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Tara Arko
Director, Technical Services
Nunavut Impact Review Board
Cambridge Bay, NU X0B 0C0

June 30, 2022

Re: Comment Request for Baffinland Iron Mines Corp.'s Mary River Project, 2021 Annual Monitoring Report

Dear Ms. Arko,

The Qikiqtani Inuit Association (QIA) appreciates the opportunity to provide comments on the Mary River Project (the Project) 2021 Annual Monitoring Report¹ (the Report) submitted by Baffinland Iron Mines Corporation (BIMC, Baffinland, or the Proponent) to the Nunavut Impact Review Board (NIRB). The QIA has included its comments in the appendix to this letter. Comments have been categorized by the following topics:

1. General (comments are labeled QIA G#__);
2. Terrestrial Environment (QIA TE#__);
3. Marine and Aquatic Environment (QIA M&AE#__); and
4. Socio-economic Environment (QIA SE#__).

The QIA is providing our comments to help increase the likelihood that the spirit and intent of the NIRB Project Certificate is fulfilled moving forward. We appreciate the diligence of BIMC in developing the Annual Report and all supplementary reporting that has informed this development. We strive to work with NIRB and Baffinland to improve upon the implementation of conditions to better monitor, mitigate and, as necessary, manage potential adverse impacts on the environment, and support the maximization of benefits to Inuit. The QIA would also like to acknowledge the productive work of the NIRB in reviewing both BIMC's filings as well as the comments provided by the QIA and other parties.

Responsiveness to the QIA's Issues and Concerns Raised Over the Years

In reviewing the 2021 Annual Report, the QIA has identified a number of overarching concerns that need to be addressed in concert with the specific issues presented in the QIA's comments. We note that several concerns remain outstanding and have been carried

¹ Baffinland (2022). Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board. March 31, 2022.



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over from our previous comments on the 2017², 2018³, 2019⁴, and 2020⁵ reports. The fact that we have had to reiterate similar issues a number of times over the years is indicative that:

- Issues raised by the QIA in relation to a number of monitoring and management issues, and with the implementation and compliance status of a number of Project Certificate Conditions, have not been substantively addressed;
- The way in which the Annual Monitoring Report is reviewed, especially follow-up, may not be leading to the type of outcomes that the parties envisioned when this process began.

The QIA is open to discussing with the NIRB, Baffinland and other parties moving forward how to improve the role that the process of review and comments on the Annual Monitoring Report plays in improved monitoring and management of the Mary River Project.

Review Highlights

QIA's comments include multiple requests for increased data collection, analysis, Inuit and other monitoring, and refining of management plans for the Project. We do not consider these requests refusable advice, though similar requests have in the past been treated as such by BIMC; they are by and large critical for environmental management and decision-making. They also, in many cases, are required to put the Proponent in compliance with specific Project Certificate (PC) Conditions (or PCC).

In summary, some of QIA's ongoing concerns (not in order of priority) include:

- Lack of Effort and Outcomes Understanding re: Socioeconomic Effects
- Insufficient Data Collection and Reporting on the Socioeconomic Environment
- Dust Exceeding FEIS Predictions and Levels Acceptable to Inuit
- Open Pit and Associated Liabilities

² QIA (2018). Comment Request for Baffinland Iron Mines Corp.'s Mary River Project, 2017 Annual Monitoring Report. Letter sent May 14, 2018.

³ QIA (2019). Comments on Baffinland Iron Mines Corp.'s Mary River Project (08MN054) 2018 Annual Monitoring Report. Letter sent June 7, 2019.

⁴ QIA (2020). Comments Request for Baffinland Iron Mines Corp.'s Mary River Project, 2019 Annual Monitoring Report. Letter sent July 28, 2020.

⁵ QIA (2021). Comments Request for Baffinland Iron Mines Corp.'s Mary River Project, 2020 Annual Monitoring Report. Letter sent July 6, 2021.



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- Exceedances of Regulatory Criteria
- Inadequacies in Marine and Aquatic Effects Monitoring and Management
- Inadequacies in Caribou and Other Wildlife Monitoring and Management
- Inadequacies in Vegetation Monitoring and Management
- Inadequacies in Monitoring of Inuit Culture, Resources and Land Use (CRLU)
- NIRB Working Groups Effects Monitoring and Management Program Input
- Sequencing of Monitoring Report and Annual Report Finalization
- Adaptive Management and Monitoring

Lack of Effort and Outcomes Understanding re: Socioeconomic Effects

Baffinland does not provide comprehensive discussion about how the Project is achieving outcomes predicted in the Final Environmental Impact Statement (FEIS). In particular, Baffinland's reporting reflects a general lack of effort in providing NIRB and Inuit with transparent and comprehensive accounting of how the socioeconomic terms and conditions are being met, and on the overall socioeconomic impacts of the Project.

QIA is concerned that many of the direct socioeconomic benefits (e.g., employment, training) of the Project are either plateauing or not being delivered. This is offset against increasing adverse effects on the biophysical environment and Inuit culture, resources and land use (CRLU), meaning that overall, the Project is delivering diminishing returns. Inuit have been raising this concern in multiple forums.

Insufficient Data Collection and Reporting on the Socio-economic Environment

QIA understands that many PC Conditions related to socio-economic monitoring depend on Baffinland's engagement with the Qikiqtani Socio-Economic Monitoring Committee, and that the Terms of Reference for the Socio-Economic Monitoring Working Group distinguishes the types of monitoring data that Baffinland, QIA and the Government of Nunavut are each best positioned to furnish. That noted, in some instances Baffinland's reporting reveals gaps and insufficiencies with respect to the information reported on various socio-economic indicators that are needed to illustrate Project-related impacts on social well-being. QIA believes that it is reasonable to expect Baffinland to take an active role in identifying these gaps and to demonstrate concerted efforts to address them in collaboration with the Working Group to achieve full compliance with the PC.

Some of the reporting assessed as insufficient may also be related to the perceived deferral of responsibility to responsible government agencies and departments for data collection and monitoring under the *Nunavut Agreement* (e.g., Section 12.7.4). The bottom line is that



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where data does not already exist, Baffinland is not collecting it. As a result, assessing the Mary River Project's (Project) socioeconomic impacts through the Project Certificate is not possible through current reporting, and data does not exist that may contextualize, validate, or refute the limited and often only indirectly related information and discussion that Baffinland provides in relation to socioeconomic conditions.

Dust Exceeding FEIS Predictions and Exceeding Levels Acceptable to Inuit

Section 3.2 is a summary of highlights and challenges. Whereas the 2020 Annual Monitoring Report spotlighted dust as a major challenge, the 2021 Annual Monitoring Report does not. Because dust dispersion and concentration remains one of the main concerns for Inuit, it is surprising that the ongoing exceedances of dustfall criteria are not included in this section. It should be clear to all parties that continued higher than expected, or acceptable to Inuit, dust and dustfall is one of the highest priority "challenges" facing the Mary River Project, and the level of effort expended to understand the causal circumstances and impact outcomes associated with this dust – at the mine, along the terrestrial transportation system, and at the port – needs to increase proportionate to the level of concern and observed change. This has yet to occur nor, importantly, has a system for dedicated Inuit observations and IQ-enriched monitoring been implemented.

