behavior. At an ambitious scope, this monitoring might be achieved using unmanned aircraft flown ahead of ships, or over known areas of importance for seabirds or haul-out sites in the case of walrus, in accordance with the requirements of their Special Flight Operations Certificate.</p> <p>Since it is only feasible at the current time to have Marine Wildlife Observer’s present on the icebreaker MSV Botnica, during the shoulder seasons only, Baffinland will develop a pilot project using remote technology to monitor for ship strikes along the shipping route within the Nunavut Settlement Area. The intent of this pilot project will be to determine the efficacy of mitigation to prevent ship strikes and of monitoring to detect ship strikes and any near misses. The monitoring program will run for three years, and will begin one year in advance of Phase 2 shipping operations, with annual reporting to DFO and the MEWG members. If the pilot program confirms ship strikes and/or near misses are occurring the project will be extended and included as a component of the MMP, in consultation with the MEWG. Otherwise, the program will be discontinued as a permanent component of the MMP, though the program may be implemented again periodically based on advice from the MEWG or Inuit Committee.</p>
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.

<b>Rationale:</b>	Baffinland proposes removing PC Condition 107, on the grounds that UAV tests in 2014 demonstrated the difficulty in using such methods because of wind and cold temperatures. QIA does not support removal of this PC Condition. The PC Condition requires consideration of alternate methods, which is still valid and necessary. Significant advances have been made in drone technology since 2014 work.
<b>BIM Commitments</b>	192, 217

<b>Term and Condition No.</b>	<b>108</b>
<b>Category:</b>	Marine Environment – Shipboard Observers
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations
<b>Objective:</b>	To ensure that interactions with marine mammals, seabirds, and seabirds are effectively monitored for along the southern and northern shipping routes, as applicable.
<b>Term or Condition:</b>	The Proponent shall ensure that data produced by the monitoring program is analysed rigorously by experienced analysts (in addition to being discussed as proposed in the FEIS) and thoroughly reviewed by the MEWG to maximize their effectiveness in providing baseline information, and for detecting potential effects of the Project on marine mammals, seabirds and seabirds in the Regional Study Area, including behavioural responses to vessels. It is expected that data from the long-term monitoring program be treated with the same rigor.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes removing this PC Condition on the grounds that it is duplicative of PC Condition 106. QIA does not support removing this PC Condition. Issues with analyses of existing data, e.g., “experienced analysts” should have questioned the unrealistic ringed seal group size estimates reported by the 2018 shipboard observer program.
<b>BIM Commitments</b>	83, 88, 91, 115, 217

<b>Term and Condition No.</b>	<b>109</b>
<b>Category:</b>	Marine Environment – Ship Noise
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations

<b>Objective:</b>	To prevent impacts to marine mammals from Project shipping activities.
<b>Term or Condition:</b>	The Proponent shall conduct a monitoring program to confirm the predictions in the FEIS with respect to disturbance effects from ships noise on the distribution and occurrence of marine mammals. The survey shall be designed to address effects during the shipping seasons, and include locations in Hudson Strait and Foxe Basin, Milne Inlet, Eclipse Sound and Pond Inlet including areas near the floe edge as appropriate. The survey shall continue over a sufficiently lengthy period to determine the extent to which habituation occurs for narwhal, beluga, bowhead and walrus.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes removing this PC Condition and combining elements into PC Condition 110. QIA does not support removing this PC Condition. Baffinland's proposed revisions to PC Condition 110 do not adequately capture the requirements of this condition.
<b>BIM Commitments</b>	84, 182, 219

<b>Term and Condition No.</b>	<b>110</b>
<b>Category:</b>	Marine Environment – Ship Noise
<b>Responsible Parties:</b>	The Proponent, Marine Environment Working Group
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To prevent impacts to marine mammals from Project shipping activities.
<b>Term or Condition:</b>	<p>The Proponent shall develop and implement a monitoring program that includes but is not limited to acoustic monitoring and allows for an assessment of the predictions in the FEIS and FEIS addendum (short-term, long-term, and cumulative) of vessel noise on marine mammals and their populations. In consultation with the MEWG and Inuit Committee, the monitoring program shall develop clear thresholds for impact mitigation and early warning indicators that serve to provide rapid identification of un-predicted impacts as a result of vessel noise are occurring. The monitoring program shall continue over a sufficiently lengthy period to determine the extent to which habituation occurs for narwhal, beluga, bowhead and walrus, with direction from the MEWG and Inuit Committee. Monitoring programs shall be designed to address effects during the shipping seasons, and include locations in Hudson Strait and Foxe Basin, Milne Inlet, Eclipse Sound and Pond Inlet.</p> <p>Passive acoustic monitoring data will be used to characterize the degree of conservatism in the sound propagation modelling, at an appropriate frequency for the duration of the Phase 2 construction</p>

	and operation periods. These programs will be developed in conjunction with the MEWG and the Inuit Committee.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	QIA revisions to Baffinland proposed edits to add in role of MEWG and Inuit Committee, and to add additional clarity about monitoring program design.
<b>BIM Commitments</b>	4, 16, 84, 85, 86, 121, 218, 2494

<b>Term and Condition No.</b>	<b>111</b>
<b>Category:</b>	Marine Environment – Ship Noise
<b>Responsible Parties:</b>	The Proponent, Marine Environment Working Group
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To prevent impacts to marine mammals from Project shipping activities.
<b>Term or Condition:</b>	<p>The Proponent shall develop clear thresholds for determining if negative impacts as a result of vessel noise are occurring. Mitigation and adaptive management practices shall be developed to restrict negative impacts as a result of vessel noise. This shall include, but not be limited to:</p> <ul style="list-style-type: none"> <li>a. Identifications of zones where cumulative noise could be mitigated due to biophysical features (e.g., water depth, distance from migration routes, distance from overwintering areas etc.); and</li> <li>b. Vessel transit planning, for all seasons, to determine the degree to which cumulative sound impacts can be mitigated through the seasonal use of different zones.</li> </ul> <p>Passive acoustic monitoring data will be used to determine individual vessel noise signatures and identify vessels for which additional mitigation may be required (e.g., both the IMV <i>Botnica</i> and the <i>Sara Desgagnes</i> are particularly loud, in comparison to other Project vessels).</p>

	The Proponent, in conjunction with the Marine Environment Working Group and the Inuit Committee, shall develop a monitoring protocol that identifies and integrates Objectives, Indicators, Thresholds, and Responses to ensure rapid identification of negative impacts."
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes removing PC Condition 111 based on proposed revisions to PC Condition 110. QIA does not support removal of PC Condition 111. QIA revisions are proposed to ensure early warning indicators are established and applied appropriately.
<b>BIMBaffinland Commitments:</b>	4, 16, 141, 218, 227, 2494218

<b>Term and Condition No.</b>	<b>112</b>
<b>Category:</b>	<b>Marine Environment – Ship Noise</b>
<b>Responsible Parties:</b>	The Proponent, Marine Environment Working Group
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To prevent impacts to marine mammals from Project shipping activities.
<b>Term or Condition:</b>	<p>Prior to commercial shipping of iron ore, the Proponent, in conjunction with the Marine Environment Working Group, shall develop a monitoring protocol that includes, but is not limited to, acoustical monitoring that provides an assessment of the negative effects (short and long term cumulative) of vessel noise on marine mammals. Monitoring protocols will need to carefully consider the Objectives, Indicators, Thresholds, and Responses that will be best examined to ensure rapid identification of negative impacts. Thresholds shall be developed to determine if negative impacts as a result of vessel noise are occurring. Mitigation and adaptive management practices shall be developed to restrict negative impacts as a result of vessel noise. This shall include, but not be limited to:</p> <ul style="list-style-type: none"> <li>a. Identification of zones where noise could be mitigated due to biophysical features (e.g., water depth, distance from migration routes, distance from overwintering areas etc.);</li> <li>b. Vessel transit planning, for all seasons.</li> <li>c. A monitoring and mitigation plan is to be developed, and approved by Fisheries and Oceans Canada prior to the commencement of blasting in marine areas.</li> </ul>

<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes removing PC Condition 111 based on proposed revisions to PC Condition 110. QIA does not support removal of PC Condition 112. Baffinland's suggested edits remove mention of cumulative noise zones, vessel transit planning, and need for early warning indicators that allow for rapid identification of problems.
<b>BIM Commitment Commitments</b>	4, 84

<b>PROPOSED Term and Condition No. [NEW M]</b>	<b>QIA Recommended Project Certificate Condition</b>
<b>Category:</b>	Marine Environment – Shipping Impacts
<b>Responsible Parties:</b>	The Proponent, Marine Environment Working Group, North Baffin Communities, QIA
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To ensure Inuit involvement in mitigating impacts to marine mammals from Project shipping activities
<b>Term or Condition:</b>	The Proponent and MEWG to work with the Inuit Committee, to develop IQ-based metrics to be incorporated into Objectives, Indicators, Thresholds, and Responses for the Project.
<b>Reporting Requirements:</b>	Annually to NIRB.
<b>Rationale:</b>	This PC Condition is being proposed by QIA to ensure prioritization of IQ and to link to the commitments from the Inuit Certainty Agreement.
<b>BIM Baffinland Commitments:</b>	4218

<b>Term and Condition No.</b>	<b>113</b>
<b>Category:</b>	Marine Environment – Arctic Char



<b>Responsible Parties:</b>	The Proponent, Marine Environment Working Group, Inuit Committee
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent impacts to marine fish in Steensby Inlet and Milne Inlet
<b>Term or Condition:</b>	The Proponent shall conduct monitoring of marine fish and fish habitat, which includes but is not limited to, monitoring for Arctic Char stock size and health condition in Steensby Inlet and Milne Inlet, as recommended by the Marine Environment Working Group and the Inuit Committee.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	This PCC should be updated to link to the commitments from the Inuit Certainty Agreement.
<b>Baffinland Commitments:</b>	147, 201, 247

<b>Term and Condition No.</b>	<b>114</b>
<b>Category:</b>	Marine Environment – Arctic Char
<b>Responsible Parties:</b>	The Proponent, Marine Environment Working Group
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent impacts to marine fish in Steensby Inlet and Milne Inlet.
<b>Term or Condition:</b>	In the event of the development of a commercial fishery in the Steensby Inlet area or Milne Inlet-Eclipse Sound areas, the Proponent, in conjunction with the Inuit Committee and, the Marine Environment Working Group, shall update its monitoring program for marine fish and fish habitat to ensure that the ability to identify Arctic Char stock(s) potentially affected by Project activities and monitor for changes in stock size and structure of affected stocks and fish health (condition, taste) is maintained to address any additional monitoring issues identified by the MEWG relating to the commercial fishery.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	

<b>Term and Condition No.</b>	<b>115</b>
<b>Category:</b>	Marine Environment – Arctic Char

<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To prevent impacts to marine fish in Steensby Inlet and Milne Inlet.
<b>Term or Condition:</b>	The Proponent is encouraged to continue to explore off-setting options in both the freshwater and marine environment to offset the serious harm to fish which will result from the construction and infrastructure associated with the Project.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes removing PC Condition 115, as it is conducted in accordance with DFO guidance. QIA disagrees with removing this PC Condition. This condition requires BIMC to continue exploring offsetting options and PCC 128 requires BIMC consult RE: these options. The two PCCs could be amalgamated, provided the resultant PCC captures both requirements. While DFO does the permitting, both the offsetting options and consultations with Inuit are of interest to other parties, so they should be included in NIRB requirements to ensure annual reporting is available to stakeholders.

**Commentary:** The term “serious harm” is as defined by applicable Federal fisheries legislation and interpreted by Fisheries and Oceans Canada from time to time.

