

I.	Executive Summary	3
A.	QIA’s Position on the SOP	4
B.	Constraints on the Scope of the Review and QIA’s Recommendations	7
II.	AMENDED Conditions	8
III.	QIA’s SOP Technical Comments	9
A.	The Context of the SOP	9
B.	General SOP Issues	11
1.	Integration of Inuit Qaujimagatuqangit.....	13
2.	Problematic impact characterization and significance determination approach.....	13
3.	Impacts During Operational Flexibility	14
4.	Implementation Status of Prior Baffinland Commitments	14
C.	Adaptive Management and Environmental Oversight	14
D.	Atmospheric Environment Issues	15
E.	Terrestrial Environment	17
F.	Freshwater Environment	18
G.	Marine Environment	18
H.	Socio-Economic	19
I.	Culture, Resources and Land Use	19

**Written Submission and Technical Comments of the
Qikiqtani Inuit Association
to the Nunavut Impact Review Board
regarding the
Baffinland Iron Mines Corporation Sustaining Operations Proposal**

I. EXECUTIVE SUMMARY

Baffinland Iron Mines Corporation (“Baffinland”) has applied to the Nunavut Impact Review Board (“NIRB”) for approval of what it calls its “Sustaining Operations Proposal” (“SOP”) for the Mary River Project.

Like the Production Increase Proposal, Production Increase Proposal Renewal, and others like them, this application seeks to increase Baffinland’s permitted production, trucking and shipping of ore from 4.2 million tonnes per year (“mtpa”) to 6mtpa along the northern Tote Road, through Milne Port and shipped out of Eclipse Sound. However, there are three important features of the SOP which distinguish it from those previous proposals.

First, the SOP is not linked to any long-term, forward-looking proposal for ongoing increased production and shipping limits. Conversely, the 2018 Production Increase Proposal, which first increased Baffinland’s operational limits to 6mtpa, and the extension and renewal which followed it, were all tied to the request that Baffinland be allowed to operate at 6mtpa on an ongoing basis in the Phase 2 Application.

Second, the SOP seeks “operational flexibility” to ship ore beyond the 6mtpa production and trucking limits, if that ore is produced and trucked within the previous year’s limits, but is left at Milne Port and cannot be shipped due to adverse ice conditions or other shipping operations reasons.

Third, Baffinland has publicly announced that it intends to secure outstanding permits and begin construction on the southern rail route and Steensby Port (together, “Steensby”). Despite it being part of the original application for the Mary River Project, the addition of Steensby to the project

as the project is currently operating, represents a significant expansion, and the SOP provides no insight into how it will interact with the construction and eventual operation of Steensby.¹

In light of NIRB's procedural direction issued May 8, 2023,² these are QIA's initial written submissions on the SOP. At the time of filing, QIA has not received a decision on its motion to allow an opportunity to provide closing submissions after all the evidence has been put on the record. However, QIA reserves the right to provide further submissions to NIRB in a manner consistent with QIA's legal and constitutional rights.

A. QIA's Position on the SOP

The process set out by NIRB for the determination of the SOP has prevented QIA from supporting or opposing the SOP.

The process, which was deficient from both a procedural fairness and constitutional perspective, prevented QIA from doing the due diligence necessary to reach a decision on the merits of the SOP application. QIA acknowledges that NIRB was required by the Responsible Ministers to expedite and prioritize the SOP, and that operational limitations narrowed the window available for holding the community roundtables even further.³

Everyone involved in the SOP in particular, and regulatory processes involving Baffinland in general, is responsible for ensuring that those processes do not interfere with the ability of Qikiqtani Inuit to protect and defend their rights. In issuing their direction pursuant to section 114 of the *Nunavut Planning and Project Assessment Act* ("NuPPAA"), the Responsible Ministers ought to have put greater weight on the impact that an expedited process would have on Inuit rights. The Responsible Ministers similarly ought to have consulted QIA before issuing their section 114 letter, to ensure that the limitations their direction was to impose on NIRB would not interfere with QIA's own decision-making processes.

QIA's position is that if the SOP is approved by NIRB, it must be made subject to certain conditions, described in these submissions.

The fact that QIA has provided these conditions in case the SOP is approved should not be taken to suggest tacit approval or acquiescence to the SOP. Rather, these conditions recognize that the SOP will continue to cause impacts, both ongoing and novel, to Inuit rights, and that

¹ While Steensby is almost certainly not going to be operating by the end of the SOP, the interaction between the SOP and construction activities has not been addressed in the SOP Application.

² Letter from Kaviq Kaluraq to The Honourable Dan Vandal, Megan Lord-Hoyle and Lou Kamermans, "Re: Notice and Procedural Guidance Regarding the Nunavut Impact Review Board's Assessment of Baffinland Iron Mines Corporation's 'Sustaining Operations Proposal' Project Proposal", May 8, 2023.

³ Letter from the Honourable Dan Vandal to Kaviq Kaluraq, April 20, 2023 (NIRB ID: 344411).

accommodation measures must be put in place to prevent, mitigate and compensate for those impacts.

QIA's ability to take a position on the SOP was frustrated by several factors.

- The abbreviated regulatory process, and the timing of these submissions prior to the community roundtables scheduled for the end of July and the beginning of August, prevents QIA's internal governance processes from taking a position, as it interferes with the ability of QIA's governing bodies to meet, and to consider all of the relevant evidence in making their decision. The design of the SOP review process and its abbreviated timeline either eliminated, or significantly constrained, QIA's opportunities to engage with the proponent, with NIRB, and with impacted communities, in a manner which would have allowed for robust and comprehensive engagement. Given this, the process has not allowed for consultation to occur to the level required by QIA.
- In its submissions on the 2022 PIPR, QIA explained that it "will not support any proposal for production and shipping above 4.2mtpa after 2022 until there is a significant reconsideration of existing Project Certificate Terms and Conditions...." There has not yet been such a reconsideration.

As the Designated Inuit Organization for Inuit in the Qikiqtani Region of Nunavut, QIA has an important role in this proceeding. Baffinland's economic interests must not be privileged over the constitutionally-protected rights of Inuit. A concerted effort by all parties to ensure that a comprehensive and substantive review of the regulatory application is necessary. QIA calls on both NIRB and the Government of Canada to ensure that future regulatory reviews of Baffinland applications receive full and proper scrutiny, in a regulatory process not cut short by proponent-driven deadlines.

Although QIA's ability to engage with Inuit to the extent that it would like to has been hampered by the procedural limitations imposed on this process, Inuit (including QIA) have been clear and consistent on several key issues:

- Baffinland has for years insisted that 6mtpa was required for the Mary River Project to remain viable. It has achieved this level of permitting through a series of interim approvals. Those interim approvals have only ever considered the requests in isolation, and Baffinland's ongoing 6mtpa operation has never been fully assessed. In a reality where there has not been a fulsome assessment of a 6mtpa project, the sole argument for operational flexibility is project economics. It is unreasonable to ask Inuit to accept the potential impacts of up to 7.3mt being shipped in a given year, when a fulsome impact assessment of 6.0mt has still not occurred.

- Despite being permitted to ship up to 6mtpa since 2018, it is QIA's understanding that Baffinland has never in fact been able to ship that much ore from Milne Port, coming closest in 2019 and 2022 when it shipped 5.9mt. Whether due to ship availability, the timing of ice breakup and formation, or other reasons, NIRB should resist overpermitting the Mary River Project by creating opportunities for Baffinland to engage in activities (such as shipping up to 7.3mt in a year) which have not been meaningfully assessed, and have not been shown to be necessary.
- The existing Mary River Project has had greater than expected and predicted, and widely Inuit-observed effects on narwhal, dust deposition (and thereby vegetation, mammals and fish and fish habitat), and Inuit harvesting, travel over and enjoyment of land. There is also a high level of uncertainty about the Project's effects on caribou and seal. In combination, this means that Inuit have observed greater than acceptable changes to the environment even at production levels lower than 6mtpa and have strong concerns about the impacts of continuing at this rate of production without the imposition of additional prevention, mitigation and compensation measures to accommodate Inuit for those changes and impacts to their rights.
- Western science predictions have been subject to a high degree of uncertainty and disagreement between Baffinland and other parties. Inuit Qaujimagatuqangit (IQ) has been inadequately integrated into Project planning, assessment, monitoring and management to date. Therefore, the Project is generally plagued with uncertainties about its existing and likely future impacts on the environment. Recent commitments by Baffinland to improve its monitoring and management (including adaptive management) systems, have not been fully developed yet and therefore this uncertainty remains. Inuit would like to see the precautionary principle apply in relation to production/activity rates, particularly until a more sensitive and comprehensive project monitoring and management system is in place.
- Uncertainty around the future of shipping from Milne Port in light of Baffinland's stated plans to begin construction on the southern transportation route should cause NIRB to maintain previous limits (e.g. 6mtpa) on the northern transportation route, subject to a comprehensive assessment of non-status quo requests.
- Proposal-specific cumulative effects assessments conducted by Baffinland over the past ten years have not been consistent with accepted cumulative effects assessment practice. Until a methodologically sound cumulative effects assessment is conducted for the entire Mary River Project, no significant changes to the project should be permitted.

It is with those clear and consistent principles in mind that QIA makes this submission.

B. Constraints on the Scope of the Review and QIA's Recommendations

The SOP is Baffinland's eighth application in eleven years to allow for increased production, transportation and shipping, beyond what was originally permitted for the Mary River Project. It is the sixth application for expansion of the Project that is different than the Project Proposal which was originally assessed on a Final Environmental Impact Statement which studied transportation to, and shipping from, Steensby Inlet.

Unlike the previous applications, this is the first time since the Early Revenue Phase approval in 2014 that a production increase proposal has not been tied to an underlying permanent expansion application. The SOP, for the first time, proposes unassessed production increases which are disconnected from a long-term/permanent proposed change to the Mary River Project's operations and infrastructure.

The impacted Inuit communities and DIOs have struggled to actively participate in over a decade of non-stop hearings and reviews of different proposals for project changes and expansions, while balancing other DIO responsibilities and the significant burden of monitoring and reporting on the actual project operational cycle. That struggle has been consistently communicated by Inuit parties to Baffinland, NIRB and the Responsible Ministers, and yet this cycle of short-term expedited reviews has been allowed to continue. Conscious steps must be taken to develop amendment review processes which respect the spirit and intent of the Nunavut Agreement and NuPPAA, and not processes that exploit their unforeseen shortcomings or oversights. QIA recognizes that due to the proponent-driven nature of its processes, NIRB itself has similarly been forced to grapple with these challenges. QIA looks forward to continuing to work with NIRB to find an appropriate balance which honours the Nunavut Agreement by putting the rights of Inuit at the center of all review processes.

Regulatory exhaustion is not merely inconvenience, it has real implications for Inuit engagement levels, the quality of IQ able to be made available, Inuit well-being, and the Inuit understanding of being empowered in governance and stewardship.

QIA did not have access to the final, filed version of the SOP until April 17, 2023 – almost a month after it was declared by NIRB to be final and complete on March 23, 2023. Although earlier drafts of the SOP had been shared with QIA pursuant to Baffinland's IIBA obligations, QIA's full technical review could not begin until the final version was filed with NIRB. QIA and its technical advisors were left with extremely limited time to (a) review the SOP application, (b) engage with impacted communities, and (c) prepare this response submission. That limited window of time meant that QIA simply did not have the resources or time to delve into all of the issues that the SOP raised, or all of the concerns identified by QIA's technical advisors and impacted communities. Rather, QIA has focused only on the most urgent areas of concern.

The 2022 PIPR and the SOP reviews both took place over important times in the calendar for traditional Inuit activities such as harvesting and camping. These are important and meaningful activities for Inuit cultural continuity and exercise of Inuit harvesting rights. The overlap of the NIRB processes with these times has had a two-fold impact on this review.

First, QIA respects our members' exercise of their rights, and has not had an appropriate opportunity to engage our communities on this proposal as many Inuit, and particularly traditional harvesters, are out on the land. Second, these same impacted Inuit are expected to make their own representations, either individually or through their HTO or Hamlet, at a time when they are exercising their rights and cannot easily prepare for and attend regulatory meetings. It should also be noted that more time and effort is required, especially for Mittmatalingmiut, to carry out these activities due to project impacts making animals more scarce and traditional camping and harvesting areas limited.

Given the short timelines and resource limitations associated with the SOP, QIA has limited its submissions on certain issues, such as cumulative effects, on the understanding that a more appropriate proceeding for a fulsome reconsideration of the impacts of the whole Mary River Project will be forthcoming following the conclusion of the SOP process.⁴

II. AMENDED CONDITIONS

As set out above, at this time QIA takes no position on whether or not the SOP should be approved. However, if the SOP is approved, QIA submits that the impacts to the environment and Inuit rights which will flow from the SOP require that it must only be approved subject to the conditions described in the table at the end of these submissions ("Amended Conditions"). Without the Amended Conditions in place, the SOP is likely to cause unacceptable adverse effects to the environment and Inuit rights. QIA reserves the right to provide further submissions following the community roundtables and the opportunity they will provide to hear from Inuit directly.

QIA also notes that even with the Amended Conditions in place, the Mary River Project will still require additional detailed reconsideration in several key respects, particularly cumulative effects, before the long-term impacts of the Project on Inuit rights and the environment can be properly understood and addressed.

QIA understands the SOP to be a temporary measure, intended only to bridge the gap until a more fulsome review of the Project can take place without the procedural restrictions imposed by the recent 'urgent' applications. That comprehensive reconsideration of the Mary River

⁴ QIA has previously called for such a comprehensive review in its submissions on the 2022 PIPR.

Project must take place prior to any further applications from Baffinland to alter or expand the Project are considered.

III. QIA'S SOP TECHNICAL COMMENTS

A. The Context of the SOP

The Mary River Project operates on lands owned by Inuit, extracts minerals owned by Inuit, relies on a commercial lease with QIA to use Inuit Owned Lands (IOL), ships iron ore through arctic marine areas that are the backbone of Inuit food security and culture in the region, and is subject to an Inuit Impact Benefit Agreement (IIBA). Almost no aspect of the mine and its operations does not touch in some way on the constitutionally protected rights of Inuit guaranteed through the *Nunavut Agreement* and its structures, including this NIRB review process.

QIA owns and manages, on behalf of Inuit in the region, the lands on which the Mary River Project is located. QIA (in cooperation with Nunavut Tunngavik Incorporated) is responsible for protecting and using the IOL for responsible resource development on behalf of Inuit if Inuit choose to use these lands for mining, and ensuring any Project proposal meets an Inuit-accepted balance between impacts and benefits.

QIA is governed by a democratically elected Board of Directors, representing each of the Qikiqtani Communities. QIA's decisions are informed by input from Community Directors, information from community members, the views of community organizations including HTOs, technical and legal advice, and past experiences and organizational knowledge.

The past ten years have seen a nearly constant cycle of regulatory applications, hearings and approvals for the Mary River Project. This cycle has caused acute regulatory exhaustion for Inuit impacted by the Project, particularly the most impacted communities, and QIA.

The regulatory history which has led us to the SOP is one of constantly moving goalposts. Baffinland has consistently sought to produce and ship 'just a little bit more' to keep itself afloat, while that 'little bit more' has steadily grown, with little meaningful technical assessment.

1. The Project was originally assessed and approved in 2012 to produce and ship 18mtpa of iron ore, using a railway to and a port at Steensby Inlet.
2. After this approval, Baffinland applied in 2013 and received approval in 2014 for an "Early Revenue Phase" allowing 3.5mtpa to be transported via Tote Road, and shipped from Milne Inlet.
3. Baffinland then applied and received approval for a production increase to 4.2mtpa.
4. In 2014, Baffinland also submitted a proposal for the Phase 2 expansion to allow for a railway to Milne Inlet and an increase to 12mtpa. The NIRB *Phase 2 Reconsideration Report*, released on May 13, 2022, recommended against approval of this expansion.

5. During the Phase 2 review, Baffinland applied for and received approval in 2018 to produce and ship 6mtpa until the end of 2020 (the “Production Increase Proposal”, or “PIP”).
6. In late 2019, Baffinland applied for an extension of the 2018 approval, and received approval to produce and ship 6mtpa until the end of 2021 (the “Production Increase Proposal Extension” or “PIPE”).
7. Immediately after the NIRB *Phase 2 Reconsideration Report*, and before the Inuit organizations had an opportunity to respond to the Minister on the section 35 Inuit rights impacts issues raised in NIRB’s *Phase 2 Reconsideration Report*, Baffinland asked the Minister to unilaterally extend the 2020 approval for a production increase which expired at the end of 2021. The Minister directed Baffinland to apply through the appropriate NIRB process instead, resulting in the 2022 “PIP Renewal” which was granted only after back-and-forth process arising out of the Crown Consultation.
8. NIRB’s recommendation to deny Baffinland’s application for the Phase 2 Expansion was supported by the Responsible Ministers with a decision released on November 16, 2022.
9. The SOP application was submitted in March 2023, seeking permissions for a two-year period (2023 and 2024) to again produce, truck and ship 6mtpa, in addition to allowance for “operational flexibility” to ship ore left from previous seasons at Milne Port.

Perhaps the most important contextual circumstance for NIRB’s review of the SOP application is that the release of the Phase 2 Reconsideration Report revealed a substantial number of gaps, weaknesses and deficiencies in the Project **as it is currently operating**.

When NIRB conducts its review of the SOP, it should be particularly attentive to whether, and to what extent, Baffinland has begun to address those gaps in this application. It would be a missed opportunity for all of the time, energy and knowledge which went into the Phase 2 review from all parties to be wasted by not applying the lessons learned from that process to the existing project as it moves forward.

Highlighting the deficiencies identified in the Phase 2 Reconsideration Report is a recognition that all of the participants in this process can benefit from the hindsight provided by that report. Impacts which were not fully identified in initial reviews, and gaps which have developed over the course of the Project’s operation, have now been identified, and mitigation measures can therefore be implemented. Any application by Baffinland for further expansion of the Project which doesn’t incorporate improvements and fixes to the issues identified in the Phase 2 Reconsideration Report will be deficient.

Giving due consideration to and acting on findings and recommendations in the Phase 2 Reconsideration Report will only improve the project and make forward progress toward a project that is acceptable to Inuit. Taking these steps will also further de-risk the project with respect to community acceptance, and reduce the number of outstanding issues, which in turn will reduce the review burden created by potential future amendment applications.

In the sections that follow, QIA will highlight the key concerns revealed in its technical review of the SOP, and will summarize the terms and conditions which QIA believes ought to be implemented if the SOP is to be approved. Full details and wording on commitments and conditions sought can be found in the Technical Comments tables in the annex to this submission.

In light of the abbreviated process and limited time provided for preparation of QIA's comments, including the absence of any iterative technical comments (such as a technical workshop, or exchange of information requests), QIA's submission will not go into detail about how QIA or NIRB has dealt with particular issues in the past (except to the extent that doing so is necessary for the current project), and will not go into detail about the concerns which QIA continues to have about project elements which are beyond the scope of the SOP.

An absence in this submission of discussion about any particular issue should not be taken to mean that QIA does not have any concerns about that particular issue.

In its submissions on the 2022 PIPR, QIA explained that: "QIA remains of the view, however, that a thorough reconsideration of the Terms and Conditions for the existing Mary River Project is overdue and necessary...."

QIA's position on this has not changed, and issues which may not be raised in this submission, may nevertheless remain concerns for QIA, with the intention of addressing those larger project concerns in a subsequent proceeding.⁵

B. General SOP Issues

QIA has identified concerns with the approach to cumulative effects assessment taken in the SOP application.

In Section 6.9, Baffinland says it has integrated the full development of the Approved Project (by definition a reasonably foreseeable future development), including all physical works and activities associated with increased mining, building and operating the Steensby rail, Steensby Port and southern shipping route, which could be up to 18 million tonnes per year, into its cumulative effects assessment. However, no quantitative evidence or analysis is provided to support this statement. This leaves an unacceptably high probability that total cumulative effects are underestimated by a wide margin in the SOP. As a result, it seems that the finding of no significant adverse cumulative effects in the full Approved Project + SOP case is not supported by actual evidence.

⁵ QIA previously raised the need for a more broadly scoped reconsideration of the Mary River Project, able to meaningfully consider cumulative effects, in its submissions on the 2022 PIPR.

QIA also notes that inadequate cumulative effects assessment is emblematic of a larger problem in the Mary River Project's continuing cycle of piecemeal assessments – this being the 8th NIRB assessment for the Project – that we are not seeing a full picture of the existing and likely future effects of the Mary River Project on the environment and Inuit.

The adoption of an approach that largely leaves us reliant on an incremental (and hidden) updating of the 2012 and 2013 FEIS and ERP cumulative effects assessments is highly problematic as the following has all changed in the intervening period:

- Climate change has accelerated, especially in the arctic. In other words, the receiving environment has changed;
- The combinatory effects of mining, transporting, storing and shipping up to 18 million tonnes per year to the south and up to 7.3 million tonnes to the north were never previously assessed nor are they demonstrably assessed in Section 6.9 of the SOP application;
- Inuit have observed and science has recorded higher than expected project effects and overall changes on narwhal, dust, and Inuit land use and other valued ecosystem and socio-economic components than predicted in the Project-specific assessments those 2012 and 2013 cumulative effects assessments were predicated on;
- Inuit have demanded a larger role than before in assessment of the proposed Project; and
- Many of the mitigation measures and monitoring systems to gauge their effectiveness, that the CEA is in large part reliant upon in finding no likely significant adverse effects on VSECs and VECs, have not been implemented or analysed. As a result, such reliance is highly speculative;

The CEA for the SOP is 17 pages long (pgs. 259 to 276 of 922) and includes no quantitative analysis on any VSECs or VECs. It is at best a very high-level summary of an outdated cumulative effects assessment, one that appears to have been built on some unstable assumptions, and impact predictions that have been exceeded in the intervening period. It is fundamentally deficient and should not be treated by NIRB as compelling evidence.

Given the extensive concerns expressed by QIA and others⁶ regarding the state of the cumulative effects assessments, QIA is concerned about the impact of Baffinland's decision to proceed with the Steensby portion of the Approved Project without a full and proper updating of the

⁶ See e.g. Letter from David Qajaaq Qamaniq to the Honourable Dan Vandal; "Minister's April 20, 2023 letter to Nunavut Impact Review Board re Baffinland's Sustaining Operations Proposal", May 4, 2023. See also letter from the Honourable Dan Vandal to David Qajaaq Qamaniq, June 9th, 2023: "In writing to the Board on behalf of all responsible Ministers, we have voiced our support and agreement with calls for an updated, comprehensive cumulative effects assessment....".

cumulative effects assessment and a full reconsideration of the terms and conditions in the Project Certificate.

1. INTEGRATION OF INUIT QAUJIMAJATUQANGIT

The SOP represents a step forward for Baffinland regarding the consideration of IQ, but much work remains to be done.

QIA's analysis of the SOP identifies that there is still a lack of IQ and Inuit perspectives in the effects characterization and significance estimation processes, which strongly favour Baffinland's scientific predictions (often debated by other parties) when there is conflict with Inuit observed effects. This is evidenced by the fact that there are still no VSECs or VECs which Baffinland predicts significant adverse effects on in either the Project Case or Planned Development (cumulative effects assessment) Case.

Inuit disagree with this conclusion. This misalignment cannot, despite efforts by Baffinland to suggest otherwise, be totally attributed to perception of significance being a personal construct that differs between individuals. Inuit have identified existing significant adverse effects caused by shipping, dust and other industrial physical works and activities associated with the Project in previous assessments; these findings continue to be minimized or ignored by Baffinland.

We note as well that Baffinland has developed an "IQ Management Framework" for the Mary River Project. QIA's position has been for some time and remains that any such Framework needs to be developed primarily by the Inuit parties, and that is not the case to date. Its success relies on credibility that can only come from it being Inuit-led. The era of casual, proponent-led and designed IQ data collection and analysis should be over for the Mary River Project; the era of proper Inuit data sovereignty and IQ management needs to begin.

2. PROBLEMATIC IMPACT CHARACTERIZATION AND SIGNIFICANCE DETERMINATION APPROACH

One of the major gaps in the SOP is the lack of actual effects characterization or defensible significance estimations.

Effects characterization typically requires consideration of multiple criteria (magnitude, duration, extent, reversibility, among others), including generic or VEC/VSEC-specific "low, moderate, and high" definitions by which each can be characterized. These are absent from the SOP.

Significance determination typically requires some sort of thresholds between significance and non-significance, either through qualitative or quantitative definitions or by identifying what mix of effects characterization findings would lead to a finding of significance (e.g., high magnitude,

local extent, medium to long-term duration, among other possibilities). These are not identified in the SOP.

Baffinland may suggest that it doesn't change much if anything from previous assessments with the new proposal, and therefore its prior predictions from the FEIS and its addendums stand. This is not a reasonable assumption, given the gaps in Baffinland's prior estimations identified by the NIRB and Inuit parties (for example, in the Phase 2 Reconsideration Report), including in the CRLU realm. The absence of a proper effects characterization and significance estimation schema, played out for each of the topics covered in the SOP, means that there is inadequate detail for the reviewers of any such proposal to work with. This substantially reduces the confidence that can be held in Baffinland's findings.