Dustfall impacts the terrestrial, aquatic and marine environments on multiple Valued Components (VCs), and is especially prevalent at and around the mine site, along the Tote Road, and in the vicinity of Milne Port. For example, the QIA has comments respecting lichens, dust on Arctic Char eggs, and the effect of dust on Inuit drinking water sources.

As in the 2020 Annual Monitoring Report, Baffinland identifies that dustfall measurements have shown consistency year-over-year. In the 2021 Annual Monitoring Report, Baffinland suggests this fact is evidence that dust mitigation measures are working. They state that because there has been an increase in production, but dustfall has been consistent, dust suppression mitigations must be effective and they are therefore in compliance with Project Certificate Conditions related to dustfall (especially PCC 10). The QIA does not agree with this conclusion. Continued exceedances of dustfall measurements suggest that mitigations are not working and therefore require revisiting.

Throughout its comments on Project Certificate Conditions related to dustfall, the QIA identifies gaps in data collection and analysis. While efforts have been made to create a more robust dust monitoring program, it is the opinion of the QIA that more work is required. While Baffinland has included additional dustfall monitors on several sites around the project area and has added six 'short' monitors to better represent conditions at ground level, the QIA is not satisfied that the true amount of dust on the ground is being measured



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accurately. Baffinland has provided no evidence that a monitor set at a height of 0.5 m is a good representation of ground level. Furthermore, it was raised in the 2021 Terrestrial Environment Annual Monitoring Report that helicopter overflights were contaminating dust monitors with very high levels of dust. This is a new pathway for dust dispersion that requires more attention in future monitoring efforts.

As noted by Inuit in multiple forums, dust deposition has impacted the ability to pursue traditional activities such as hunting and harvesting around the Project and has reduced Inuit faith in country food and water sources. QIA seeks to ensure proper mitigative action is being taken to bring levels of dust into compliance with the PCCs and to ensure previous and ongoing impacts to Inuit that come from dust deposition are better understood and addressed.

In addition, QIA continues to request that dustfall monitoring:

- include collection of snow cores near monitoring sites to assess the accuracy of the dustfall monitoring;
- include more robust measures of effects to caribou forage;
- include a meaningful sedimentation threshold based on mortality rates of Arctic Char eggs exposed to Project-generated dust sediment.

The QIA also requests moving forward that Inuit observations, using IQ-enriched observational criteria, be integrated into dustfall distribution and effects monitoring. See further discussion on this topic in the section on “Inadequacies in Monitoring of Inuit Culture, Resources and Land Use (CRLU) below.

Open Pit and Associated Liabilities

QIA has concerns over Baffinland’s position that Deposit 1 is a hilltop outcrop as opposed to a pit, based on the QIA’s observations of pit dewatering in 2019 and 2020, and Baffinland’s deferral of certain reclamation research activities. QIA seeks to ensure proper measures are being taken to reduce liability on Inuit Owned Land from the creation of a pit, which includes monitoring data to understand the water balance and water quality concerning Deposit 1 and to inform and ensure adequate reclamation security is held. Satellite imagery illustrates what is likely standing water at the active mine site and Baffinland’s mine operations staff have indicated to QIA that dewatering activities and the pit are permanent at Deposit 1.



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Exceedance of Regulatory Criteria

The 2021 Annual Report contains reports of similar exceedances of regulatory criteria reported in the 2020 Annual Report. These include but are not necessarily limited to:

- four discharges of non-compliant effluent discharge;
- two exceedance of daily water withdrawal limits;
- continued excessive chloride and sulphate concentrations at the Landfill Facility, and;
- exceedances of dissolved metal parameters at monitoring locations down-gradient from the Landfill Facility.

It appears that the seepage issue from the Waste Rock Facility documented in the 2020 Annual Report has been resolved as the 2021 Annual Report does not reference it. The QIA would like to note that the two exceedances of water withdrawal limits is a significant improvement from the 31 that occurred in 2020. The QIA expects that other ongoing problems of contamination will be resolved promptly.

Inadequacies in Marine and Aquatic Effects Monitoring and Management

Marine and aquatic (i.e., freshwater) effects, and their monitoring and management, remain of the highest priority to Inuit and are one of the largest issues in relation to the Project. There have been some notable improvements in the Proponent's performance; however, there remain some substantial gaps that must be addressed, for example invasive species risk from ship's ballast water and biofouling, the significant decline in the Eclipse Sound narwhal population, and better information on sea ice conditions as they relate to shipping and marine mammal habitat use. Some of the higher priority key issues related to this critical topic are highlighted below.

Inadequacies in Ringed Seal Monitoring

Baffinland has not fully monitored impacts to seals nor properly analyzed impact pathways on seals, despite continued requests from impacted community members and this being a term and condition of approval (PC Conditions 99 and 101). Instead Baffinland continued to argue against the need to monitor impacts since project activities don't, according to Baffinland, overlap with critical life stages and their impression that seal population levels are not a concern since there are no quota limitations for harvesting. Baffinland finally agreed to conduct some seal monitoring in 2021 via an aerial survey, but there is a low level of confidence that the monitoring will be conducted to meet Inuit expectations and fully address the range of impacts described by Inuit nor to be useful in establishing seal Early Warning Indicators.



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The Phase 2 Recommendations Report thus echoes and amplifies what the QIA has been stating for several years - that measurable, highly impactful changes to Inuit CRLU have been caused by and contributed to by the Project, and yet are still not being properly recognized, monitored for, reported on, or mitigated against by BIMC. This recognition should lead to a redoubling of efforts by all parties to increase the level of effort associated with monitoring impacts on Inuit CRLU, and to engaging Inuit in this process.

Despite QIA comments on prior Annual Monitoring Reports, there remain severe current limitations in the Project CRLU monitoring system. To be frank, the Project currently has no consistent, Inuit-endorsed IQ-driven monitoring system. Issues include:

- There are very few and inadequate proxy measures (e.g., number of Inuit passing through an area is not a measure of quality or quantity of harvesting, success per unit of effort, or enjoyment) being used to assess what the level of impacts on Inuit CRLU are;
- There is evidence that dust is creating real problems out on the land for Inuit;
- There are extensive concerns about impacts on movement and numbers of animals that are harvested by Inuit; and
- There has been no data collected on harvest per unit of time and effort.

That these types of impacts have been suggested by Baffinland as “hard to measure”, should no longer be accepted as a rationale for why they are not being measured.

The only reasonable statements that can be made about the level of Project impacts on Inuit CRLU in the 2021 Annual Monitoring Report remains – as it was in relation to the 2020 Annual Monitoring Report – that the current monitoring system is not sensitive enough to capture these effects, and that Inuit have observed and experienced extensive effects currently not captured in this inadequate monitoring system. In light of this and the findings in the NIRB Phase 2 Recommendations Report that higher than expected, potentially significant adverse impacts on Inuit and the resources they rely upon are already evident, it is therefore important, as per the precautionary principle, to assume conservatively that adverse impacts on Inuit from the Project of a significant nature are already occurring and that the monitoring system needs to be vastly improved immediately to capture a proper portrait of the extent, magnitude and significance of existing Project effects on Inuit CRLU. It is imperative that Baffinland work with Inuit to identify appropriate thresholds and responses that have meaning to Inuit, to deal with these impacts, and to implement them in a timely fashion.