<b>Term and Condition No.</b>	<b>116</b>
<b>Category:</b>	Marine Environment – Blasting
<b>Responsible Parties:</b>	The Proponent, Fisheries and Oceans Canada
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To prevent impacts to marine fish and fish habitat from explosives.
<b>Term or Condition:</b>	Prior to construction, the Proponent shall develop mitigation measures to minimize the effects of blasting on marine fish and fish habitat, marine water quality and wildlife that include but are not limited to 1), compliance with the Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters (Wright and Hopky, 1998), as modified by Fisheries and Oceans Canada for use in the North and as revised from time to time, and 2) an overpressure threshold of 50kPa as agreed to by the Proponent.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland agreed during the Phase 2 review with a request from DFO to apply a more stringent overpressure threshold of 50 kPa, instead of the published 100 kPa threshold identified by Wright and Hopky (1998).

<b>Term and Condition No.</b>	<b>117</b>
<b>Category:</b>	Marine Environment – Blasting
<b>Responsible Parties:</b>	The Proponent, Fisheries and Oceans Canada
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To prevent impacts to marine fish and fish habitat from explosives.
<b>Term or Condition:</b>	The Proponent shall ensure that blasting in, and near, marine water shall only occur during periods of open water. Blasting in, and near, fish-bearing freshwaters shall, to the greatest degree possible, only occur in open water. If blasting is required during ice-covered periods, it must meet requirements established by Fisheries and Oceans Canada.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes removing PC Condition 117 based on proposed revisions to PC Condition 116. QIA does not support removal of this PC Condition. However, PC Conditions 116-118 could be amalgamated into a single marine PC Condition, provided they capture the intent of each existing PC Condition.

<b>Term and Condition No.</b>	<b>118</b>
<b>Category:</b>	Marine Environment – Blasting
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To prevent impacts to marine fish and fish habitat from explosives.
<b>Term or Condition:</b>	The Proponent shall incorporate into the appropriate mitigation plan prior to construction, thresholds for the use of specific mitigation measures meant to prevent or limit marine wildlife disturbance, such as bubble curtains for blasting, and nitrate removal.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes removing PC Condition 118 based on proposed revisions to PC Condition 116. QIA does not support removal of this PC Condition. However, PC Conditions 116-118 could be amalgamated into a single marine PC Condition, provided they capture the intent of each existing PC Condition.

**Commentary:** As expressly noted in the Minister's letter of April 28, 2014, this term and condition applies equally to all aspects of the Mary River Project, including the Early Revenue Phase.

<b>Term and Condition No.</b>	<b>119</b>
<b>Category:</b>	Marine Environment – Ringed Seals
<b>Responsible Parties:</b>	The Proponent, Marine Environment Working Group
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To prevent impacts to ringed seals from icebreaking associated with Project shipping.
<b>Term or Condition:</b>	The Proponent shall develop a ringed seal monitoring plan that incorporates Inuit perspectives into the design, planning and implementation phases, and includes Inuit-derived objectives, indicators, thresholds, and responses (OITRs) which include low, moderate and high risk thresholds. The Proponent shall, in conjunction with the Marine Environment Working Group, monitor ringed seal birth lair abundance and distribution for at least two years prior to commencement of the shipping season, with continued monitoring over the life of the Project as necessary, and as determined by the MEWG and the Inuit Committee, to test the accuracy of the impact predictions and determine if mitigation is needed. Monitoring shall also include a control site outside of the Project's zone of influence.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Shoulder season icebreaking along the northern route may impact ringed seal territory formation in autumn and moulting in spring. QIA believes it is important to maintain monitoring for both northern and southern routes. QIA revisions also incorporate the role of the MEWG and Inuit Committee.
<b>BIM Commitments</b>	30, 225

<b>Term and Condition No.</b>	<b>120</b>
<b>Category:</b>	Marine Environment – Marine Mammal Interactions
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent impacts to marine mammals associated with Project shipping.

<b>Term or Condition:</b>	<p>The Proponent shall ensure that, subject to vessel and human safety considerations, all Project shipping adhere to the following mitigation procedures while in the vicinity of marine mammals:</p> <ol style="list-style-type: none"> <li>Wildlife will be given right of way;</li> <li>Ships will when possible, maintain a straight course and constant speed, avoiding erratic behavior;</li> <li>When marine mammals appear to be trapped or disturbed by vessel movements, the vessel will implement appropriate measures to mitigate disturbance, including stoppage of movement until wildlife have moved away from the immediate area; and</li> <li>When marine mammals are concentrated in sea ice leads, animals will be given the right of way and no vessels will enter the lead, to minimize disturbance to marine mammals when open-water habitat is limited.</li> </ol>
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Project Condition revised to be more specific re: marine mammal right-of-way and marine mammals trapped or disturbed, to address what happened at the start of the 2020 shipping season when icebreaking occurred when narwhal were aggregated in sea ice leads.
<b>BIM Commitments</b>	92

**Commentary:** As noted previously, unless otherwise stated, the term “marine mammals” as used throughout the Project Certificate includes polar bears.

<b>Term and Condition No.</b>	<b>121</b>
<b>Category:</b>	Marine Environment – Marine Mammal Interactions
<b>Responsible Parties:</b>	The Proponent, Fisheries and Oceans Canada, Environment Canada
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent impacts to marine mammals and seabird colonies associated with Project shipping.

<b>Term or Condition:</b>	The Proponent shall immediately report any contact by Project vessels with marine mammals or seabirds to regulatory authorities in accordance with legislation. The Proponent shall summarize and report annually to the NIRB regarding contact by Project vessels with marine mammals or seabirds in the Annual Report to NIRB. The proponent will report all wildlife mortalities immediately to the MHTO and QIA.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	QIA revisions for clarity and to ensure all contact with marine mammals and seabirds are appropriately reported.
<b>BIM Commitment</b>	83, 91, 95, 115, 192, 217

<b>Term and Condition No.</b>	<b>122</b>
<b>Category:</b>	Marine Environment – Marine Mammal Interactions
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent impacts to marine mammals and seabird colonies associated with Project shipping.
<b>Term or Condition:</b>	The Proponent shall summarize and report annually to the NIRB regarding accidental contact by Project vessels with marine mammals or seabird colonies through the applicable monitoring report.
<b>Reporting Requirements:</b>	To be provided in the Annual Report to the NIRB.
<b>Rationale:</b>	QIA does not object to Baffinland's proposal to remove PC Condition 122 provided the revisions to PC Condition 121 are accepted.

<b>Term and Condition No.</b>	<b>123</b>
<b>Category:</b>	Marine Environment – Marine Mammal Interactions
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To prevent impacts to marine mammals and seabirds associated with Project shipping.

<b>Term or Condition:</b>	<p>The Proponent shall provide sufficient marine mammal observer coverage on Project vessels to ensure that collisions with marine mammals and seabirds are observed and reported through the life of the Project. To ensure adequate coverage, monitoring will be conducted using remote technology during ice breaking and shoulder season shipping activities, to detect and monitor ship strikes and sea ice. The marine wildlife observer protocol shall include, but not be limited to, protocols for marine mammals, seabirds, and environmental conditions and immediate reporting of significant observations to the ship masters of other vessels along the shipping route, as part of the adaptive management program to address any items that require immediate action.</p> <p>Baffinland will implement additional mitigation requirements to avoid vessel strikes with bowhead whales. Once advised of the presence and location of bowhead whales, Masters of project ships operating within the RSA will be instructed to exercise due caution in order to minimize the likelihood of interaction with the mammals. In such events, Masters will be authorized to adjust speed or alter course within safe and prudent navigational constraints to avoid to the extent possible interactions with bowhead whales.</p> <p>Baffinland will also implement an incidental marine mammal monitoring program with vessel operators calling on Milne Port, which will request incidental observations of marine mammals to be recorded and relayed to Baffinland. In support of this program, Baffinland will develop educational materials for vessel crew to assist in marine mammal identification and data recording. Baffinland will provide a draft of the materials and program for review by the MEWG before they are finalized.</p>
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes removal of PC Condition 123 as it duplicates objectives and reporting requirements of PC Conditions 106 and 111. QIA does not support reminding this PC Condition. It requires sufficient coverage to have monitoring be effective, whereas Baffinland is looking to have this done at a surveillance level only.
<b>BIM Commitment</b>	83, 95, 115, 192, 217

<b>Term and Condition No.</b>	<b>124</b>
<b>Category:</b>	Marine Environment – Marine Mammal Interactions
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring



<b>Objective:</b>	To prevent impacts to marine mammals and marine fish populations from increased harvesting pressures in Project areas.
<b>Term or Condition:</b>	The Proponent shall prohibit non-Inuit Project employees from recreational boating, fishing and harvesting of marine wildlife in Project areas, including Steensby Inlet and Milne Inlet.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	QIA supports Baffinland's proposed edits to bring PC 124 into alignment with the Nunavut Agreement and IIBA.

<b>Term and Condition No.</b>	<b>125</b>
<b>Category:</b>	Marine Environment – Public Engagement
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To assess acceptability of acoustic deterrent devices for the general public.
<b>Term or Condition:</b>	Prior to use of acoustic deterrent devices, the Proponent shall carry out consultations with communities along the shipping routes and nearest to Steensby Inlet and Milne Inlet ports to assess the acceptability of these devices. Feedback received from community consultations shall be incorporated into the appropriate mitigation plan.
<b>Reporting Requirements:</b>	Annually
<b>Rationale:</b>	

<b>Term and Condition No.</b>	<b>125 (a)</b>
<b>Category:</b>	Marine Environment – Public Engagement
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To ensure public acceptability of Project vessel anchor sites and reduce potential conflicts between Project marine shipping and local harvesting.

<b>Term or Condition:</b>	The Proponent shall consult with potentially-affected communities and groups, particularly Hunters' and Trappers' Organizations regarding the identification of Project vessel anchor sites and potential areas of temporary refuge for Project vessels along the shipping routes within the Nunavut Settlement Area. Feedback received from community consultations shall be incorporated into the most appropriate mitigation or management plans.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	No change.

<b>Term and Condition No.</b>	<b>126</b>
<b>Category:</b>	Marine Environment – Public Engagement
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To incorporate local input into monitoring data collection.
<b>Term or Condition:</b>	The Proponent shall design monitoring programs to ensure that local users of the marine area in communities along the shipping route have opportunity to be engaged throughout the life of the Project in assisting with monitoring and evaluating potential Project-induced impacts and changes in marine mammal distributions.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes removing PC Condition 126 as it is duplicative to PC conditions 163 and 164. QIA supports removing this PC Condition, provided revisions to PC Conditions 163 and 164 are accepted, along with QIA's new PC Conditions related to Culture, Resources and Land Use being adopted.

<b>Term and Condition No.</b>	<b>127</b>
<b>Category:</b>	Marine Environment – Public Engagement
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To promote public awareness and engagement with Project shipping activities.

<b>Term or Condition:</b>	The Proponent shall ensure that communities and groups in Nunavik are kept informed of Project shipping activities and are provided with opportunity to participate in the continued development and refinement of shipping related monitoring and mitigation plans.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes removal of this PC Condition, as it is duplicative of requirements of PC Condition 163. QIA does not support removing this PC Condition. QIA is concerned with the Proponent amalgamating commitments into an overarching generic condition. QIA requests either this condition remain or explicit requirements for engagement with Inuit on Project shipping activities be included in Condition 163.

<b>Term and Condition No.</b>	<b>128</b>
<b>Category:</b>	Marine Environment – Public Engagement
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To ensure habitat compensation is acceptable to local communities.
<b>Term or Condition:</b>	The Proponent shall consult with local communities as fish habitat offsetting options are being considered and demonstrate its incorporation of input received into the design of the Fish Habitat Off-Setting Plan required to offset the Harmful Alteration, Disruption or Destruction of Fish and Fish Habitat (HADD).
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Baffinland proposes removal of PC Condition 128, as it is duplicative of PC Condition 115 (for which removal is also proposed). QIA does not support removing this PC Condition. Minimum regulatory requirements will not ensure involvement of Inuit in offsetting planning, consideration of IQ in offset planning, or require evidence of how that input was considered as required by this condition.