3. IMPACTS DURING OPERATIONAL FLEXIBILITY

The issue of operational flexibility will need to be examined in much more detail than it currently is in the SOP draft. There are questions about exactly how mining, transport, storage, and marine shipping could be altered under different operational flexibility scenarios that need to be considered, after which a proper assessment of differential effects during years with more mining and transport activity (and, importantly, years with more storage of ore) should be conducted. We expected clarity on this to be in the SOP and we see the concept subject to only very brief discussion.

4. IMPLEMENTATION STATUS OF PRIOR BAFFINLAND COMMITMENTS

BIMC made many commitments in the Phase 2 review and 2022 PIPR, but they have not all been implemented. A better understanding of Baffinland's view of the progress on these commitments, including if and how they will be implemented during the SOP time frame, are needed to better understand how the Proponent will advance and strengthen mitigation.

In addition, it is not always clear what Phase 2 commitments have been brought forward. For example, several gaps re: freshwater commitment "carryover" from Phase 2's water licencing process are flagged in one of QIA's Technical Comments.

C. Adaptive Management and Environmental Oversight

As was the case in 2022, Baffinland's current approach to the Mary River Project's adaptive management system continues to be inadequate.

QIA is concerned that little progress has been made since the Phase 2 Reconsideration Report stated that "the existing TEWG and MEWG have been unable to come to agreement about important components of adaptive management for the current Mary River Project, such as the

selection of Early Warning Indicators” and that the “important work of the TEWG and MEWG did not progress during the [7 years of the Phase 2] assessment.”⁷

Indeed, the SOP appears to represent a retreat in terms of the scope of commitment Baffinland demonstrates for integrating Inuit into its fledgling adaptive management system. In the Phase 2 proposal, Baffinland and QIA had agreed that both parties would be co-approvers of all Objectives, Indicators, Thresholds and Responses (OITRs) to be built into a co-authored Adaptive Management Plan. The SOP now suggests that QIA will only have approval over Inuit OITRs.

In terms of mitigation, Baffinland states in a variety of places in the SOP Application that by working with QIA, it has made considerable progress in managing effects through improved monitoring and updating control measures.

A more accurate statement at this point would be that Baffinland and Inuit parties have made some progress in designing a system to improve the identification and subsequent managing of effects through improved monitoring and updating control measures. Many elements of this system are still in the design phase; the success of these systemic improvements needs to be tested on the ground over the next couple of years before assertions can be made about its efficacy. It is not reasonable to “discount” the magnitude of likely effects from the SOP by relying on a variety of yet to be implemented or fully efficacy-tested mitigation measures; a precautionary approach must be prioritized in prediction of effects given the lessons of the past decade.

D. Atmospheric Environment Issues

Dust impacts are amongst the most problematic issues to date from the Mary River Project, exceeding original FEIS predictions in both intensity and extent.

Inuit have raised concerns about dust in all subsequent reviews and reconsiderations, and still this is a pervasive observed effect by - and concern for - Inuit. Baffinland has provided reviewers no confidence that fugitive dust emissions in excess of FEIS predictions that have been observed throughout the PIP (2018) phase and onward will be constrained. QIA also notes that dust causes impacts to the atmospheric environment, terrestrial environment, freshwater environment, marine environment, and Inuit culture, resources and land use. In addition to the immediate impacts of project-related dust on the environment and Inuit rights, QIA has serious concerns about project dustfall’s contribution to cumulative effects.

⁷ NIRB Phase 2 Reconsideration Report ([NIRB ID 339558](#)) at page x.

The SOP brings with it potential for both a temporal continuation of higher than predicted dust, noise and vibration effects, and potential increases in effects during periods where operational flexibility is in place.

QIA's comments on the SOP and proposed Amended Conditions related to atmospheric environment issues are focused on ensuring that measures to combat dust contamination are implemented accountably. This includes revisions to the terms of reference for the Dust Audit Committee, including to make the committee jointly accountable to Baffinland and QIA. QIA also seeks enhanced monitoring of dustfall including the activation of Inuit-led dustfall monitoring (as committed to in the 2022 PIPR) and modelling of predicted dustfall. Without this updated modelling it is difficult to have a complete understanding of dustfall impacts, including where dustfall impacts are likely to be highest, and what effective mitigation measures could be employed. It is important to clearly communicate dustfall exceedances observed through satellite imagery, so that these exceedances can be taken into account in the considerations of required mitigations.

Dust impacts from continued high levels of road use and potentially increased stockpiling remain a concern. There are outstanding questions about whether dust will be properly mitigated and monitored, even with a large number of new commitments from Baffinland. QIA is seeking greater clarity on Baffinland's commitments from February 2023 meetings with QIA and its response to the Dustfall Audit Committee, which are late. QIA also expects that Baffinland will commit to – or the NIRB will require – the Dustfall Audit Committee's advice moving from something that is refusible (applied "where reasonable"), to something that is more mandatory to implement and therefore more precautionary for the environment.

QIA notes that dust deposition has real-life effects on vegetation, wildlife and Inuit that are not adequately accounted for in the SOP Application. We know, for example that concentrations of metals in lichen have increased for some contaminants of potential concern (COPCs) based on 2022 data, suggesting that sustained high levels of dust may have a larger effect than predicted on caribou forage. The spatial extent of dustfall from the Project is also higher than predicted and may be affecting snow melt and having other effects at further extents from the Project. These findings are not well reflected in the SOP.

As a result of these continued high concerns about dust impacts, QIA recommends NIRB adopt a project certificate condition that requires Baffinland to develop site specific thresholds for conditions that may increase dust dispersion, and corresponding mitigations that include at minimum operational staged decreases in dust generating site activities.

E. Terrestrial Environment

Baffinland's frequent finding in its FEIS documents from past proposals that its project contributes no significant effects to major Inuit valued ecosystemic components requires greater scrutiny by NIRB. For example, in the SOP,⁸ Baffinland suggests that Inuit harvesting practices are a more significant impact on caribou populations than the Mary River Project is. This conclusion ignores the fact that Inuit harvesting and associated stewardship practices are fundamental Inuit rights, the maintenance of which is among the responsibilities of this review. This suggestion is also inconsistent with the Inuit Qaujimajatuqangit shared repeatedly during many regulatory processes related to the Mary River Project.

Going forward, Baffinland must take steps to ensure that its assessments and mitigation measures related to the terrestrial environment are consistent with Inuit Qaujimajatuqangit, and where they are not, take steps to reconcile the difference.

Given concerns raised by Inuit and western scientists throughout the Phase 2 review and through the TEWG, QIA is concerned that the zone of influence on caribou around the Mary River Project has been under-estimated, thereby under-estimating habitat loss and impacts to caribou movement. Current monitoring for caribou may be flawed in showing low numbers of caribou population, when it should be showing that caribou are avoiding the area (in other words, what is actually a loss of functioning habitat is instead being reported as an absence of caribou). Elders say that the caribou have altered their migration patterns on a broad scale to avoid the Mary River Mine, but this information has little weight in the SOP's estimation of no significant adverse effects on caribou.

The impacts to caribou from unpredicted increased dustfall and increased contaminants in lichen is also not well understood. The findings presented within the SOP application run contrary and minimize the 2022 Terrestrial Environment Mitigation and Monitoring Plan results of metal monitoring in lichen, which have shown sustained increases for lead (including exceedances of lichen lead concentration thresholds) and arsenic relative to baseline (2019-2022), and recent significant increases relative to baseline for copper, selenium, and cadmium (2022). In light of these findings, Baffinland is requested to reconsider their blanket statement regarding the absence of effects greater than predicted.

Baffinland is also requested to convene with Inuit parties and the GN after the IQ study has been completed, to collaboratively revise and finalize the caribou protection measures for the Project.

⁸ Section 6.3.2.3.

F. Freshwater Environment

As with terrestrial environment impacts, QIA does not agree with the notion proposed by Baffinland that project environmental effects do not rise to thresholds of significance. Such a conclusion is incompatible with the overwhelming weight of Inuit Qaujimagatuqangit and the lived experiences of Inuit.

Direct dust deposition onto watercourses, waterbodies and the marine environment do not appear to have specific mitigations. Mitigation plans are required to minimize the effects of dust deposition directly to the aquatic environment during freshet and avoid changes in when and at what rate the ice melts due to increased absorption of solar radiation. In addition, further work is required on whether a buffer zone should be established to protect streams along the Tote Road from applications of dust suppressants.

In relation to monitoring, QIA notes that it is possible that the distribution of dust from the Project may be of a larger enough geographic extent that it is now impacting on what was previously a reference lake that should have been too far away from the Project to be affected. This possibility needs to be investigated and if true, new reference lakes even further from the Project will need to be found. Monitoring of Tote Road stream crossing infrastructure, with annual updates on culvert remediation and fish passage constraints, should also be continued to ensure unimpeded access by juvenile Arctic char to and from their summering habitat.

G. Marine Environment

Impacts observed by Inuit to marine environment valued ecosystem components are, as with terrestrial and freshwater impacts, not consistent with Baffinland's claims for the Project to have had no significant effects. More evidence is needed to support Baffinland's claims before NIRB can assure itself that the SOP, as applied for, can be approved.

The deferral/deflecting of responsibility regarding narwhal remains a serious issue in this SOP application. The Proponent considers open-water shipping to not be a major factor driving the significant decline in narwhal abundance in Eclipse Sound. Other intervenors disagree with this assertion, and the Proponent has provided very limited evidence to support its position.

In addition, Inuit have reported impacts from shipping on ringed seals, but there do not seem to be new/updated plans for mitigation, or even admission that these impacts are happening, in the SOP. Inuit Qaujimagatuqangit on impacts to ringed seals has not been comprehensively summarized in the SOP application, and it is therefore not clear that periodic aerial surveys are sufficient to monitor the impacts experienced by harvesters.

Inuit remain very concerned about the type of ships, frequency of transits, and other shipping issues. Vessel convoys were introduced as a mitigation measure in 2022, and the Proponent plans

to continue to use convoys to the extent possible. The use of convoys may be limited, however, due to scheduling and logistical issues. Additional information on convoy logistics in 2023 and 2024 is requested so that the efficacy of this mitigation method can be properly assessed in the Project circumstances. Additional mitigation opportunities beyond convoys also need to be explored.

A small subset of vessels produce a disproportionate amount of the overall noise exposure. These vessels should be identified and phased out of the Project fleet, to further reduce narwhal exposure to noise disturbance.

In addition to black carbon emissions and climate change impacts of ships burning heavy fuel oils (HFO), this type of ship fuel is highly persistent in the environment if spilled. Ore carriers and tankers serving the Mary River Project should stop using or carrying this category of fuel to reduce potential impacts if a spill occurs.

The Spill at Sea Response Plan (SSRP) identifies the potential for tanker groundings, but information on the way such an incident would be prevented if a ship lost propulsion or steering is not provided in the SOP. No mention is made of the potential for ore carrier groundings, though this is the single greatest cause of casualties of this vessel type. More information is required on this and how groundings will be avoided and managed.

QIA is also concerned that the potential impacts of using vessels larger than Post-Panamax to ship ore from Milne Port may not be reflected in the SOP assessment.

H. Socio-Economic

Continuing to ensure that past commitments are implemented, and ongoing successes documented, is among QIA's priorities. QIA has identified several opportunities for improvements to the project terms and conditions which would lead to enhanced socio-economic effects including multiple enhanced training programs for Inuit.

I. Culture, Resources and Land Use

Baffinland's estimation of no significant effects on Inuit Culture, Resources and Land Use continues to conflict with Inuit observations of change and increased negative experiences on the land, ice and waters as a result of the Mary River Project. Inuit are the experts when it comes to observing and experiencing direct and indirect effects on culture, resources and land use. IQ is uniquely situated to be an appropriate lens through which to assess these changes. The fact that IQ is not used as the primary effects characterization and significance estimation tool for CRLU reduces the confidence that Inuit and the NIRB should have in Baffinland's estimation of effects on CRLU.

There are some notable improvements in the way Baffinland treats Inuit perspectives on culture, resources and land use in the SOP application, as well as some remaining gaps.

The Tusaqtavut studies are the most recent culture, resources and land use studies conducted in relation to the Mary River Project. They present the most recent (circa +/- 2019-2021) extensive IQ data about Project effects to date on Inuit CRLU values. The results of these Tusaqtavut studies are partially integrated into the SOP application, but Baffinland also puts provisos in place about their applicability that are not necessarily appropriate. The most important point that needs to be recognized is that the material in the Tusaqtavut studies reflects Inuit perspectives on **impacts observed after Baffinland's mitigation was applied** (i.e., residual impacts observed in the real world by Inuit) and should not be discounted as "pre-mitigation". Overall, it is strongly recommended that Baffinland temper its inclination to dismiss or otherwise attempt to diminish the observations of Inuit as reported in studies like Tusaqtavut on a move forward basis.

QIA also seeks updates from Baffinland on its approach to risk communication (there is a need to move to an Inuit-led approach on this topic for it to be likely to be successful with its target audience) and the committed-to Inuit-led dust quality monitoring program.

Submitted: June 26, 2023



Jeremiah Groves, Executive Director

QIA Technical Comments for Baffinland’s Sustaining Operations Proposal

June 26, 2023

Table of Contents

<i>General</i>	22
<i>Inuit Qaujimagatuqangit Integration</i>	25
<i>Adaptive Management</i>	34
<i>Atmospheric Environment</i>	36
<i>Terrestrial Environment</i>	58
<i>Freshwater Environment</i>	67
<i>Marine Environment and Shipping</i>	78
<i>Socio-Economics</i>	103
<i>Culture, Resources and Land Use</i>	107

I. GENERAL

Review Comment #	G-1
Subject/Topic	Cumulative environmental assessment (CEA)
References	Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.9., p. 259-260 of 922; section 6.9.1, p. 260 of 922; section 6.9.2, Table 6.33, p. 261 of 922
Summary	Development of the Approved Mary River Project, which would export iron ore south via Steensby Inlet, is a reasonably foreseeable development and likely to contribute to cumulative effects. It is not clear how potential future impacts of the currently approved Mary River Project were considered in the SOP cumulative effects assessment.
Importance of issue to the impact assessment process	The Approved Project would share infrastructure with the SOP and extract iron ore from the same mine. It will contribute to future cumulative effects that the SOP should factor into its CEA. It is not clear that future impacts from the construction and operation of the Approved Project have been factored into the SOP CEA.
Detailed review Comments	<p><i>"Table 6.33 Screening of Other Projects and Activities with the Potential to Interact Cumulatively with the Mary River Project (including the PIP and SOP)"</i> considers existing impacts of the Mary River Approved Project from 2012 to 2022 (SOP s.6.9.2, Table 6.33, p. 261 of 922). However, the table makes no mention of future interactions with the Approved Project. Elsewhere in the SOP Baffinland states <i>"...this CEA assumes potential temporal overlap with construction and operation with the previously approved southern railway and Steensby Port."</i> (SOP s.6.9.1, p. 260 of 922). It is not clear how this assumption was factored into the CEA.</p> <p>The Approved Project is adjacent to the SOP and will share infrastructure, including the Mary River Mine, from which it plans to extract up to 18 MT of iron ore annually for shipment via the southern rail route to a port at Steensby Inlet. This amount is in addition to ore</p>

	<p>that would be extracted from the mine and exported annually via the Tote Road and port at Milne Inlet under the ERP (4.2 Mtpa) or SOP proposal if approved (6 Mtpa). Baffinland continues to augment its baseline studies for the Approved Project and has expressed its intentions to construct Steensby Port and the southern railway this decade. This is well within the temporal boundaries of the CEA, which extend from ca. 1970 to 2045 (SOP s.6.9., p. 259-260 of 922). In addition, as it has been previously approved, all physical works and activities associated with Steensby rail, port and southern shipping are by definition “reasonably foreseeable” and must be integrated into any cumulative effects assessment.</p>
<p>Recommendation/ Request</p>	<p>a. Baffinland to clarify whether and, if so, how and where foreseeable future construction and operation of the Approved Project have contributed to the SOP cumulative effects assessment, particularly activities related to linear developments (road, rail), transportation (air, ground, marine), and mining (blasting, crushing, loading).</p> <p>b. If the southern portion of the Approved Project was not integrated into the SOP cumulative effects assessment, Baffinland should re-conduct this exercise.</p>

<p>Review Comment #</p>	<p>G-2</p>
<p>Subject/Topic</p>	<p>Truck traffic</p>
<p>References</p>	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.1.1, Table. 6.2, p. 125 of 922; section 6.4.2.1; section 6.4.5, Table 6.15, p. 183 of 922; section 6.9.2, Table 6.33, p. 261 of 922</p>
<p>Summary</p>	<p>Increased truck traffic along the tote road has been identified as having potential SOP interaction with airborne emissions and applicable to the water quality and freshwater biota VECs. Clarification is required of the potential for increases in trucking traffic (all types) on the existing roads, from the SOP and activities related to construction of the approved southern route, and related impacts from factors such as dust mobilization, disturbances (sight, sound, smell), and accidents (e.g., wildlife mortalities, spills, collisions).</p>

Importance of issue to the impact assessment process	The future magnitude of trucking using existing Project roads is uncertain. Further information is needed to assess the trucking impact predications.
Detailed review Comments	As the SOP notes, trucking is associated with impacts to the atmospheric, terrestrial, freshwater, and human environments (s.6.1.1, Table. 6.2, p. 125 of 922). Traffic volumes for the SOP are expected to continue at a daily average of 118 daily round trips. However, increased truck traffic along the Tote Road has been identified as having potential SOP interactions with airborne emissions that affect water quality and freshwater biota VECs (s.6.4.5, Table 6.15, p. 183 of 922). It is not clear whether increases in trucking may occur on existing Project roads related to the SOP and/or overlap of activities related to construction of the approved southern route. The cumulative effects assessment only considered the potential cumulative effects of the approved FEIS up to 2022 (SOP s.6.9.2, Table 6.33, p. 261 of 922). This leads to uncertainty with respect to the impact predictions related to SOP trucking.
Recommendation/ Request	Baffinland to clarify: a. What additional trucking is required under this proposal. b. What additional trucking may occur at Milne Port, along the Tote Road and at the Mine Site related to construction of the southern route or other activities (e.g., exploration) during the next 5 years. c. What cumulative effects are predicted from the combined traffic in terms of disturbance, dustfall and contaminants, animal mortalities, and accident risk.

II. INUIT QAUJIMAJATUQANGIT INTEGRATION

Review Comment #	IQ-1
Subject/Topic	Data Sovereignty Agreement
References	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. pgs.35-49 of 922, 145-162 of 922.</p> <p>Baffinland Iron Mines Corporation (Baffinland). 2023. Inuit Qaujimajatuqangit Framework Mary River Project (Draft).</p> <p>Inuit Tapiriit Kanatami. (ITK) 2018. National Inuit strategy on research: implementation plan. ITK, Ottawa, Ont., Canada.</p>
Summary	<p>In the SOP application materials, it has been noted that Baffinland’s operations and environmental management have been shaped by IQ and community feedback relating to the 6 Mtpa activities. It is stated that Baffinland will not publicize any IQ data or information without obtaining an agreement for its use from both the contributor and the QIA. However, as QIA and Baffinland begin to co-develop an adaptive management framework and the Inuit Stewardship Plan which will increase the amount of IQ data collection and use, there are concerns with how IQ may be used by Baffinland. Further, “informal IQ collection” and integration by Baffinland presents concerns regarding power dynamics, the validity of IQ collected, and how Baffinland may interpret and use this information. Therefore, a recommendation is made to ensure QIA and Inuit ownership of IQ used for the Project. This would include the creation and signing of a Data Sovereignty Agreement with QIA.</p>
Importance of issue to the impact assessment process	<p>Inuit Qaujimajatuqangit (IQ), as defined by Baffinland, as a reflection of Inuit knowledge encompassing information about relationships, mortality, core values, worldviews and environmental knowledge. Baffinland has developed an initial IQ Management Framework that encourages collaboration and decision-making throughout the Project’s lifespan. It is important that information is not actively</p>

	<p>collected and publicized without agreement being obtained from QIA and communities to ensure IQ is being used respectfully. Ensuring Inuit access, ownership, and control over data and information gathered on population, wildlife, and environment is key to achieving Inuit self-determination in research (ITK, 2018). A Data Sovereignty Agreement that outlines data use, access, and ownership, as well as any restrictions, should be finalized between QIA and Baffinland. This agreement would formalize a process for IQ permitting and use by Baffinland to help ensure the valid and respectful application of IQ preventing misuse or misappropriation.</p>
Detailed review Comments	<p>Currently, there is no formal agreement or process in place establishing how IQ is collected and used by Baffinland. Baffinland has developed an initial IQ Management Framework which demonstrates Baffinland’s understanding of the value of IQ and a level of commitment to protecting its use. For example, it is stated in the IQ Management Framework that “Baffinland will not publicize any IQ data or information without obtaining an agreement for its use from both the contributor and the QIA (Article 16.3.4)”, and “Baffinland will not include sensitive information such as, but not limited to, the locations of sacred or spiritual sites, and heritage and burial sites, in any written reports or disclose the information under any circumstances except to QIA”. However, these commitments, while appreciated, are not currently subject to any agreed upon enforcement mechanisms, and there are many other considerations for the protection and respectful application of IQ.</p> <p>For example, Baffinland engages in what it calls “informal IQ integration”, which is “IQ provided by Inuit community members to Baffinland through ongoing engagement activities, participation in monitoring programs or other initiatives not conducted under an NRI licence.” This informal IQ integration presents many issues, including whether Inuit are receiving free, prior and informed consent before data is being gathered. Further, there are concerns that a power dynamic may be at play when IQ is being collected from community members or Inuit staff, where Baffinland may exert a level of influence, knowingly or unknowingly, over responses which may damage the validity of the IQ provided. In addition, “informal IQ integration” may not be subject to appropriate verification mechanisms by Inuit.</p>

	<p>Importantly, “Baffinland has agreed to resource QIA to develop and administer an Inuit Committee as part of the development and implementation of the Inuit Stewardship Plan (ISP), which includes a Culture, Resource and Land Use Monitoring (CRLU) Program”. The ISP represents a huge opportunity to close the credibility gap, where IQ is considered equal to western science, rather than just for validation of impact predictions. With this more consistent application of IQ in Project decision-making, there becomes a greater need to establish the guidelines and restrictions for doing so.</p> <p>For example, a clause included in the Data Sovereignty Agreement could be to establish the Inuit Committee with the responsibility of providing oversight of IQ use for the Project, ensuring that IQ is being used accurately and respectfully.</p>
<p>Recommendation/ Request</p>	<p>The Project Certificate be amended with a new term, “The Proponent shall sign a legally binding Data Sovereignty Agreement with QIA to ensure the protection, oversight, and Inuit ownership and control of Inuit Qaujimajatuqangit (IQ) used for the Mary River Project. The Data Sovereignty Agreement shall include, but not be limited to, provisions regarding ownership and control, informed consent, data protection and security, governance and oversight, and dispute resolution. This agreement will include considerations for how IQ is used with respect to the Inuit Stewardship Plan and Adaptive Management Framework.”</p>

<p>Review Comment #</p>	<p>IQ-2</p>
<p>Subject/Topic</p>	<p>Integration of IQ and Inuit Inputs into effects characterization and significance estimation</p>
<p>References</p>	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal (SOP). NIRB File No.08MN053. Section 3.1.1 (Inuit Qaujimajatuqangit), pg. 48 of 922; Section 6.1.2 (Reconciling Significance Criteria with Inuit Experience), pgs. 126-127 of 922; Table 6.3, pgs. 129-131 of 922; Table 6.10, pg. 157 of 922; among others</p>
<p>Summary</p>	<p>Inuit perspectives on significance of effects continue to not be included in the assessment. Baffinland suggests that for the first time in any of its assessments of the Mary River Project “that the significance</p>

	<p>evaluation process explicitly considers community views” (pg. 127 of 922). QIA still considers there to be substantial gaps in this consideration, as well as gaps in the effects characterization process itself – namely, the absence of a formal effects characterization process evident in the SOP Application.</p>
<p>Importance of issue to the impact assessment process</p>	<p>Inuit perspectives and Inuit Qaujimajatuqangit (IQ) does need to be explicitly integrated into any assessment of the Mary River Project. Baffinland recognizes that it has failed to do so adequately in the past and that is a starting point. However, the SOP Application materials do not show compelling consideration of Inuit perspectives and IQ in the effects characterization or significance estimation process, and this results in another assessment that underestimates total Project Case impact loading experienced – and likely to be experienced - by Inuit and the resources they rely on.</p>
<p>Detailed review Comments</p>	<p>QIA applauds Baffinland’s recognition that it has not adequately considered Inuit perspectives and IQ in prior effects characterization and significance estimation processes for previous iterations of the Mary River Project. Baffinland states that in the SOP, for the first time, “that the significance evaluation process explicitly considers community views (including on sensitivity to change and views on actual observed changes or risks of change)... in the final significance conclusions” (pg. 127 of 922). Baffinland also notes that IQ is particularly important in “ determining the accuracy of impact predictions” (pg. 48 of 922).</p> <p>Despite this, it is not clear in the SOP that Baffinland has included verified Inuit perspectives on the magnitude, duration, distribution, and overall significance of impacts in its significance determination in the SOP. While Baffinland has provided a synopsis of Inuit perspectives in the VEC and VSEC-specific review sections, Baffinland does not actually demonstrate how IQ influenced the significance determinations for any of these VECs or VSECs or show that these findings of significance have been verified or refuted by Inuit. Baffinland’s ultimate finding, that there are no significant adverse effects on any VSECs or VECs in the Project Case, has been refuted by Inuit, QIA, and other parties in the past; despite this, there is no meaningful change in the effects characterization or significance determinations by Baffinland.</p> <p>IQ shouldn't be treated as a test of the Proponent's accuracy, but as a standalone source of knowledge that receives equal consideration in the effects characterization and significance determination process itself.</p>

QIA also notes that the SOP Application materials almost totally lack actual effects characterization or defensible significance estimations. Effects characterization typically requires consideration of multiple effects characterization criteria (magnitude, duration, extent, reversibility, among others), including generic or VEC/VSEC-specific “low, moderate, and high” definitions by which each can be characterized. These are absent from the SOP. Referring reviewers back to prior assessments is not appropriate; the SOP has to be assessed on its own merits in light of the information of today.