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In addition to the virtual non-existence of an ongoing CRLU monitoring program, there are a number of additional critical shortcomings related to baseline assessments of CRLU, effects on aesthetic values of Inuit in relation to the land, waters and ice, and food security.

One of the continuing primary CRLU monitoring shortfalls is found in BIMC's efforts to understand the "interactions between the Project and Inuit harvesting and how this relates to food security for the residents of the North Baffin" and verify BIMC's FEIS prediction that:

"The Project will not have a significant effect on harvesting within the land use study area as a result of Project development. Although potential exists for wildlife to avoid areas of intensive Project interaction, the amount of country food harvested per level of effort is not anticipated to change meaningfully."

This prediction has not been supported by any Project-specific evidence through dedicated monitoring, nor is it credited in the NIRB Phase 2 Recommendations Report. There is no data that BIMC has collected or provided about whether "harvest per unit of effort" has been impacted during the time period the Project has been impacting on the environment or Inuit. Harvest per unit of effort is one of the most important metrics for monitoring CRLU, however, Baffinland still has made no attempts to capture this kind of data. They continue to focus on visitor person-days, number of Wildlife Compensation Fund claims, and impact of Project employment on Inuit employees harvesting participation. The NIRB Phase 2 Recommendations Report highlighted the clear effect that the Project has had on this metric and Baffinland's lack of effort to measure it:

"Intervenors noted that harvesting data does not capture information regarding the level of effort, days on the land, and distance travelled by harvesters, which community members indicated have all have been increasing since the Mary River Project began operations. This type of information has not been sought or considered in the Proponent's assessment" (p. 219)

There has also been little to no effort to understand impacts to the robustness and flexibility of the (particularly Mittimatalik) Inuit food system since mining operations began. While acknowledging the importance of country (harvested and gathered) foods to Inuit and Inuit culture, BIMC has not effectively gauged the impact that their Project activities are having on access to country food in each of the communities (including both its availability and the ability of a range of community members, from different social and economic backgrounds, to access it). This is a significant shortfall, which stymies ongoing monitoring efforts.

The QIA has stated through multiple avenues that sensory disturbance, harvester safety and routing choices, sense of enjoyment on the land, and perception of risk of eating contaminated food are essential factors that play a role in CRLU monitoring. They certainly



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influence the indicator of visitor days, but are not captured by that indicator. More effective indicators would include Inuit-designed indicators that could detect changes in harvesting patterns, behaviours, and effort, and the reasons underlying harvesting and travel choices.

Baffinland continues to defend their inaction on this type of monitoring and analysis because food-security is a complex issue and their influence and their control on this issue is limited. Food security is indeed a complex issue. Baffinland does contribute to and have initiatives around the 'four pillars of food security' identified by the Nunavut Food Security Coalition, in an attempt to mitigate impacts the Project may be having on food security. However, this mitigation has not over the past half-decade or more built any additional understanding of the Project's interactions with Inuit harvesting and culture. By not establishing a baseline and implementing monitoring and analysis directly related to Inuit harvesting, BIMC cannot verify its FEIS prediction, and continues to stand at odds with widespread Inuit conclusions that the Project has had a significant adverse impact on Inuit harvesting.

Additionally, interactions and impact pathways may be discovered through monitoring co-designed with Inuit so that the current mitigation could be made more focused and effective.

NIRB Working Groups Effects Monitoring and Management Program Input

As stated previously in our review of the 2020 Annual Monitoring report, QIA continues to have serious concerns about incorporation of Working Groups effects monitoring and management program input. Fundamentally, revised Terms of Reference for the TEWG and MEWG are needed with specific redress to the schedule of providing information between parties and an overall schedule to allow adequate time for the Working Groups' input into the upcoming field season, clear and transparent evidence of where and how IQ has been incorporated, and development of community-based monitoring program(s). Freshwater issues are also slipping through the cracks. The Terms of Reference also need dispute resolution mechanisms, as QIA notes that Working Group recommendations and advice are often not being fully carried through.

Sequence of Monitoring Report and Annual Report Finalization

The QIA continues to request that feedback from working groups on the draft monitoring reports be presented within the annual reports. This is important because the working groups provide valuable perspectives, correct errors and omissions, and highlight continued suggestions for improvements. Year after year, the draft monitoring reports are submitted to the Working Groups for review at the same time as the Annual Report review period.



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This means all interested parties who are not Working Group members (e.g., hamlets, other HTOs with the exception of MHTO) lack access to critical information on 2021 monitoring.

The disconnect between the timing of submission of MEWG and TEWG comments and submission of the Annual Report leads to limitations in the information provided in the Annual Reporting to NIRB.

The schedule of review and finalization of monitoring reports needs to be synchronized so this feedback can be fully incorporated into the annual report.

Adaptive Management and Monitoring

The 2021 Annual Monitoring Report has again not effectively demonstrated Baffinland's ability to plan or incorporate lessons learned to reduce risks and prevent future failures related to adaptive management. In general, adaptive management responses related to the effects of monitoring are not clearly visible in the Annual Report and need to be discussed both in the context of biological studies as well as research into impacts to Inuit harvesting.

QIA monitoring concerns include but are not limited to the following:

- Dust monitoring may not accurately capture dust levels on the ground and does not account for areas most likely to be frequented by foraging caribou;
- Ineffectiveness of caribou monitoring to determine Project effects to movement and habitat;
- The lack of progress made by the Proponent to address Inuit observations on Project impacts on ringed seals, including impacts reported by hunters;
- The ineffective Early Warning Indicator (EWI) employed by the Proponent for narwhal monitoring, which failed to provide any "early" warning (i.e., using calf-cow ratio and nursing behaviour instead of narwhal body condition, stress levels for EWI; no seal EWI) and the continued exclusion of IQ-based metrics in the development of EWI;
- Lack of biological testing of ballast water and hull fouling, which is needed to better understand and mitigate risk from potentially invasive species;
- A lack of a monitoring program for CRLU, especially as relates to food security;
- A narrow focus on emissions for climate effects monitoring and a lack of identification of indicators sensitive enough to identify climate changes impacting the Project-affected area. There has also been a lack of substantive progress on the Climate Change Strategy.



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Conclusions

Finally, we again state our appreciation to the NIRB and Baffinland for the opportunity to provide our comments on the 2021 Annual Monitoring Report and on Baffinland's compliance level with NIRB's Project Certificate Conditions. We trust the NIRB will continue to hold the Proponent to the highest standard in meeting the Terms and Conditions of the Project Certificate, including their specific and underlying objectives related to environmental protection and Inuit well-being and access to benefits.

The QIA remains fully committed to working collaboratively and in good faith with all parties in relation to the Mary River Project. We look forward to seeing our requests adopted by BIMC in a proactive fashion. In instances where this does not occur, we strongly recommend the NIRB adopt our requests as requirements for Proponent improvement between 2022 and 2023.