## Socio-Economic Terms and Conditions

### Population Demographics

<b>Term and Condition No.</b>	<b>129</b>
<b>Category:</b>	Population Demographics – Qikiqtaaluk Socio-Economic Monitoring Committee

<b>Responsible Parties:</b>	The Proponent, members of the QSEMC
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	Description of the general monitoring framework to be developed in consultation with the Qikiqtaaluk Socio-Economic Monitoring Committee.
<b>Term or Condition:</b>	The Proponent is strongly encouraged to engage in the work of the Qikiqtaaluk Socio-Economic Monitoring Committee and in work conducted through the Inuit Stewardship Plan, along with other agencies and affected communities and it should endeavour to identify areas of mutual interest and priorities for inclusion into a collaborative monitoring framework that includes socio-economic priorities related to the Project, communities, and the North Baffin region as a whole.
<b>Reporting Requirements:</b>	Detailed description of activities provided in Annual Report
<b>Rationale:</b>	QIA revision to reflect commitments from the Inuit Certainty Agreement.

<b>Term and Condition No.</b>	<b>130</b>
<b>Category:</b>	Population Demographics – Project-specific monitoring
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	Recognizing that some Project-specific socio-economic monitoring initiatives may be best addressed in smaller more focused working groups, this is encouraged where possible.
<b>Term or Condition:</b>	The Proponent should consider establishing and coordinating with smaller socio-economic working groups to meet Project specific monitoring requirements throughout the life of the Project.
<b>Reporting Requirements:</b>	To be determined following approval of the Project by the Minister
<b>Rationale:</b>	QIA proposes that this PC Condition can be removed, provided that the PC Conditions in the proposed new Inuit Governance and Participation section are accepted.

<b>PROPOSED Term and Condition No.</b>	<b>QIA Recommended Project Certificate Condition</b>
<b>Category:</b>	Population Demographics – Project-specific monitoring
<b>Responsible Parties:</b>	The Proponent

<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To mitigate negative impacts and enhance positive Project opportunities and benefits for Inuit.
<b>Term or Condition:</b>	<p>The Proponent shall develop an adaptive management plan which will include the following:  Outline the specific plans for monitoring Inuit employment, education and training, contracting and social and cultural impacts and benefits.  Identify triggers associated with impacts and benefits.  Identify the specific adaptive management measures or actions to be considered should benefits differ from benefits or impacts initially predicted.  The Proponent shall implement this plan and take all adaptive management measures when triggered.</p>
<b>Reporting Requirements:</b>	To be determined following approval of the Project by the Minister.
<b>Rationale:</b>	QIA proposes that this PC Condition can be removed, provided that the PC Conditions in the proposed new Inuit Governance and Participation section are accepted.

<b>Term and Condition No.</b>	<b>131</b>
<b>Category:</b>	Population Demographics – Monitoring demographic changes
<b>Responsible Parties:</b>	The Proponent, members of the QSEMC
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To monitor demographic changes affecting the North Baffin communities and the territory as a whole in order to understand changes and to evaluate the Proponent's predictions as related to population demographics.
<b>Term or Condition:</b>	<p>The Qikiqtaaluk Socio-Economic Monitoring Committee is encouraged to engage in the monitoring of demographic changes including the movement of people into and out of the North Baffin communities and the territory as a whole. This information may be used in conjunction with monitoring data generated through work conducted under the Inuit Stewardship Plan, and obtained by the Proponent from recent hires and/or out-going employees in order to assess the potential effect the Project has on migration. The Proponent is expected to provide detailed analysis on the current and potential future impacts of the Project on migration against predictions in the Final Environmental Impact Statement, as well as</p>

	on all measures taken to mitigate or address negative Project-related impacts.
<b>Reporting Requirements:</b>	Annually to NIRB
<b>Rationale:</b>	<p>Baffinland has proposed merging the requirements of 10 separate Socio-Economic PC Conditions, including 131, 134, 140, 145, 148, 154, 158, 159, 168, 169. QIA strongly disagrees with this proposed amalgamation, as it will minimize compliance responsibilities for the Proponent and complicate the monitoring of compliance.</p> <p>QIA revision to reflect commitments from the Inuit Certainty Agreement.</p>

<b>Term and Condition No.</b>	<b>132</b>
<b>Category:</b>	Population Demographics – Training programs
<b>Responsible Parties:</b>	The Proponent, impacted communities, Municipal Training Organization, Government of Nunavut
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To develop training programs in ways which contribute to limiting the potential for migration to occur as North Baffin residents seek training and employment opportunities in the larger centre of Iqaluit.
<b>Term or Condition:</b>	The Proponent is encouraged to partner with other agencies such as Hamlet organizations in the North Baffin region, the Municipal Training Organization, and the Government of Nunavut in order to adapt pre-existing, or to develop new programs which encourage Inuit to continue living in their home communities while seeking ongoing and progressive training and development. Programs may include driver training programs offered within Hamlets, providing upgraded equipment to communities for use in municipal works, providing incentives for small businesses to remain operating out of their community of origin, or supplementing existing recreational facilities and programming in North Baffin communities.
<b>Reporting Requirements:</b>	Program outcomes relative to the objective of this condition to be included in the Annual Report.
<b>Rationale:</b>	Minor change to clarify reporting requirements.

<b>Term and Condition No.</b>	<b>133</b>
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<b>Category:</b>	Population Demographics – Monitoring demographic changes
<b>Responsible Parties:</b>	The Proponent, members of QSEMC, Government of Nunavut, Nunavut Housing Corporation
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	Training programs may be developed with the goal of limiting the potential for migration to occur as North Baffin residents may choose to seek employment and therefore move from smaller North Baffin communities to the larger centre of Iqaluit.
<b>Term or Condition:</b>	The Proponent is encouraged to work with the Qikiqtaaluk Socio-Economic Monitoring Committee and in collaboration with the Government of Nunavut's Department of Health and Social Services, the Nunavut Housing Corporation, with communities through the Inuit Stewardship Plan, and with other relevant stakeholders to design a voluntary survey of its Inuit employees and of Inuit employees of its contractors and subcontractors, and to conduct the survey on an annual basis in order to identify changes of address, housing status (i.e. public/social, privately owned/rented, government, etc.), and migration intentions while respecting confidentiality of all persons involved.
<b>Reporting Requirements:</b>	To be determined following approval of the Project by the Minister
<b>Rationale:</b>	QIA supports Baffinland's proposed revisions.  QIA revision to reflect commitments from the Inuit Certainty Agreement.

**Commentary:** Although the survey design and implementation should be undertaken in consultation with the Government of Nunavut, the responsibility for design and implementation of the survey remains with the Proponent.

<b>Term and Condition No.</b>	<b>134</b>
<b>Category:</b>	Population Demographics – Employee origin
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	Project-specific information regarding employee origin is important to comparing predictions of labour availability and employment opportunities with actual levels of employment from various demographic segments over different geographic areas.



<b>Term or Condition:</b>	<p>The Proponent shall include with its annual reporting to the NIRB a summation of employee origin information as follows, for the current year and each of the previous two years:</p> <p>a) The number of Inuit and non-Inuit employees currently employed, specifying the total number, the number hired during the current year, total hours worked, total wages earned, and the number of resignations or terminations.</p> <p>This information shall be broken out as follows:</p> <p>a) Each Impacted Community  b) From each of the Qikiqtaaluk, Kivalliq and Kitikmeot Regions  c) From provinces/territories outside of Nunavut  d) Outside of Canada, specifying the locations and number from each foreign point of hire.</p>
<b>Reporting Requirements:</b>	Information to be provided in Annual Report
<b>Rationale:</b>	<p>Baffinland has proposed merging the requirements of 10 separate Socio-Economic PC Conditions, including 131, 134, 140, 145, 148, 154, 158, 159, 168, 169. QIA strongly disagrees with this proposed amalgamation, as it will minimize compliance responsibilities for the Proponent and complicate the monitoring of compliance.</p> <p>QIA believes that monitoring and reporting on employment-related benefits received by geographical origin is important to maintain as a standalone PC Condition.</p> <p>QIA further believes that the proposed additions and revisions provide clarity over the current PC Condition. The additional level of detail will more effectively capture the delivery of these critical Project benefits to Inuit, contribute to ease of reviewing reports, and reflect efforts to maximize Inuit participation at the Project over time.</p>

## Education and Training

<b>Term and Condition No.</b>	<b>135</b>
<b>Category:</b>	Education and Training – Employee work/study programs
<b>Responsible Parties:</b>	The Proponent, Qikiqtani Inuit Association
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	Recognizing the 12-hour work days inherent with work at the Project site, it is not clear how employees would successfully engage in a work/study program offered by the Proponent.

<b>Term or Condition:</b>	The Proponent will support Inuit Project employees in pursuing education opportunities by providing options for work/study programs that can be completed while on-shift, or off-site with compensation in accordance with applicable labour standards. Such opportunities would be in addition to mandatory or position-based training.
<b>Reporting Requirements:</b>	Annually to NIRB
<b>Rationale:</b>	QIA revision to strengthen language and to clarify that this is meant to provide Inuit with opportunities for education and training that are above and beyond what is required for a particular job at the Project.

<b>Term and Condition No.</b>	<b>136</b>
<b>Category:</b>	Education and Training – Transferable skills and training
<b>Responsible Parties:</b>	The Proponent, Qikiqtani Inuit Association, Government of Nunavut, Municipal Training Organization
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	Offering training which results in certifications that are valid for employment at more than one site or in different fields provides an investment in the long-term employability of Nunavummiut.
<b>Term or Condition:</b>	The Proponent is encouraged to work with training organizations and/or government departments offering mine-related or other training in order to provide additional opportunities for employees to gain meaningful and transferable skills, credentials and certifications especially where such training of employees offered by the Proponent remains valid only at the Mary River Project sites. The Proponent will work with the Government of Nunavut and other relevant stakeholders to explore opportunities for certification or accreditations for training that are valid beyond the Mary River Project.
<b>Reporting Requirements:</b>	Annually to NIRB
<b>Rationale:</b>	QIA revision reflects strong desire by Inuit to gain transferable and certifiable skills and extend the employment-related benefit opportunities beyond the Project. Inuit want the Project to also serve as an incubator for skills and capacity development that can benefit the local labour market in communities.

<b>Term and Condition No.</b>	<b>137</b>
<b>Category:</b>	Education and Training – Transferable skills and training

<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	Offering training which results in certifications that are valid for employment at more than one site or in different fields provides an investment in the long-term employability of Nunavummiut.
<b>Term or Condition:</b>	Prior to construction, the Proponent shall develop an easily referenced listing of formal certificates and licences that may be acquired via on-site training or training during employment at Mary River, such listing to indicate which of these certifications and licences would be transferable to a similar job site within Nunavut. This listing, and the number of Inuit who have attained each certificate or license shall be updated on an annual basis, and is to be provided to the NIRB upon completion and whenever it is revised.
<b>Reporting Requirements:</b>	The initial listing should be provided to the NIRB at least 60 days prior to the start of construction, and annually thereafter or as may otherwise be required.
<b>Rationale:</b>	No change.

<b>Term and Condition No.</b>	<b>138</b>
<b>Category:</b>	Education and Training – Inuit employee training
<b>Responsible Parties:</b>	The Proponent, Qikiqtani Inuit Association
<b>Project Phase:</b>	Construction
<b>Objective:</b>	Working together with the Qikiqtani Inuit Association to prepare effective training programs developed specifically for Inuit will assist in employee preparedness and may improve employee retention.
<b>Term or Condition:</b>	Not later than 90 days prior to commencement of any construction activities under the Phase 2 proposal, the Proponent shall deliver and implement an Inuit Training Plan that covers the Phase 2 construction phase and the first three years of operations. This plan will provide a detailed description of labour demand, and of the training programs that will be delivered in order to maximize Inuit participation at the Project, including locations, expected enrolment and impacts on Inuit employment. This plan will be developed in collaboration with the Qikiqtani Inuit Association and other relevant stakeholders.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	Building upon Baffinland's proposed changes, QIA's revisions to this PC Condition reflect the conclusion of the Qikiqtani Skills and

	Training for Employment Program (Q-STEP) as well as clear Inuit priorities to ensure training anticipates Phase 2 operations and that planning for this training occurs in advance so that Inuit do not miss out on important employment benefits.
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<b>Term and Condition No.</b>	<b>139</b>
<b>Category:</b>	Education and Training – Hiring southern Canadians and foreign employees
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	With the unknown availability of labour from the North Baffin region and Nunavut as a whole to provide employment to the Project, the need to employ southern Canadians or foreign workers may implicate the Proponent's on-site language, cross-cultural awareness, and other programming. Having information available regarding the sourcing of labour for the Project is important to ensuring the Proponent and others are prepared for any influx of southern or foreign employees.
<b>Term or Condition:</b>	Prior to commencing construction, the Proponent is requested to undertake and provide the results of a detailed labour market analysis which provides quantitative predictions of the number of employees that may reasonably need to be sourced from southern Canada and from foreign markets, identifying where applicable, the country of origin for the foreign labour. Within 90 days of the issuance of the Project Certificate, the Proponent is required to submit an updated Labour Market Analysis which considers requirements of the ERP as well as hiring points within Nunavut and outside of the North Baffin region and RSA.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	QIA supports Baffinland's proposal to remove this PC Condition.