Significance determination typically requires some sort of thresholds between significance and non-significance, either through qualitative or quantitative definitions or by identifying what mix of effects characterization findings would lead to a finding of significance (e.g., high magnitude, local extent, medium to long-term duration, among other possibilities). Those should be identified in the SOP; they are not. Instead, in Section 7, Baffinland refers to NuPPAA significance criteria at the global, whole of project level only. This is not adequate for the purposes of an environmental assessment. In addition, QIA notes that no mention is made of integration of Inuit perspectives or IQ into this Section 7 table, except a broad statement that “Baffinland has taken into consideration community comments share directly from the communities” (pg. 281 of 922). This is hardly evidence that Baffinland took Inuit perspectives seriously in its effects characterization and significance determination process.

The almost total absence of effects characterization and significance estimation materials means there doesn’t seem to be an assessment behind this assessment. Baffinland may suggest that it doesn’t change much if anything from previous assessments with the new proposal, and therefore its prior predictions from the FEIS and its (many now) addendums stand. However, this is not a reasonable assumption, given the lack of credibility of Baffinland’s prior estimations identified by the NIRB and Inuit parties, including in the CRLU realm. The absence of a proper effects characterization and significance estimation schema, played out for each of the topics covered in the SOP, means that there is inadequate detail for the reviewers to work with.

In the end, Baffinland continues to identify all VSEC’s and VEC’s as having “no [adverse] significance” in regard to residual effects. No

	tables or formulas were included in the Environmental Review section of the SOP on how Baffinland came to the significance determinations for each VEC. Without more detail on what lies behind these estimations, it is difficult to understand the determination process or distinguish whether or how Baffinland engaged Inuit communities meaningfully on significance determination for this SOP.
Recommendation/ Request	<p>Baffinland to:</p> <ol style="list-style-type: none"> a. Provide evidence of how it integrated Inuit perspectives and IQ into actual effects characterization and significance determination for the SOP Application materials, including verification exercises with Inuit on effects characterization and significance determination. b. Provide a supplemental submission with effects characterization tables for each VC and VSEC, and significance thresholds/definitions for each.

Review Comment #	IQ-3
Subject/Topic	Respectful integration of IQ into SOP assessment
References	Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal (SOP). NIRB File No.08MN053. Section 3.1.1 (Inuit Qaujimagajatuqangit); Section 6.3.8 Plain Language Summary of Conclusions, pg. 175 of 922.
Summary	Overall, the SOP does not introduce extensive new IQ. It relies on Inuit Tusaqtavut studies in an extensive (and partially but not always respectful) way. In relation to IQ, Baffinland continues to make assertions re: both measured and predicted impacts that are not supported by Inuit observations, and IQ-related observations are treated as secondary to Baffinland’s scientific analyses and predictions.
Importance of issue to the impact assessment process	QIA remains concerned that Baffinland undervalues and underestimates the implications of Inuit-reported observations of impacts in the SOP, an issue that plagued the Phase 2 assessment and continues to undermine the confidence that can be placed in Baffinland’s estimations of effects because they are not verified by Inuit and do not match Inuit observations of the environment.
Detailed review Comments	Baffinland shows positive signs of more respectful treatment of Inuit inputs in the SOP application than previous assessments and reconsiderations of the Mary River Project. Community concerns seem to be dealt with in a more serious fashion. Each of the Valued

Component sections includes unvarnished (if selective) IQ statements from Inuit, tied to a broad spectrum of potential (and already existing) adverse impacts from the Project.

In the SOP, Baffinland does a credible job of surfacing NIRB Phase 2 and Production Increase Proposal findings related to existing and likely future project effects, and how Inuit findings and observations differ from Baffinland's predictions. So, there is some improvement there.

That said, while Baffinland "recognizes" the NIRB Phase 2 findings around issues like major differences between Baffinland predictions and monitoring results and Inuit observations and experiences of change, Baffinland does not endorse or agree with – or make credible efforts to explain away – those findings. What that leaves us with is an SOP that in places effectively disagrees or attempts to explain away prior NIRB findings, and an SOP where none of the VEC/VSEC effects predictions change from prior directionality to match Inuit and NIRB findings. To be clear, the SOP predicts all adverse impacts are still considered to be 'not significant'. This will be of high concern to QIA and Inuit parties who have presented credible evidence to the contrary.

Baffinland also continues to exhibit a "tiering" of western science above IQ and Inuit observations in the SOP. The SOP characterizes scientific findings as evidence or observations, while characterizing Inuit information as "perceptions". For example, at pg. 175 of 922, Baffinland suggests that "Direct effects of the Project on the terrestrial environment are expected but are limited to the footprint areas adjacent to the Project's infrastructure. As a result, effects on the Terrestrial Environment are predicted to improve and become less significant than currently perceived by community members."

In contrast, Inuit – and scientific evidence - have reported impact loading from dust is actually higher and across a wider area than the Project footprint. In addition, Inuit observations and IQ hold that caribou are avoiding the mine site at a much broader range than the footprint area. Baffinland's scientific data is relied upon in suggesting a relatively small zone of influence, even though it is contrary to Inuit predictions that the project is impacting at a regional level on caribou.

	<p>And QIA notes the coded language of Inuit “perceptions” used in this and other statements in the SOP application materials.</p> <p>Similar evidence of this higher “tiering” of western science collected by and for Baffinland over Inuit observations and findings is found for example in Section 6.5.4: “Baffinland has learned through IQ that narwhal are particularly sensitive to noise and that they will react to Project vessels, hunting vessels, and other noise sources (Remnant and Thomas 1992; Stewart et al. 1995; Fugal and Laing 2011; ERM 2019; QIA 2018; 2019, 2021). This is contrary to the range and duration of narwhal reaction recorded during Baffinland’s monitoring programs.”</p> <p>In relation to narwhal, Baffinland states that IQ observations are “contrary” to science. Baffinland finds ultimately that impacts on the marine environment, including narwhal, are expected to be of “low magnitude and not significant” (pg. 218 of 922). The examples go on and on. Where Baffinland’s science and IQ disagree, Baffinland politely acknowledges and then dismisses the IQ and embraces its science.</p> <p>Overall, the way that scientific predictions and findings are framed still differs in the SOP from the way IQ observations and experiences are framed. Inuit experienced impacts (e.g., from dust) are still framed as “potential interaction and/or conflict with” (pg. 125 of 922) Inuit use of lands and resources, rather than “reduced or otherwise negatively altered conditions for Inuit use of lands and resources”. Inuit “perceive” impacts in the SOP, while science “measures” impacts. The language used reflects IQ still being treated as a lesser form of knowledge; a less valuable input.</p>
Recommendation/ Request	<ol style="list-style-type: none">a. The NIRB take into careful consideration gaps between Baffinland’s scientific analyses predictions and Inuit observations when determining the significance of residual effects from the SOP.b. Baffinland commit to engaging Inuit more directly in the conduct of actual effects characterization and significance determination in relation to the SOP and any future assessments or reconsiderations related to the Mary River Project.

Review Comment #	IQ-4
Subject/Topic	Baffinland’s proposed IQ Management Framework
References	Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal (SOP). NIRB File No.08MN053. Section 3.1.3, IQ Management Framework; Table E-1, Commitments Carried Forward from Phase 2 Assessment, pg. 436/922, SOP ID#88
Summary	Baffinland has drafted a proposed IQ Management Framework for the Mary River Project. QIA holds that the appropriate drafters of any IQ Management Framework are Inuit parties.
Importance of issue to the impact assessment process	Respectful integration of IQ into not only NIRB’s process but everyday planning, monitoring and management of the Mary River Project is essential. Baffinland’s IQ Management Framework has yet to be endorsed by Inuit and may well not be endorsed by Inuit, and therefore its existence should not be considered evidence that IQ is being respectfully or adequately integrated into the Mary River Project as yet.
Detailed review Comments	<p>SOP Commitment ID#88 holds that “Baffinland will work with QIA and the impacted communities to develop a final IQ Management Framework, subject to co-approval of QIA and the impacted communities. If the communities agree, their approval could be facilitated through the Inuit Committee for the Mary River Project.”</p> <p>The management and control of IQ will become even more important as more of it is used in Project assessment, planning, management, and monitoring.</p> <p>The Baffinland IQ Framework drafted by Baffinland has not been verified or endorsed by QIA or the Inuit communities, nor has this necessary verification or endorsement process been scheduled.</p> <p>Overall, QIA suggests that the development of a functioning IQ Management Framework can only be accomplished by Inuit, for Inuit, rather than seeing the adoption of a Baffinland-drafted IQ Framework by Inuit.</p>

Recommendation/ Request	Baffinland commit to fund the Inuit parties, including QIA to develop an IQ Framework for the Mary River Project, rather than this being a Baffinland-led enterprise.
------------------------------------	---

III. ADAPTIVE MANAGEMENT

Review Comment #	AM-1
Subject/Topic	Adaptive Management OITR Approvals
References	<p>Baffinland Iron Mines Corporation (Baffinland). 2020. Inuit Certainty Agreement. Schedule 2, pgs. 42-55 of 176; Schedule 6, pgs. 90-100 of 176</p> <p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. Appendix D, pg. 102 of 922.</p> <p>Nunavut Impact Review Board. 2022. NIRB Project Certificate [NO. :005]. Appendix B: QIA ID#7.</p>
Summary	<p>According to Appendix B in the Project Certificate, QIA only approves <u>Inuit</u> Objective, Indicators, Actions and Responses (OITRs). Given the impacts predicted in the past environmental assessment may no longer apply to the current project, a recommendation should be made that ensures a joint approval for all OITRs – as was confirmed in the Inuit Certainty Agreement (ICA) for Phase 2.</p>
Importance of issue to the impact assessment process	<p>The Adaptive Management Plan provides a transparent framework for operational decision-making in the Project, with the objective of mitigating impacts on Inuit and the environment by adhering to the Precautionary Principle. Considering that all Project impacts are felt by Inuit, regardless of whether they are identified through an Inuit or non-Inuit epistemic system, it is crucial that QIA has approval authority over all OITRs.</p> <p>By granting QIA approval for both Inuit and non-Inuit OITRs, the Adaptive Management Framework can better align with QIA’s expectations for preventing and mitigating impacts. Failing to secure QIA approval for non-Inuit OITRs could result in conflicting</p>

	<p>epistemologies, undermining the spirit of Two-Eyed Seeing, which seeks to harmonize different ways of knowing. Given that an environmental assessment has not been completed for prolonged production levels of 6 MT, a precautionary approach that ensures Inuit perspectives are weaved into the OITR framework is necessary.</p> <p>Therefore, ensuring QIA’s involvement in the approval process for all OITRs fosters collaboration, inclusivity, and a shared commitment to mitigating impacts in a manner that respects both Inuit knowledge systems and western science. It enhances the potential for synergistic outcomes and reinforces the principle of Two-Eyed Seeing, benefiting both the Project and the well-being of Inuit and the environment.</p>
<p>Detailed review Comments</p>	<p>The ICA states in 2.1.2, “QIA and Baffinland will jointly develop and approve objectives, indicators, thresholds, and response requirements for all adaptive management plans included in the Adaptive Management Plan.” QIA and Baffinland have previously agreed that all OITRs will be jointly approved.</p> <p>However, in the SOP Baffinland states the PIPR commitment: “QIA and Baffinland to jointly develop and approve, by April 2024, the adaptive management elements for monitoring programs and <u>Inuit</u> Objectives, Indicators, Thresholds and Responses for the Adaptive Management Plan related to narwhal, seal, Arctic char, caribou, dust and culture, resource and land use.”</p> <p>A clear commitment to include QIA’s approval of both Inuit and non-Inuit OITRs will help ensure a better aligned adaptive management framework and less conflicts between the Parties while implementing the framework.</p>
<p>Recommendation/ Request</p>	<p>The Project Certificate be amended to include the following term and condition:</p> <p>“QIA and Baffinland to jointly develop and approve the adaptive management elements for monitoring programs, including both Inuit and non-Inuit Objectives, Indicators, Thresholds and Responses for the Adaptive Management Plan.”</p>

IV. ATMOSPHERIC ENVIRONMENT

Review Comment #	AE-1
Subject/Topic	Establish GHG emissions targets for 2030; implement clean energy technology and purchase Nunavut-based carbon offsets to achieve targets
References	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. pg.119-144 of 922.</p> <p>Baffinland Iron Mines Corporation (Baffinland). 2023. Baffinland’s Climate Change Strategy (2023-2028).</p> <p>Government of Canada. 2023, January 27. Net-Zero Emissions by 2050. Government of Canada. https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/net-zero-emissions-2050.html</p>
Summary	<p>Mining companies across Canada have begun committing to net-zero plans for transitioning off fossil fuels (e.g., Agnico Eagle) and are implementing clean energy technology (e.g., Voisey’s Bay Wind Energy Project). Ambitious projects are occurring in Nunavut like Sabina’s Back River Project Energy Centre which will reduce annual fuel consumption by approximately 50%. Baffinland has committed to climate monitoring, studies and tracking its GHG emissions in the current Project Certificate. It has also committed to “exploring and implementing concrete steps to reduce greenhouse gases”. However, in its Climate Change Strategy, Baffinland has not yet committed to implementing clean energy technology or to any GHG reductions for that matter. An amended Term 3 in the Project Certificate could require the development of a plan for transitioning to renewable energy with concrete GHG emissions targets established for 2030. This could also include purchasing carbon offsets from Inuit organizations that are conserving lands and waters in Nunavut, where possible. An additional project certificate requirement would be for collaboration with QIA and incorporation of Inuit Qaujimajatuqangit while considering options to ensure proper siting, installation and</p>

	<p>operation of renewable technologies do not interfere with wildlife and Inuit harvesting.</p>
<p>Importance of issue to the impact assessment process</p>	<p>The earth has warmed approximately 1°C in the last 150 years. The Arctic is warming faster than anywhere else on earth, with warming rates in Nunavut being approximately triple the global effort, or 3°C. Inuit are already observing changes leading to significant shifts in permafrost levels, snow cover, sea ice, and the ranges of plant and animal species. This has tangible impacts on Inuit culture and well-being. There is a desire among Nunavummiut to transition off diesel energy production toward an Inuit energy independent future with clean energy technology. Further, Inuit organizations in Nunavut are engaged in the important work of establishing conservation areas. These areas can offset GHG emissions by protecting carbon stored in natural ecosystems thereby avoiding future emissions or actively removing GHGs from the atmosphere through restoration of degraded ecosystems. These activities can generate carbon credits in the voluntary carbon market.</p> <p>As production levels increase, Baffinland should make a firm commitment to reduce its carbon footprint, as it already contributes significantly to Nunavut’s footprint. The Government of Canada has issued the 2030 Emissions Reduction Plan to reduce emissions by 40% below 2005 levels by 2030 and a net-zero emissions goal by 2050. Despite Baffinland’s commitment to work towards reducing GHG emissions (i.e., Term 3 in the Project Certificate), according to the SOP, GHG produced by the Project increased by 36% between 2015 and 2021. To achieve net-zero emissions by 2050 as per the 2030 Emissions Reduction Plan and contribute to the transition of diesel energy production in Nunavut, Baffinland must establish concrete GHG reduction targets and implement renewable energy technology and/or purchase carbon offsets to achieve these.</p>
<p>Detailed Review Comments</p>	<p>The SOP acknowledges that, “GHG emissions of the Mary River Project as assessed initially in the EIS represent a significant increase compared to Nunavut levels at the time of the assessment” but states the emissions are small when compared to national emissions. However, Nunavummiut are concerned with reducing GHGs in Nunavut. Inuit are working to transition off diesel both for the practical benefit of reducing emissions but also as a symbolic and</p>

	<p>encouraging effort at a global stage to minimize any contribution to global climate change despite the challenges to do so in Nunavut.</p> <p>Baffinland states they are "researching the potential for renewable energy sources, and where possible, implementing these sources to off-set fuel requirements and reduce GHG emissions" as part of the activities that are "designed to support the implementation of the adaptive management plan". QIA understands that Baffinland is researching the viability of alternative energy sources and considering their application at the Mary River Project, as well as the return on investment. However, elsewhere in Nunavut these technologies are being actively implemented demonstrating their technical and financial feasibility. Sabina's Back River Project Energy Centre has received NIRB approval and will reduce GHG emissions from the project by approximately 50%. Further, Baffinland may be motivated by the co-benefits that arise from installing these technologies, including an opportunity to train Inuit technicians on installation, operations, and maintenance to build capacity for decarbonizing in communities.</p>
<p>Recommendation/ Request</p>	<p>Term and Condition 3 be modified to include the following language: "The Proponent shall establish GHG emissions reduction targets for 2030 by May 2024 and will implement clean energy technology – given proper permits are acquired – and purchase Nunavut-based carbon offsets, where applicable, to achieve targets. The Proponent progress to achieving the established GHG emission reduction targets will be monitored and enforced through the Adaptive Management Framework."</p> <p>Term and Condition 4 be modified to include the following language: "The Proponent shall consult with QIA and HTOs to incorporate Inuit Qaujimajatuqangit into any design plans ensuring proper siting, installation and operation of renewable energy sources in order to prevent and minimize impacts on Inuit harvesting."</p>

<p>Review Comment #</p>	<p>AE-2</p>
<p>Subject/Topic</p>	<p>Appendix 7 does not reflect discussions on the PIPR commitments with QIA during February 2023</p>

<p>References</p>	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 4.2, pg. 91 of 922; section 6.2.6.3; appendix 7, pgs. 633-664 of 922</p>
<p>Summary</p>	<p>The dustfall issues brought up by QIA and the associated commitments made by BIMC during February 2023 meetings related to the PIPR are essential in addressing concerns related to the impacts of dustfall on the environment. The list of additional/new terms and conditions, and commitments provided in section 6.2.6.3 (New Mitigations and Monitoring Since 2022) are not reflective of discussions on the PIPR commitments between QIA and BIMC during the February 2023 meetings. These commitments must be filed with NIRB.</p>
<p>Importance of issue to the impact assessment process</p>	<p>The SOP needs to incorporate commitments made by BIMC to QIA related to updates and changes to mitigations, management, and monitoring plans as noted in the February 2023 meetings in order to address QIA’s on-going concerns on dustfall impacts from the Mary River Project. Without these commitments being included formally within the SOP, BIMC may continue to delay implementing them and dustfall impacts could continue at levels unacceptable to Inuit.</p>
<p>Detailed review Comments</p>	<p>During meetings on dustfall mitigations and monitoring held between QIA and BIMC in February 2023, BIMC made commitments to address QIA’s concerns related to the impacts of dustfall produced at the Mary River Mine and the shortcomings of existing mitigation, management and monitoring plans. However, various sections of the SOP do not reflect this content. Section 4.2 (Mitigation) of the SOP notes that “Because no significant changes are proposed here to the activities carried out between 2018 and 2022, existing mitigation, management, and monitoring plans (inclusive of the 2022 updates) should continue to be sufficient to address concerns regarding potential environmental effects.” (PDF pg. 91 of 922). Within section 6.2.6.3 (New Mitigations and Monitoring Since 2022) of the SOP, BIMC lists new terms and conditions and commitments made since 2022 related to dustfall, but the list does not include relevant updates on the PIPR commitments between QIA and BIMC during the February 2023 meetings. Appendix 7 of the SOP report, which similarly lists PIPR commitments, does not reflect the additional commitments or timeframes identified during the February 2023 meetings.</p> <p>Without clear wording within the SOP and relevant appendices that these commitments made during 2023 will be followed through, QIA is</p>

	<p>concerned that the existing mitigation, management, and monitoring plans will not be sufficient to address concerns related to environmental impacts of dustfall. QIA is also concerned that many of these commitments are now behind schedule.</p>
Recommendation/ Request	<p>Baffinland to confirm each of the following commitments on dustfall on the NIRB record, made in dialogue with QIA in February 2023, and provide revised timelines for each of the commitments that are behind schedule:</p> <p>Updates and Additional Commitments for 18A and 18B from February 2023:</p> <ul style="list-style-type: none">• Baffinland committed to looking at a process for recording wind speed, visual information on dust travelling, thresholds, monitoring options and recommendations from the dust audit and providing a write up of this to QIA by April 15th. This will include items related to enclosing the crusher area, etc., including timelines for procurement of materials• By April 15th, Baffinland committed to providing a list of operational mitigations that can be implemented during high risk days and that it include the feasibility of each operational item. Baffinland to provide information on the number of down days there can be for their crushers.• Baffinland committed to setting up video monitoring to compare dust amounts during different conditions.• Baffinland committed to undertaking a literature search on dust thresholds and mitigations.• Baffinland to confirm whether there was discussion on spraying dust suppressants (particularly the newly proposed one) during the dust audit meetings, and provide information on any relevant chronic toxicity testing for the levels of proposed suppressants which will discharge into the marine environment, noting that QIA specifically requested that the chronic toxicity testing should be done with appropriate marine species.• Baffinland committed to developing high risk thresholds for dust by the end of 2023. QIA expects this will include information on what data is collected for these thresholds (e.g. wind speed, direction, precipitation).• Baffinland to provide name of the unnamed dust suppressant by April 15th. <p>Additional Commitments for to 19A from February 2023: BIMC to confirm changes to application of dustblockr, provide feedback on optimizing the amount of watering and road maintenance that is</p>

possible, researching viability of applying water to supplement the use of dustblockr. These tasks are to be completed by April 15th

Additional Commitments for 19B from February 2023:

BIMC to review and share SDS for dustblockr. BIMC to provide update on blends of dustblockr that will be used. BIMC to discuss with GN on using suppressants on roadways.

Additional Commitments related to 19C from February 2023:

In the bi-annual report BIMC to provide the quantity and frequency of dust suppressants used.

Commitment 20A: No additional commitments

Updates and Additional Commitments for 20B, 20C and 20D from February 2023:

- BIMC is undertaking a feasibility study of the wind fencing, which will be released by April 15th. BIMC stated that this wind fence is not looking very feasible, and they are looking at other options.
- BIMC noted that one of the alternatives to the wind fencing is applying a spray product to the ore when it come out of the crusher to reduce dust.

Updates and Additional Commitments for 20E and 20F from February 2023:

- BIMC to develop thresholds for shutting down the crusher then shut down with front end loaders.
- BIMC to provide map of their meteorological stations in the April 15th report.

Updates and Additional Commitments for 21A from February 2023:

- Baffinland committed to providing dustfall isopleth modelling across different seasons (i.e., frozen and unfrozen) and annually.
- Baffinland committed to continuing to check whether monitoring data lines up with the models.
- QIA stated that active air quality monitoring sites should be included within the dustfall monitoring program. QIA would want to see a transect of the active sampling up/down wind of the sites (i.e. 2 at the mine and 2 at the port). These active samples would need to be paired with passive samplers.

- BIMC agreed to share updated isopleth modelling (by early/mid March).
- BIMC committed to looking into site-wide active air quality monitoring and agreed to provide an update on proposed active monitoring stations on April 15th

Updates and Additional Commitments for 21B from February 2023:

- Baffinland asked whether the snow sampling done by HESL/QIA could be updated to align more with some of BIMCs programs.
 - HESL/QIA to take dissolved metal measurements and compare to federal guidelines. HESL/QIA noted that the visual impact of dust on the snow is what translates to impact to traditional activities on the land.
- HESL/QIA to share draft of communications to communities on snow sampling results.
- Baffinland to have a snow sampling program in spring 2023 and fund ISP.

Updates and Additional Commitments for 21C from February 2023:

- QIA committed to providing a list of areas of community concern. Baffinland committed to reviewing this list for feasibility.

Update for 21D from February 2023:

- BIMC to include the results of their memo on how they will compare monitored results with FEIS predictions in their 2022 reporting.