Sincerely,

Chris Spencer
Manager, Regulatory Affairs

Attachment: Appendix 1: QIA comments on Baffinland 2021 Annual Monitoring Report

Appendix 1: QIA comments on Baffinland 2021 NIRB Annual Monitoring Report

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General Comments

Comment #	QIA 2021 AMR GC #1
Reference	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: Popular Summary</p> <p>Page: 5-7 (Popular Summary)</p>
QIA Comment	<p>Several statements in the popular summary are made without providing acknowledgement of their uncertainty for context. For example:</p> <ul style="list-style-type: none"> • “Weather conditions in 2021 were summarized and compared to average conditions from previous years” (p. 5). No mention was made of equipment failures that weakened these comparisons. • “Results show there is very little difference between dustfall levels at 0.5 and 2.0 m” (p. 5). This is based on only 3 months of what should be a full year or multi-year study. • “A holistic review of the data from the 2021 shipping season does not conclude that the relatively lower numbers of narwhal observed in Eclipse Sound in 2021 is Project-related. Elimination of early season ice-breaking in 2021 further reduced residual uncertainty in that Project shipping is the primary driver of the observed change in narwhal abundance in Eclipse Sound” (p. 6). For clarity the source of this review should be clearly identified, as should the reviewer’s relationship to the Proponent. • “Although the total number of narwhal near Bruce Head was lower in 2021, observed behavioural responses of narwhal to shipping appear generally consistent with previous years, meaning that narwhal continue to demonstrate temporary and localized responses to shipping activities, with animals returning to their pre-response behaviour shortly following initial exposure” (p. 6). Roughly half the animals were no longer present, which suggests their behaviour changed. • “...Pond Inlet harvesters were able to fulfill their entire summer [narwhal] quota by the fall” (p. 7). They were able to catch narwhal but at what extra cost in terms of time, effort, and resources? • “Consistent with previous years the results of this program [i.e., the MEEMP and NIS/AIS Monitoring Program at Milne Port] indicate that effects of the Project on the marine environment are within predictions” (p. 8). The extensive radial sampling program for monitoring effects on sediment and benthic infauna was not run in 2021, nor was the zooplankton sampling program, and there were no AIS/NIS settlement plates or baskets to recover. • “Lake Sedimentation monitoring at the Mine Site indicate that sedimentation rates are generally consistent with baseline except in the shallow stations, but accumulation rates at these sites remain well below the proposed low response threshold of 0.15 mm” (p. 8). The 2020-2021 sediment samples for the 2020 to 2021 ice-cover period were lost in transit so in 2021 only the open water data were analyzed.

QIA Request	The QIA requests that Baffinland qualify its statements in the popular summaries and elsewhere to put them in proper context, so readers are better able to understand any underlying uncertainties.
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Comment #	QIA 2021 AMR GC #2
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 2.5; 4.6.10 Marine Environment (PC Conditions 76 through 98); 4.8.2 Alternatives Analysis (PC Conditions 178 through 184); APPENDIX E</p> <p>Page: 23-27; 245-304; 549-567</p>
QIA Comment	<p>Baffinland (e.g., p. 27) suggests that the Working Groups’ participants lack of “significant experience operating industrial projects, particularly in the complex and challenging Arctic” is a consideration in the provision of advice on Project monitoring, mitigation, and adaptive management. The QIA notes that its technical experts do not need experience operating a mine to apply their expertise on the Arctic marine or terrestrial environments to reviewing Project impact assessments and monitoring and adaptive management plans, and identifying areas for improvement. Nor do they need said experience to acknowledge and carefully consider the significant volume of local knowledge and expertise that is available and has been widely shared with the Proponent and other intervenors. The Proponent also states that some recommendations from the Working Groups “do not properly appreciate or weigh [sic] health and safety concerns and limitations or operational constraints” (2021 AMR, p. 257). The QIA assures the Board that it properly appreciates the issues at hand.</p> <p>Baffinland stresses “the need to retain ultimate authority to reject recommendations that don’t meet reasonable criteria for implementation” (2021 AMR, p. 27). Who determines what is reasonable, and under what criteria? The Proponent also notes the need to take the costs or logistics involved in implementing recommendations into account, suggesting that this is rarely done by MEWG members. MEWG members are well aware of the logistics involved, and it is incumbent on the Proponent to provide detailed information to justify arguments against implementing expert-recommended mitigation. Furthermore, costs cannot be treated as an ultimate overriding factor. Everything has a cost, and not all costs are borne by the Proponent, especially those that are ecosystemic and socio-cultural.</p> <p>Baffinland also states that “it is important to distinguish between initiatives that may be of personal interest or curiosity to individual Working Group members, and those that have a reasonable link to the Mary River Project’s activities” (2021 AMR, p.176). This is an interesting statement - TEWG and MEWG members would benefit from a greater understanding on what types of recommendations the Proponent considers to be pet projects and not relevant recommendations to improve Project monitoring and adaptive management.</p> <p>PCC 184 requires that the Proponent “collaborate with the Marine Environment Working Group to review the status of compliance with, and implementation of, all</p>

	of the Terms and Conditions in Project Certificate No. 005 related to marine environmental protection” (p. 567). The MEWG did not review the status of compliance with, and implementation of, all of the Terms and Conditions in 2021.
QIA Request	<p>The QIA requests that the Proponent provide a detailed summary of the criteria used to determine whether the implementation of a recommendation is feasible, including how the different criteria are weighted.</p> <p>The QIA requests that the Proponent provide examples of recommendations that member organizations have made that it considers initiatives that may be “of personal interest or curiosity” to individual members and not a reasonable recommendation to improve Project monitoring and adaptive management (p.176).</p>

Comment #	QIA 2021 AMR GC #3
Reference	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 1.5.2 Supporting Documents and Appendices</p> <p>Page: 12</p>
QIA Comment	<p>"Reports that have yet to be issued as final and are awaiting review and feedback from the Terrestrial and Marine Environment Working Groups have not been included as attachments to this report, however, they have been released to the Working Groups for review and comment, to which the NIRB is an observing member" (p. 12).</p> <p>As in 2020, the 2021 Annual Report does not include many of the relevant and necessary reports from the year's marine and terrestrial monitoring programs as Appendices (e.g., Marine Mammal Aerial Survey, Bruce Head, Terrestrial and Marine Environment Annual Monitoring Reports). An important consequence of these overlapping review timelines is that the Annual Report to NIRB does not benefit from reviews of these underlying monitoring reports by the Working Groups. Errors and omissions that might have been caught are entrenched in the Annual Report, while corrections, clarifications, and additions are lost.</p>
QIA Request	The QIA reiterates its 2020 request that the Proponent commit to providing all future draft reports for Working Group review on a schedule that allows the revised reports to be included in the Annual Report to NIRB, which should also reflect any revisions to these reports.

Comment #	QIA 2021 AMR GC #4
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: Popular Summary; 3.3 Looking Ahead</p> <p>Page: 12, 38</p>
QIA Comment	With reference to Steensby Port and associated infrastructure, the Annual Report notes that no activities are planned in 2022, with the exception of environmental/baseline studies to “support the future development of the southern transportation corridor and Steensby Port, should that be possible” (p.38).