**Commentary:** As expressly noted in the Minister's letter of April 28, 2014, this term and condition applies equally to all aspects of the Mary River Project, including the Early Revenue Phase.

<b>Term and Condition No.</b>	<b>140</b>
<b>Category:</b>	Education and Training – Survey of Nunavummiut employees
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations

<b>Objective:</b>	Monitoring the number of employees who leave previous employment in their home communities or who leave some type of formal education in pursuit of employment with the Project is important to evaluate predictions made and the potential impacts to North Baffin communities and education rates.
<b>Term or Condition:</b>	The Proponent shall survey Nunavummiut employees as they are hired and specifically note the level of education obtained and whether the incoming employee resigned from a previous job placement or educational institution in order to take up employment with the Project. The Proponent shall use data obtained to isolate and describe trends with respect to the choices of Inuit employees regarding employment opportunities at the Project, and in the profile of educational attainment.
<b>Reporting Requirements:</b>	Annually to NIRB
<b>Rationale:</b>	<p>Baffinland has proposed merging the requirements of 10 separate Socio-Economic PC Conditions, including 131, 134, 140, 145, 148, 154, 158, 159, 168, 169. QIA strongly disagrees with this proposed amalgamation, as it will minimize compliance responsibilities for the Proponent and complicate the monitoring of compliance.</p> <p>QIA believes that Baffinland's annual reports do not clearly isolate trends with respect to impact of Project employment on local job markets, or whether people are suspending education to work at the Project (or whether level of education is changing). QIA proposes revisions to more clearly capture the objective of the PC Condition.</p>

<b>Term and Condition No.</b>	<b>141</b>
<b>Category:</b>	Education and Training – Training of Inuit
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To ensure that effective training is available in a timely manner.
<b>Term or Condition:</b>	The Proponent will collaborate with QIA prior to construction in the design and delivery of training to Inuit who will serve in monitoring roles as defined by the Inuit Impact and Benefit Agreement and the Inuit Stewardship Plan.
<b>Reporting Requirements:</b>	Details about the number of Inuit trained and serving in monitoring roles, a description of the roles, and other relevant information to be included in Annual Report.
<b>Rationale:</b>	Baffinland proposes removing PC Condition 141 as it is duplicative of PC Condition 138. QIA does not support removing this PC Condition, as it is specifically focused on supporting QIA in training

	Inuit for monitoring-related positions, reflecting commitments in the Inuit Certainty Agreement.
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## Livelihood and Employment

<b>Term and Condition No.</b>	<b>142</b>
<b>Category:</b>	Livelihood and Employment – Employee cohesion
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To promote cohesion between employees on site, and between employees and their families.
<b>Term or Condition:</b>	The Proponent is strongly encouraged to promote the use of Inuktitut on site in accordance with the Mine Health Safety Act and the Inuit Impact and Benefit Agreement, and to implement policies and procedures to minimize and mitigate conflicts due to language, including English and Inuktitut training, and by creating opportunities for cultural exchange among employees.
<b>Reporting Requirements:</b>	Annually to NIRB
<b>Rationale:</b>	QIA revision to ensure actions and reporting that are practically applicable and meaningfully reported on.

<b>Term and Condition No.</b>	<b>143</b>
<b>Category:</b>	Livelihood and Employment – Employee family contact
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To enable and foster connection and contact between employees and family members.
<b>Term or Condition:</b>	The Proponent shall consider the use of both existing and innovative technologies (e.g. community radio station call-in shows, cell phones, video-conferencing, Skype, etc.) as a way to ensure Project employees are able to keep in contact with family and friends and to ward off the potential for feelings of homesickness and distance to impact on employee retention and family stability.
<b>Reporting Requirements:</b>	Annually to NIRB

<b>Rationale:</b>	QIA revision based on seemingly little attention dedicated by Baffinland (as reflected in reporting to NIRB) to achieving the objective of this PC Condition.
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<b>Term and Condition No.</b>	<b>144</b>
<b>Category:</b>	Livelihood and Employment – Requirements for employment
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To ensure that the prerequisites and requirements for employment are clear and well known in work readiness programs.
<b>Term or Condition:</b>	The Proponent shall make requirements for employment clear in its work-readiness and other public information programs and documentation, including but not limited to: education levels, criminal records checks, policies relating to drug and alcohol use and testing, and language abilities. The Proponent will also include information about skill equivalencies, training, career mobility and leadership opportunities.
<b>Reporting Requirements:</b>	Annually to NIRB
<b>Rationale:</b>	QIA revisions to incorporate IIBA commitments, and to strengthen the requirement overall. QIA believes this revision is necessary based on past reporting and compliance.

<b>Term and Condition No.</b>	<b>145</b>
<b>Category:</b>	Livelihood and Employment – Barriers to employment for women
<b>Responsible Parties:</b>	The Proponent, Government of Nunavut, members of QSEMC
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To monitor and understand the existence of barriers to employment for women specifically relating to childcare availability and costs.
<b>Term or Condition:</b>	The Proponent is encouraged to work with the Government of Nunavut, the Qikiqtaaluk Socio-Economic Monitoring Committee and with communities through the Inuit Stewardship Plan to monitor and help to address the barriers to employment for women, specifically with respect to childcare availability and costs.
<b>Reporting Requirements:</b>	Annually to NIRB
<b>Rationale:</b>	Baffinland has proposed merging the requirements of 10 separate Socio-Economic PC Conditions, including 131, 134, 140, 145, 148, 154, 158, 159, 168, 169. QIA strongly disagrees with this proposed



	<p>amalgamation, as it will minimize compliance responsibilities for the Proponent and complicate the monitoring of compliance.</p> <p>QIA revision to reflect commitments from the Inuit Certainty Agreement.</p>
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<b>Term and Condition No.</b>	<b>146</b>
<b>Category:</b>	Livelihood and Employment – Availability of childcare for Project employees
<b>Responsible Parties:</b>	Government of Nunavut and Qikiqtani Inuit Association
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To lessen the barriers to employment as relating to the availability of childcare.
<b>Term or Condition:</b>	The Government of Nunavut and the Qikiqtani Inuit Association are strongly encouraged to investigate the possibility for Project revenue streams to support initiatives or programs which offset or subsidize childcare for Project employees.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	QIA proposes that this PC Condition may be removed, as it is covered by the Inuit Certainty Agreement, and QIA's Revenue Policy.

<b>Term and Condition No.</b>	<b>147</b>
<b>Category:</b>	Livelihood and Employment – Affordability of housing
<b>Responsible Parties:</b>	The Proponent, Government of Nunavut and Nunavut Housing Corporation
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To lessen the barriers to maintaining employment as relating to the availability and costs of housing.
<b>Term or Condition:</b>	The Proponent is encouraged to work with the Government of Nunavut and the Nunavut Housing Corporation to investigate policy options which might provide incentives for employees living in social housing to maintain employment as well as to negotiate for and obtain manageable rental rates.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.

<b>Rationale:</b>	<p>Baffinland proposes to remove PC Condition 147 as it is covered in an MOU with the GN. QIA does not support removing this PC Condition. QIA believes retaining it will provide necessary incentive to complete and report on this work.</p> <p>QIA revision for clarity.</p>
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## Economic Development and Self-Reliance, and Contracting and Business Opportunities

<b>Term and Condition No.</b>	<b>148</b>
<b>Category:</b>	Economic Development and Self-Reliance, and Contracting and Business Opportunities – Food security
<b>Responsible Parties:</b>	The Proponent, Members of the QSEMC
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To improve understanding of the interactions between the Project and Inuit harvesting and how this relates to food security for residents of the North Baffin.
<b>Term or Condition:</b>	The Proponent is encouraged to undertake collaborative monitoring in conjunction with the Qikiqtaaluk Socio-Economic Monitoring Committee's monitoring program and programs under the Inuit Stewardship Plan for the Mary River Project, which address Project harvesting interactions and food security and which includes broad indicators of dietary habits. Where community-level data may not be initially available, the Proponent is encouraged to support the development of indicators and methodologies that prioritize Inuit Qaujimanituqangit and Inuit-led monitoring.
<b>Reporting Requirements:</b>	Annually to NIRB
<b>Rationale:</b>	<p>Baffinland has proposed merging the requirements of 10 separate Socio-Economic PC Conditions, including 131, 134, 140, 145, 148, 154, 158, 159, 168, 169. QIA strongly disagrees with this proposed amalgamation, as it will minimize compliance responsibilities for the Proponent and complicate the monitoring of compliance.</p> <p>QIA revision to reflect commitments from the Inuit Certainty Agreement.</p>

**Commentary:** *If available, the Proponent should also incorporate information regarding harvesting and food security indicators generated under the auspices of the Nunavut General Monitoring Plan.*

<b>Term and Condition No.</b>	<b>149</b>
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<b>Category:</b>	Economic Development and Self-Reliance, and Contracting and Business Opportunities – Impacts of temporary closure
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To further the understanding of how a temporary closure may impact on the well-being of the residents and businesses of the North Baffin region.
<b>Term or Condition:</b>	No later than six months prior to the commencement of expanded operations as described in the Phase 2 Proposal, the Proponent is required to undertake an analysis of the risk of temporary mine closure, giving consideration to how communities in the North Baffin region may be affected by temporary and permanent closure of the mine, including economic, social and cultural effects and taking into consideration the potential drop in employment between the construction and operations phases of the Project. The Proponent shall work with QIA, QSEMC, and SEMWG throughout the life of the Project to determine best practices for managing effects of temporary or permanent closure of the Project on communities in the North Baffin region.
<b>Reporting Requirements:</b>	Annually to NIRB
<b>Rationale:</b>	Updated to reflect Baffinland's revisions and QIA's prioritization of ongoing efforts to plan for the impacts of closure on communities. This is particularly pertinent given the experience of Nunavummiut with the COVID-19 pandemic, and appropriate for inclusion in a PC Condition.

<b>Term and Condition No.</b>	<b>150</b>
<b>Category:</b>	Economic Development and Self-Reliance, and Contracting and Business Opportunities – Impacts to visitors of Sirmilik National Park
<b>Responsible Parties:</b>	The Proponent, Parks Canada
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To limit potential of Project impacts upon visitors, researchers and/or beneficiary users of the Sirmilik National Park.

<b>Term or Condition:</b>	<p>The Proponent will ensure the following:</p> <ul style="list-style-type: none"> <li>a. The Proponent will maintain, where possible, a minimum flying altitude of 2,000 feet over the park, except for approaches to land, take-off or for safety reasons.</li> <li>b. The Proponent will ensure that certification of noise compliance is current, where compliance is applicable.</li> <li>c. For the purpose of briefing Park visitors, the Proponent will provide Parks Canada (1) prior to commencing the shipping season, with planned daily shipping schedules, and (2) annually, with air traffic information, and (3) to provide updates when significant variations from these are expected.</li> <li>d. The Proponent is strongly encouraged to provide due consideration to wilderness experience during its operations in the open water season, especially during the month of August which is typically a time of high use by sea kayakers.</li> </ul>
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	No change.