Updates and Additional Commitments for 21E from February 2023:

- Baffinland will update their isopleth modelling, add active air quality sampling locations, look for a correlation between the active air sampling and passive dustfall monitoring. Once the extent of dust and additional monitoring locations are planned, Baffinland will overlay areas of community concern and see if there are any areas left over that should have monitoring in place and fill that gap.
- Baffinland is planning on extending their snow sampling to validate the satellite imagery to locations that do not have passive samplers. Baffinland committed to reporting back to QIA on how their validation process is going.

	<p>Updates and Additional Commitments for 21F from February 2023:</p> <ul style="list-style-type: none">• See 21B <p>Updates and Additional Commitments for 21G from February 2023:</p> <ul style="list-style-type: none">• Baffinland committed to considering the NRCAN passive dustfall monitors at these locations and will continue to use satellite imagery in the interim.• QIA noted that snow cores could be taken at these distant locations. BIMC said they could try to address this through their snow sampling program. <p>Update for 21H from February 2023: N/A</p> <p>Update for 21I from February 2023:</p> <ul style="list-style-type: none">• Captured under 21A <p>Updates, Clarifications, and Additional Commitments for 21J from February 2023:</p> <ul style="list-style-type: none">• QIA noted that after the updated isopleth modeling is completed they would want to see monitoring in place at areas that have longer term dustfall effects.• There was discussion on using the updated modelling and satellite imagery to determine areas of dust accumulation, then having BIMC personnel go out and identify these areas on the ground and then do monitoring during the freshet.• BIMC committed to having a draft of an action plan on this and share it with QIA. Once QIA has provided feedback BIMC will have 30 days to circulate the final plan and action the activities. Noting that the study would be completed in the next year or so and then then monitoring at areas of concern would be in 2025 or 2026. <p>Update for 21K from February 2023: Captured under 18A, 18B, and 21A</p> <p>Update for 22A from February 2023: N/A (complete) Update for 22B from February 2023: N/A (complete)</p>
--	---

	<p>Update for 22C from February 2023: BIMC has submitted a proposal for using the NRCAN dustfall monitoring equipment to MHTO for their review and approval.</p> <p>Update for 22D from February 2023:</p> <ul style="list-style-type: none">• Baffinland noted that satellite imagery methods for dustfall is not successful in the summer due to lack of snow.• Noted that active / air quality monitoring should be in place at the locations noted in 22A. <p>Update for 22E from February 2023: Baffinland noted they can't do bi-weekly monitoring, due to the above constraints and cloud cover. Baffinland committed to looking at all images possible though during appropriate conditions.</p> <p>Update for 22F from February 2023: Baffinland will do their best to implement them while keeping in line with economic costs.</p> <p>Update for 22G from February 2023: N/A</p> <p>Update for 22H from February 2023: As per other commitments, BIMC will provide a response to the dust audit report and continue to evaluate options to improve dust control.</p> <p>Update to 22I from February 2023: See 18A and 18B</p> <p>Updates and additional commitments for 22J from February 2023:</p> <ul style="list-style-type: none">• BIMC committed to working in partnership with NRCan on implementing their UAV/satellite imagery methods for assessing lichen abundance. Baffinland will have a conversation with NRCan on this before the next TEWG meeting. <p>Updates and additional commitments for 22K from February 2023: N/A <i>Note: commitments 24A-C were deferred during our February 2023 meetings, so are not included in this list.</i></p>
--	---

Review Comment #	AE-3
-------------------------	-------------

<p>Subject/Topic</p>	<p>BIMC’s commitment to implement additional mitigations recommended by the Dust Audit Committee</p>
<p>References</p>	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.2.2.2, pg. 79, 133, 142 of 922.</p>
<p>Summary</p>	<p>BIMC previously committed to providing a formal response to the recommendations of the Dust Audit Committee within two weeks of receiving the report (communication sent to QIA by BIMC on January 25, 2023) and was further adjusted to April 2023 via email (communication sent by BIMC to QIA on April 6, 2023). Currently no formal responses have been released and at this time QIA is unable to evaluate whether BIMC has effectively implemented the additional dust mitigation measures noted by the Dust Audit Committee.</p>
<p>Importance of issue to the impact assessment process</p>	<p>BIMC needs to be held to account to ensure they follow through on the necessary dust mitigation recommendations outlined by the Dust Audit Committee to ensure that potential dustfall impacts are effectively reduced and the environment is protected. Without a formal response on these items or more robust commitment to implement them, the QIA is not confident that the recommendations will be effectively followed through.</p>
<p>Detailed review Comments</p>	<p>Within section 6.2.2.2 (Air Quality) of the SOP, BIMC states that “...Baffinland has established the independent Dust Audit Committee to investigate ways to improve dust control measures and has committed to implementing additional dust mitigation measures proposed by the Dust Audit Committee.” (PDF p. 133 of 922). Later on in the SOP, BIMC states “Baffinland will seek to integrate the recommendations of the independent Dust Audit Committee.” (PDF p. 142 of 922).</p> <p>As of June 9, 2023, BIMC still has not provided formal responses to the Dust Audit Committee. BIMC had previously indicated that they would provide a formal response to the recommendations of the Dust Audit Committee within two weeks of receiving the report (communication sent by BIMC on January 25, 2023), and further delayed this by stating they would provide a formal response during April 2023 (communication sent April 6, 2023). This is worrying to the QIA, as BIMC has not communicated tangible actions that have been taken to implement the additional dust mitigation measures proposed by the Dust Audit Committee, nor have they provided consistent wording on whether all</p>

	<p>the recommendations will be implemented. For example, in the SOP BIMC states “Though dust remains a concern, Baffinland responded to this feedback by explaining the Company’s commitment to implementing the recommendations (or a suitable alternative) from the forthcoming Dust Audit Committee Report where reasonably practical.” (PDF p. 79 of 922). The dual provisos of “or a suitable alternative” and “where reasonably practical” do not breed confidence, and increase the urgency that should be placed in Baffinland providing a meaningful response to the Dust Audit Committee’s recommendations.</p> <p>As a result, the QIA is currently unable to assess which recommendations BIMC will follow through on and how effectively these recommendations will be implemented.</p>
<p>Recommendation/ Request</p>	<p>BIMC to provide a formal response to the Dust Audit Committee including activities that are committed to be undertaken to implement the Dust Audit Committee’s recommendations and associated timelines for completion of implementation. This formal response needs to be provided no later than July 15, 2023, in order to inform the NIRB SOP process.</p>

<p>Review Comment #</p>	<p>AE-4</p>
<p>Subject/Topic</p>	<p>Dust Audit Committee</p>
<p>References</p>	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.2.3.1, pg.142 of 922</p> <p>Nunami Stantec Limited and Independent Dust Audit Committee Members. 2023. Baffinland Dust Audit Final Recommendations Report. Total pgs.: 65</p>
<p>Summary</p>	<p>The Dustfall Audit Committee completed their audit and released their Final Recommendations Report in 2023. The recommendations within the report are worded such that there is little in the way of binding recommendations that BIMC must enact. BIMC has not provided their formal response to the recommendations report, so it is currently</p>

	unknown which recommendations BIMC is committed to complying with.
Importance of issue to the impact assessment process	If the current and future recommendations reports from the Dust Audit Committee are not followed and enacted by BIMC, then dustfall impacts will continue without relevant enhanced mitigations.
Detailed review Comments	In response to concerns about dustfall from the five affected North Baffin communities, term and condition 187 of the amended Project Certificate 005 requires the establishment of a Dust Audit Committee. This Committee produced their Final Recommendations Report in early February 2023. The specific wording used in the recommendations from the Committee (e.g. explore options to...) means that they are not binding. QIA is concerned that the recommendations will not be adhered to by BIMC, as evident by the language used by BIMC in section 6.2.3.1. (Monitoring Programs Established by Baffinland Under the Project Certificate) “Baffinland will seek to integrate the recommendations of the Independent Dust Audit Committee.” (PDF p. 142 of 922).
Recommendation/ Request	<ul style="list-style-type: none"> a. NIRB revise Project Certificate Condition 187 to require annual dust auditing and reporting for the Mary River Project, tied to specific adaptive management objectives, indicators, thresholds and responses. b. Baffinland revise the terms of reference for the Dust Audit Committee, so there is a requirement for the results of the annual dustfall audit to be presented to both Baffinland and QIA, with a bilateral decision-making process to identify what measures will be taken to mitigate dustfall impacts, subject to approval by the TEWG. This would allow results from the Inuit Stewardship Plan and results from Baffinland’s monitoring to be considered in bilateral decisions about what measures should be taken re: dustfall.

Review Comment #	AE-5
Subject/Topic	Atmospheric dispersion modelling and estimate of dustfall impacts
References	Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.2.2.2, pg.133-134 of 922.

<p>Summary</p>	<p>BIMC has not included in the SOP application the items the QIA requested be included in updated atmospheric dispersion modelling during the February 2023 discussions on PIPR commitments. This is concerning as any issues in the atmospheric dispersion modelling would change how impacts of dustfall are characterized, potentially reducing confidence in Baffinland’s effects prediction and in the effectiveness of mitigation measures committed to by the Proponent. Revised atmospheric dispersion modelling could lead to the identification of additional mitigation measures, such as increased application of dust suppressants, reduced trucking speeds, or more conservative limitations on blasting based on environmental conditions.</p>
<p>Importance of issue to the impact assessment process</p>	<p>BIMC noted that the atmospheric dispersion modelling was only completed for annual dustfall rates. BIMC does not include any details on the requested items to be included in the updated atmospheric dispersion modelling discussed between BIMC and the QIA during the February 2023 meetings. This is concerning as any shortcomings of the atmospheric dispersion modelling would change how impacts of dustfall are characterized and what effective mitigation measures could be utilized.</p>
<p>Detailed review Comments</p>	<p>Within section 6.2.2.2 (Air Quality) of the SOP, BIMC notes that their atmospheric dispersion model was only completed for annual dustfall rates. As well, their comparison between model-predicted dustfall and measured dustfall was only completed for total annual dustfall rates at the Milne Port, Mine Site, and the Tote Road – North Crossing at km 28, where dustfall data is collected year-round. QIA notes that concerns have been raised regarding the efficacy of data collected at dustfall monitoring stations because of equipment issues (e.g., solutions within dustfall canisters freezing and impacting the validity of collected data) and this should be clearly noted by BIMC within section 6.2.2.2.</p> <p>BIMC has not included any details in the SOP application on the atmospheric dispersion modelling update agreed to during the February 2023 meetings between the QIA and BIMC. These commitments are included in our comment above under commitment 21A. In particular, QIA noted that we have less confidence in dustfall measurements in the winter due to concerns with the fixative freezing, and requested isopleth modelling across different seasons (i.e., frozen and unfrozen) and annually. QIA also requested reviewing how the models align with monitoring data across frozen (winter) and unfrozen (summer) conditions, and adjusting the models based on verification with monitoring data.</p>

	<p>This is concerning to the QIA as without this updated modelling it is difficult to have a complete understanding of dustfall impacts, including where dustfall impacts are likely to be highest, and what effective mitigation measures could be employed.</p> <p>As well, BIMC's limited comparison to only monitoring stations where data is collected year-round is concerning to the QIA as this would exclude many of the more distant monitoring sites, which are not monitored year-round.</p>
Recommendation/ Request	<p>a. BIMC to recommit to refined atmospheric dispersion modelling, as agreed to in February 2023. Specifically, QIA expects that BIMC will:</p> <ul style="list-style-type: none">● Complete both seasonal and annual atmospheric dispersion modelling to assess dustfall impacts● Compare atmospheric dispersion modelling with data from the dustfall monitoring stations both seasonally and annually <p>b. BIMC to file an update on model predictions compared to measured dustfall on the NIRB registry to include seasonal predictions that fall within the period of time that monitoring occurs at all monitoring stations. This will allow for the model-predicted total annual dustfall ($\text{g}/\text{m}^2/\text{year}$) to be fully compared with measured annual dustfall at all dustfall monitoring stations, not just the ones where monitoring is conducted year-round. This updated submission will include updates to SOP tables 6.4 and 6.5 showing the maximum predicted dustfall and annual dustfall compared to the measured dustfall from monitoring stations. The updated data presented from tables 6.4 and 6.5 should be separated by season as well. Based on the results, if model predictions reveal higher levels of dustfall than FEIS predictions, BIMC is requested to commit to reconsidering the potential effects of these dustfall levels on soil-metal concentrations, lichen-metal concentrations, freshwater and aquatic life, caribou health, and human health.</p> <p>c. If deemed relevant by QIA and BIMC based on the results of this updated seasonal dustfall modelling predictions (calibrated with</p>

	<p>actual results), BIMC to commit to developing seasonally relevant mitigation measures to reduce dustfall to acceptable levels to Inuit, noting that seasonally-relevant mitigation measures may include seasonal guidance on dust suppressants application rates, seasonal reductions on trucking speeds, or more conservative limitations on blasting based on environmental conditions within certain seasons.</p>
--	---

Review Comment #	AE-6
Subject/Topic	Lichen-Metal Contaminants of Potential Concern (COPCs)
References	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.2.7; section 6.3.3.1 pg.147 of 922; section 9.0, pg. 287 of 922</p> <p>EDI Environmental Dynamics Inc. (Prepared for Baffinland Iron Mines Corporation). 2023. 2022 Final Terrestrial Environmental Annual Monitoring Report. section 9.1.2.2, p. 162 of 425</p>
Summary	<p>Concentrations of metals in lichen have increased for many contaminants of potential concern (CoPCs) based on 2022 data, yet these findings are not well reflected in the SOP.</p>
Importance of issue to the impact assessment process	<p>The SOP report fails to identify that contaminants of potential concern have been found particularly in lichen near the Project area, suggesting that sustained high levels of dust are having a larger effect than predicted on caribou forage.</p>
Detailed review Comments	<p>Baffinland identifies that vegetation monitoring in 2021 included vegetation and soils base metals monitoring, and notes that “Soil-metal and lichen-metal concentrations at the Project mainly indicated no significant increases compared with baseline values, and all samples remained within guidelines.” Within section 6.2.7 (Characterization of Residual Effects), BIMC states “Monitoring results generally confirm measured effects from 4 years of operating at 6 Mtpa are within the predictions contained within the original ERP FEIS Addendum. The notable exception is related to dust deposition, which has exceeded predictions, however, important environmental receptors like freshwater quality and vegetation health have not shown effects to exceed predictions.” (PDF p. 156 of 922). Within section 9.0 (Summary and Conclusion), BIMC summarizes the changes in effects resulting from</p>

the SOP in table 9.2. and continues to gloss over important dustfall impacts. Specifically, BIMC states that “Metal concentrations across all vegetation and soil base metals monitoring sites are below Project thresholds, which are based on CCME guidelines where available.” (PDF p. 286 of 922). Later on in the table BIMC states “Soil metal and lichen-metal concentrations at the Project mainly indicated no significant increases compared with baseline values, and all samples remained within guidelines.” (PDF p. 287 of 922).

The findings as presented within the SOP report run contrary and minimize the 2022 TEAMR results of metal monitoring in lichen, which have shown sustained increases for lead (including exceedances of lichen lead concentration thresholds) and arsenic relative to baseline (2019-2022), and recent significant increases relative to baseline for copper, selenium, and cadmium (2022). In the 2022 TEAMR, Baffinland identifies thresholds for concentrations of metals in lichen from available peer-reviewed literature (see Table 9-2, p. 128 in the 2022 Terrestrial Environment Annual Monitoring Report). The document notes that there is a high degree of uncertainty in these levels: robust guidelines for CoPC levels on lichen are generally not available. Nonetheless, Baffinland characterizes the identified thresholds as signaling “an early indicator for potential changes in vegetation health, including reduced vigour or growth.”

It is unfortunate that Baffinland did not include a review of the 2022 lichen-metal findings in the SOP. Some of the concerning trends that lichen-metal monitoring revealed in 2022 include the following:

- At the near mine site, arsenic, copper, lead and selenium have increased significantly;
- At the far mine site, arsenic, cadmium and selenium have increased significantly.
- Near Milne Port, arsenic, copper and lead have increased significantly.
- Along the Tote Road, lead has increased significantly and the mean concentration is above the lower lichen indicator value.
- Selenium along the Tote Road has also increased significantly at the reference site.

	<p>In this context, significance refers to a statistically significant increase in concentrations of these contaminants; mean concentrations of lead that are above the concentration threshold for lichen is a particularly concerning early warning signal that dustfall exceedances are being detected in other areas of the environment.</p> <p>In summary, the 2022 TEAMR lichen-metal monitoring results show that concentrations of metals have significantly increased relative to baseline over multiple years and in some cases exceeded lichen indicator values. As well, the 2022 results showed a concerning number of significant increases relative to baseline where there were none in previous years. If increases in lichen-metal concentrations continue, there is a concern that these metal concentrations could have adverse impacts to wildlife and human health. These findings warrant closer investigation and underscore the importance of finding improved ways to reduce dustfall and other emissions from the mine site, the ore stockpile, and along the Tote Road.</p>
<p>Recommendation/ Request</p>	<p>BIMC provide a supplemental submission to the NIRB public record that fully characterizes the potential impacts of higher than predicted levels of dustfall on vegetation and the aquatic environment, particularly in terms of impacts to vegetation health, caribou health, human health risks, and aquatic life.</p> <p>This supplemental submission must clearly identify that dustfall deposition has exceeded FEIS predictions. It must note that while lichen-metal concentrations at most monitoring sites are below lichen indicator values, a lichen indicator value has been exceeded in one site, and a number of sites have significantly higher metal concentrations relative to baseline conditions. It must explain the uncertainty with respect to lichen-metal concentration thresholds in the Arctic environment, and how that uncertainty has been accounted for in the analysis. It should note that lichen-lead concentrations at near monitoring sites by the Tote Road have been above lichen indicator values since 2019, and at near monitoring sites by the Mine Site and Milne Port concentrations have been significantly higher than baseline conditions since 2019. As well, lichen-arsenic concentrations at near monitoring sites by the Mine Site have been significantly higher than baseline conditions since 2019, and no lichen indicator value has been established. As well, lichen-metal concentrations have shown statistically significant increases from</p>

	<p>baseline conditions during 2022 monitoring where there were none during previous monitoring years at the:</p> <ul style="list-style-type: none"> ● near sites for the Milne Port for lichen-arsenic concentrations ● far sites for the Mine Site for lichen-arsenic concentrations ● far sites for the Mine Site for lichen-cadmium concentrations ● near sites for the Milne Port and the Mine Site for lichen-copper concentrations ● near sites and far sites for the Mine Site for lichen-selenium concentrations ● reference sites for the Tote Road for lichen-selenium concentrations. <p>In light of these findings, Baffinland to reconsider their blanket statement regarding the absence of effects greater than predicted. Given the early warning signals that are encompassed within these findings, Baffinland is requested to immediately enact additional studies to investigate how metal deposition can be mitigated and reduced. Baffinland is requested to explain the lichen-metal monitoring results to the dustfall committee and seek their guidance on additional mitigations measures. Baffinland must recommit to identifying additional mitigations to reduce dust (i.e., precautionary approaches to blasting based on risks associated with wind and rainfall; reducing traffic speed; etc.).</p>
--	---

Review Comment #	AE-7
Subject/Topic	Dustfall impacts exceeding predictions
References	Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.2.2.2, pg.133 of 922.
Summary	BIMC has not clearly laid out land users’ concerns related to dustfall and how monitoring has confirmed these concerns within section 6.2.2.2.
Importance of issue to the impact	It is important to clearly communicate dustfall exceedances observed through satellite imagery, so that these exceedances can be taken into account in the considerations of required mitigations to allow Baffinland

assessment process	to continue production at the 6 mta level while reducing the effects of dustfall on the environment.
Detailed review Comments	<p>Under Section 6.2.2.2 (Air Quality), BIMC states that “The spatial extent of dustfall greater than the dustfall thresholds was predicted by the atmospheric dispersion model to be within approximately 1,000 m from Project activities. The visually perceived spatial extent of dustfall by land users was greater than the model-predicted or measured spatial extent during the dustfall monitoring program, because even very low dustfall levels, which are below the detection threshold of the dustfall passive monitors, can be seen on snow. The dustfall spatial extent has since been measured through a seasonal satellite monitoring program.” (PDF p. 133 of 922).</p> <p>In reality, the spatial extent of dustfall from the Project is higher than predicted, and may be affecting snow melt and having other effects at further extents from the Project. The findings from satellite monitoring allow visualization of the spatial extent of dust, and are an important program to maintain to ensure that the effects of additional mitigation measures can be tracked year over year.</p>
Recommendation/ Request	<p>a. Baffinland to recommit to undertaking annual monitoring of the spatial extent of dustfall using the satellite monitoring program, in particular to track potential reductions associated with the implementation dustfall mitigation measures.</p> <p>b. Baffinland to commit to integrating a more dedicated Inuit sensory monitoring of dustfall into the monitoring system.</p>

Review Comment #	AE-8
Subject/Topic	Effects of dustfall on Terrestrial Environment VECs
References	Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 9, table 9.2, pgs. 287 of 922.
Summary	BIMC states that there are no predicted changes in the extent, frequency, reversibility, or probability of effects on Terrestrial Environment VECs and that although the duration of effects will increase that the environmental effects will remain not significant. This is

	<p>concerning as there have been numerous recorded exceedances of predicted dustfall levels, so the validity of predicted changes are questionable. BIMC should update the atmospheric dispersion modelling and reassess the potential effects of dustfall on terrestrial VECs.</p>
<p>Importance of issue to the impact assessment process</p>	<p>The observed effects of dustfall are not consistent with the predicted effects shown in the original FEIS. Without updated atmospheric dispersion modelling, a thorough comparison with seasonal and annual dustfall at all relevant monitoring stations, and a subsequent structured reassessment of potential effects from dustfall, it is difficult to impossible to support with confidence Baffinland’s assertion that only the duration of effects on Terrestrial Environment VECs would increase while the extent, frequency, reversibility, and probability would remain unchanged.</p>
<p>Detailed review Comments</p>	<p>BIMC summarizes the changes in effects resulting from the SOP in table 9.2 (Summary of Changes in Effects) and states that “There are no predicted changes in the extent, frequency, reversibility or probability of effects on Terrestrial Environment VECs as a result of extending the timeframe for the nominal rate of 6 Mtpa activity level for the SOP. Potential changes to factors related to significance include increases in the duration of effects on Terrestrial Environment VECs. However, with existing mitigation, the environmental effects are evaluated to remain not significant.” (PDF p. 287 of 922).</p> <p>This is concerning to the QIA as the observed effects of dustfall have not been consistent with the predicted effects of the FEIS and FEIS addendum, meaning that there is little confidence in BIMC’s assertion that “There are no predicted changes in the extent, frequency, reversibility or probability of effects on Terrestrial Environment VECs...” (PDF p. 287 of 922). Annual monitoring reports identify where dustfall levels have consistently been higher than predicted in the FEIS along the Tote Road. These higher than predicted levels of dustfall may have result in commensurate higher than predicted levels of effects for other terrestrial VECs, such as caribou health.</p>
<p>Recommendation/ Request</p>	<p>a. Baffinland to undertake revised atmospheric dispersion modelling for both seasonal and annual dustfall to fully understand the potential impacts, and compare atmospheric dispersion modelling with data from the dustfall monitoring stations both seasonally and annually.</p>

	<p>b. Thereafter, based on the results of this revised atmospheric dispersion modelling and comparison with monitoring data, BIMC to reassess the extent, frequency, reversibility, probability, and duration of effects of dustfall on Terrestrial Environment VECs and their corresponding effect levels and provide an update to the NIRB during the SOP assessment period.</p>
--	--

Review Comment #	AE-9
Subject/Topic	Potential changes in effects
References	Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.2.5, pgs. 149 of 922.
Summary	In its summary of Potential Changes in Effects, Baffinland states, " <i>Scaling production and transportation between 4.2 Mt and 6 Mt operating limits does not result in a perceptible change to noise and vibration.</i> " (SOP s. 6.2.5, p. 149 of 922). This statement requires supporting evidence that is missing from the SOP.
Importance of issue to the impact assessment process	Impact assessment requires a fulsome assessment and clear description of Project effects if it is to support good decision-making.
Detailed review Comments	Baffinland states, "Scaling production and transportation between 4.2 Mt and 6 Mt operating limits does not result in a perceptible change to noise and vibration." (SOP s. 6.2.5, p. 149 of 922). This suggests that a 42% increase in ore mined and transported annually (i.e., from 4.2 to 6.0 Mtpa) does not require additional blasting, crushing, trucking, loading, or shipping. The noise and vibration levels may be similar under both production scenarios but their frequencies of occurrence and /or durations must be greater.
Recommendation/ Request	Baffinland to provide supporting evidence for its statement, "Scaling production and transportation between 4.2 Mt and 6 Mt operating limits does not result in a perceptible change to noise and vibration." (SOP s. 6.2.5, p. 149 of 922), provide clarification of how the frequency of occurrence and duration of noise and vibrations have been factored into this statement, and provide a quantitative assessment of how

	much the frequency of occurrence and duration of noise and vibrations increases in the 42% production increase scenario identified.
--	---