QIA Request	The QIA requests that the Proponent provide an update on these environmental/baseline studies.
Comment #	QIA 2021 AMR GC #5
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 2.3 Engagement Activities</p> <p>Page: 14-20</p> <p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board, Appendix B, 2021 Engagement Records and Community Comments and Questions [NIRB Registry: 220401-08MN053-2021 Annual Report-App B Engagements-IA1E.pdf]</p> <p>Section: Appendix B.1 and B.2</p> <p>Page: B.1 - 8, and Table 1; B.2 - 1-6</p>
QIA Comment	<p>In its 2020 Annual Report comments, the QIA requested that Baffinland provide a tracking table that would:</p> <ul style="list-style-type: none"> • Indicate the frequency of stakeholder engagement • Indicate participants in the stakeholder engagement • Describe key issues and feedback raised and Baffinland has or will address these issues and feedback <p>As in the 2020 Annual Report, Baffinland provides a bullet point list of their engagement activities, for example "Providing regular and ongoing opportunities for the dissemination of Project-related information and receipt of stakeholder input through Baffinland Community Liaison Officers (BCLOs) stationed in each of the five (5) North Baffin communities..." (p.15) and provides summary tables of public and community event dates, types, and topic of discussion (Table 2.1 and Table 2.3). Baffinland mentions that a summary of engagement events is found in Appendix B. Baffinland also mentions that a summary of Inuit feedback from these engagement events that relates to environmental effects is embedded within the relevant ecosystemic and socio-economic project certificate condition discussion within Section 4 (see p. 15 and p. 40), and is also detailed in Appendix B.</p> <p>As the QIA previously stated in its 2020 comments, in the 2021 Annual Report Baffinland has not provided detailed evidence of tracking the comments, concerns, feedback and recommendations of community members and members of the public, as well as how Baffinland responded to the comments, as evidence of the strength of its engagement process. Table 2.1, Table 2.2, and Appendix B, Appendix B.1 in particular, all combined do provide the date, participant, location, event type, and a general description of the topics discussed but does not provide the issues or concerns raised, or how these have been addressed by Baffinland. Baffinland has provided an issue tracking table specific to comments received by the Shipping Monitors (p. 16; Appendix B.2); The QIA would like to see this type of tracking table expanded to all engagement events. It is important that Intervenor and other</p>

	interested parties have a clear and detailed understanding of how stakeholder comments were gathered, assessed, addressed, and implemented.
QIA Request	The QIA requests that the Proponent provide further evidence of the strength of its community engagement process by providing a tracking table indicating engagement event type, date, participants, discussion topic(s), key issues, feedback and concerns raised by community members and members of the public, where these issues were raised, and how Baffinland has or will address them, and reasons if the issue will not be addressed.

Comment #	QIA 2021 AMR GC #6
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 3.2.2 Covid-19 Pandemic Table 3.1 (related to PC Conditions 101, 125, 126, 127, 128)</p> <p>Page: 32-33</p>
QIA Comment	<p>The Proponent notes that some Inuit participation in the environmental monitoring program occurred in 2021.</p> <p>According to information provided under PC Condition 101c, Inuit participated in interviews to discuss preliminary monitoring results. Baffinland states they solicited input on program design and program planning for future Monitoring Programs.</p> <p>According to information provided under PC Condition 125a, Baffinland interacts with the Hamlet of Pond Inlet and the HTO “to better understand potential concerns associated with its shipping operations, and includes discussions related to anchorage sites” (p. 408).</p> <p>According to information provided under PC Condition 126, Baffinland has implemented a Pond Inlet-based Shipping Monitor Program, which employs two full-time employees. Baffinland states a total of seven individuals were employed for the 2021 marine monitoring programs and ten were employed as Shipping Monitors (both full- and part- time).</p> <p>It is clear that Inuit take opportunities to participate in marine monitoring. It is less clear the role of Inuit Qaujamajatuqangit in the implementation of these monitoring programs.</p>
QIA Request	The QIA requests that Baffinland describe its plans to improve the role that Inuit Qaujamajatuqangit and Inuit observations play in monitoring of the marine environment.

Comment #	QIA 2021 AMR GC #7
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.2 Approach to Reporting on Performance</p> <p>Page: 40-41 (Table 4.2)</p>

QIA Comment	<p>Baffinland provides a template summary sheet (Table 4.2) that is to be completed for “each of the ecosystemic, socio-economic and ‘other’ terms and conditions ... in Sections 4.6 to 4.8” (p. 40).</p> <p>Two items are of particular interest: ‘Inuit and Stakeholder Review’ and ‘Trends’.</p> <p><u>‘Inuit and Stakeholder Review’ Item</u></p> <p>There are two aspects to Inuit and Stakeholder Review that are not clearly identified in the Annual Report. The first aspect is evidence of Inuit and Stakeholder input into the implementation and successful application of the terms and conditions, for example, in relation to such things as the framework, data, monitoring, and analysis required under given terms and conditions. The other aspect is in relation to assessing and verifying Baffinland’s self-assessment of compliance status where, in previous years, Inuit parties including the QIA have had different findings regarding compliance status than Baffinland. It is not clear how this has been reconciled by Baffinland through subsequent engagement with those Inuit parties.</p> <p><u>‘Trends’ Item</u></p> <p>Baffinland indicates that they only provide information on “notable” trends (p. 41). However, in the spirit of transparency, all trends should be reported on, especially as: a. what is deemed notable is a subjective determination in many instances; and b. what is deemed notable by Inuit and Baffinland has differed over the years.</p>
QIA Request	<p>The QIA requests that Baffinland report on:</p> <ul style="list-style-type: none"> • Inuit and Stakeholder input into how the terms and conditions should and have been applied in a given year; • Inuit and Stakeholder input in relation to assessing and verifying Baffinland’s self-assessment of compliance status, and how Baffinland engaged with parties that disagreed with previous Baffinland compliance self-reporting and sought reconciliation; and • All trends and change over-time, not just those deemed ‘notable’.

Comment #	QIA 2021 AMR GC #8
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.2 Approach to Reporting on Performance</p> <p>Page: 40-41</p>
QIA Comment	<p>Table 4.2 expands on how the Proponent reports on “notable trends”. However, in the spirit of transparency, all trends should be reported on including qualitative indicators, for example, Inuit perspective on improvements in communication and engagement.</p> <p>There are some obvious places in the AMR where the Trends section should include graphs to show changes over time. Reporting on PCC 8 is one example.</p>
QIA Request	The QIA requests that the Proponent report on all trends and change over-time, not just those deemed notable by the Proponent.

Comment #	QIA 2021 AMR GC #9
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.5.2 Unauthorized Discharges and Spills</p> <p>Page: 46</p>
QIA Comment	Baffinland reports that fourteen (14) spills were reported to the Spill Report Line, CIRNAC and the QIA, which is an increase of 8% from 2020. The most common causes for the spills were equipment failure (component malfunction, preventative maintenance), improper operation of equipment, and procedural issues (inadequate procedure or training). It is concerning that the number of spills occurring has increased since 2020. Five of the 14 spills are not quantified.
QIA Request	The QIA requests that the Proponent report the trend on the number of annual reported spills occurring over time. Additionally, Baffinland has stated the most common causes of spills: please elaborate on other causes of spills in this section. For unquantified spills, please provide an estimated amount.