<b>Term and Condition No.</b>	<b>151</b>
<b>Category:</b>	Economic Development and Self-Reliance, and Contracting and Business Opportunities – Access to housing
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To investigate ways that economic development and self-reliance may improve access to housing by employees.
<b>Term or Condition:</b>	The Proponent is encouraged to investigate measures and programs designed to assist Project employees with homeownership or access to affordable housing options.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	Baffinland proposes to remove PC Condition 147 as it is covered in an MOU with the GN. QIA does not support removing this PC Condition. QIA believes retaining it will provide necessary incentive to complete and report on this work.

<b>Term and Condition No.</b>	<b>152</b>
<b>Category:</b>	Economic Development and Self-Reliance, and Contracting and Business Opportunities – IIBA contract requirements

<b>Responsible Parties:</b>	The Proponent, Qikiqtani Inuit Association
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To improve ability of small businesses to access Project contract and subcontract opportunities.
<b>Term or Condition:</b>	The Proponent is encouraged to provide the Board, the Qikiqtani Inuit Association, the Qikiqtaaluk Socio-Economic Monitoring Committee, with information regarding the effectiveness of any provisions within the Inuit Impact and Benefit Agreement which may require that larger contracts be broken down into smaller size in order that they are reasonably managed by smaller businesses in the North Baffin region, while respecting any confidential or privileged information.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	QIA revision to reflect that IIBA provisions related to contract tailoring are primarily the responsibility of the Proponent.

### Human Health and Well-Being

<b>Term and Condition No.</b>	<b>153</b>
<b>Category:</b>	Human Health and Well-Being – Employee and family health and wellbeing
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Closure and Post-Closure Monitoring
<b>Objective:</b>	To provide adequate medical services on site, including those that contribute to the mental health and well-being of all employees.
<b>Term or Condition:</b>	The Proponent is encouraged to provide on-site and support off-site community programs that contribute to the mental health and well-being of all employees and their families. This includes but is not limited to providing counseling and access to treatment programs for substance and gambling addictions as well as which address domestic, parenting, and marital issues that affect employees and/or their families.
<b>Reporting Requirements:</b>	Annually to NIRB
<b>Rationale:</b>	Baffinland has proposed revisions to this PC condition that provide for removal of PC Condition 157. QIA's additions build upon Baffinland's revisions to more completely capture the intent of both PC Condition 153 and 157.
<b>Term and Condition No.</b>	<b>154</b>

<b>Category:</b>	Human Health and Well-being – Indirect impacts to health and well-being
<b>Responsible Parties:</b>	The Proponent, Government of Nunavut, members of the QSEMC
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To understand the indirect impacts of the Project upon health and wellbeing.
<b>Term or Condition:</b>	The Proponent shall work with the Government of Nunavut, the Qikiqtaaluk Socio-Economic Monitoring Committee, and communities in accordance with the Inuit Stewardship Plan to monitor potential indirect effects of the Project, including indicators such as the prevalence of substance abuse, gambling issues, family violence, marital problems, rates of sexually transmitted infections and other communicable diseases, rates of teenage pregnancy, high school completion rates, and others as deemed appropriate. Where community-level data may not be initially available, the Proponent is will support the development of indicators and methodologies that prioritize Inuit Qaujimanitugangit, local knowledge and Inuit-led localized data collection/monitoring.
<b>Reporting Requirements:</b>	Annually to NIRB
<b>Rationale:</b>	Baffinland has proposed merging the requirements of 10 separate Socio-Economic PC Conditions, including 131, 134, 140, 145, 148, 154, 158, 159, 168, 169. QIA strongly disagrees with this proposed amalgamation, as it will minimize compliance responsibilities for the Proponent and complicate the monitoring of compliance.  QIA revision to reflect commitments from the Inuit Certainty Agreement.

<b>Term and Condition No.</b>	<b>155</b>
<b>Category:</b>	Human Health and Well-being – Employee cohesion
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To encourage the on-site cohesion of employees through cultural awareness and social programs.
<b>Term or Condition:</b>	The Proponent will report to the NIRB annually on any identified cultural conflicts that occur at site, how these are measured, mitigation measures imposed, and how success of these measures will be recorded, evaluated, and reported in subsequent years
<b>Reporting Requirements:</b>	To be provided at least 60 days prior to the commencement of any construction activities.

	Annually to NIRB
<b>Rationale:</b>	QIA agrees that measures should be in place for the life of the Project, however, given changes to Project design QIA recommends that the Proponent not only implement existing plans but also review and consider developing new plans.

<b>Term and Condition No.</b>	<b>156</b>
<b>Category:</b>	Human Health and Well-Being – Support initiatives
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To assist with fostering well-being within point-of-hire communities.
<b>Term or Condition:</b>	The Proponent is encouraged to assist with the provision and/or support of recreation programs and opportunities within the potentially affected communities in order to mitigate potential impacts of employees' absences from home and community life.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	No change

<b>Term and Condition No.</b>	<b>157</b>
<b>Category:</b>	Human Health and Well-Being – Counseling and treatment programs
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To make available, necessary treatment and counseling services for employee and family well-being.
<b>Term or Condition:</b>	The Proponent should consider providing counseling and access to treatment programs for substance and gambling addictions as well as which address domestic, parenting, and marital issues that affect employees and/or their families.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	QIA does not object to Baffinland's proposal to remove PC Condition 157 provided revisions to PC 153 are accepted.



## Community Infrastructure and Public Services

<b>Term and Condition No.</b>	<b>158</b>
<b>Category:</b>	Community Infrastructure and Public Services – Impacts to health services
<b>Responsible Parties:</b>	The Proponent, Government of Nunavut
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To monitor indirect Project impacts to health and social services provided by the Government of Nunavut.
<b>Term or Condition:</b>	The Proponent is encouraged to work with the Government of Nunavut and other parties as deemed relevant, and in accordance with the Inuit Stewardship Plan in order to develop a Human Health Working Group which addresses and establishes monitoring functions relating to pressures upon existing services and costs to the health and social services provided by the Government of Nunavut as such may be impacted by Project-related in-migration of employees, to both the North Baffin region in general, and to the City of Iqaluit in particular.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	<p>Baffinland has proposed merging the requirements of 10 separate Socio-Economic PC Conditions, including 131, 134, 140, 145, 148, 154, 158, 159, 168, 169. QIA strongly disagrees with this proposed amalgamation, as it will minimize compliance responsibilities for the Proponent and complicate the monitoring of compliance.</p> <p>QIA revision to reflect commitments from the Inuit Certainty Agreement.</p>

<b>Term and Condition No.</b>	<b>159</b>
<b>Category:</b>	Community Infrastructure and Public Services – Impacts to infrastructure
<b>Responsible Parties:</b>	The Proponent, Government of Nunavut
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To monitor Project-related impacts to infrastructure within the Local Study Area communities.

<b>Term or Condition:</b>	The Proponent is encouraged to work with the Government of Nunavut to develop an effects monitoring program that captures increased Project-related pressures to community infrastructure in the Local Study Area communities, and to airport infrastructure in all point-of-hire communities and in Iqaluit.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	<p>Baffinland has proposed merging the requirements of 10 separate Socio-Economic PC Conditions, including 131, 134, 140, 145, 148, 154, 158, 159, 168, 169. QIA strongly disagrees with this proposed amalgamation, as it will minimize compliance responsibilities for the Proponent and complicate the monitoring of compliance.</p> <p>QIA revision to reflect commitments from the Inuit Certainty Agreement.</p>

<b>Term and Condition No.</b>	<b>160</b>
<b>Category:</b>	Community Infrastructure and Public Services – Distribution of benefits
<b>Responsible Parties:</b>	The Proponent, Qikiqtani Inuit Association, Government of Nunavut
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To ensure the distribution of benefits is done in a way that off-sets Project-related impacts to infrastructure or services.
<b>Term or Condition:</b>	The Government of Nunavut and the Qikiqtani Inuit Association are encouraged to cooperate to ensure in a broad sense, that Project benefits are distributed across impacted communities and across various demographic groups within these communities in a manner that best offsets any Project-related impacts to infrastructure or services.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	No change.

<b>Term and Condition No.</b>	<b>161</b>
<b>Category:</b>	Community Infrastructure and Public Services – Policing
<b>Responsible Parties:</b>	The Proponent, Government of Nunavut, Royal Canadian Mounted Police
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring

<b>Objective:</b>	To ensure the territorial government and its policing service are adequately prepared to handle any Project-related increases to the need for service and associated impacts.
<b>Term or Condition:</b>	The Government of Nunavut should be prepared for any potential increased need for policing, and ensure that the Royal Canadian Mounted Police is prepared to handle ongoing Project-related demographic changes and subsequent crime prevention that may be needed as a result of the development, operation, and closure of the Project.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	No change.

### Culture, Resources and Land Use

<b>Term and Condition No.</b>	<b>162</b>
<b>Category:</b>	Culture, Resources and Land Use – Public consultation
<b>Responsible Parties:</b>	The Proponent, Elders and community members of the North Baffin communities
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To ensure the ongoing and consistent involvement of Elders and community members in developing and revising monitoring and mitigation plans.
<b>Term or Condition:</b>	The Proponent should make all reasonable efforts to engage Elders and community members of the North Baffin communities in order to have community level input into its monitoring programs and mitigative measures, to ensure that these programs and measures have been informed by traditional activities, cultural resources, and land use as such may be implicated or impacted by ongoing Project activities.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	QIA proposes removing this PC Condition, as it should be covered by the PC Conditions in the proposed new Inuit Governance and Participation section.

<b>Term and Condition No.</b>	<b>163</b>
<b>Category:</b>	Culture, Resources and Land Use – Public consultation
<b>Responsible Parties:</b>	The Proponent, North Baffin communities

<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To involve communities in the development and evolution of management and monitoring plans.
<b>Term or Condition:</b>	The Proponent shall engage and consult with community members and Elders in the communities of the North Baffin region in order to ensure that Nunavummiut are kept informed about the Project activities, and more importantly, in order that the Proponent's management and monitoring plans continue to evolve in an informed manner. This engagement shall be conducted within the broader framework of the Inuit Stewardship Plan.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	QIA proposed removing this PC Condition, as it should be covered by the PC Conditions in the proposed new Inuit Governance and Participation section.

<b>Term and Condition No.</b>	<b>164</b>
<b>Category:</b>	Socio-Economic Impacts – Shipping notification
<b>Responsible Parties:</b>	The Proponent, Elders and community members of the North Baffin communities
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	In order to inform members of North Baffin communities of planned Project shipping transits such that community members' planned travel routing may be adjusted to avoid interaction with Project ships and/or ship tracks.
<b>Term or Condition:</b>	The Proponent is required to provide notification to communities regarding scheduled ship transits throughout the regional study area including Eclipse Sound and Milne Inlet, real-time data regarding ships in transit and any changes to the proposed shipping schedule to the MEWG and agencies within Pond Inlet on a weekly basis during open water shipping, and to the RSA communities on a monthly basis.
<b>Reporting Requirements:</b>	The information required shall be provided on a monthly basis at a minimum or more often as the Proponent determines necessary and is to be provided to the Proponent's community liaison officers and those of the Qikiqtani Inuit Association as well as the Hunters and Trappers Organizations and Hamlet organizations of the North Baffin communities, Coral Harbour, and the NIRB's Monitoring Officer. Where deviations from the proposed schedule or routing are required, this information shall be provided as soon as possible.

<b>Rationale:</b>	No change.
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<b>Term and Condition No.</b>	<b>165</b>
<b>Category:</b>	Socio-Economic Impacts – Emergency shelters
<b>Responsible Parties:</b>	The Proponent, Elders and community members of the North Baffin communities
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	In order to provide for human safety precautions in the event of adverse weather or other emergency situations along segments of linear transportation infrastructure.
<b>Term or Condition:</b>	The Proponent is strongly encouraged to provide buildings along the rail line and Milne Inlet Tote Road for emergency shelter purposes, and shall make these available for all employees and any land users travelling through the Project area. In the event that these buildings cannot, for safety or other reasons be open to the public, the Proponent is encouraged to set up another form of emergency shelters (e.g. seacans outfitted for survival purposes) along the rail line and Milne Inlet Tote Road. These shelters must be placed along Tote Road and rail routing prior to operation of either piece of infrastructure, and must be maintained for the duration of Project activities, including the closure phase. The number and location of shelters shall be coordinated through the Qikiqtani Inuit Association, with inputs from the Inuit Committee and HTOs., with ownership and maintenance obligations established in the Inuit Stewardship Plan.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	QIA revisions to reflect commitments in the Inuit Certainty Agreement.
<b>Baffinland Commitments</b>	238 commits to three observation stations that double as emergency shelters.