V. TERRESTRIAL ENVIRONMENT

Review Comment #	TE-1
Subject/Topic	Effects of aircraft flights over snow geese moulting areas
References	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.3.2.2, pg. 159 of 922</p> <p>EDI Environmental Dynamics Inc. (Prepared for Baffinland Iron Mines Corporation). 2023. 2022 Final Terrestrial Environmental Annual Monitoring Report. Table 0, p. 19 of 425</p>
Summary	BIMC continues to conduct low-level flights which could adversely impact snow geese during the moulting season. The NIRB should update term and condition 71 to allow for remote monitoring of snow geese during overflights to assess these on-going impacts.
Importance of issue to the impact assessment process	The low-level flights, which occur every year as part of BIMC’s activities at the Mary River Mine continue to have potential impacts on moulting snow geese. To date BIMC has not undertaken surveys to understand the magnitude of these impacts, meaning that the significance of these impacts is not fully understood. Project Certificate Term and Condition 71 should be strengthened to ensure these impacts are fully understood and flights are re-routed if necessary.
Detailed review Comments	<p>Within section 6.3.2.2 (Birds and Bird Habitat), BIMC states that “The PIP (2018), PIPE (2020) and PIP Renewal (2022) did not involve new habitat loss, although sensory disturbance and risk of mortality from collisions associated with transportation remain as residual effects on</p> <p>birds. As predicted in the FEIS and ERP FEIS Addendum, the overall effect on birds was predicted to be minimal with no predicted cumulative effects.” (PDF p. 159 of 922).</p> <p>Through their annual reporting BIMC has identified that aircraft pilots will fly over the eastern edge of the snow geese moulting area, as noted within the 2022 TEAMR: “Compliance with minimum helicopter flight heights was moderate in 2022 when considering the pilots’ rationale for</p>

	<p>low-level flying and flight hours within the Snow Geese area during the moulting season.” (PDF p. 19 of 426).</p> <p>These low level flights remain concerning to the QIA, as they could pose potential adverse impacts to the snow geese within the regional study area and thereby impact harvest by Inuit.</p>
<p>Recommendation/ Request</p>	<p>Baffinland commit to work in collaboration with Inuit Guardians to monitor the impacts of low level flights on snow geese use of the moulting area, through a ground-based survey of impacts based on behavioural responses, and commit to discussing these results at a TEWG meeting to identify appropriate mitigation measures if necessary.</p> <p>The QIA recognizes that monitoring activities have the potential to cause more impacts to snow geese population. Therefore, ground-based surveys need to be designed to minimize impacts during sensitive timing windows, such as through employing equipment/methods like camera traps that can allow for observations of flights during sensitive timing windows and for cameras to be deployed before snow geese arrive in the spring, and collected after snow geese depart in the fall.</p>

<p>Review Comment #</p>	<p>TE-2</p>
<p>Subject/Topic</p>	<p>Monitoring for regional impacts to caribou</p>
<p>References</p>	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.3.6.3, table 6.12, pg. 156 of 922</p>
<p>Summary</p>	<p>BIMC is relying upon Government of Nunavut (GN)-led collaring efforts to assess caribou distribution in the regional study area; however, it is unclear whether collaring will be supported by the Pond Inlet HTO. An alternative method must be identified.</p>
<p>Importance of issue to the impact assessment process</p>	<p>It is critical that Baffinland identifies a viable method from a western science perspective to assess caribou abundance and distribution relative to the Project infrastructure, that is agreeable to Inuit.</p>

<p>Detailed review Comments</p>	<p>Table 4.1 states that BIMC is using collar data (GN-led effort) to assess caribou distribution in the Regional Study Area relative to the mine and infrastructure, along with aerial surveys to assess caribou distribution and density as required.</p> <p>Table 6.12 identifies that aerial surveys and regional collaring data analysis will be used to determine caribou abundance and assess caribou willingness to cross the transportation corridor. The table also identifies that caribou collar data will be used to examine changes in effective habitat (e.g., using resource selection probability functions or RSPFs).</p> <p>Baffinland notes a few key elements in footnotes to this table:</p> <p>Footnote 70 defines deflection as “caribou that fail to cross the North Railway or Tote Road after approaching it”. This definition should be revisited to ensure the TEWG is in agreement (through a consensus-based process).</p> <p>Footnote 71 notes that “the sample size necessary to determine if deflections are having a population-level impact (as opposed to individual animal responses) will be like the sample sizes necessary for effective collar monitoring program.” However, the adequacy of sample size for collaring was based on group size assumptions. For deflection (or balking), sample size should be based on the requirements for individual caribou observations.</p> <p>Footnote 72 identifies that “Baffinland would support a caribou collaring program only if supported by the affected communities’ Hunter and Trapper Organizations/Associations. Footnote 73 identifies the need for MHTO support for running a collaring program. QIA is concerned that many of the regional monitoring programs for caribou rely on collaring, which may not be an acceptable monitoring approach to Inuit.</p> <p>QIA is also concerned that Baffinland has not identified appropriate mitigations for observed balking behaviour during migration, including</p>
--	--

	<p>agreeing to being bound to the requirements identified by the TEWG in terms of caribou group sizes that require traffic to cease or trucks to convoy. Currently, the extent of the Baffinland commitment is that: <i>“Based on IQ knowledge provided by hunters and elders and/or site-staff observations, if migratory caribou start to move through the RSA, then the leading caribou will be allowed to cross over the Tote Road undisturbed so that others will follow.”</i></p>
<p>Recommendation/ Request</p>	<ul style="list-style-type: none"> a. Baffinland commit to redefining deflections with the TEWG to include repeated balking. b. Baffinland explore the use of pellet surveys as a method of marked-recapture to estimate caribou abundance and distribution across the regional study area, including determining whether this method would be acceptable to Inuit. c. Baffinland commit to adhering to mitigation measures identified by the TEWG, including requirements to stop traffic to allow caribou to pass during migration based on group sizes identified by the TEWG. Baffinland to commit to these measures being in place immediately upon observing migrating caribou attempting to cross the road, particularly if deflections (including both balking or failing to cross the road) are observed.

<p>Review Comment #</p>	<p>TE-3</p>
<p>Subject/Topic</p>	<p>Prediction of no significant effect on caribou habitat effectiveness and traditional movement patterns</p>
<p>References</p>	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.3.2.3, pg. 146 of 922.</p>
<p>Summary</p>	<p>With ongoing concerns raised by Inuit about a large zone of influence around the mine at this point in the caribou population cycle, there is a need to fully summarize this concern and ensure that the existing commitment to re-estimate the zone of influence around the mine based on IQ is used to revise the energy-protein model.</p>
<p>Importance of issue to the impact</p>	<p>It is critical that the assessment consider the potential for a broader zone of influence around the mine and a larger energetic effect than was previously estimated, particularly as Baffinland will be sustaining a</p>

<p>assessment process</p>	<p>higher level of production, with commensurate higher impact levels, for a longer period of time if the SOP is approved.</p>
<p>Detailed review Comments</p>	<p>Despite reassurances in Section 6.3.2.3 of the SOP application, concerns remain that the Project is causing caribou avoidance at a broad scale within north Baffin (for example, these specific concerns were identified by Inuit elders during workshops held on caribou protection measures as part of the draft Nunavut Land Use Plan, who identified that caribou had altered their migration patterns at a broad level to avoid the Mary River Project). This concern is exacerbated by the current low population densities: it is during this period of time that caribou are behaviourally most skittish and most likely to learn to avoid areas. It is surprising that these concerns, which have been raised many times by Inuit and scientists working for various agencies throughout the Phase 2 review process and through the TEWG, are not reflected in Section 6.3.2.3 of the SOP.</p> <p>It is also surprising that Baffinland continues to raise harvesting practices as a more important impact than the mine itself, considering that harvesting and associated stewardship practices are fundamentally an Inuit right that must be maintained.</p> <p>The very real possibility that Baffinland’s energetic modelling may have used an under-estimated zone of influence is not considered in the SOP application. Baffinland’s PIPR commitment (QIA-ID-23) to re-estimating the zone of influence based on IQ, dustfall levels and noise is also not considered or mentioned in the SOP report (see Appendix 7).</p>
<p>Recommendation/ Request</p>	<ol style="list-style-type: none"> a. Baffinland to provide a supplemental submission to the NIRB registry, identifying IQ concerns related to the potential for a much larger zone of influence around the mine, explaining how the zone of influence may change with the caribou population cycle, identifying how Baffinland will implement appropriate mitigation measures in response to the cycle, and identifying and recommitting to existing PIPR commitments regarding re-estimating the zone of influence based on IQ, dustfall levels and noise. b. The Project Certificate be amended to include a term and condition requiring Baffinland to recalibrate the energy-protein model following the committed-to IQ study and re-estimation of

	the zone of influence (both committed to as part of the PIPR), as one method of determining if there is in fact a significant loss of habitat effectiveness associated with the mining activities.
--	--

Review Comment #	TE-4
Subject/Topic	Prediction of no significant effect on overall caribou health
References	Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.3.2.3, pg. 146 of 922.
Summary	Sustained high levels of dust that exceed FEIS predictions may be having an effect on caribou health, which is currently not measured effectively.
Importance of issue to the impact assessment process	Impacts to caribou health may affect the caribou population as it enters its growth phase, and may affect Inuit health, well-being and culture, resource and land use values.
Detailed review Comments	Sustained high levels of dust that exceed FEIS predictions call into question the predictions from the initial FEIS regarding impacts to caribou health. While Baffinland supports a voluntary harvester sample program, there has been little uptake / low submission of samples to this program.
Recommendation/ Request	Baffinland to commit to revise the voluntary harvester sample program through the following process: <ul style="list-style-type: none"> 1. meeting with the MHTO within three months post-approval to identify why samples have not been provided within the current voluntary harvester sample program, and identify specific improvements for how to improve the program. 2. Discussing improvements to the program with the TEWG 3. Finalizing the revised program 4. Implementing the revised program in 2024 and tracking how well the revised program increases uptake, by making comparisons between the number of samples received and overall harvesting levels based on GN data.

Review Comment #	TE-5
Subject/Topic	Helicopter overflights and noise levels
References	Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.3.3.1, pg. 147 of 922.
Summary	Potential for low helicopter flights to disturb wildlife.
Importance of issue to the impact assessment process	The SOP does not explain whether noise monitoring was undertaken under main helicopter flight paths.
Detailed review Comments	Baffinland states that noise monitoring data indicate that helicopter noise is likely too infrequent in all Project areas to cause any significant disturbance to wildlife. However, Baffinland has yet to share a map showing how their noise monitoring stations overlap with routine helicopter flight paths. This information would help in evaluating whether noise levels outside of the PDA may be leading to increased stress and/or avoidance of the Project area more broadly.
Recommendation/ Request	Baffinland provide data showing how their noise monitoring stations overlap with helicopter flight paths, to determine whether there is potential for this source of noise to have been missed in the noise monitoring.

Review Comment #	TE-6
Subject/Topic	Height-of-Land (HoL) / Remote cameras may be missing caribou avoidance at a broader scale
References	Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.3.3.1, pg. 147 of 922; section 6.3.6.1 pg. 153 of 922.
Summary	HoL / Remote cameras may be missing caribou avoidance at a broader scale, calling into question Baffinland’s confidence that the results of the HoL surveys are strictly related to low regional abundance of caribou

	<p>(i.e., it is possible that caribou presence is being under-reported by this approach).</p>
<p>Importance of issue to the impact assessment process</p>	<p>The SOP remains overly optimistic about the potential impacts of the Project at its current extent on regional caribou population, and its findings do not generally agree with input from IQ holders.</p>
<p>Detailed review Comments</p>	<p>In Section 6.3.3.1 of the SOP application, Baffinland states that they remain confident that “the results of the HOL surveys are related to the low regional abundance of caribou” and do not consider whether the continued null results may be due to broad scale avoidance of the Project area by caribou. While low caribou numbers are no doubt contributing to the continued lack of data from this monitoring program, a larger (and undetectable) problem is that caribou may be avoiding the Project area by taking alternate routes around it, in which case what is actually a loss of functioning habitat is instead being reported as an absence of caribou. Inuit knowledge holders have identified that this type of disturbance is particularly concerning when caribou populations are low, as they may learn to avoid these areas over a longer time period, even as their numbers increase. This is particularly concerning for the Mary River area, as the area is known to be an important location for caribou calving / post-calving.</p> <p>In Section 6.3.6.1 of the SOP report, Baffinland identifies mitigation measures for caribou, many of which rely on observing caribou within 3 km of Project activities. QIA has concerns that many of these mitigation measures may be difficult to comply with consistently as they rely on a relatively long line of sight in all directions.</p> <p>Section 6.3.6.2 identifies new mitigations and monitoring since 2022. While these existing mitigation measures are important, they do not go far enough in terms of proactively reducing disturbance to caribou. QIA has identified that these measures should be implemented during the low-increasing period of the caribou population cycle, to ensure that caribou do not learn to avoid the important calving / post-calving areas around the Mary River Project over a longer time period.</p>
<p>Recommendation/ Request</p>	<p>a. The supplemental submission requested above on caribou avoidance of the Project area include the consideration that the lack of caribou detections may be reflective of avoidance at a broader scale, in alignment with concerns raised by IQ-holders.</p>

	<p>b. Baffinland commit to implementing a proactive approach to mitigations within the calving and post-calving period: i.e., specifically committing to avoiding blasting and helicopter usage within 3 km of critical calving / post-calving habitat during the appropriate timing window (to be confirmed by HTO members, but tentatively from June 1 - July 15). This commitment must be in place now.</p> <p>c. The Project Certification be amended to include a term and condition requiring Baffinland to convene with Inuit parties and the Government of Nunavut after the IQ study has been completed, to collaboratively revise and finalize the caribou protection measures for the Project.</p>
--	---

VI. FRESHWATER ENVIRONMENT

Review Comment #	FE-1
Subject/Topic	Absence of enhanced management and mitigation of dust and other impacts
References	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 4.6, pg. 118 of 922; section 6.2.3.1 pgs.139-145 of 922; appendix 10, pgs. 713-736 of 922; appendix 7, comment ID# QIA ID-18A, QIA ID-18B pg. 638 of 922</p> <p>Hutchinson Environmental Sciences Ltd. 2022. QIA Environmental Inspection: Spring 2022. Prepared for the Qikiqtani Inuit Association.</p>
Summary	<p>Baffinland has indicated the effects to both the aquatic and terrestrial environments are “not significant”. As a result, no concrete adaptive management steps have been provided within the body of the application, appendices or in management plans that have been updated concurrent to the SOP review process. Baffinland has provided reviewers no confidence that fugitive dust emissions in excess of FEIS predictions that have been observed throughout the PIP (2018) phase and onward will be constrained.</p>
Importance of issue to the impact assessment process	<p>Baffinland’s assertion that project effects to the aquatic and terrestrial environments as well as Inuit uses of the land within the project’s zone of impact are “not significant” may not be correct. As a result, insufficient management and mitigation options may be required for ongoing operations at the SOP level allowing for the continuation of greater than predicted and accepted effects on valued ecosystem components.</p>
Detailed review Comments	<p>Baffinland notes <i>“In 2016 there was a large increase in production from 0.5 MTPA to 2.5 MTPA, and there was a corresponding increase in dustfall, however, from 2016 to 2020, dustfall generally plateaued with only modest increases in some Project areas. Post-2016 decreases in dustfall are likely associated with implementation of dustfall mitigation strategies (Figure 6.1)...(P142/319) From 2015 through 2021, there was no consistent correlation between increases in production and dustfall (2021 Terrestrial Environment Annual Monitoring Report, EDI 2022). Results of 2021 monitoring support that additional dust</i></p>

mitigations employed in 2021 along the Tote Road and at the Milne Port stockpiles are functioning as intended.”

This suggests that the project dust generation varies more with the interactions between core components of ore extraction and the natural environment rather than total ore production. While we agree with Baffinland’s assessment that the observed decline in fugitive dust generation in 2021 suggests newly introduced mitigations (e.g., DUST/BLOKR®) have contributed to those reductions, fugitive dust generated by project activities is still in excess of FEIS predictions.

Baffinland has used these observations to support the conclusion that the effects associated with ongoing project activities are not having a significant impact on either the terrestrial or aquatic environments. However, QIA has noted when reviewing the 2019, 2020 and 2021 Baffinland annual reports to the NIRB that fugitive dust concentrations have been greater than predicted around the Mine Site, along the tote road and at Milne Port (HESL 2022). QIA has also noted that the current sampling stations do not have sufficient geographic coverage to assess the full extent the fugitive dust generated by project activities (HESL 2022).

Methodological concerns have also been raised with Baffinland’s approach to dust monitoring. The reliance on isopropyl alcohol as a collection medium and passive sampling devices may be underrepresenting the total volume of fugitive dust generated by the project. We therefore posit that the monitoring data used to assess fugitive dust from the project may be underrepresenting the effects of the existing project both at the early revenue and increased production mining rates.

Baffinland has highlighted a number of commitments intended to address ongoing concerns QIA has raised with project-generated dust. The establishment of *“site specific thresholds for conditions that may increase dust dispersion (i.e., wind speed), and corresponding mitigations to implement on days where thresholds are met, which may include, but not limited to, the use of additional dust suppression and operational staged decreased in dust generating site activities”*. From

	<p>our understanding of Baffinland’s discussion of dust generated from the project, it appears that operational staged decreases may be the most rapidly implemented mitigation to further constrain dust impacts closer to those accepted within the FEIS.</p>
<p>Recommendation/ Request</p>	<p>Baffinland to develop site specific thresholds for conditions that may increase dust dispersion, and corresponding mitigations that include at minimum operational staged decreases in dust generating site activities, within 30 days of receiving the amended project certificate. These thresholds and mitigations should be presented in an update to the Air Quality and Noise Abatement Management Plan and submitted to the NIRB for intervenor review.</p> <p>While we understand Baffinland’s commitment to QIA suggests these thresholds and mitigations will be developed in collaboration with the TEWG (as per Comment ID# QIA ID-18 A and B), we suggest that relying on the TEWG for the initial development of those thresholds and mitigations will introduce unnecessary delays. Our recommended approach allows Baffinland to efficiently develop and implement mitigations as appropriate (i.e., in relation to high risk dust dispersion days) while allowing those thresholds and mitigations to be further refined in collaboration with the TEWG.</p> <p>We note this condition may be applied as an update to Term and Condition 188 from the PIPR as it includes a timeline in which it must be implemented.</p>

<p>Review Comment #</p>	<p>FE-2</p>
<p>Subject/Topic</p>	<p>Assessment of project effects to water quality</p>
<p>References</p>	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.4.5, pgs. 170-171 of 922</p> <p>Qikiqtani Inuit Association Review of Baffinland’s 2021 Qikiqtani Inuit Association and Nunavut Water Board Annual Report for Operations (QIA 2021). Focused on NWB Annual Report AEMP#1; QIA 2021 NWB Annual Report CREMP#12</p>

<p>Summary</p>	<p>Effects to water quality from the 6 Mtpa SOP production level are expected to be similar to the last several years including their spatial extent and magnitude. This conclusion is predicated in part on a comparison between water quality in the local project area and the reference lake. Evidence from the 2021 Annual Report for Operations suggests project dust may be impacting the reference lake, confounding that comparison. A new reference lake may need to be established.</p>
<p>Importance of issue to the impact assessment process</p>	<p>Evaluation of previous and ongoing project effects relies in part on a comparison between water quality in the local project area and at reference lakes. Comparisons of project area to reference sites that are under the influence of the project confound any conclusions.</p>
<p>Detailed review Comments</p>	<p>Baffinland notes that <i>“In summary, water quality impacts from the 6 Mtpa SOP operation will be similar to the last several years and consistent with FEIS and ERP FEIS Addendum predictions: of moderate magnitude, confined to the local study area, medium-term in duration, infrequent, and reversible, and thus not significant. Impacts to Arctic char health and condition due to water quality impacts will also be consistent with FEIS and ERP FEIS Addendum predictions: low magnitude, medium-term in duration, infrequent, and partially reversible, and thus not significant.”</i></p> <p>These conclusions rely on a comparison between project area lakes and the reference sites. In review of the 2021 Annual Report to the NWB, QIA stated <i>“Given:</i></p> <ul style="list-style-type: none"> • <i>the current dustfall monitoring program completed by Baffinland is unable to determine the extent and severity of the fugitive dust from the mine, and the direction of the wind at site, it is the QIA’s opinion that it has not been demonstrated that the current reference sites are appropriate”.</i>
<p>Recommendation/ Request</p>	<ol style="list-style-type: none"> a. Baffinland re-evaluate their current reference locations for both lentic and lotic programs and determine if they are influenced from the impacts of mine-related fugitive dust. b. Baffinland provide evidence the life history of Arctic charr at the reference lake mirrors that of the project area waterbodies and watercourses. c. If a) the reference lakes are indeed under the influence of project generated dust, and/or b) the life history of Arctic

	<p>charr in the reference lake does not reflect that of the project area lakes, Baffinland to establish a new reference lake that is outside the project’s zone of influence and contains Arctic charr with similar life histories.</p>
--	---

Review Comment #	FE-3
Subject/Topic	Trigger action response plans
References	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 4.5, pgs. 109-117 of 922.</p> <p>Baffinland Iron Mines Corporation (Baffinland). 2023. Adaptive Management Plan (Draft). Section 3.2, pg. 27-28 of 50.</p>
Summary	<p>The SOP provides a high-level overview of how adaptive management will be incorporated into the project (i.e., as trigger action response components of individual management plans). However, Baffinland’s SOP submission does not directly include the adaptive management plan (i.e., the overview document) nor does it include the individual updated management plans in which the specific trigger action response plans will be incorporated. These components are required for stakeholder review and input to provide confidence the ongoing divergences from FEIS predictions will be adequately managed and mitigated in a timely manner.</p>
Importance of issue to the impact assessment process	<p>Failure to include updated management plans with their associated trigger action response plan components decreases confidence that project effects that are currently diverging from FEIS predictions will be appropriately constrained using mitigation and management options that are currently covered under the proposed project certificate amendment as well as within the existing water licence.</p>
Detailed review Comments	<p>Baffinland’s SOP application includes an acknowledgement that in <i>“this SOP, as is typical of any environmental effects assessment, some level of uncertainty in effects predictions cannot be resolved before the Project is permitted to operate”</i>. Baffinland continues, noting their <i>“Adaptive Management Plan for the Mary River Project provides an overview of the management mechanisms established to identify where mitigation measures may not sufficiently address potential adverse effects, and to address uncertainty or conditions that may occur during operations that were not anticipated during the planning phase.”</i></p>

	<p>At this stage of the project, with the benefit of lessons learned operating in the early revenue phase and increased production phases, Baffinland should have better understanding of how project effects have either conformed to the effects outlined in the FEIS or diverged from them. This understanding has been reflected in the progressive development of trigger action response plans as components of the existing management plans. These management plans are being submitted outside of the SOP review process.</p> <p>Baffinland has had an ongoing issue constraining the volume and dispersion of fugitive dust to what had been predicted within the FEIS. Baffinland had also encountered several spills (uncontrolled discharges) associated with melting dust entrained snow discharging to nearby waterbodies despite conforming to the 30 m setback. Examples of these uncontrolled discharges include:</p> <ul style="list-style-type: none">• May 14, 2022: “Sediment-laden” (elevated TSS) water flowing from the Mine Site to the Sheardown Lake Tributary (SDLT) location.• May 17, 2022: “Sediment-laden” (elevated TSS) water flowing from the Mine Site to the Camp Lake Tributary (CLT). <p>The following plans are of particular concern to the management of aquatic effects, have been referenced in the draft Adaptive Management Plan, and have not been updated as of this writing:</p> <ul style="list-style-type: none">• The Fresh Water Supply, Sewage and Wastewater Management Plan,• The Snow Management Plan, and• The Aquatic Effects Monitoring Plan. <p>The adaptive management of project effects to the aquatic environment are essential to constraining impacts to agreed upon levels within the FEIS.</p>
Recommendation/ Request	<p>NIRB require as a condition of the amended project certificate:</p> <p>Baffinland to submit updated versions of</p> <ul style="list-style-type: none">• the Fresh Water Supply, Sewage and Wastewater Management Plan,

	<ul style="list-style-type: none"> • the Snow Management Plan, and • the Aquatic Effects Monitoring Plan. <p>The updated plans must include trigger action response plan (TARP) components in each.</p> <p>Updated plans to be submitted as part of these proceedings (i.e., in response to comments on the SOP). Intervenors must be provided an opportunity to review each updated plan, and finalized versions of each (i.e., incorporating reviewer input) must be submitted within 30 days of receiving the project certificate.</p>
--	---

Review Comment #	FE-4
Subject/Topic	Phase 2 NWB Commitments
References	<p>Appendix 2; Appendix E Commitments Carried Forward from Phase 2</p> <p>QIA Updated Technical Comments - Baffinland Iron Mines Corporation's Type 'A' Water Licence 2AM-MRY-1325 Amendment 2. Dated October 25, 2021.</p>
Summary	<p>Baffinland has included a list of commitments made as part of the Phase 2 NIRB proceedings in the SOP submission. QIA and other intervenors' review of Baffinland's Phase 2 water licence application to the Nunavut Water Board occurred concurrently to the NIRB process and included identification and resolution of several issues that directly apply to the SOP but have not been preserved in this process following the NIRB's negative determination on the Phase 2 application.</p>
Importance of issue to the impact assessment process	<p>Several issues raised during QIA's review of Baffinland's Phase 2 water licence application to the NIRB are directly applicable to the SOP and support both the characterization of ongoing project effects and the management of those effects.</p>
Detailed review Comments	<p>Baffinland has included a list of commitments made as part of the Phase 2 NIRB proceedings in the SOP submission. QIA and other intervenor's review of Baffinland's Phase 2 water licence application to the Nunavut Water Board occurred concurrently to the NIRB process and included identification and resolution of several issues that directly apply to the SOP but have not been preserved in this process following the NIRB's negative determination of the Phase 2 application. Several issues raised during QIA's review of Baffinland's Phase 2 water licence application to the NWB are directly applicable to the SOP and support</p>

	<p>both the characterization of ongoing project effects and the management thereof.</p> <p>Key issues raised by QIA during the Phase 2 water licence review that pertain to the SOP are as follows:</p> <ul style="list-style-type: none">• QIA #10.1 – QIA identified calcium for inclusion in the adaptive management component of the surface water and aquatic ecosystem management plan to manage runoff from areas subject to dust suppression using calcium chloride. It is unclear whether Baffinland will completely forgo the use of calcium chloride in preference to other chemical dust suppressants. If calcium chloride persists, this technical concern remains.• QIA #40.1 – QIA requested Baffinland include iron concentrations in the trigger action response framework for road operation (i.e., in the road management plan). Our review of the updated draft road management plan does not include iron concentrations as a trigger in runoff. Iron continues to be a parameter of concern for transporting ore along the tote road and assists in evaluating whether fugitive dust associated with trucking ore is impacting the surrounding aquatic and terrestrial environments.• QIA #68.1 – QIA noted the sediment sampling procedure as currently written in the Surface Water Sampling Program - QA/QC Plan was missing details regarding how the sample was obtained via a grab sample. How it currently reads implies that the sample was obtained with a spatula or spoon when our understanding is that a spoon is used to transfer sediment from the sampler to the laboratory bottle. Baffinland has committed to reviewing and updating the plan; it is not clear if this commitment has been addressed at this time.• QIA #72.1 – QIA requested that Baffinland continue to monitor nutrients in lotic systems, and add sampling of primary producers in the form of periphyton, in those systems (such as the Mary River) receiving discharge of treated sewage effluent. Baffinland will continue to discharge to these environments yet does not monitor this main scavenger of limiting nutrients in lotic systems. Baffinland committed to address this and other concerns with the aquatic effects monitoring program through hosting an Aquatic Effects Monitoring Program workshop as part of the Phase 2 review process. This commitment may be appropriately honoured as part of the SOP to ensure appropriate improvements to the existing
--	--

	AEMP's capacity to evaluate ongoing project effects that will persist under the SOP.
Recommendation/ Request	Baffinland to evaluate and carry forward commitments and technical resolutions from the Phase 2 NWB process and incorporate those commitments and resolutions into the current SOP application. Specifically, commitments identified/sought in QIA #10.1, QIA #40.1, QIA #68.1 and QIA #72.1 need to be brought forward to the SOP.