Comment #	QIA 2021 AMR GC #10
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.1 Meteorology and Climate (PC Conditions 2 and 4)</p> <p>Page: 52-56, 61-62</p> <p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board, Appendix G.1, Climate Change Strategy Framework – Draft” [NIRB Registry: 220401-08MN053-2021 Annual Report-App G.1 Climate Change Strategy-IA1E.pdf]</p> <p>Section: Goal 2</p> <p>Page: 3</p>
QIA Comment	<p>Baffinland describes the work completed over the year on their Climate Change Strategy.</p> <p>There is sufficient detail and description of the management strategies development undertaken over the year but there is very little description of environmental monitoring conducted to understand climate change in the region, and to therefore be able to set “environmental priorities of concern for action planning” (p. 54), understand “community and regional vulnerabilities” (p.54), and develop “climate scenario analysis” (p. 54).</p> <p>Despite Baffinland’s Climate Change Strategy identifying monitoring of climate change and risks as one of the goals of the Strategy (Appendix G.1, Goal 2) and Baffinland’s methods indicating the use of scientific data and Inuit Qaujimajatuqangit in environmental monitoring of climate, there is only mention of monitoring temperature and tidal data.</p>

	<p>It is unclear why Baffinland has yet to develop Inuit Qaujimajatuqangit-defined climate-related criteria and include those in the ‘comprehensive’ environmental monitoring program that is currently implemented.</p> <p>It is also not clear from the discussions under PC Conditions 2 and 4 whether and how Inuit Qaujimajatuqangit will be integrated into understanding community and regional vulnerabilities and into developing climate scenarios. Further, it is unclear what is the status of climate scenarios development, and whether community and regional vulnerabilities have been identified. Are the climate action strategies purely driven by a focus on mine works and activities that contribute to climate change or is there a refinement of actions to address these community and regional vulnerabilities, to the extent that there is overlap between the mine and these vulnerabilities?</p> <p>Overall, the QIA disagrees with Baffinland’s interpretation that the Compliance Status of PC Condition 4 is “not applicable”. The PCC calls for Baffinland to “endeavour to include the participation of Inuit from affected communities and other communities in Nunavut when undertaking climate-change related studies and research” (p. 61). If no such efforts have been made by Baffinland, the PCC should be labeled “non-compliant”; if efforts can be demonstrated to have been made and be ongoing, this should be labeled as “in progress”; given the importance of ongoing climate change monitoring and management efforts, this status of this PCC should never be deemed “not applicable”; that is in effect an admission of failure.</p> <p>Under PC Condition 4, it seems valuable and appropriate to include discussion of trends in the data Baffinland is collecting through their climate-related monitoring, bench-marked against predictions made in the FEIS, as well in relation to climate scenarios Baffinland may have developed.</p>
QIA Request	<p>The QIA requests that Baffinland provide:</p> <ul style="list-style-type: none"> • A description of the work they will undertake to assist Inuit in the development of Inuit Qaujimajatuqangit-defined climate-related criteria to be applied in relation to the Project’s Climate Change Strategy. The description should include a timeline for their incorporation into the environmental monitoring program that is currently implemented and proposed for the future of the Project. • A description of how and where Inuit Qaujimajatuqangit will be used to inform climate scenario development and to understand community and regional vulnerabilities. The description should include a timeline for the climate scenario development and when community and regional vulnerabilities and environmental priorities will be established. <p>The QIA requests that Baffinland include discussion and analysis of trends in their climate-related monitoring under PC Condition 4 in future annual reports.</p>

Comment #	QIA 2021 AMR GC #11
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.1 Meteorology and Climate (PC Conditions 1 through 6); 4.6.2 Air Quality (PC Conditions 7 through 12)</p> <p>Page: 47-65, 69-74</p>
QIA Comment	<p>Greenhouse gas (GHG), SO₂ and NO_x emissions are reported for PC Condition 6 (pp. 64-65). Are vessel emissions included in these calculations, and if not, why not?</p> <p>PC Condition 9 (pp. 75-76) reports on greenhouse gas emissions generated by Project activities and is expected to include aircraft use associated with the Project and fuel consumption measured by Baffinland's purchase and use, plus fuel used by contractors and sub-contractors. How do the GHG emissions reported break down by source (aircraft, tote road trucking, vessels, Proponent vs contractor use, etc.)?</p>
QIA Request	The QIA requests that the Proponent provide the additional details on emissions sources as required under the relevant Project Certificate Conditions.

Comment #	QIA 2021 AMR GC #12
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: Popular Summary; 4.6.2 Air Quality (PC Conditions 7 through 12)</p> <p>Page: 5 (Popular Summary), 69-74</p>
QIA Comment	Continuous ambient air quality monitoring equipment is set up at Milne Port and the Mine Site to monitor sulphur dioxide (SO ₂) and nitrogen oxides (NO _x) levels. In 2021 there was a data gap in the SO ₂ monitoring due to an Internal Pump failure.
QIA Request	The QIA requests that the Proponent describe the steps they will take to ensure air quality monitoring equipment is in good working order and operating correctly.

Comment #	QIA 2021 AMR GC #13
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.3 Noise & Vibration (PC Condition 14b)</p> <p>Page: 90-91</p>
QIA Comment	<p>The Proponent acknowledges that Inuit community concerns have been raised relating to noise (p.84). Baffinland describes the monitoring that has been conducted, provides a general overview of the sound levels recorded at the three distances from the project, and gives a general indication of temporal variability. Baffinland has also concluded that the sound levels beyond immediate vicinity of the project area are unlikely to cause "significant wildlife disturbance" (p.85) or significantly affect wildlife distribution or behaviour (p. 92).</p> <p>Baffinland has not provided any information on how the impact of noise, sound level or other noise characteristic, may affect other users, e.g., hunters. Noise and</p>

	vibration can impact culture and land use and need to be investigated if there are Inuit concerns.
QIA Request	The QIA requests that Baffinland provide a list of specific Inuit concerns related to Noise and Vibration and how they have been addressed, whether and how Inuit have verified the effectiveness of any measures to reduce concerns, and what plans, if any, Baffinland has to involve Inuit sensory metrics related to noise (against natural background conditions and Inuit observations of what is normal, acceptable, and unacceptable).

Comment #	QIA 2021 AMR GC #14
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.7 Culture, Resources & Land Use – (PC Conditions 162 and 164)</p> <p>Page: 513 - 515</p>
QIA Comment	In the discussion on PCC 162, Baffinland identifies a communications protocol “to be implemented during the 2021 shipping season”. The same was stated in the 2020 Annual Report It is not clear how this protocol has been used during communications about shipping or if it is being effective.
QIA Request	QIA requests that the Proponent provide a description of any incidences, near misses, or concerns communicated by Inuit and Stakeholders via the communications protocol, and provide commentary on the effectiveness of the communications protocol.