<b>Term and Condition No.</b>	<b>166</b>
<b>Category:</b>	Socio-Economic Impacts – Public Consultation
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring

<b>Objective:</b>	To ensure members of the public are able to access shipping information on an as-required basis in order to inform potential users of the scheduled Project activities which could require deviations to land users' schedules or routing.
<b>Term or Condition:</b>	The proponent shall establish a communications protocol with nearby land-users to ensure that questions regarding ice conditions or ship movements into and out of both Milne Inlet and Steensby Inlet ports may be answered by Project personnel in a timely fashion in order to assist users in preparing for travel.
<b>Reporting Requirements:</b>	To be provided to NIRB, QIA and other parties in accordance with the Inuit Stewardship Plan no later than 60 days prior to construction.
<b>Rationale:</b>	QIA offer revisions to Baffinland's proposed changes to PC Condition 166 to ensure that both northern and southern shipping routes are captured in the requirements of the condition.
<b>Baffinland Commitments:</b>	89, 240

### Benefits, Royalty, and Taxation

<b>Term and Condition No.</b>	<b>167</b>
<b>Category:</b>	Benefits, Royalty and Taxation – Partnership Agreements
<b>Responsible Parties:</b>	The Proponent, Government of Nunavut
<b>Project Phase:</b>	Construction
<b>Objective:</b>	The Proponent and the Government of Nunavut develop a formalized partnership agreement.
<b>Term or Condition:</b>	The Proponent and the Government of Nunavut are strongly encouraged to, as soon as practical following the issuance of the Project Certificate, enter into discussions to negotiate a Development Partnership Agreement.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	QIA agrees with the recommendation to remove this condition.

### Governance and Leadership

<b>Term and Condition No.</b>	<b>168</b>
<b>Category:</b>	Governance and Leadership – Monitoring program

<b>Responsible Parties:</b>	The Proponent, members of the QSEMC
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	Outline variables that are relevant to the Project and which should be adopted by the QSEMC's monitoring program.
<b>Term or Condition:</b>	The specific socioeconomic variables as set out in Section 8 of the Board's Report, including data regarding population movement into and out of the North Baffin Communities and Nunavut as a whole, barriers to employment for women, Project harvesting interactions and food security, and indirect Project effects such as substance abuse, gambling, rates of domestic violence, and education rates that are relevant to the Project, be included in the monitoring program adopted by the Qikiqtani Socio-Economic Monitoring Committee, and in social monitoring in accordance with the Inuit Stewardship Plan.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	<p>Baffinland has proposed merging the requirements of 10 separate Socio-Economic PC Conditions, including 131, 134, 140, 145, 148, 154, 158, 159, 168, 169. QIA strongly disagrees with this proposed amalgamation, as it will minimize compliance responsibilities for the Proponent and complicate the monitoring of compliance.</p> <p>QIA revision to reflect commitments from the Inuit Certainty Agreement.</p>

**Commentary:** As noted previously, if available, the Proponent should also incorporate information regarding the specific variables in Section 8 of the Board's Final Hearing Report that may be monitored under the auspices of the Nunavut General Monitoring Plan.

<b>Term and Condition No.</b>	<b>169</b>
<b>Category:</b>	Governance and Leadership – Monitoring economic effects
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To maintain transparency inform communities in relation to economic benefits associated with the Project.
<b>Term or Condition:</b>	The Proponent provide an annual monitoring summary to the NIRB on the monitoring data related to the regional and cumulative economic effects (positive and negative) associated with the Project and any proposed mitigation measures being considered necessary to mitigate the negative effects identified.



<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	Baffinland has proposed merging the requirements of 10 separate Socio-Economic PC Conditions, including 131, 134, 140, 145, 148, 154, 158, 159, 168, 169. QIA strongly disagrees with this proposed amalgamation, as it will minimize compliance responsibilities for the Proponent and complicate the monitoring of compliance.

## Other Terms and Conditions

### Accidents and Malfunctions

<b>Term and Condition No.</b>	<b>170</b>
<b>Category:</b>	Accidents and Malfunctions – Terrestrial Wildlife Management and Monitoring Plan
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	Updates to plan in order to better understand the potential for, and to minimize possible caribou-railway interactions.
<b>Term or Condition:</b>	The Proponent shall include in an updated Terrestrial Wildlife Management and Monitoring Plan, plans for increased caribou monitoring efforts including weekly winter track surveying and summer and fall surveys undertaken on foot twice per month.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	QIA would support consolidation with other PCCs but not outright deletion. It is a specific defined task.

<b>Term and Condition No.</b>	<b>171</b>
<b>Category:</b>	Accidents and Malfunctions – Terrestrial Wildlife Management and Monitoring Plan
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Pre-Construction
<b>Objective:</b>	Updates to plan in order to minimize potential for caribou-railway interactions.
<b>Term or Condition:</b>	The Proponent shall include within its updated Terrestrial Wildlife Management and Monitoring Plan, a commitment to establish deterrents along the railway and Tote Road embankments at any areas where it is determined that caribou are utilizing the embankments or transportation corridors to facilitate movement and

	where such movement presents a likelihood of caribou mortality to occur.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister
<b>Rationale:</b>	<p>Baffinland proposes removing this PC Condition, on the grounds that that should Project monitoring identify a need for caribou deterrents along the embankments of transportation corridor, appropriate mitigation measures will be discussed with the TEWG and implemented to minimize potential effects in accordance with requirements of PC Condition No. 50, 51 and 53.</p> <p>QIA does not support removal of this PC Condition. Other PC Conditions deal with wildlife deterrents in general and are not specific requirements for deterrents along the rail line.</p>

<b>Term and Condition No.</b>	<b>172</b>
<b>Category:</b>	Accidents and Malfunctions – Overwintered fuel vessel
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To provide evidence that vessel to be used is fit and insured for proposed use.
<b>Term or Condition:</b>	The Proponent is encouraged to provide the Government of Nunavut with evidence that the vessel that it intends to use for the overwintering of fuel has been designed and certified for use under the conditions which it is expected to operate, and that it be required to provide copies of the vessel owners' insurance policies.
<b>Reporting Requirements:</b>	The required information is to be provided to the Government of Nunavut as soon as possible, and at a minimum, at least 60 days prior to the commencement of any construction related shipping.
<b>Rationale:</b>	QIA disagrees with the removal of this condition, as this is a requirement for the full project not a specific component of the project.

<b>Term and Condition No.</b>	<b>173</b>
<b>Category:</b>	Accidents and Malfunctions – Use of best practices
<b>Responsible Parties:</b>	The Proponent; Canadian Coast Guard

<b>Project Phase:</b>	Construction, Operations, Closure
<b>Objective:</b>	To provide additional spill contingency measures for spills in marine areas.
<b>Term or Condition:</b>	The Proponent shall employ best practices and meet all regulatory requirements during all ship-to-shore and other marine-based fuel transfer events. The Canadian Coast Guard shall provide updates with respect to training and equipment provided to communities.
<b>Reporting Requirements:</b>	Annually
<b>Rationale:</b>	QIA revision to add Coast Guard requirements and make it acceptable to accept removal of PCC 174 as proposed by Baffinland.

<b>Term and Condition No.</b>	<b>174</b>
<b>Category:</b>	Accidents and Malfunctions – Community level spill response
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Closure
<b>Objective:</b>	To improve community ability to assist in spill response.
<b>Term or Condition:</b>	The Proponent and the Canadian Coast Guard are required to provide spill response equipment and annual training to Nunavut communities along the shipping route to potentially improve response times in the event of a spill.
<b>Reporting Requirements:</b>	To be determined following approval of the Project by the Minister
<b>Rationale:</b>	Baffinland has proposed removing PC Condition 174. QIA supports removing this PC Condition pending revisions to PC Condition 173 being accepted.

<b>Term and Condition No.</b>	<b>175</b>
<b>Category:</b>	Accidents and Malfunctions – Ship track markers in ice cover
<b>Responsible Parties:</b>	The Proponent, Qikiqtani Inuit Association, Hunters and Trappers Organizations of the North Baffin region and Coral Harbour
<b>Project Phase:</b>	Construction, Operations, Closure
<b>Objective:</b>	To ensure that measures taken to mark the shipping track(s) during periods of ice cover are effective in advising ice-based travelers, and that, where necessary, revisions to this practice can be made to ensure public safety.

<b>Term or Condition:</b>	The Proponent shall, in coordination and consultation with the Qikiqtani Inuit Association, the Inuit Committee and the Hunters and Trappers Organizations of the North Baffin communities and Coral Harbour, provide updates to its Shipping and Marine Mammals Management Plan to include adaptive management measures it proposes to take should the placement of reflective markers along the ship track in winter months not prove to be a feasible method of marking the track to ensure the safety of ice-based travelers.
<b>Reporting Requirements:</b>	Following commencement of construction for the Steensby phase of the Project.
<b>Rationale:</b>	

<b>Term and Condition No.</b>	<b>176</b>
<b>Category:</b>	Accidents and Malfunctions – Revised spill modeling
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Pre-Construction, Construction Operations, Closure
<b>Objective:</b>	To improve community ability to assist in spill response.
<b>Term or Condition:</b>	The Proponent is required to revise its spill planning to include additional trajectory modeling for areas of Hudson Strait, such as Mill Island, where walrus concentrate, as well as for mid-Hudson Strait during winter conditions as well as for the northern shipping route, including Milne Inlet, Eclipse Sound and Pond Inlet.
<b>Reporting Requirements:</b>	The updated modeling shall be provided to the NIRB, Fisheries and Oceans Canada, and Environment Canada for review at least 3 months prior shipment of bulk fuel to Steensby Inlet or Milne Inlet.
<b>Rationale:</b>	QIA would conditionally support removal if amendments made to PCC97.

<b>Term and Condition No.</b>	<b>177</b>
<b>Category:</b>	Accidents and Malfunctions – Foreign flagged vessels
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Closure and Post-Closure Monitoring
<b>Objective:</b>	To ensure foreign flagged ships operating in Canadian waters are held to the same standard as domestic ships with regard to emergency response planning.

<b>Term or Condition:</b>	The Proponent shall enroll any foreign flagged vessels commissioned for Project-related shipping within Canadian waters into the relevant foreign program equivalent to Transport Canada's Marine Safety Delegated Statutory Inspection Program.
<b>Reporting Requirements:</b>	To be determined following approval of the Project by the Minister
<b>Rationale:</b>	QIA supports Baffinland's proposal to remove PC Condition 177 on the grounds that ship owners / operators are responsible for enrolling their foreign flagged vessel with the appropriate program, and that Baffinland manages compliance through its contract terms and conditions.

**Commentary:** As expressly noted in the Minister's letter of April 28, 2014, this term and condition applies equally to all aspects of the Mary River Project, including the Early Revenue Phase.

## Alternatives Analysis

<b>Term and Condition No.</b>	<b>178</b>
<b>Category:</b>	Alternatives Analysis – Mill Island shipping route consideration
<b>Responsible Parties:</b>	The Proponent, Qikiqtani Inuit Association, Nunavut Impact Review Board, Marine Environment Working Group
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance
<b>Objective:</b>	To prevent disturbance to walrus and walrus habitat on the northern shore of Mill Island.
<b>Term or Condition:</b>	Subject to safety considerations and the potential for conditions, as determined by the crew of transiting vessels, to result in route deviations, the Proponent shall require Project vessels to maintain a route to the south of Mill Island to prevent disturbance to walrus and walrus habitat on the northern shore of Mill Island.
<b>Reporting Requirements:</b>	Where Project vessels are required to transit to the north of Mill Island owing to environmental or other conditions, an incident report is to be provided to the Marine Environment Working Group and the NIRB within 30 days, noting all wildlife sightings and interactions as recorded by shipboard monitors. The Proponent shall summarize all incidences of deviations from the nominal shipping route as presented in the FEIS to the NIRB annually, with corresponding discussion regarding justification for deviations and any observed environmental impacts.
<b>Rationale:</b>	No change.