Review Comment #	FE-5
Subject/Topic	Effects pathways to aquatic environment
References	Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. appendix 10, pgs. 713-736 of 922
Summary	Baffinland's summary of potential effects and associated mitigations to the freshwater and marine environment do not appear to consider the linkage between direct dust deposition on the watercourses, waterbodies and marine environment. Subsequently, specific mitigations to manage this deposition do not appear to be considered.
Importance of issue to the impact assessment process	Direct dust deposition onto watercourses, waterbodies and the marine environment do not appear to have specific mitigations. Mitigations may be required to minimize the effects of dust deposition directly to the aquatic environment during freshet and avoid changes in when the ice melts due to increased absorption of solar radiation.
Detailed review Comments	<p>Baffinland's assessment of effects to the biophysical environment guides the selection and implementation of mitigation measures and the development of the forthcoming adaptive management components of management plans as they are updated. Baffinland appears to have specifically neglected the linkage pathway of direct deposition of fugitive dust to snow resulting in an absence of consideration of this effects pathway as well as associated mitigations.</p> <p>Direct deposition of fugitive dust to open water can impact water quality over time. Deposition onto ice can increase the absorption of solar thereby impacting how quickly the ice melts, shortening the period when it is safely traversable. Dust accumulated on the ice over the hard water season can also introduce a pulse of total suspended solids when the ice finally melts if not managed or mitigated prior.</p>

<p>Recommendation/ Request</p>	<p>a. Baffinland explicitly identify direct deposition of dust as an effects pathway influencing the marine and freshwater aquatic environments.</p> <p>b. Baffinland update relevant management plans to include appropriate mitigations of dust deposited both on the ice and directly to the aquatic environment within the below-noted plans and within forthcoming adaptive management components. These plans should be updated during the SOP regulatory process with finalized versions incorporating intervenor input as a condition of the project certificate.</p> <p>Relevant plans may include:</p> <ul style="list-style-type: none"> • Surface Water, Aquatic Ecosystem Management Plan, • Spill Contingency Plan, and • Snow Management Plan.
---	--

<p>Review Comment #</p>	<p>FE-6</p>
<p>Subject/Topic</p>	<p>Tote Road stream monitoring</p>
<p>References</p>	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.4.2.1, p.177 of 922; section 6.4.6.2, p. 185 of 922</p> <p>Baffinland Iron Mines Corporation (Baffinland). 2022. Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board. NIRB File No. 220331. Appendix G.17</p>
<p>Summary</p>	<p>Baffinland has committed to several new study programs to assess potential dust and sediment impacts to tote road stream ecosystems and is requesting regulatory advice on the need to create buffer zones to protect streams from dust suppressant applications, but is no longer preparing its annual “DFO Tote Road Report”. Clarifications are needed.</p>
<p>Importance of issue to the impact assessment process</p>	<p>The new studies committed to should improve understanding of potential impacts of truck traffic along the Tote Road on the ecology of streams crossed. Advice is needed on whether a buffer zone should be established to protect streams along the Tote Road from applications of dust suppressants. Monitoring of Tote Road stream crossing</p>

	<p>infrastructure, with annual updates on culvert remediation and fish passage constraints, should be continued to ensure unimpeded access by juvenile Arctic char to and from their summering habitat.</p>
<p>Detailed review Comments</p>	<p>Baffinland plans to implement an <i>“aquatic effects monitoring program for the Tote Road watercourses that will further evaluate potential dust effects to the aquatic environment (Section 6.3.4).”</i> (SOP s.6.4.2.1, p. 177 of 922). No description of this program was found in Section 6.3.4.</p> <p>Baffinland has committed to additional monitoring at representative streams that lead into Phillips Creek along the Tote Road, and to adding additional parameters related to possible contaminants from rubber tire wear to its current Tote Road Monitoring Program (SOP s.6.4.6.2, p. 185 of 922). It is drafting methodology for these programs in consultation with QIA, with the University of Saskatchewan providing advice on studying rubber tire contaminants. The Phillips Creek study is to be implemented during the 2023 open water season and the tire contaminants will be studied for 2-years. QIA welcomes these commitments.</p> <p>“Baffinland will seek confirmation from regulators as to whether a buffer is required for safe application of dust suppressants along the Tote Road to avoid contamination of surface waters on either side of water crossings and in ditches along the Tote Road.” (SOP s. 6.4.6.2, p. 185 of 922. Good idea. It is important that the advice be provided soon to inform summer 2023 suppressant applications. The advice and underlying rationale should be shared with other interested parties (e.g., QIA, MHTO).</p> <p>Baffinland has not included a “DFO Tote Road Report” (e.g., Baffinland 2021) with its annual reporting for 2022 to the Nunavut Water Board or NIRB. This report has provided annual updates on the status of stream crossings, Arctic char passage, and the need for remediation of culverts and other structures. Many streams crossed by the Tote Road provide important summering habitat for juvenile Arctic char. These fish rely on unimpeded passage to and from these habitats, but the culverts have often required remediation, so monitoring and reporting should continue.</p>

<p>Recommendation/ Request</p>	<p>a. Baffinland clarify what comprises the “aquatic effects monitoring program for the Tote Road” referred to in SOP Section 6.4.2.1, and provide details on it if they are not already in the SOP application materials.</p> <p>b. Baffinland provide an update on the status of its new commitments to develop methodology and implement new aquatic study programs for the Tote Road streams.</p> <p>c. Baffinland clarify what monitoring of stream crossings will be continued over the long term and commit to providing annual reports similar to the DFO Tote Road reports that provide updates on the status of Tote Road stream crossings, remediation required and completed, and passage of Arctic char.</p> <p>Baffinland seek advice from the appropriate regulatory body on the need for a buffer zone between Project dust suppressant applications and streams to inform summer 2023 suppressant applications, and share the advice and any underlying rationale with QIA and the MHTO when received.</p>

VII. MARINE ENVIRONMENT AND SHIPPING

<p>Review Comment #</p>	<p>ME-1</p>
<p>Subject/Topic</p>	<p>Impacts to ringed seals</p>
<p>References</p>	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.5.3.1, pgs. 192-197 of 922</p>
<p>Summary</p>	<p>Inuit Qaujimagatuqangit (IQ) on impacts to ringed seals has not been comprehensively summarized in the SOP application, and it is therefore not clear that periodic aerial surveys (one in 2021) are sufficient to monitor the impacts experienced by harvesters.</p>
<p>Importance of issue to the impact assessment process</p>	<p>Inuit have been reporting effects from Project shipping on ringed seals, and it is important that programs be designed to monitor these impacts in a timely, consistent, and rigorous fashion, and develop effective mitigation that can be implemented in time to make a difference if</p>

	<p>adverse impacts are encountered. Given statements made by Inuit in relation to the Mary River Project, it is possible that impacts on ringed seal are being underestimated with the current monitoring program in place.</p>
Detailed review Comments	<p>Inuit have been reporting shipping-related impacts to ringed seals for many years, and in 2021 the Proponent conducted an aerial survey which it states, “support impact predictions that no significant effects to ringed seal distribution and density would occur as a result of Project activities” (s. 6.5.3.1, page 184, pdf page 197 of 922 in complete file). This contradicts Inuit who, for many years, have been reporting shipping-related impacts to ringed seals.</p> <p>However, the SOP application does not provide any detailed documentation on the Project-related effects to ringed seals that Inuit are experiencing and reporting. hat Inuit Qaujimagatuqangit (IQ) has been collected by the Proponent to indicate that aerial surveys are sufficient to monitor the impacts they are experiencing.</p>
Recommendation/ Request	<ol style="list-style-type: none">a. Baffinland provide additional information on the IQ observations it has documented on ringed seals, including when and where impacts are occurring, and how that information has been collected to date.b. Baffinland identify whether and if so, how it has engaged Inuit on the question of how to properly monitor Project impacts and overall population and condition of ringed seal in the Project-affected area, and if so what Inuit have requested and how this has been acted on by Baffinland or committed to be acted on.c. In light of the response to the above, Baffinland provide an explanation on what confidence NIRB and other parties should put on periodic aerial surveys as adequately monitoring impacts on ringed seals.

Review Comment #	ME-2
Subject/Topic	Assessing alternate explanations for the significant decrease in narwhal abundance in Eclipse Sound
References	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.5.3.1</p> <p>Baffinland Iron Mines Corporation (Baffinland). 2023. Submission of Supporting FEIS Addendum for Sustaining Operations Proposal. NIRB File No.08MN053. pg. 5</p>
Summary	<p>The Proponent does not consider open-water shipping to be a likely cause driving the significant decline in narwhal abundance in Eclipse Sound. Other intervenors disagree with this assertion, and the Proponent has provided very limited evidence to support this position.</p>
Importance of issue to the impact assessment process	<p>The significant declines in narwhal abundance in Eclipse Sound are of concern to many parties, including QIA and Inuit harvesters in Pond Inlet. Effective adaptive management and mitigation requires an understanding of other potential factors that might also impact narwhal, particularly those the Proponent asserts are driving the decline. Intervenors and NIRB require this information to make informed determinations of the role Project shipping has on narwhal population declines.</p>
Detailed review Comments	<p>Baffinland asserts at pg. 182 of 922: "Open-water shipping in the RSA is not considered the likely cause of the observed decline in 2021..." and that "A holistic review of the data from the 2021 shipping season does not conclude that the relatively lower number of narwhals observed in Eclipse Sound in 2020 and 2021 was Project driven." (pg. 181 of 922).</p> <p>Baffinland asserts that "there are other factors driving the fluctuations in narwhal abundance between Eclipse Sound and Admiralty Inlet, and there is IQ and scientific rationale to support that view" (e.g., SOP cover letter, page 5).</p>

	<p>Other factors that the Proponent identifies as potentially contributing to the decline in Eclipse Sound narwhal abundance including changes in sea ice coverage, prey availability, and predation pressure (e.g., s. 6.5.3.1, page 183, pdf page 196 of 922 in complete file). No evidence (e.g., assessment of sea ice conditions, changes in killer whale abundance and distribution) is presented to support this. The Proponent further asserts that it is beyond its responsibly to test for the effects of external (non-Project) stressors, and that it remains committed to supporting the responsible agencies and local communities on regional monitoring initiatives, but that any such assessment should be led by DFO (s. 6.5.3.1, page 183, pdf pg. 196 of 922). QIA agrees that DFO has a mandate to conduct regional-scale monitoring and management, but the Proponent has a responsibility to monitor changes related to the project, which requires consideration of other factors that may be impacting the Eclipse Sound narwhal population.</p> <p>In addition to an absence of scientific supporting evidence for Baffinland’s purported “external” factors, the SOP does not provide supporting IQ evidence re: changes that have occurred and Project and non-Project contributions to these changes in Eclipse Sound narwhal stocks. What IQ has the Proponent compiled on longer-term changes in narwhal abundance?</p>
Recommendation/ Request	<p>Baffinland provide:</p> <ul style="list-style-type: none">a. A more detailed assessment of the changes in environmental conditions that it suggests are driving the large-scale reduction in narwhal abundance in Eclipse Sound, including assessment of long-term changes in sea ice conditions and killer whale abundance and distribution in both Eclipse Sound and Admiralty Inlet.b. An update on what IQ it has gathered on this topic, including discussion of what factors Inuit have attributed changes in narwhal populations in Eclipse Sound to. This update must identify when and how such IQ was gathered and what verification methods were used by Baffinland in relation to it.

Review Comment #	ME-3
Subject/Topic	Progress on existing commitments for marine mammal monitoring, mitigation, and adaptive management
References	Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.5.3.3; appendices 7 and 8
Summary	The Proponent made a number of commitments as part of the Phase 2 review and PIP Renewal approval. Many of these commitments are meant to improve marine mammal monitoring, mitigation, and adaptive management, and updates on their status are required.
Importance of issue to the impact assessment process	Commitments made by the Proponent are meant to strengthen adaptive management and improve mitigation of impacts to marine mammals (narwhal, ringed seal). A better understanding of the progress on these commitments, including if and how they will be implemented during the SOP time frame, are needed to better understand how the Proponent will advance and strengthen mitigation.
Detailed review Comments	<p>The Proponent has made a number of commitments to strengthen monitoring, adaptive management, and mitigation of Project-related effects on marine mammals. These commitments have been made both through the Phase 2 review process (and carried forward) and through the PIP Renewal approval (s. 4.2, pages 78-79, pdf pages 91-92 of 922; Appendix 7, pdf pages 633-664; Appendix 8, pdf pages 665-676).</p> <p>Key commitments for marine mammals include:</p> <ul style="list-style-type: none"> • Baffinland’s commitment to develop a sampling program to assess cortisol levels and body condition in a systematic program working with harvesters to gather samples. This program is reported to be currently under development and will be presented to the MHTO for review and feedback (6.5.3.3, Table 6.19, pages 186-188, pdf pages 186-201 in complete file; also see Appendix 7, page 4 of 31, pdf page 637 of 922 in complete file; Appendix 8, pdf page 671 of 922 in complete file). In Appendix 8 (pdf page 671 of 922 in complete file)

	<ul style="list-style-type: none">○ What are the timelines for program development and review and feedback, and does the Proponent consider the MHTO to be the only review party?● Baffinland’s commitment to update the Marine Monitoring Program to make it clear what behavioral indicators are recorded during the Ship Board Observer (SBO) Program (Appendix 7, page 16 of 31, pdf page 649 of 922 in complete file). This commitment was for the Proponent to analyze and report the behavioural data it was collecting and has already collected as part of the SOP (based on the SBO manual used to train observers).<ul style="list-style-type: none">○ When will the Proponent be reporting on its analysis of the behavioural data SBO observers were collecting since program start?● Baffinland commitment to reporting on observed behavioural responses of ringed seal collected through the Ship-Based Observer Monitoring Program during the shoulder seasons (Appendix 7, page 28 of 31, pdf page 661 of 922).<ul style="list-style-type: none">○ Data on ringed seal behavioural responses should have been collected since program inception, based on the training provided to observers. When will the Proponent be reporting on its analysis of the ringed seal behavioural data SOP observers have been collecting?
Recommendation/ Request	Baffinland provide intervenors with updates on: a. the timeline for establish of the cortisol and body condition monitoring program and what parties Baffinland proposes should review the draft program. b. The timeline for analysis of and reporting on the behavioural response data it has been collecting (for all marine mammals including ringed seal).

Review Comment #	ME-4
Subject/Topic	Clarification of total ore that could be shipped in 2024
References	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. appendix 3; section 1.2, pg. 23</p> <p>Baffinland Iron Mines Corporation (Baffinland). 2023. Submission of Supporting FEIS Addendum for Sustaining Operations Proposal. NIRB File No.08MN053.</p>
Summary	<p>The Proponent has requested that the Project Certificate be amended to allow shipping of any stranded ore in a previous year in addition to the nominal limit of 6 Mtpa. QIA seeks clarification on the maximum amount of ore that the Proponent may ship during any one season, particularly in 2024.</p>
Importance of issue to the impact assessment process	<p>The amount of ore to be shipped will determine the number of vessels required (depending on charter availability, and within an upper limit of 84 ore carrier transits per year). Ore carrier numbers and types (i.e., size) will influence the overall potential for noise disturbance to marine mammals (particularly narwhal).</p>
Detailed review Comments	<p>In 2022, approximately 1.3 million tonnes (Mt) of ore were left at Milne Port when the shipping season closed early, on October 13, due to an influx of multi-year ice along the Northern Shipping Route. The Proponent wishes to ship as much of that ore as possible during the 2023 and 2024 seasons. The SOP cover letter (pages 4-5) notes that the Proponent “<i>will aim to evacuate as much of that as possible during the 2023 and 2024 season</i>”, depending on ore carrier availability and seasonal conditions. The SOP will include an absolute trucking limit of 6 Mtpa, and the cover letter (p. 5) states that “<i>the total maximum volume of ore that could ever be transported by ship in 2023 and 2024 combined would be no more than 13.3 million tonnes (i.e. 1.3 Mtpa ore hauled and stranded in 2022 + 6 Mtpa ore hauled in 2023 + 6 Mtpa ore hauled in 2024)</i>”.</p> <p>There could potentially be 7.3 Mtpa shipped in 2023 (i.e., 6 Mt mined and trucked in 2023 plus 1.3 Mt at port from 2022). What happens if the</p>

	<p>Proponent is unable to ship 7.3 Mt in 2023? What could the maximum tonnage be in 2024 (within the 84 vessel limit)? The Proponent's suggested revision to Term and Condition 179(a) (e.g., SOP main document s. 1.2, p. 10) states that <i>"the Proponent is permitted to ship the previous year's ore remaining at Milne Port"</i> should ore remain at Milne Port as of October 31.</p> <p>What would happen, for example, in a scenario where heavy ice conditions again result in a shortened season in 2023, and more ore is stranded? What is the absolute maximum that Baffinland expects it could ship in either 2023 or 2024? Is it 7.3 Mt? Or could the 2024 proposed shipping level be higher than 7.3 Mt in a scenario where even more ore is stranded in 2023 than in 2022? As a theoretical example, consider a scenario where only 5 Mt can be shipped in 2023 (1.3 Mt stranded in 2022 plus 3.7 of the 6 Mt trucked in 2023). This would result in another 2.3 Mt stranded in 2023. Would the Proponent then plan to ship 8.3 Mt (2.3 Mt stranded in 2023 plus 6 Mt trucked in 2024) in the 2024 shipping season? This would still result in a total of 13.3 Mt shipped in 2023 and 2024 (assuming vessel availability), but would theoretically entail the use of more large (e.g., Cape Class) vessels in 2024, which could lead to more underwater noise disturbance compared to other years.</p> <p>Additionally, how does the volume of ore to be shipped (planned to ship) affect the logistics of vessel convoys? Will convoys be more difficult to schedule and organize with increased shipping limits? The use of convoys is meant to reduce acoustic disturbance to marine mammals, and maximizing the number of vessel transits in convoy will improve mitigation of disturbance impacts from Project shipping. Logistic and scheduling constraints that require single vessel transits will reduce the effectiveness of convoying, which Baffinland considers a key feature of mitigation and adaptive management of Project-related shipping impacts.</p>
Recommendation/ Request	<ol style="list-style-type: none">a. Baffinland provide clarification on the maximum amount of ore that it is seeking permission to ship in 2024 should the 2023 season again be shortened due to environmental conditions. b. Baffinland provide additional information on the logistics of convoy scheduling including how tonnage to be shipped

	<p>could affect the number of vessels that could be convoyed (also see technical comment ME-5 regarding convoy scheduling).</p> <p>c. Baffinland provide more information on how much increased dust deposition would be expected along the transportation route and at Milne Port (and surroundings) under different operational flexibility scenarios.</p> <p>d. Baffinland provide clarity on whether the impacts assessed in the SOP are based on an average 6.0 mtpa throughput, storage and shipping year, or are they based on the “busiest year” scenario, with the largest amount of activity? The proper way to assess this would be to use the busiest year, not the average, scenario, to have a properly precautionary/conservative assessment.</p>
--	--

Review Comment #	ME-5
Subject/Topic	Clarification on convoy scheduling
References	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 1.2; section 2.3.4</p> <p>Baffinland. 2023. Marine Environmental Working Group (MEWG) Meeting - Minutes. Meeting ID: M-14022023. Meeting Minutes (Final), distributed by Baffinland to MEWG members and observers via email on 25 April 2023.</p> <p>Austin, M. 2023. Baffinland 2022 Underwater Acoustic Monitoring: Preliminary analysis of noise from vessel convoys. Version 1.0. Technical report by JASCO Applied Sciences for Baffinland Iron Mines.</p>
Summary	<p>Vessel convoys were introduced as a mitigation measure in 2022, and the Proponent plans to continue to use convoys to the extent possible. The use of convoys may be limited, however, due to scheduling and logistical issues. For example, in 2022 inbound convoys occurred more often than outbound convoys, and convoys from the start of the RSA to</p>

	<p>Ragged Island occurred more often than convoys through Milne Inlet. Additional information on convoy logistics in 2023 and 2024 is requested.</p>
<p>Importance of issue to the impact assessment process</p>	<p>Vessel convoys were introduced in 2022 as a way to reduce total sound exposure. The degree of noise exposure reduction, and thus potential reductions to narwhal acoustic disturbance, depend on the number and location of convoys.</p>
<p>Detailed review Comments</p>	<p>The Proponent introduced vessel convoys as a new mitigation in 2022, as a way to further reduce total sound exposure (e.g., see SOP section 2.3.4, pg. 40 of 922). Having ore carriers and other Project vessels transit in convoys with less than 10 km inter-vessel separation results in an overall reduction of the total sound exposure in the RSA compared to single vessel transits (Austin 2023). Convoys result in an increase in instantaneous sound levels between the vessels, but it is expected that this increase is compensated by a shorter overall exposure duration and a net decrease of noise exposure.</p> <p>The Proponents passive acoustic monitoring (PAM) program recorded data from 11 convoys in 2022 (Austin 2023). The monitoring program recorded underwater sound levels for four convoys in Eclipse Sound between 31 July and 7 August, all of which were inbound convoys (one convoy of three ore carriers and two tugs at the start of the shipping season, and three convoys of two ore carriers). The hydrophone deployed in Milne Inlet recorded seven convoys between 13 August and 01 October, four of which were inbound (four convoys of two ore carriers). Only three outbound convoys (compared to eight inbound) were recorded (two convoys of two ore carriers, one convoy of one ore carrier and one sealift vessel).</p> <p>Most of the inbound convoys were from the start of the RSA to the anchorage at Ragged Island (MEWG presentations in February 2023), with few convoys from the RSA border to port or from Ragged Island to port. Milne Inlet is a key area for narwhal during summer, and thus a key area of concern for acoustic disturbance. MEWG members asked for additional clarification on convoys during the February 2023 meeting, and Baffinland informed the group that scheduling logistics make it difficult to have convoys through Milne Inlet or to have more outbound convoys (Baffinland 2023). There are three anchorages designated at Milne port, but Baffinland only uses two, with one retained for emergency purposes. Given ship loading schedules, this makes it is</p>

difficult to bring two vessels in from Ragged Island at one time. Baffinland noted that convoy scenarios will generally be limited to what was accomplished in 2022, unless it can find another anchoring location at port, which has been unsuccessful to date. With respect to outbound convoys, because of sequencing of loading, vessels have to leave and cannot take up another anchorage that another inbound vessel needs.