Terrestrial Environment

Comment #	QIA 2021 AMR TE #1
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.2 Air Quality (PC Condition 10)</p> <p>Page: 77</p> <p>Document Name: Mary River Project Terrestrial Environment 2021 Annual Monitoring Report (2021 TEAMR)</p> <p>Section: 7</p> <p>Page: 35-91</p> <p>Document Name: Appendix G.29 Air Quality Memo</p>
QIA Comment	<p>PC Condition 10 states that the Proponent shall update its Dust Management and Monitoring Plan. This update shall include items such as plans for monitoring the first few kilometers of the rail corridor leaving the mine site, monitoring dustfall at intervals along Milne Inlet Tote Road, and taking all adaptive management measures described in its Dust Management and Monitoring Plan if monitoring indicates that dust in the ambient air or dust deposition from the increased traffic is greater than initially predicted.</p> <p>Baffinland identifies that dust management and monitoring measures continue to be implemented at the Mine site, Port site, and Tote Road. They added 14 dustfall monitoring stations in 2021: four additional monitors at Milne Port, four new monitors along the rail alignment, and six ‘short’ monitors installed at 0.5 m to compare the difference between dustfall at the standard height of 2.0 m and dustfall closer to the ground. Additionally, in 2020 Baffinland began conducting satellite imagery analysis to measure the extent of dustfall extent and relative magnitude within a 20 km buffer of the Project Development Area.</p> <p>Mitigation measures include installation of equipment at the Crusher Facility, application of a product called Dust Blockr along the Tote Road, and application of a product called DusTreat on Milne Port stockpiles.</p> <p>Baffinland has certainly made changes to its Dust Management and Monitoring Plan as a response to concerns identified by the QIA, the TEWG, and the MHTO. However, these changes have not fully addressed those concerns.</p> <p>First, it is not clear that the ‘short’ monitors placed at 0.5 m accurately reflect the amount of dust settling on the ground. Baffinland reports in the 2021 TEAMR that “no difference was found in the dustfall measured at a standardized height of 2.0 m and at 0.5 m” (2021 TEAMR, Table 0, p. v). This result is used as evidence that the 2.0 m height across all monitoring stations captures the amount of dust falling at ground level. Baffinland does not give any rationale for choosing the 0.5 m height</p>

	<p>and provides no evidence that the amount of dust collected in the ‘short’ monitors is commensurate with the dust that collects at ground level.</p> <p>As the QIA suggested in comments provided on the 2020 NIRB Annual Monitoring Report, one way to measure the amount of dustfall collecting at ground level is with snow core samples. These samples will show how much dust collects at the surface of the snowpack between snow events.</p> <p>Second, contrary to Baffinland’s assertion that dustfall mitigations are successful, the results of the passive dustfall sampling show that concentration and extent of dustfall continues to be above FEIS predictions at most monitoring sites. According to Table 7-4 of the 2021 TEAMR, in 2021 20 monitoring sites have results above FEIS predictions and 6 have results within FEIS predictions. This means that 77% of sites are collecting more dust than predicted. Dustfall measurements have consistently been over FEIS predictions year over year.</p> <p>The satellite imagery analysis showed that dustfall extent increased between 2020 and 2021 at some locations. According to section 7.4.3 of the 2021 TEAMR, dustfall extents decreased between 2019 and 2021 at Milne Port. At the mine site satellites showed localized increases in dustfall concentration and an increase in the southern and northwestern extents compared to previous years. Along the Tote Road, dustfall extents and concentrations in 2021 increased from 2020. Baffinland states, “Given the available data for the satellite imagery analysis, the efficacy of DustBlockr as a summer suppressant cannot be assessed through this method” (2021 TEAMR, p. 78). None of these results were presented in the 2021 NIRB Annual Monitoring Report.</p> <p>It is curious, given the information on continued high amounts of dustfall presented in the 2021 TEAMR, that Baffinland states in the 2021 NIRB Annual Monitoring Report, “results demonstrate the ongoing effectiveness of reducing dust generation from crushing and ore stockpiling and tote Road traffic, despite an increased production level of up to 6 Mtpa at the Project and the volume of Tote Road traffic” (p. 78). Baffinland is hypothesizing that general stability in dustfall measurements between periods of low production and periods of high production mean that mitigations are working. However, there have been increases in the extent and concentration of dust at certain locations, as stated in the paragraph above. Baffinland should conduct further analysis on the correlation between production and dustfall across all locations in the RSA as a test of the hypothesis. QIA does not consider dustfall mitigations to be successful when measures continue to be above FEIS predictions and show no significant decreases.</p> <p>Finally, Baffinland does not discuss the effect of helicopter flights on dust dispersion. In the 2021 TEAMR, Baffinland identifies that low flying helicopters likely contaminated at least two samples (2021 TEAMR, p. 47). QIA is concerned about the potential for low flying helicopters to disperse dust over Inuit areas of importance.</p> <p>The QIA has consistently requested that Baffinland design a dustfall monitoring program that addresses Inuit concerns regarding concentration and extent of</p>
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	<p>dustfall across the landscape. In 2019 and 2020, the request included the following modifications:</p> <p>a) re-examining dustfall locations based on where dustfall is predicted to be highest; b) pairing dustfall and vegetation monitoring; c) monitoring dustfall on vegetation; d) included some monitoring stations at lower levels (paired with stations at the 2 m height) to determine how much dustfall is being missed.</p> <p>Baffinland has not re-examined dustfall locations based on where dustfall is predicted to be highest, has not paired dustfall and vegetation monitoring, has not monitored dustfall on vegetation. Baffinland has included lower-level monitors paired with those at the 2 m height, but has not provided evidence that a height of 0.5 m accurately reflects ground-level concentrations. The height of 0.5 m provides an interesting comparison to the 2 m height, but does not address the concern of dustfall accumulation at ground level as a result of wind.</p> <p>Through the review of the 2020 Annual Monitoring Report, the QIA requested that a full dust audit of sources be undertaken, overseen by NIRB, and tied to project conditions that can be evaluated annually to ensure dust levels are gradually decreasing over time. In the 2021 Annual Monitoring Report, Baffinland indicates that in 2021 they initiated a third party audit of current and future dust sources to propose control improvements. This auditor is working with a Dust Audit Committee, which includes representatives from each of the five North Baffin communities. The QIA expects that this audit will help identify more effective ways to reduce dust dispersion from the project.</p>
QIA Request	<ol style="list-style-type: none"> 1. The QIA requests that Baffinland provide evidence that the ‘short’ monitors accurately reflect conditions at ground level. If the short monitors continue to miss dust that is being moved by wind at the ground level, QIA requests that Baffinland include another approach to gauge accumulation over time at ground level. 2. The QIA requests that Baffinland identifies that current mitigation measures are insufficient for dust management or provide clear evidence that they are working. QIA expects that the forthcoming Dust Audit will result in more effective mitigation measures. 3. As in the review for the 2018, 2019 and 2020 Monitoring Reports, the QIA requests that Baffinland develop daily triggers for dust mitigation measures, using clear thresholds for when mitigation measures will be used. 4. As in the review for the 2018, 2019 and 2020 Monitoring Reports, the QIA requests that Baffinland develop a community-based monitoring program for impacts of dust to key values, including establishing culturally-relevant thresholds for dustfall, Inuit observations, and IQ-enriched monitoring. <p>The QIA recognizes that Baffinland has implemented actions as an attempt to control dust generation throughout the Project. However, the QIA is concerned with the implication that as long as dustfall continues to be measured within an annual</p>