<b>PROPOSED Term and Condition No. [NEW N]</b>	<b>QIA Recommended Project Certificate Condition</b>
<b>Category:</b>	Assessment of alternative routes by Project shipping
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Operations
<b>Objective:</b>	To better understand the potential impacts of Project shipping using alternative shipping routes
<b>Term or Condition:</b>	Prior to Project shipping in Canadian waters via any alternative to the nominal routes identified in the FEIS (Southern Route: Steensby Inlet-Foxe Basin- Hudson Strait-Davis Strait-Labrador Sea) and ERP EIS (Northern Route: Milne Inlet-Eclipse Sound-Pond Inlet-Baffin Bay-Davis Strait-Labrador Sea) the Proponent shall complete, for public review, a comprehensive environmental effects assessment, including potential cumulative and transboundary effects, of proposed shipping along the alternative route(s). The Proponent shall report the routing and timing of all Project vessel transits in relation to sea ice conditions.
<b>Reporting Requirements:</b>	Comprehensive assessment report to NIRB for public review prior to the use by Project shipping of any routes other than the approved northern and southern shipping routes. Annual reports on the routing and timing of all Project vessel transits in relation to sea ice, supported by maps of individual ship tracks overlain on sea ice with dated progress, are to be provided to the MEWG for review.
<b>Rationale:</b>	While Baffinland has committed to not using alternative shipping routes for Phase 2, QIA believes that it is important to have a PC Condition that requires a comprehensive environmental assessment of any route(s) for which interest is shown in the future, to ensure potential environmental impacts are understood and can be assessed independently, and appropriately mitigated.
<b>BIM Commitments</b>	44

<b>PROPOSED Term and Condition No. [NEW O]</b>	<b>QIA Recommended Project Certificate Condition</b>
<b>Category:</b>	Transparency in Design of Alternative Rail Route
<b>Responsible Parties:</b>	The Proponent

<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To ensure transparency in design and understanding of environmental risks of the northern rail route.
<b>Term or Condition:</b>	At least 6 months prior to commencement of construction the Proponent will provide NIRB, QIA and the Inuit Committee?] a description of the process and/or decisions matrix for the new rail route construction to ensure that all environmental and engineering parameters are accounted for. The Proponent will update and report on the Rail Deviation Alignment Decision Work Plan including any inputs from the CRLU Monitoring Program and feedback from the Inuit Committee. This report will include a description of conditions and thresholds that would require the Proponent to modify or change the proposed alternative route, including discovery of archaeological sites and places of importance, and parameters around permafrost sensitivity and ice lenses etc.
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister.
<b>Rationale:</b>	Given that the Proponent unilaterally revised its chosen northern rail route to Route 3, that a full and complete environmental assessment, including IQ inputs, has not been completed on Route 3 at this time, and that there are still concerns about Route 3 from Inuit parties, should Phase 2 proceed as proposed, it is critical that additional environmental assessment activities, including extensive Inuit inputs, are completed on this proposed alternative means, well in advance of construction.

<b>PROPOSED Term and Condition No. [NEW P]</b>	<b>QIA Recommended Project Certificate Condition</b>
<b>Category:</b>	Thresholds For Modifications To Rail Crossings
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To ensure clear steps on triggers and thresholds are known for when a modification to rail will occur.
<b>Term or Condition:</b>	The Proponent shall identify triggers for modifying rail crossings in collaboration with the Inuit Committee and the TEWG. The draft Additional Level Crossing Construction Decision Matrix shall be finalized with input from the Inuit Committee and the TEWG at least 6 months prior to construction. The final Additional Level Crossing Construction Decision Matrix shall include an option to consider bridges with footings to ensure permeability of the railway if major concerns with caribou movement are raised by the Inuit Committee



	through the CRLU Monitoring Program, or by the TEWG based on results from the Proponent's monitoring programs.
<b>Reporting Requirements:</b>	The draft Additional Level Crossing Construction Decision Matrix shall be finalized with input from the Inuit Committee, and the TEWG at least 6 months prior to construction.
<b>Rationale:</b>	The proponent has committed to developing this plan; however, given the importance of ensuring compliance and reporting on this plan annually, QIA believes it should be included as a PCC. Furthermore, the option to include bridges as a mitigation measure to ensure permeability to the railway has not been included in the relevant commitment, and should be required as a mitigation measure if necessary.
<b>BIM Commitment</b>	236

### Operational Variability

<b>Term and Condition No.</b>	<b>179</b>
<b>Category:</b>	Operational Variability
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Operations
<b>Objective:</b>	To apply the precautionary principle in respect of potential effects on marine wildlife and marine habitat from changes to shipping frequency that may result from a significant increase in mine production for an extended period of time.
<b>Term or Condition:</b>	The Proponent shall not exceed 20 ore carrier transits to Steensby Port per month during the open water season and 242 transits per year in total.
<b>Reporting Requirements:</b>	For each year after the Proponent commences shipping ore via the Proponent shall include in the Annual Report to the NIRB, a summary of the total amount of vessels calling on each port for the previous calendar year.
<b>Rationale:</b>	

<b>REVISED Term and Condition No.</b>	<b>179 (a) <i>modified for Production Increase Proposal and Extension Request to the Production Increase Proposal</i></b>
<b>Category:</b>	Operational Variability/Flexibility
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Operations
<b>Objective:</b>	To ensure that there are appropriate limits on the Milne Inlet marine shipping component in order to limit and manage likely Project effects, while balancing the need for operational flexibility.
<b>Term or Condition:</b>	Until December 31, 2021, the total volume of ore shipped via Milne Inlet may exceed 4.2 million tonnes per year, but must not exceed 6.0 million tonnes in any calendar year. After December 31, 2021, the maximum total volume of ore shipped via Milne Inlet in a calendar year returns to 4.2 million tonnes per year, unless this condition has been further modified under section 112 of <i>Nunavut Planning and Project Assessment Act</i> , S.C. 2013, c. 14, s. 2.
<b>Reporting Requirements:</b>	For each year after the Proponent commences shipping ore via Milne Inlet under the Early Revenue Phase Proposal, the Proponent shall include in the Annual Report to the NIRB, a summary of the total amount of ore shipped via Milne Inlet for the previous calendar year.
<b>Rationale:</b>	<p>Baffinland has proposed that this PC Condition be revised to reflect a maximum of 176 ore carriers calling on Milne Port in any calendar year.</p> <p>QIA strongly disagrees with this proposal. Baffinland wishes to eliminate the cap on production of iron ore that would be transported to market via the northern shipping route, and to replace it with caps on the number of annual round trips by ore carriers (176 per year) and trains (20 per day). No limits have been proposed on the average size of the ore vessels or average length of the trains. If this is not specified based on the 12Mt per year production rate that formed the basis of the Phase 2 FEIS, Baffinland could increase ore production within these transportation limits, by increasing average vessel size and train length.</p> <p>The potential environmental effects of such increases were not assessed in the Phase 2 FEIS. QIA is concerned that the environmental effects of using larger ships and longer trains will be greater than predicted. QIA recommends that clear limits be placed on both ore production and transportation if Phase 2 is approved to prevent shipping of tonnages and traffic volumes via the northern route that are greater than were assessed in the Phase 2 FEIS.</p> <p><b>[Note:</b> Baffinland has committed (#241) to limit to 168 the number of ore carriers visiting Milne Port in a single year, but the risks related to removing the ore production limit remain. Baffinland has also</p>

	committed #242 to a staged ramp up of shipping activities if Phase 2 is approved. Neither commitment wording has been confirmed.]
<b>BIM Commitment</b>	127, 173, 241, 242

<b>REVISED Term and Condition No.</b>	<b>179 (b) modified for Production Increase Proposal and Extension Request to the Production Increase Proposal</b>
<b>Category:</b>	Operational Variability/Flexibility
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Operations
<b>Objective:</b>	To ensure that there are appropriate limits on the Milne Inlet Tote Road land transportation component in order to limit and manage likely Project effects, while balancing the need for operational flexibility.
<b>Term or Condition:</b>	<p>Unless otherwise approved by the NIRB, in any given day, the total number of truck transits along the Milne Inlet Tote Road may not exceed 180, nor can the Proponent transport more than 6Mtpa for the duration of the Phase 2 construction period. Following commissioning of the North Railway, unless otherwise approved by the NIRB, in any given day, the total number of train transits along the North Railway may not exceed 20 and the number of truck transits along the Milne Inlet Tote Road is 0.</p> <p>For greater clarity, the Phase 2 construction period for the purpose of this term/condition will be the period between commencement of construction, and when the rail system is operational to transport mined ore materials.</p>
<b>Reporting Requirements:</b>	For each year after the Proponent transports ore via the Tote Road, the Proponent shall include in the Annual Report to the NIRB, a summary of the total amount of ore shipped via the Tote Road for the previous calendar year. Once operational, the Proponent shall include the amount of ore shipped via the railway.
<b>Rationale:</b>	Baffinland's proposed revisions to PC Condition 179-b seek to eliminate the cap on production of iron ore that would be transported to market via the northern shipping route, and to replace it with caps on the number of annual round trips by ore carriers (176 per year) and trains (20 per day). No limits have been proposed on the average size of the ore vessels or average length of the trains. If this is not specified based on the 12Mt per year production rate that formed the basis of the Phase 2 FEIS, the Proponent could increase

	ore production within these transportation limits, by increasing average vessel size and train length. The potential environmental effects of such increases were not assessed in the Phase 2 FEIS. QIA is concerned that the environmental effects of using larger ships and longer trains will be greater than predicted. QIA recommends that clear limits be placed on both ore production and transportation if Phase 2 is approved to prevent shipping of tonnages and traffic volumes via the northern route that are greater than were assessed in the Phase 2 FEIS.
<b>BIMC Commitments</b>	26, 69

<b>Varied Term and Condition No.</b>	<b>179 (c) <i>New condition for Production Increase Proposal and varied by the Minister for the Extension Request to the Production Increase Proposal</i></b>
<b>Category:</b>	Operational Variability/Flexibility
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Operations
<b>Objective:</b>	To ensure commitments made by the Proponent with respect to the 2018 production increase and delivery of benefits to Inuit are adhered to, and, can be determined through a body of evidence.
<b>Term or Condition:</b>	The Proponent shall be required to resource and support a third party to conduct bi-annual performance audits of commitments made by the proponent in relation to both the IIBA and every proponent commitment and every term or condition of the Project Certificate relating to environmental management of the tote road component or environmental management related to shipping.
<b>Reporting Requirements:</b>	On a bi-annual basis, the Proponent shall file a Performance Audit Report with the NIRB on or before March 31 and September 30 of each calendar year. This report shall include the findings of the third-party auditor, and, Baffinland's commitment to addressing the findings of the auditor. This term and condition will remain in force for the duration of the Mary River Project, unless it is modified under the <i>Nunavut Planning and Project Assessment Act</i> .
<b>Rationale:</b>	Baffinland proposes to remove PC Condition 179-c on the grounds that should the Phase 2 Project be approved, any commitments related to the environmental management of the marine and terrestrial components of the Northern Transportation Corridor should be recorded and appended to the Public Hearing Report, and subsequently tracked through existing annual compliance monitoring.