Convoys led to a reduction in overall noise exposure in 2022, but loaded outbound vessels tend to be louder (Austin 2023), so these logistical issues may ultimately limit the value of convoying as mitigation. Passive acoustic data also indicate that putting the loudest vessels in the centre of the convoy will provide the most benefit with respect to noise exposure reduction, which provides ideas for convoy reconfiguration (Jasco representative, MEWG meeting, February 2023). The Jasco representative also noted that scientific literature suggests that vessels need to be 2-3 km away from each other to be most effective (MEWG, February 2023). The Proponent considers a convoy to be comprised of vessels within 10 km or closer, which may not provide the greatest reduction in noise. Vessels separated by more than 3 km should therefore not be considered to be in convoy, based on Jasco's review of the available literature.

Baffinland has also proposed to bring in larger vessels in 2023 (pending charter availability). The SOP notes that Baffinland can load approximately one vessel, or 75,000t per day (SOP s. 1.2, p. 12, pdf pg. 25 of 922 in complete file). The SOP refers to Capesize vessels as those ranging in size of Deadweight Tonnage (DWT) of 200,000-220,000 and with carrying capacity range of approximately 200,000 to 215,000 metric tonnes (SOP s. 2.3.4, p. 28, pdf page 41 of 922 in complete file). It will take longer to load a larger vessel. Does this make it more difficult to schedule convoys, both inbound and outbound? If this is the case, this would see additional limitations on the application/efficacy of a mitigation measure that is already limited due to shipping logistics.

In summary, QIA is seeking additional clarification and details on how scheduling and port logistics impact potential for inbound convoys through Milne Inlet and outbound convoys through the RSA.

<p>Recommendation/ Request</p>	<p>Baffinland provide:</p> <ul style="list-style-type: none"> a. Additional clarification on how scheduling and port logistics impact the potential for using inbound convoys through Milne Inlet and outbound convoys through the RSA. b. Additional information on the proportion of total transits (ore carriers and Project-related support vessels such as tankers and sealifts) that can convoy, both inbound (from the RSA border to Ragged Island, from the RSA border to Milne port, and from Ragged Island to Milne port) and outbound. c. Additional information on how the use of larger (Capesize) vessels will affect shipping schedule logistics and the potential use of vessel convoys. <p>Baffinland:</p> <ul style="list-style-type: none"> d. commit to maintaining inter-vessel distances of not more than 3 km in any convoy scenario where conditions allow (depending on sea ice presence, etc.). e. Commit to identifying the loudest vessels in the fleet and scheduling convoys such that these vessels are in the centre in any scenario where three or more vessels are in convoy (also see next commitment request. f. Commit to scheduling convoys of three or more vessels except in pre-defined circumstances to be described by Baffinland. <p>Baffinland to identify how often logistic constraints will affect the ability to schedule vessel convoys on average and define what the constraints would be.</p>
---	--

<p>Review Comment #</p>	<p>ME-6</p>
<p>Subject/Topic</p>	<p>Mitigating disturbance impacts to marine mammals (primarily narwhal)</p>
<p>References</p>	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.5.6.1; section 6.5.6.2.</p> <p>Canada Department of Fisheries and Oceans. 2017. Evaluation of the Scientific Evidence to Inform the Probability of Effectiveness of Mitigation Measures in Reducing Shipping-Related Noise Levels</p>

	<p>Received by Southern Resident Killer Whales. <i>Canadian Science Advisory Secretariat Science Advisory Report 2017/041.</i></p> <p>Williams, R., S. Veirs, V. Veirs, E. Ashe, and N. Masticka. 2019. Approaches to reduce noise from ships operating in important killer whale habitats. <i>Marine Pollution Bulletin</i> 139: 459-469.</p> <p>WSP Canada Inc. 2023. Mary River Project 2022 Marine Mammal Aerial Survey Program. Report by WSP Canada Inc., Calgary, AB for Baffinland Iron Mines Corporation, Oakville, ON. Document 166372401-428-R-Rev0-59000, 27 April 2023.</p>
<p>Summary</p>	<p>Mitigation measures employed by the Proponent to reduce underwater noise disturbance have evolved and improved over time. Vessel convoys were introduced in 2022, which was the first year where Eclipse Sound narwhal numbers increased after years of significant declines. Abundance is still significantly reduced from pre-Project shipping, however, and additional mitigation opportunities need to be explored. A small subset of vessels produce a disproportionate amount of the overall noise exposure. These vessels should be identified and be phased out of the Project fleet, to further reduce narwhal exposure to noise disturbance.</p>
<p>Importance of issue to the impact assessment process</p>	<p>Despite advances in mitigation of underwater noise disturbance, and the removal of some non-Project noise sources (i.e., ending of the Pond Inlet Small Craft Harbour construction), Eclipse Sound narwhal abundance is still significantly reduced from pre-Project levels. Additional opportunities to further reduce noise exposure should be explored, and an important mitigation tool not yet implemented is phasing out the loudest vessels in the fleet.</p>
<p>Detailed review Comments</p>	<p>The Proponent employs a variety of mitigation measures to reduce disturbance to narwhal and other marine mammals through Project shipping. Mitigations are summarized in the SOP (e.g., s. 6.5.6.1 and 6.5.6.2, pages 194-196, pdf pgs. 207-209 of 922) and in associated management plans such as the Shipping and Marine Wildlife Management Plan (SMWMP).</p> <p>Mitigation measures in place include:</p>

- requiring Project vessels to maintain constant speed and course when possible;
- travel at a maximum speed of 9 knots when transiting in Eclipse Sound and Milne Inlet;
- minimize idling when at Milne Port or at the established anchorages;
- requiring a continuous path of 3/10ths or less ice concentrations from the entrance of Eclipse Sound to Milne Port to start shipping; and
- vessel staging in Baffin Bay at least 40 km east of the Nunavut Settlement Area.

The use of vessel convoys was introduced in 2022 as an additional mitigation measure. Mitigation has evolved through adaptive management, and the Proponent has made improvements to mitigation over time (e.g., year-over-year improved compliance with speed limits).

The 2022 shipping season saw the introduction of vessel convoys as a way to reduce total sound exposure and associated disturbance to narwhal, and the first increase in the Eclipse Sound narwhal population after several years of significant declines (SOP s. 6.5.3.1, pages 180-182, pdf pgs. 193-195 of 922; WSP Canada Inc. (2023)). The 2022 estimate for the Eclipse Sound narwhal stock was 4,592 narwhal (CV = 0.10, 95% CI 3,754-5,617), an increase from the 2021 estimate of 2,595 (CV = 0.33, 95% CI of 1,369-4,919). This is positive news, but narwhal numbers in the RSA in 2022 were still significantly lower than estimates from surveys conducted between 2004 and 2019 (reviewed in WSP Canada Inc. 2023).

QIA (and other intervenors) disagree with the Proponent's conclusions that shipping is not a factor in narwhal declines, and reiterate the importance of using the best mitigations possible to minimize acoustic disturbance and hopefully see a continued increase in narwhal abundance. Mitigation has evolved and improved over time, but options for further mitigation are limited and narwhal have not returned to pre-Project numbers. The Proponent has indicated that there are operational difficulties with further reducing vessel speeds, and there are no options for the use of alternative routes (i.e., vessels have to transit Milne Inlet). Baffinland has also indicated that operational constraints may also limit the potential for convoys to further reduce noise exposure.

	<p>An additional feasible mitigation that has not been implemented yet is the removal of the loudest vessels from the fleet (and/or vessel retrofit). A small proportion of vessels often produce a disproportionately large amount of the total noise exposure in a region (DFO 2017; Williams et al. 2019). Scientific research has clearly shown that removing or retrofitting the noisiest vessels can provide a significant reduction in noise. For example, Williams et al. (2019) assessed multiple scenarios for shipping noise reduction in British Columbia waters and found that speed limits led to a 3 dB achievable noise reduction, compared to a 6 dB achievable noise reduction for removal/retrofit plus speed limits, and a 10 dB achievable noise reduction through a combination of removal/retrofit, speed limits, and vessel convoys.</p> <p>Further reductions in vessel speed are not feasible, and convoys, while effective at reducing some noise exposure, cannot be implemented for all shipping transits. Acoustic data on vessel noise signatures are available, from both the Proponent's Project-specific monitoring and from independent research by Oceans North/Scripps, that can be used to identify the chartered vessels that produce a disproportionate amount of underwater noise. These vessels could be phased out of the charter fleet for additional underwater noise reductions.</p>
Recommendation/ Request	<p>Baffinland:</p> <ul style="list-style-type: none">a. Commit to identifying the subset of chartered vessels that produce a disproportionate amount of noise in 2023;b. Commit to conducting acoustic modeling to identify what proportion of the loudest vessels should be removed to make the greatest gains in underwater noise reduction; and,c. Provide a plan in a supplemental filing on when and how it will begin phasing out the loudest ore carriers and support vessels (sealift, tankers).

Review Comment #	ME-7
Subject/Topic	Use of ore vessels larger than Post-Panamax
References	<p>Baffinland Iron Mines Corporation (Baffinland). 2013 Early Revenue Phase (ERP) Addendum to the Final Environmental Impact Statement (FEIS). Volume 3 Project Description, pg. 24 of 66; Appendix 3D (Ore Dock and Ship Loading Comparison of Options), pg. 30 and 50 of 65</p> <p>PND Engineering. n.d. Milne Inlet ore dock. Available online at: https://www.pndengineers.com/about-pnd/featured-projects/milne-inlet-ore-dock , Accessed June 17, 2023.</p> <p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal (SOP). NIRB File No.08MN053. section 2.3.4, pgs. 40-44 of 922; section 6.5.4, pg. 205 of 922; section 6.5.5, pg. 206 of 922</p>
Summary	<p>Baffinland is considering the use of Baby Cape and Capesize ore carriers. These vessels are larger than the existing ore dock was designed for, and their environmental impacts were not assessed in the ERP FEIS, PIPR, or SOP reviews. It is not clear whether they can be safely docked and loaded at the existing dock, or whether their environmental impacts will be the same as the vessel classes assessed. QIA requests further information on the vessel-handling capability of the existing dock, and the potential environmental risks and impacts of these larger vessels relative to the smaller vessels that were assessed.</p>
Importance of issue to the impact assessment process	<p>The potential impacts of using vessels larger than Post-Panamax to ship ore from Milne Port may not be reflected in the SOP assessment.</p>
Detailed review Comments	<p><i>“Baffinland continue[s] the trend towards the use of larger ore carriers for a portion of the total vessel calls...”</i> (SOP s. 6.5.4, p. 205 of 922). It states <i>“the SOP will also involve the use of larger ore carriers for a portion of the total vessel calls, including Capesize carriers”</i> (SOP s.6.5.5, p. 206 of 922). Shipping scenarios in the SOP consider scenarios involving up to 6 Baby Cape and 4 Capesize ore carrier return trips annually (SOP s.2.3.4, p. 44 of 922). This is a concern as the dock they will use for mooring and</p>

loading was not designed for these larger vessels, nor were the potential environmental impacts of using these larger vessels assessed.

The existing ore dock was designed by PND Engineering to provide moorage and accommodate *“vessels up to [our emphasis] Post-Panamax-size and will act as a material offloading facility to accommodate the ship loaders and loading operations”* (PND Engineering n.d.). *““The dock will accommodate Handymax, Panamax, and Post Panamax vessels, for which a minimum draft of 17 m [at low tide] is required.”* (ERP FEIS Vol. 3 Project Description, p. 24 of 66; Appendix C. p. 30 of 65). To put the difference in ore carrier sizes in context, the average ore carrier capacity of Project vessels in 2021 was 76, 862 t (SOP s.2.3.4, p. 43 of 922). This is much smaller than Baby Cape vessels and much smaller than Capesize vessels (Table 1).

Table 1. Vessel sizes from the SOP (Tables 2.3 and 2.3, pp. 42-44 of 922).

Vessel type	Length (m)	Beam (m)	Draft (m)	Deadweight Tonnage (DWT) (metric tonnes)
Supramax	199	32	11-13	50,000 – 60,000
Post-Panamax	230	38	14-15	90,000 – 95,000
Baby Cape	250	43	15	100,000 – 120,000
Capesize	300	45-50	17-18	200,000 – 220,000

Assessments of the environmental impacts of Baby Cape and Capesize ore carriers were not found in the ERP FEIS, PIPR, or SOP. These vessels are longer, broader, and deeper than the vessel classes assessed. They carry more ballast water when empty and more ore when fully loaded, with the attendant greater engine power and fuel requirements. Individually they are likely to have greater impacts than the smaller vessels but the impact tradeoffs of replacing several smaller vessels with one larger vessel have not been comprehensively assessed by Baffinland.

	Use of larger vessels raises uncertainty with respect to vessel safety and the environmental impact predictions for shipping.
Recommendation/ Request	<p>Baffinland provide:</p> <ul style="list-style-type: none"> a. A risk assessment of using the existing ore dock to moor and load vessels much larger than it was designed to handle, and identification of additional commitments and physical works and activities necessary to accommodate these larger vessels in a safe and feasible fashion. b. An assessment of all the potential marine environmental impact trade-offs of using these larger vessels instead of those the dock was designed to handle. <p>Transport Canada is requested to identify if it has any issues with the safety of using the existing dock to moor and load Capesize vessels.</p>

Review Comment #	ME-8
Subject/Topic	Risk Assessment for Introduction of Aquatic Invasive Species (AIS) from Ballast Water
References	Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. section 6.5.3.3, pg. 201 of 922; appendix 15, pg. 907 of 922 and pg. 918 of 922
Summary	Baffinland has assessed the relative AIS invasion risk from Project vessels’ ballast water as intermediate but with moderate to high uncertainty. QIA recommends this assessment be updated once results from the risk-based biological assessment of Project vessels are available to better inform AIS risk mitigation.
Importance of issue to the impact assessment process	Information from the risk-based biological study of ships ballast water and other sources is critical to the characterization of – and determination of the significance of - effects on the marine environment and can be used to reduce uncertainty in this risk assessment and improve mitigation.

<p>Detailed review Comments</p>	<p>The updated "Risk Assessment for Introduction of Aquatic Invasive Species from Ballast Water" ranked the relative level of AIS invasion risk posed by ballast water as intermediate, with a moderate to high level of uncertainty (SOP Appendix 15, s.4.0, p. 918 of 922). This assessment factors in the use of both exchange and treatment of ballast water to reduce AIS risk, which is an important advance. However, it has had to rely on several correction factors and is not based on biological data from the ballast water of Project vessels.</p> <p>Baffinland proposes to carry forward the following Phase 2 commitments related to AIS monitoring:</p> <p><i>"• Follow the most updated version of DFO's AIS Rapid Response Framework in the event that a nonindigenous species is introduced and/or becomes established.</i></p> <ul style="list-style-type: none"><i>• Work with the MEWG and DFO to establish species-specific Rapid Response Plans. Rapid Response Plans will be developed for species identified as high risk and placed on the Trigger List.</i><i>• Implement a ballast water compliance sampling plan based on a risk-based targeting methodology to be developed in consultation with DFO and TC." (SOP s.6.5.3.3, p. 201 of 922)</i> <p>Referring to the AIS risk assessment, Baffinland has noted that <i>"Identifying and quantifying the actual proportions of harmful AIS present in the ballast water per each vessel would provide a more accurate estimate." (SOP Appendix 15, s.4.0, p. 918 of 922).</i></p> <p>Biological and shipping data from the risk-based study involving DFO could provide these data and, together with the scientific literature, be used in the future to reduce uncertainty in the Appendix 15 risk assessment and thereby improve AIS risk mitigation. The updated risk assessment should incorporate information on:</p> <ul style="list-style-type: none">• species presence and abundance in the ballast water,• proportion of number of invasive species identified in source ports, and
--	--

	<ul style="list-style-type: none"> • interannual variability in the source ports used by Project vessels <p>This material can reduce uncertainty and better understand the sensitivity of the AIS risk assessment to these factors. Correction factors for exchange efficiency and treatment reduction of species entrained with ballast water should also be updated.</p>
Recommendation/ Request	<p>Baffinland:</p> <ol style="list-style-type: none"> Confirm its proposed commitment to carrying forward into the SOP the Phase 2 commitments listed above related to AIS monitoring. Commit to phase out use of Project vessels that are shown by risk-based biological studies of ballast water or hull fouling to pose the highest risk of introducing potentially invasive species into Project ports. Update the Appendix 15 risk assessment when results are available from the DFO risk-based biological study of Project vessel ballast water.

Review Comment #	ME-9
Subject/Topic	Ships serving the mine - fuels types
References	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. appendix 7, pg. 643 of 922, SOP ID#1</p> <p>Baffinland Iron Mines Corporation (Baffinland). 2015. Spill at Sea Response Plan (BAF-PH1-830-P16-0042, Rev 0). p. 47 (Table 1-1)</p> <p>VIII. INUIT CIRCUMPOLAR COUNCIL. 2020. INUIT CALL FOR STRONGER PROTECTIONS FOR SAFE ARCTIC SHIPPING CONSIDERING WEAK HFO BAN PASSED AT IMO. PRESS RELEASE. RETRIEVED FROM: HTTPS://WWW.INUITCIRCUMPOLAR.COM/NEWS/INUIT-CALL-FOR-STRONGER-PROTECTIONS-FOR-SAFE-ARCTIC-SHIPPING-CONSIDERING-WEAK-HFO-BAN-PASSED-AT-IMO/</p>

	<p>Jönander, Christina and Ingela Dahllöf. 2020. Short and long-term effects of low-sulphur fuels on marine zooplankton communities. <i>Aquatic Toxicology</i> 227 (2020).</p> <p>Nordic Council of Ministers. 2022. Low Sulphur Fuel Oil: Identification of Environmental Impacts in a Cold Marine Environment. TemaNord 558:2022. Retrieved from: https://pub.norden.org/temanord2022-558/#</p> <p>Roy, Biswajoy and Brian Comer. 2017. Alternatives to heavy fuel oil use in the Arctic: Economic and environmental trade offs. International Council on Clean Transportation. Working Paper 2017-04. Retrieved from: https://theicct.org/sites/default/files/publications/Arctic-HFO-alternatives_ICCT_Working-Paper_04182017_vF.pdf</p> <p>Scarlett, Alan et al. 2021. MV <i>Wakashio</i> grounding incident in Mauritius 2020: The world's first major spillage of Very Low Sulfur Fuel Oil. <i>Marine Pollution Bulletin</i> 171 (2021).</p> <p>Daling, P.S. and K.R. Sørheim. 2020. <i>Characterization of Low Sulfur Fuel Marine Fuel Oils: A New Generation of Marine Fuels</i>. SINTEF, Norway. Retrieved from: https://www.itopf.org/fileadmin/uploads/itopf/data/Documents/RDaward/Summary_Report_Sintef_Low_sulphur_fuel_oils.pdf</p>
<p>Summary</p>	<p>In addition to black carbon emissions and climate change impacts of ships burning heavy fuel oils (HFO), this type of ship fuel is highly persistent in the environment if spilled. Ore carriers and tankers serving the Mary River Mine should stop using or carrying this category of fuel to reduce potential impacts if a spill occurs.</p>
<p>Importance of issue to the impact assessment process</p>	<p>The Spill at Sea Response Plan states that both tankers and ore carriers serving the mine use two blends containing heavy fuel oil: Intermediate Fuel Oil (IFO) and Low Sulfur Fuel Oil (LSFO). Both are persistent oils that cause substantial and long-lasting ecological impacts if accidentally released. Globally, shipping fleets have been switching away from IFO and heavy fuel oils and burning distillate oils, which produce lower levels of greenhouse gas emissions and, while still damaging if spilled, are less persistent. LSFO is an emerging, transitory fuel that was engineered to comply with emissions standards; however, this oil is equally if not more ecologically toxic</p>

	<p>than IFO. Over the last few years, shipping companies and spill response organizations have come to recognize that LSFO behave differently to other fuel oils, and that the fate and effect of LSFO spills vary significantly depending upon the receiving environment. In cold regions, LSFO spills present as highly viscous, coating and smothering marine species and habitat. A 2020 report by Norwegian researchers concluded that LSFO spills have “a high degree of persistence on the sea surface” and that “an oil spill response operation can even be more challenging than the previous traditional intermediately fuels oils” (Daling and Sørheim, 2020).</p> <p>Given that oil spill response operations in the project area would already be very challenging, the introduction of LSFO adds uncertainty and creates the potential that oil spills from project vessels would cause substantial adverse impacts to the waters, lands, animals, and people in the region.</p>
<p>Detailed review Comments</p>	<p>The Spill at Sea Response Plan (SSRP) states that both tankers and ore carriers serving the mine use two blends that include heavy fuel oil: Intermediate Fuel Oil and Low Sulfur Fuel Oil.</p> <p>Heavy fuel oil (HFO) refers to the fuel oil blends created from refinery residuals. HFO has long been a ship fuel of choice due to having a lower cost than more refined products such as marine gas oil or marine diesel oil. However, these residual oils are known to be highly persistent if spilled to the environment and generate higher air pollution including levels of black carbon (Roy and Comer, 2017). Distillate fuels certainly do not eliminate impacts, but they are more likely to evaporate and disperse, while HFOs are more likely to emulsify (take on water); sink; and/or persist in the environment or be encapsulated in sea ice.</p> <p>Appendix 7 of the SOP lists previous commitments, including a Phase 2 commitment that is identified as being in the SOP which expresses a commitment to develop a comprehensive Climate Change Strategy, and explains that, “important developments are occurring at the international level that our world class fleet of vessels and ship contractors are poised to comply with, including the 2020 Sulphur Cap and potential Ban on Heavy Fuel Oil in the Arctic.” This implies a forthcoming change in fuels used on the vessels in question, but no updated information has been provided.</p> <p>The 2020 Sulphur Cap now in effect for more than three years means that fuels used may well have changed. Either the same fuel is being used (in which case the referenced commitment should not mention</p>

	<p>the 2020 Sulphur Cap as it has no relevance) with after-treatment of air emissions on board (“scrubbers”), or the vessels are using a low sulphur fuel oil entirely or a lighter, distillate fuel. Either change has implications beyond the Climate Change Strategy and warrant an update to the Spill at Sea Response Plan.</p> <p>The blends created to meet sulphur content requirements may or may not be captured by the Arctic HFO ban when it does take effect since there is no standard blend and the properties tend to vary. Their behavior in the marine environment when spilled is also highly variable and poses challenges to spill responders. Both the behavior when spilled to water and potential environmental impacts have been the focus of recent studies, with researchers observing that LSFOs may pose greater ecological risks than the heavy and intermediate fuel oils they are replacing. (NCM, 2022; Jönander and Dahllöf, 2020). Real-world experience is also being gained through spills such as the <i>M/V Wakashio</i> in Mauritius, where the spill caused widespread ecological damages resulting in significant fisheries closures and tourism losses that persist three years later (Scarlett et al 2021).</p> <p>The second International Maritime Organization requirement mentioned, a ban on the use and carriage of HFOs in the Arctic, does not fully take effect until 2024 and allows many vessels to waive the requirement until 2029. The Inuit Circumpolar Council is one group calling for an earlier implementation in support of Inuit goals for protecting the Arctic environment (ICC, 2020). This measure will eventually require a shift in fuels used, but an update to the commitment is warranted regarding the timeline.</p>
Recommendation/ Request	<p>Baffinland to:</p> <ul style="list-style-type: none">a. Provide updated information on fuels used for tanker and ore carrier propulsion and update Phase 2 commitment #1 cited in Appendix 7 of the SOP, as well as related information in the SSRP.b. Commit to requiring ships serving the Mary River Mine to use safer distillate fuels beginning with the 2023 shipping season, if this is not already intended. If this change is being made, then it must be documented as a commitment going forward in the updated language requested in (a) above.

Review Comment #	ME-10
Subject/Topic	Procedures and equipment to rescue a disabled ship
References	<p>Baffinland Iron Mines Corporation (Baffinland). 2015. Spill at Sea Response Plan (BAF-PH1-830-P16-0042, Rev 0). p. 55.</p> <p>International Maritime Organization. 2008. Guidelines for Owners/Operators in Preparing Emergency Towing Procedures. MSC.1/Circ.1255</p> <p>Intercargo. 2021. Bulk carrier casualty report: Years 2012-2021 and trends. Retrieved from: https://www.intercargo.org/wp-content/uploads/2022/04/INTERCARGO-Bulk-Carrier-Casualty-Report-2021-1.pdf</p> <p>Transport Canada. 2023. Improving Canada's emergency marine towing capacity. Retrieved from: https://tc.canada.ca/en/campaigns/protecting-our-coasts-oceans-protection-plan/stronger-incident-prevention-response/improving-canada-s-emergency-marine-towing-capacity</p> <p>Vesseltracker.com. 2023. Golden Opal Cargo Ship. Retrieved from: https://www.vesseltracker.com/en/Ships/Golden-Opal-9470404.html</p> <p>Mackay, M. 2020. Venture Sea heads north. Retrieved from: http://tugfaxblogspotcom.blogspot.com/2020/09/venture-sea-heads-north.html</p>
Summary	<p>The Spill at Sea Response Plan (SSRP) identifies the potential for tanker groundings, but information on the way such an incident would be prevented if a ship lost propulsion or steering is not provided. No mention is made of the potential for ore carrier groundings, though this is the single greatest cause of casualties of this vessel type (Intercargo, 2021). The procedures and equipment that would be used to control</p>

	<p>the drift of a disabled ship in the RSA (but away from the immediate port area) should be described.</p>
<p>Importance of issue to the impact assessment process</p>	<p>Preventing a marine oil spill is paramount since even in the most favorable conditions, response efforts are unlikely to effectively mitigate impacts. As a result, it is critical that the Proponent provide detailed information about how prevention efforts will be maximized and for parties to gauge their likely effectiveness against best practices, including for an ore carrier or tanker that loses steering/propulsion while in route to/from port.</p>
<p>Detailed review Comments</p>	<p>The Spill at Sea Response Plan (SSRP) identifies the potential for tanker groundings, but information of the way such an incident would be prevented if a ship lost propulsion or steering is not provided in this or other documents reviewed. No mention is made of the potential for ore carrier groundings, though this is the single greatest cause of casualties of this vessel type (Intercargo, 2021). As one near-miss incident example, in September 2020, the M.V. Golden Opal, a carrier loaded with ore enroute from Milne Port to the UK, had a steering gear failure that prevented it from maintaining course while in Davis Strait. In this case, a tug was sent from Halifax to provide assistance and was able to do so.</p> <p>Controlling a disabled ship before it grounds can prevent loss of life and hydrocarbon spills. The ability to do so depends on:</p> <ul style="list-style-type: none"> • the conditions at the time (wind speed and direction, wave height, etc.), • the procedures and equipment on the ship (requirements exist for tankers to have methods to affix emergency tow lines, but there are not similar specific requirements for cargo ships though equipment may be on board), • availability of – and ability to deploy – an emergency tow connection to the ship, and • the ability of a tug of sufficient power to reach the ship and safely control the drift. Emergency tow systems can be available on board already or delivered to the ship via helicopter (if such equipment and procedures are available on standby for prompt deployment). <p>The International Maritime Organization requires ships to carry part of this information (focused on on-board equipment and crew procedures; see International Maritime Organization, 2008). However,</p>

	<p>preparation and coordination with the available tugs is critical as well, along with consideration of their own equipment and capacity. Maneuvering a ship in protected port waters requires a different level of tug power/configuration than effecting a rescue in more exposed waters, particularly in inclement weather. Consideration of the feasibility of rescuing a disabled ship must take into consideration the size and type of ships that will be used, as requirements may change.</p> <p>Canada has recognized the importance of dedicated emergency towing vessels and has contracted some for service on the Pacific and Atlantic coasts while studying needs and long-term approaches nationally (Transport Canada, 2023).</p> <p>It is not clear from the information provided by Baffinland what procedures and equipment are in place to prevent a grounding if an ore carrier or tanker loses propulsion, considering the intended and increasing ship sizes.</p>
<p>Recommendation/ Request</p>	<p>Baffinland to provide information about equipment for affixing emergency tow lines, availability of such tow lines, capability of available tugs to secure and sustain a connection to the ship, and procedures for prompt notification and emergency tow deployment. This should include consideration of the size and type of both ore carriers and tankers proposed to be used as well as the specifications of the available tugs.</p>

IX. SOCIO-ECONOMICS

<p>Review Comment #</p>	<p>SE-1</p>
<p>Subject/Topic</p>	<p>Inuit education and training on installation, operation, and maintenance of renewable energy technologies</p>
<p>References</p>	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. pg.17,31,206-243.</p>

<p>Summary</p>	<p>As Nunavut moves toward a future of Inuit energy independence which will include renewable energy and a transition off diesel energy production, Inuit will need to develop the skills necessary for installation, operation, and maintenance of clean energy technologies. Baffinland should commit to help build community capacity by training Inuit on the installation, operation and maintenance of renewable energy technologies that may be implemented at the Mary River Project as part of Baffinland’s Climate Change Strategy.</p>
<p>Importance of issue to the impact assessment process</p>	<p>Aside from the known benefits of reducing GHG emissions, energy independence via a transition off diesel energy production is critical for Nunavummiut. Nunavut relies heavily on imported diesel fuel, making the region vulnerable to supply disruptions and price volatility. Building capacity in renewable energy technologies can provide a stable and predictable energy cost over the long-term. This would benefit Nunavummiut and Baffinland by reducing energy expenses and creating economic stability. Additionally, community uptake of renewable energy technologies could help offset the Mary River Project’s carbon footprint.</p> <p>However, there is currently a lack of capacity among local technicians regarding operation and maintenance of clean technologies. Baffinland is dedicated to contributing to the Qikiqtaaluk community as an active member. To support the transition towards Inuit energy independence, it is therefore essential to prioritize future clean energy training opportunities for Inuit. This training will equip Inuit with the skills needed for installing, operating, and maintaining green technologies. Inuit renewable energy independence is crucial for self-sufficiency, sustainable development, economic growth, and cultural heritage preservation. Therefore, providing training in this sector is imperative for Baffinland.</p>
<p>Detailed review Comments</p>	<p>Through the various Inuit training programs established through the Mary River IIBA and the Qikiqtani Skills and Training for Employment Partnership (Q-STEP), Baffinland already contributes to Inuit education and training and notes this as a residual effect of the project in the SOP. In achieving the recommendation, “Establish GHG emissions targets for 2030 and implement clean energy technology and purchase Nunavut-based carbon offsets to achieve targets”, Baffinland has an opportunity to expand benefit delivery to Qikiqtaaluk communities by</p>

	establishing a training program for Inuit to learn the skills to install, operate and maintain clean energy technology as it transitions off diesel energy production.
Recommendation/ Request	The Project Certificate be amended with a new term, “The Proponent will develop an Inuit renewable energy training program for any future proposals for clean energy installation for the Project in alignment with its Climate Change Strategy and reflecting its commitment to build community capacity.”

Review Comment #	SE-2
Subject/Topic	Apply regional approach to training to improve Inuit employment at the Project
References	Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal. NIRB File No.08MN053. pg. 17, 93-94, 209.
Summary	Baffinland notes it is the largest private employer in the Qikiqtani Region. However, it has been consistently challenged in reaching the Minimum Inuit Employment Goals (MIEGs) for the Project. In other words, the most tangible Inuit benefit from the Project – employment – has not been realized against evidence-based goals set by Baffinland and QIA. Baffinland should develop an Inuit regional training plan building on the Inuit Impact and Benefit Agreement (IIBA) required Construction Training Program, Operation Phase Training Program and Training Program for Contract and Subcontract Activities (IIBA 8.14, 8.15 and 8.16 respectively) to achieve MIEGs.
Importance of issue to the impact assessment process	Since signing the IIBA, Baffinland has been challenged to meet MIEGs despite these goals being established and agreed based on historical Project data, opportunities for employment and training, and regional labour market analyses. Currently, Baffinland’s approach and process for training delivery seems to be ad-hoc to meet short-term demands and is not well-understood by QIA, this could be due to program design, poor communication with QIA, or both. There are no formal Inuit training plans established by Baffinland or its contractors. It is also unclear whether Baffinland takes a Qikiqtani-wide approach to

	<p>education and training, or primarily focuses on the impacted communities. Both may be creating challenges in achieving MIEGs and therefore maximizing Inuit benefit.</p>
<p>Detailed Review Comments</p>	<p>In the SOP, Baffinland notes that maximizing Inuit employment at the Mary River Project is a key objective of the Socioeconomic Monitoring Plan. It's also noted that residual effects of the SOP include increased education and training opportunities. Baffinland states, "Plans for future education and training programs will allow more Inuit to become employed in meaningful and long-term careers at Baffinland." It is unclear what plans Baffinland has to increase education and training and Inuit employment at the project in order to meet the MIEGs.</p> <p>It is recommended that Baffinland develop a detailed regional Inuit training program similar to QIA's Qikiqtani Skills and Training for Employment Partnership (Q-STEP). This would be broader in scope than Q-STEP, in that a regional training plan would include the Construction Training Program, Operation Phase Training Program and Training Program for Contract and Subcontract Activities (IIBA 8.14, 8.15 and 8.16 respectively) inclusively, rather than just a training program for operations. Further, this regional approach would expand BIMC's recruitment and training efforts (e.g., Work Ready Program, recruitment tours, advertising, career fairs, etc.) to be inclusive of all Qikiqtani communities, in a similar approach to Q-STEP. There are many benefits to pursuing a regional training approach, mainly that it will help achieve MIEGs by (1) improving hiring, upskilling and retention rates of Inuit at the Project and (2) accessing untapped portions of the Inuit labour market.</p>
<p>Recommendation/ Request</p>	<p>The Project Certificate be amended to include a new term and condition:</p> <p>"The Proponent will develop a new regional Inuit training plan that will deliver training to Inuit across the Qikiqtani Region to improve Inuit employment at the Project."</p>

A. Culture, Resources and Land Use

<p>Review Comment #</p>	<p>CRLU-1</p>
<p>Subject/Topic</p>	<p>Baffinland Characterization of the Tusaqtavut Studies’ Findings</p>
<p>References</p>	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal (SOP). NIRB File No.08MN053. Section 3.1.2.2 (Tusaqtavut Studies), pg. 56 of 922.</p>
<p>Summary</p>	<p>Baffinland integrates some aspects of Inuit Tusaqtavut (culture, resources and land use - CRLU) studies related to the Mary River Project into the SOP application materials. However, Baffinland puts provisos/limiting statements about the applicability of the Tusaqtavut findings that QIA does not agree with.</p>
<p>Importance of issue to the impact assessment process</p>	<p>The Tusaqtavut studies are the most recent culture, resources and land use studies conducted in relation to the Mary River Project and present the most recent (circa +/- 2019-2021) extensive IQ data about Project effects to date on Inuit CRLU values. It needs to be recognized that much of the material therein reflects Inuit perspectives on <u>impacts observed after Baffinland’s mitigation was applied</u> (i.e., residual impacts observed in the real world by Inuit).</p>
<p>Detailed review Comments</p>	<p>At pg. 56 of 922 in the SOP application, Baffinland states:</p> <p>“it is important to note that the information about impacts associated with the current operation in the Tusaqtavut Studies are not presented with the context of previous environmental assessment effects predictions. Essentially, what is considered in the Tusaqtavut Studies is a project without application of mitigation measures. According to the Tusaqtavut Studies, study participants were not provided with any information on the critical mitigations, monitoring programs, and compensation measures that have been proposed and/or agreed to by Baffinland.”</p> <p>This statement by Baffinland, which appears to be attempting to reduce the credibility that should be given to the findings of the Tusaqtavut studies, is not relevant when considering impacts encountered to date, which Inuit participants faithfully identified based on their observed</p>

impacts. QIA notes that these impacts observed by Inuit to date, occurred after Baffinland's existing mitigation was applied, and cannot be said to be "pre-mitigation" as a result. Baffinland should be more focused on respectfully recognizing the impacts observed by Inuit, rather than trying to explain them away or undermine their credibility.

Tusaqtavut studies conducted to date were not aimed at measuring the efficacy of mitigative measures, it was about understanding impacts in a more comprehensive manner than was being reported by Baffinland in annual monitoring reports and reconsideration processes with the NIRB. If impacts observed were in areas/on subjects that were being mitigated, QIA observes that it follows that the mitigations were not effective enough to keep impacts at a level unobservable to – and in some cases acceptable to - Inuit.

QIA recognizes that additional commitments to enhanced mitigation, compensation and monitoring have been made since these observations, that **may** reduce impacts on Inuit CRLU over time. QIA also notes that many of these measures have yet to be applied for a long period of time or at all, and there are a number of outstanding requests for commitments and implementation flagged by QIA and other Inuit parties that still need to be established. As a result, it is premature to estimate that impacts observed by Inuit are likely to reduce as a result of commitments that have yet to be implemented, let alone assessed in terms of their efficacy in identifying and dealing with adverse effects on the environment and Inuit.

Baffinland goes on to state (still at pg. 56 of 922) that:

"Further, it does not appear that researchers considered the FEIS or subsequent FEIS addendum predictions, nor was this information presented to study participants. In Baffinland's view many if not all of the impact pathways from the Tusaqtavut Studies were considered in previous assessments, and the effects described are not inconsistent with the associated predictions and/or subsequent monitoring results."

	<p>While Baffinland has shown some improvement in the SOP application in how it described impacts identified by Inuit, statements like the above suggest there is still a substantial divide between Baffinland’s and Inuit’s understanding of impacts from the Mary River Project. In Tusaqtavut studies and in other submissions on the public record, Inuit have described impacts to narwhal, caribou, seals, hunting, enjoyment of land, sense of safety, sensory impacts, etc. that they were not prepared for from the Mary River Project. And these impacts do not align with the FEIS predictions re: impacts to harvesting, dust levels, narwhal populations, among other impacts. As the NIRB has noted in its Phase 2 Reconsideration Report, there is a gulf between Baffinland predictions and Inuit observations in relation to the Mary River Project. Baffinland reiterating its position that effects are “not inconsistent” with FEIS and FEIS addendum predictions is both dismissive and counter-productive to the need for dialogue between Baffinland and Inuit. Where is the acknowledgement of experienced impacts? Baffinland’s suggestion that impacts described in studies like Tusaqtavut are consistent with anticipated impacts is not reasonable, as they are obviously a) beyond what was predicted in some cases (e.g., dust amounts and distribution); b) certainly beyond what Inuit have deemed to be acceptable as evidence by many statements on the public record; and c) evidently inadequately mitigated given (a) and (b).</p> <p>It is strongly recommended that Baffinland temper its inclination to dismiss or otherwise attempt to diminish the observations of Inuit as reported in studies like Tusaqtavut on a move forward basis.</p>
Recommendation/ Request	<p>Baffinland to:</p> <ul style="list-style-type: none">a. Provide its confirmation that it understands that many of the impacts identified in the Tusaqtavut studies reflect actual observed impacts by Inuit, and that these observed impacts were residual impacts (i.e., remaining impacts after Project mitigation was applied).b. Recognize that its FEIS and subsequent FEIS Addenda did not accurately predict the magnitude and spatial distribution of impacts observed by Inuit to date, related to the Mary River Project.

Review Comment #	CRLU-2
Subject/Topic	Impacts on Inuit Culture, Resources and Land Use (CRLU)
References	Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal (SOP). NIRB File No.08MN053. Section 6.6.7 Characterization of Residual Effects (Human Environment), Table 6.32, Resources and Land Use, pg. 256 of 922
Summary	Baffinland’s estimations of no significant effects on Inuit Culture, Resources and Land Use continue to be in conflict with Inuit observations of change and increased negative experiences on the land, ice and waters as a result of the Mary River Project.
Importance of issue to the impact assessment process	Inuit are <u>the</u> experts when it comes to observing and experiencing direct and indirect effects on culture, resources and land use. IQ is uniquely situated to be an appropriate lens through which to assess these changes. The fact that IQ is not used as the primary effects characterization and significance estimation tool for CRLU reduces the confidence that Inuit and the NIRB should have in Baffinland’s estimation of effects on CRLU.
Detailed review Comments	<p>Baffinland indicates that “Potential resource and land use impacts continue to be monitored, along with cultural well- being. Baffinland’s monitoring data of recorded land-use at the Project site suggests Inuit land use and harvesting coexists with the Project to some degree.” (pg. 224 of 922; some iteration of this sentiment is also shared at pgs. 274, 275 and 290 of 922).</p> <p>Baffinland’s suggestion of “coexistence” cannot be read as an absence of adverse effects. Inuit are effectively obliged to transit Project-affected areas to use trails between communities and to access certain important areas/harvest caribou. Being obliged to go someplace doesn’t mean that Inuit enjoyment of their experience on the land has not been adversely affected by the sights, smells, sounds, vibrations, depositions, alterations, and risks created by the industrialization of long linear portions of North Baffin (land and sea), and concentrations of activity at two major industrial facilities in the mine site and the Milne Port. Through Tusaqtavut and observations on the NIRB public record, Inuit have reported adverse effects on their enjoyment of land and willingness to harvest, in addition to impacts on biophysical resources themselves. The language of “co-existence” represents an inadequate, “rose</p>

	coloured glasses” interpretation of what Inuit have had to say about the effects of the Mary River Project on CRLU.
Recommendation/ Request	The NIRB is requested to take into careful consideration gaps between Baffinland’s scientific analyses predictions and Inuit observations, as well as the NIRB’s previous findings related to existing impacts on Inuit CRLU as described in the Phase 2 Reconsideration Report, when determining the significance of residual effects from the SOP on Inuit culture, resources and land use.

Review Comment #	CRLU-3
Subject/Topic	Risk Communication Program for the Mary River Project
References	Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal (SOP). NIRB File No.08MN053. Appendix 11, Risk Communication Program Proposal, pgs. 737-741 of 922.
Summary	Baffinland indicates that it is developing a Risk Communication Program for the Mary River Project, with a focus (educating Inuit about mining and how the project may impact on the environment) that QIA has previously indicated may not be the most effective approach of engaging Inuit about risks and increasing the confidence that Inuit have in their environment. A more appropriate course of action would be for Baffinland to resource Inuit to take the lead in defining how the risk communication should be structured and take charge of its messaging. Only knowing that this is a “by Inuit, for Inuit” risk communication program will likely allow for Inuit to trust the messaging being delivered and effect the most mitigative value of the program.
Importance of issue to the impact assessment process	Risk communication is a critical form of mitigation in relation to Inuit faith in harvested foods and water, and trust in the environment, especially in relation to an area impacted by industrial development. Proponent-led risk communication is much less likely to be trusted by Inuit and therefore adopted and have the desired results.
Detailed review Comments	At pg. 738 of 922, Baffinland notes that its commitment 157 from the Phase 2 assessment was:

	<p>“Baffinland commits to develop a risk communication strategy focused on the gathering and dissemination of information to Inuit related to the Baffinland Iron Ore Mines Project, and linkages between the Project and human health and ecological risk assessment topics. The strategy will focus on, but not be limited to, building capacity within community groups to understand the mining process, elements of the mining process and how substances produced from the mining process move in the environment. Baffinland will work with communities to develop this program to ensure it is relevant to Inuit.”</p> <p>QIA raised the need for an Inuit-led risk communication program starting with the Phase 2 reconsideration process, noting that it should be Inuit-led for the reasons noted above. QIA’s position is that a focus on the mining process is not as important as making sure that there are strong data collection programs, including IQ and western science, in place at and around Mary River Project locations, that are then subject to analysis and interpretation by Inuit about whether the areas and resources are safe, from an Inuit perspective. This can then be shared via media and messages that have meaning to Inuit, rather than through primarily websites, written technical reports, and scientific jargon.</p> <p>Despite this, the Risk Communication Program Proposal focus (Appendix 10) remains the same, proponent-driven and mining education-focused approach.</p> <p>QIA has indicated in past submissions that a Risk Communication Program that is designed and implemented by Baffinland is unlikely to succeed and to date Risk Communication has been a problem. Risk communication “by Inuit, for Inuit” is the only realistic pathway to credibility for any such program.</p> <p>We encourage BIMC to engage with QIA and other Inuit parties on what a meaningful Risk Communication Program would look like from an Inuit perspective.</p>
Recommendation/ Request	a. Baffinland to clarify its timeline for developing a Risk Communication Program (RCP) and how is it proposing to

	<p>engage QIA and Inuit parties, for whom the Risk Communication Programs is designed.</p> <p>b. Baffinland to commit to put primary control over the Risk Communication Program process in the hands of Inuit, to maximize it likely effectiveness among Inuit recipients.</p>
--	---

Review Comment #	CRLU-4
Subject/Topic	Inuit led dust monitoring program
References	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal (SOP). NIRB File No.08MN053.</p> <p>Appendix 7, Commitments List, PIPR Commitments #28 and #43.</p>
Summary	Baffinland in the PIPR NIRB process, committed to support an Inuit led dust monitoring program. This program is not yet up and running and an update on its timeline and mandate is merited.
Importance of issue to the impact assessment process	Inuit-led dust monitoring was previously committed to by Baffinland and may be an important monitoring tool to identify – in terms that have meaning to Inuit – the severity and distribution of dust impacts from the Project. It is important to have a sense of when this program may begin to contribute to the Project’s monitoring and management system.
Detailed review Comments	<p>Baffinland during the Production Increase Proposal Review made Commitment #28:</p> <p>“Baffinland agrees to resource QIA to establish an Inuit-led monitoring program on dustfall as an Inuit Stewardship Pilot program to establish the mechanisms needed to allow Inuit observations to influence mitigation measures and test appropriate Adaptive Management Plan structures, which are demonstrably responsive to Inuit Objectives Indicators Thresholds and Responses, with the budget and work plan agreed upon by Baffinland and QIA consistent with Condition No. 8.”</p> <p>The parties should be discussing the scope, nature, timing and resourcing for this as soon as possible. We note that Baffinland refers at pg. 148 of 922 of the SOP to the development and use of a snow quality indicator in relation to this program, but no further information is provided. In addition, Baffinland suggests it will play a key role in that Inuit-led dust</p>

	monitoring program; we don't know the nature of Baffinland's desired role.
Recommendation/ Request	<p>Baffinland to:</p> <ul style="list-style-type: none"> a. Provide an update on the status of resourcing provided to QIA to date to support development of this Inuit led dust monitoring program. b. Clarify what key role in the Inuit-led dust monitoring program Baffinland envisions for itself.

Review Comment #	CRLU-5
Subject/Topic	Baffinland assertions around impacts on Inuit rights
References	<p>Baffinland Iron Mines Corporation (Baffinland). 2023. Mary River Project – Sustaining Operations Proposal (SOP). NIRB File No.08MN053.</p> <p>Section 2.1, Purpose and Need for the Sustaining Operations Proposal, pg. 32 of 922.</p>
Summary	<p>Baffinland surfaces the issue of Inuit rights in the SOP Application materials, but only to provide a single and extremely one-sided assertion that job losses should the mine slow down or close would have adverse effects on Inuit rights. This is essentially the only discussion of Inuit rights in the entire SOP Application and it ignores a variety of critical elements associated with Inuit rights (harvesting, culture, food security, transportation, etc.), which have already been shown to being subject to adverse effects from the Project.</p>
Importance of issue to the impact assessment process	<p>Inuit rights are protected under the NLCA and NuPPAA and are priority rights at law. That the only meaningful discussion of rights impacts in the SOP focuses not on Inuit's need to protect the environment their rights rely upon from harm, but on economic fluctuations in a mine slowdown or closure scenario, suggests that Baffinland has an unacceptably narrow focus re: the assessment of effects in Inuit rights from the Mary River Project.</p>
Detailed review Comments	<p>Baffinland paints a one-sided portrait of Project effects on Inuit rights in the only discussion of Inuit rights in the entire SOP application materials, stating that:</p>

	<p>“Wage employment is required for many Inuit employees to have the means to exercise their Section 35 rights to undertake traditional activities. Inuit workers have told us that their employment with the mine provides increased capacity to undertake successful harvesting of narwhal and other traditional foods, and that they are concerned job loss will impair their ability to provide for themselves and their families, and to obtain hunting equipment to exercise their harvest rights.” (pg. 32 of 922).</p> <p>QIA has been explicit in its recent prior submissions to NIRB that the protection and promotion of Inuit rights is a critical consideration in relation to the Mary River Project, including in the Phase 2 Final Written Submission and the PIPR Final Written Submission.</p> <p>The means by which project contributions to and infringements on those rights has never been properly established by Baffinland, and the SOP Application has nothing to offer on this topic other than the visibly skewed statement above.</p>
Recommendation/ Request	<p>QIA requests that the NIRB explicitly identify in its SOP decision report their perspective on what the likely positive and adverse impacts of the SOP will be on Inuit rights, alone and in combination with other cumulative effects causing agents.</p> <p>QIA requests Baffinland:</p> <ul style="list-style-type: none">a. Indicate whether they understand that the Project has already had, and will likely into the future, have measurable adverse effects on Inuit rights, in addition to the purported positive effects noted by Baffinland in the SOP Application, and if so, to provide a list of the Project interactions that already have or will in the Project Case have potential adverse effects on Inuit rights, from Baffinland’s perspective.b. Commit to work with Inuit parties to determine how Inuit interpret Project impacts on rights, in the present and Project Cases, before making future assertions re: Project impacts on Inuit rights.