	QIA does not support removing this PC Condition. There are advantages of having a third party completing a compliance review. QIA further recommends that this PC Condition be implemented as a comprehensive audit rather than a checkmark exercise.
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<b>PROPOSED Term and Condition No. [NEW Q]</b>	<b>QIA Recommended Project Certificate Condition</b>
<b>Category:</b>	Operational Variability/Flexibility
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction
<b>Objective:</b>	To ensure design meets the specifications of a qualified engineer, should use of the Milne Port Tote Road be extended.
<b>Term or Condition:</b>	If commissioning of the North Railway has not occurred within three years of receipt of approval to proceed by means of issuance of a Project certificate, the Proponent must design and build the Tote Road to the design included in Amendment 1. Should this design no longer be valid, the Tote Road shall be designed for its intended uses, incorporating new techniques and methodologies, technologies, Inuit Qaujimanituaqangit, results and observations from Project monitoring and adaptive management and other new information.
<b>Reporting Requirements:</b>	Each Annual Report until the Railway is operational, the Proponent provide an updated timeline for completion.
<b>Rationale:</b>	QIA proposes this PC Condition to mitigate a concern that if construction of the North Railway is delayed BIMC could potentially operate the Milne Inlet Tote Road without appropriate design and monitoring considerations.

### Transboundary Effects

<b>Term and Condition No.</b>	<b>180</b>
<b>Category:</b>	Transboundary Effects – Makivik Corporation involvement in the Marine Environment Working Group
<b>Responsible Parties:</b>	The Proponent, members of the Marine Environment Working Group

<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To enable Makivik Corporation and Nunavik communities near shipping lanes to remain informed and involved in those shipping activities which could affect the marine environment and marine mammals.
<b>Term or Condition:</b>	The Marine Environment Working Group established for this Project shall invite a representative from Makivik Corporation to be a member of the Group
<b>Reporting Requirements:</b>	To be developed following approval by the Minister
<b>Rationale:</b>	QIA does not object to Baffinland's proposal to remove this PC Condition.

**Commentary:** As expressly noted in the Minister's letter of April 28, 2014, this term and condition applies equally to all aspects of the Mary River Project, including the Early Revenue Phase.

<b>Term and Condition No.</b>	<b>181</b>
<b>Category:</b>	Transboundary Effects – Marine Environment Working Group reporting
<b>Responsible Parties:</b>	The Proponent, members of Marine Environment Working Group
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To enable Makivik Corporation and Nunavik communities near shipping lanes to remain informed and involved in those shipping activities which could affect the marine environment and marine mammals.
<b>Term or Condition:</b>	Regardless of whether Makivik Corporation participates as a member of the Marine Environment Working Group, the Marine Environment Working Group will provide Makivik Corporation with regular updates regarding the activities of the Marine Environment Working Group throughout the Project life cycle.
<b>Reporting Requirements:</b>	To be developed following approval by the Minister
<b>Rationale:</b>	QIA does not object to Baffinland's proposal to remove this PC Condition.

**Commentary:** As expressly noted in the Minister's letter of April 28, 2014, this term and condition applies equally to all aspects of the Mary River Project, including the Early Revenue Phase.

<b>Term and Condition No.</b>	<b>182</b>
<b>Category:</b>	Transboundary Effects – Reporting to Marine Environment Working Group (MEWG)
<b>Responsible Parties:</b>	The Proponent, Makivik Corporation
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To enable Makivik Corporation and Nunavik communities near shipping lanes to remain informed and involved in those shipping activities which could affect the marine environment and marine mammals.
<b>Term or Condition:</b>	Baffinland shall make available to Makivik Corporation any ship route deviation reports provided to the NIRB in accordance with the terms and conditions set out in Section 4.12.4 of the Final Hearing Report.
<b>Reporting Requirements:</b>	To be developed following approval by the Minister
<b>Rationale:</b>	QIA does not object to Baffinland's proposal to remove this PC Condition.

**Commentary:** As expressly noted in the Minister's letter of April 28, 2014, this term and condition applies equally to all aspects of the Mary River Project, including the Early Revenue Phase.

<b>PROPOSED Term and Condition No. [NEW R]</b>	<b>QIA Recommended Project Certificate Condition</b>
<b>Category:</b>	Assessment of cumulative and transboundary effects by Project shipping
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Operations
<b>Objective:</b>	To provide the quality of information required to adequately understand and mitigate potential cumulative and transboundary impacts of Project shipping.
<b>Term or Condition:</b>	Prior to the commencement of ore shipments by Project vessels from Steensby Port, the Proponent shall complete a cumulative impact assessment of approved, existing, and reasonably foreseeable Project shipping that integrates the impacts of all shipping-related Project activities on all VECs and VSECs, in the context of other human activities, natural stressors such as climate change, and developments, and considering all interactions.



<b>Reporting Requirements:</b>	Comprehensive cumulative impact assessment report to NIRB prior to the onset of Project ore shipments via the southern shipping route.
<b>Rationale:</b>	QIA single revision for clarity.
<b>BIM Commitments</b>	12, 132, 198

### Verification of Project Monitoring and Mitigation For Potential Effects on Marine Mammals

<b>REVISED Term and Condition No.</b>	<b><i>183 New condition for Production Increase Proposal and modified for the Extension Request to the Production Increase Proposal</i></b>
<b>Category:</b>	Project monitoring of impacts to marine mammals
<b>Responsible Parties:</b>	The Proponent, members of Marine Environment Working Group
<b>Project Phase:</b>	Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To address concerns associated with the potential for impacts to marine mammals, and compliance and enforcement of terms and conditions in Project Certificate No. 005 relating to ship-based observer programs, noise exposure assessments, and the identification of other mitigation measures that have the potential to further reduce potential impacts to marine mammals.
<b>Term or Condition:</b>	<p>The Proponent shall collaborate with the Marine Environmental Working Group (MEWG) to develop impact avoidance or mitigation strategies for the protection of the marine environment, and shall implement these strategies.</p> <p>The Proponent shall implement any direction from the Department of Fisheries and Oceans (DFO), issued in furtherance of their mandate, for any avoidance or mitigation measures, including cessation of any activity, for the protection of the marine environment.</p> <p>The Proponent shall, every six months, provide to DFO a tracking table of (i) collective recommendation of the other members of the working group, and (ii) any directions from DFO. For each, the table must show the Proponent's means of implementation. Where any direction or recommendations are not fully implemented, the Proponent shall include the rationale.</p>

<b>Reporting Requirements:</b>	<p>Results of the observer program shall be provided in the Annual Report to the Board. Further, Baffinland shall report annually all data it generates from the implementation of monitoring of marine impacts it is required to implement pursuant to the Terms and Conditions of the Project Certificate.</p> <p>In relation to the specific reporting associated with the Extension Request to the Production Increase Proposal, Baffinland shall provide the tracking table referenced above to Fisheries and Oceans Canada and the other members of the Marine Environment Working Group within six months following the NIRB's issuance of Amendment 003 to the Project Certificate and shall provide subsequent updates to the table every 6 months thereafter.</p>
<b>Rationale:</b>	QIA revisions to clearly establish the role of the MEWG and DFO in monitoring and mitigation and to strengthen reporting requirements.

<b>PROPOSED Term and Condition No. [NEW S]</b>	<b>184 New condition for Production Increase Proposal</b>
<b>Category:</b>	Project monitoring of impacts to marine mammals
<b>Responsible Parties:</b>	The Proponent
<b>Project Phase:</b>	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
<b>Objective:</b>	To address concerns associated with the potential for impacts to marine mammals, and compliance and enforcement of terms and conditions in Project Certificate No. 005 relating to ship-based observer programs, noise exposure assessments, and the identification of other mitigation measures that have the potential to further reduce potential impacts to marine mammals.
<b>Term or Condition:</b>	The proponent shall collaborate with the Marine Environmental Working Group to review the status of compliance with, and implementation of, all of the Terms and Conditions in Project Certificate No. 005 related to marine environmental protection.
<b>Reporting Requirements:</b>	Results of the observer program shall be provided in the Annual Report to the Board. Further, Baffinland shall report annually all data it generates from the implementation of monitoring of marine impacts it is required to implement pursuant to the Terms and Conditions of the Project Certificate.
<b>Rationale:</b>	

<b>PROPOSED Term and Condition No. [NEW T]</b>	<b>QIA Recommended Project Certificate Condition</b>
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<b>Category:</b>	<b>Inuit Stewardship Plan - Monitoring and Management</b>
<b>Responsible Parties:</b>	The Proponent and QIA
<b>Project Phase(s):</b>	Construction, Operations, Closure
<b>Objective:</b>	To ensure Inuit are fully engaged in Project monitoring of culture, resources and land use, and of social changes in the impacted communities.
<b>Term or Condition:</b>	The Proponent to support QIA and the impacted communities to develop an Inuit Stewardship Plan for the Mary River Project, funded for the life of the Project. The ISP will be a Project monitoring and management plan, overseen by the independent, Inuit-led Inuit Committee and Inuit Social Oversight Committee, that identifies monitoring and management roles for Inuit in the culture, resources, and land use, and social, impact realms. Findings of the monitoring programs will be integrated into management decisions based on requirements built into the Project's Adaptive Management Plan. The Terms of Reference for the IC and ISOC will be determined
<b>Reporting Requirements:</b>	To be developed following approval of the Project by the Minister. by QIA.
<b>Rationale:</b>	

<b>PROPOSED Term and Condition No. [NEW U]</b>	<b>QIA Recommended Project Certificate Condition</b>
<b>Category:</b>	Food security risk communication
<b>Responsible Parties:</b>	The Proponent; Qikiqtaaluk Socio-Economic Monitoring Committee (QSEMC) and Mary River Socio-Economic Monitoring Working Group (SEMWG), North Baffin Communities
<b>Project Phase:</b>	Construction and Operations
<b>Objective:</b>	To protect and enhance Inuit food security by increasing understanding of, and public communication of, the health of the land and country.

<b>Term or Condition:</b>	The Proponent to develop and implement with the North Baffin communities a Culture, Resources, and Land Use Risk Communication Strategy/Program, focused on gathering and dissemination of information to Inuit on the health of the land and country foods in the Project-affected area. The Proponent to recognize that each community may have different information needs, including method of delivery (i.e. workshops, pamphlets etc.) and concerns and will support the customization of the program where required.
<b>Reporting Requirements:</b>	As part of annual reporting to NIRB
<b>Rationale:</b>	The Proponent's commitment to a risk communication program is currently limited to focusing on describing the potential effects of mining from a technical perspective. Meaningful risk communication will likely need to be an Inuit-driven program in order to have credibility in the communities, and include a focus on reporting (and receiving reports from community members and acting on them) of the observable health and safety of water, wildlife and other resources Inuit rely upon for their survival on the land.
<b>Baffinland Commitments:</b>	28 (removed), 157, 180

<b>Term and Condition No. NE0057</b>	<b>QIA Recommended Project Certificate Condition</b>
<b>Category:</b>	
<b>Responsible Parties:</b>	The Proponent, Nunavut Impact Review Board, Government of Canada, parties implicated in Commitment List
<b>Project Phase:</b>	All Project Phases
<b>Objective:</b>	To provide assurance of proper completion of proponent commitments and to provide an enforcement mechanism for performance and implementation of all commitments contained in the Proponent's commitment list, as detailed in the updated Commitment List which the Proponent has filed with NIRB as found on the Public Registry.

<b>Term or Condition:</b>	Parties which are named in the Commitment List as undertaking specific commitments shall perform or implement those commitments in accordance with timelines, goals, and objectives of the commitment. Where a timeline, goal, or objective is not clear, the named party shall perform/implement the commitment in a timely manner, and in keeping with the spirit and intent of the commitment.
<b>Reporting Requirements:</b>	Annual Reporting on completion of commitments from the Commitment List
<b>Rationale</b>	The Proponent made considerable commitments both in quantity and quality throughout this extended review process. Many of these commitments are central to the viability of environmental mitigation and monitoring processes and address concerns regarding structures and processes not yet in place for environmental mitigation and monitoring. These commitments, which were made to garner support and resolve key issues related to the project, are currently neither binding nor enforceable and are currently not monitored. By adding a project condition that requires these commitments to be performed or implemented, the Proponent and other Parties named in the commitments list are bound by NuPPAA to complete these promises. This condition would also create a direct link to project monitoring by NIRB and GoC to ensure that the commitments are treated as undertakings which can be evaluated and, where needed, enforced if there are issues with performance or implementation of the commitments.