	<p>general range, even if that range is higher than predicted in the FEIS, that Baffinland is compliant with the Project Certificate Conditions. The Project Certificate Conditions require Baffinland to stay within the predicted range. The QIA is concerned that the continual deposition of dust on the land and on the ice may be causing long term and potentially significant damage to the ecosystem. Baffinland has stated that mitigations are working, but has provided evidence contrary to that statement.</p>
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Comment #	QIA 2021 AMR TE #2
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.3 Noise and Vibration (PC Condition 14b) and 4.6.8 Terrestrial Environment (PC Condition 60)</p> <p>Page: 90, 215</p> <p>Document Name: Appendix G.3 Air Quality and Noise Abatement Management Plan</p> <p>Section: 5.3, Table 10</p> <p>Page: 35</p> <p>Document Name: Comments on Baffinland Iron Mines Corp.'s Mary River Project (08MN053) 2020 Annual Monitoring Report (210707-08MN053-QIA Comments Re 2020 Annual Report-IA1E.pdf)</p> <p>Page: 10</p> <p>Document Name: Response to Comments on Baffinland's 2020 Annual Report to the NIRB August 11, 2021 (210811-08MN053-Baffinland Response to 2020 Annual Report Comments-IA1E.pdf)</p> <p>Document Name: Alberta Energy Regulator, 2007. Directive 038: Noise Control.</p>
QIA Comment	<p>PC Condition 14 (b) states that the Proponent shall mitigate potential impacts of noise to wildlife and people during project operations. The 2021 Terrestrial Environment Annual Monitoring Report indicates that noise monitoring was initiated in 2020 but did not occur in 2021.</p> <p>Table 10 in Appendix G.3 (pg. 35 of 42) outlines Noise Performance Indicators and Thresholds. The table states that the Indicator is "Noise level at fenceline", and the threshold is 40 dBA. QIA interprets this to mean that if noise is measured above 40dBA at the project fenceline, then it is above threshold and action must be taken. However, Baffinland seems to use a threshold of 40dBA 1.5 km from fenceline, which is inconsistent with Table 10 in Appendix G.3. It is more consistent with guidance from the Alberta Energy Regulator's Directive 038, which states that permissible sound levels (psl) should not exceed 40 dBA (nighttime) at 1.5 km from the facility fence line.</p>

	<p>Since noise monitoring was not complete in 2021, the QIA is referencing 2020 data. Table 0 in the 2020 Terrestrial Environment Annual Monitoring Report gives a description of the noise monitoring program that was initiated in 2020:</p> <p>“Nine Autonomous Recording Unites were deployed at various distances from Project areas to examine Project-related noise and potential effects on wildlife... the operational threshold for Project-related noise is 40 dBA 1.5 km from the facility fence. Ambient noise was typically below 40 dBA at 1.5 km from all Project areas and below 40 dBA at 3 km from all Project areas. Project-related noise was typically not audible at 3 km from the Project” (2020 TEAMP, pg. xvi).</p> <p>Table 5-5 of the 2020 TEAMR (p. 28) Indicates that the 10th percentile of all measurement sites were above the 40 dBA threshold. This means that the typical recorded measurement of sound were above threshold at all project areas and at all distances.</p> <p>During the review of the 2020 Annual Monitoring Report, the QIA stated its concern about the effects of noise and vibration on wildlife, how it was not clear if the results of the 2020 pilot noise monitoring program exceeded the FEIS, and how the Air Quality and Noise Abatement Management Plan did not take into account sensitive timing windows. The QIA suggested that “additional mitigations be developed, based on the predicted zone of influence, particularly within sensitive timing windows for species of concern” (pg. 11).</p> <p>In the response to these comments, Baffinland stated “the noise monitoring results matched the original prediction that Project-related noise would be audible at 1.5 km from the PDA. Expected noise levels were a component of the conservatively estimated zone of influence used in the FEIS impact assessment” (p. 9). According to Table 5-5 of the 2020 TEAMR, however, current noise levels are exceeding the threshold at 1.5 km from the PDA. According to Table 10 of the AQNAMP, this is cause for mitigative action.</p> <p>PC Condition 60 states that the proponent shall mitigate impacts to wildlife from explosions. The methods for this mitigation involve scanning the area for wildlife and if wildlife is present and could be harmed by the activity, blasting will not occur. Baffinland states, “No wildlife has been knowingly harmed or disturbed by blasting activities during construction.” It is not clear how the mitigation is being tracked and reported. Does blasting occur during sensitive timing windows, such as the nesting period for birds? The current mitigative approach does not appear to account for sensitive timing windows or wildlife that is difficult to detect visually.</p> <p>The QIA remains concerned about the effects of noise and vibration on wildlife use around the Project area. The impacts of noise and dust on a zone of influence around the mine footprint was not adequately considered in the original impact assessment conducted for the MRP, and continues to be a key area of uncertainty. The initiation of noise monitoring at three locations (the Mine Site, the Tote Road, and Milne Port) in 2020 is a start; however, the QIA has some concerns with how the data have been interpreted.</p>
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	<p>It is not clear how monitoring stations for noise were identified. It would make sense for these monitoring stations to be located in areas that are particularly sensitive to noise, such as caribou calving or post-calving habitat near the road, footprint, or common helicopter flight lines. Other mines have noted that zones of influence can extend much further from mines than the sites currently being monitored for noise (e.g., Golder 2017). This and other relevant research should inform the locations of noise monitoring stations relative to the mine, particularly given that one of the primary concerns with respect to wildlife is specific to North Baffin caribou.</p> <p>The QIA additionally notes that the Proponent has not undertaken a monitoring effort relative to vibration. No data are available on current levels of vibration in around the Project site; this information is critical to incorporate into estimating the zone of influence around the mine. Baffinland stated in its reply to comments on the 2020 AMR that vibration monitoring is already occurring around the project area – Baffinland points to the work that is undertaken to satisfy PCC 14. However, the vibration monitoring occurs only inside of buildings and is interpreted only in the context of how vibrations affect humans. This is not adequate for understanding how vibrations from the project are affecting wildlife.</p>
QIA Request	<p>The QIA continues to request improvements to the Proponent’s current approach relative to impacts of noise and vibration on wildlife, to ensure compliance with PCC 14(b) and PCC 60. The QIA requested these during the review of the 2020 AMR and found that the response from Baffinland did not satisfactorily address QIA concerns:</p> <ol style="list-style-type: none"> 1. In addition to the current noise stations, identify highly sensitive areas for noise around the Project (e.g., calving areas; post-calving areas for caribou; nesting areas) and monitor noise levels in those locations; 2. Initiate a monitoring program for vibration around the Project area; 3. Integrate noise levels and vibration levels into the re-estimation of the zone of influence around the mine, particularly with respect to North Baffin caribou. 4. Consider additional mitigations based on the predicted zone of influence, particularly within sensitive timing windows for species of concern. 5. Summarize noise levels from monitoring work conducted to date relative to the 40 dBA for psl. 6. Review research emerging from the last 15 years to determine whether a more conservative psl should be the appropriate threshold for introducing mitigations.

Comment #	QIA 2021 AMR TE #3
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.4 Hydrology and Hydrogeology (PC Condition 16)</p> <p>Page: 97-98</p>
QIA Comment	PC Condition 16 states, “The Proponent shall ensure that the water related infrastructure or facilities that are designed and constructed, including the modification of culverts, diversion of watercourses, and diversion of runoff into watercourses along the railway, access roads, port sites, the Milne Inlet Tote Road,

	<p>and other areas of the Project site, are consistent with those proposed in the FEIS and FEIS Addendum in terms of type, location, and scope and that the requirements of all relevant regulatory authorities are satisfied advance of constructing those facilities” (p. 97).</p> <p>The QIA disagrees with Baffinland’s statement of compliance. The Tote Road has never been built to the presented designs as approved in the FEIS Addendum. The QIA notes this remains a concern and has been highlighted year after year.</p>
QIA Request	<p>The QIA requests that Baffinland build the Tote Road as proposed in the FEIS and FEIS Addendum in terms of type, location, and scope and that the requirements of all relevant regulatory authorities are satisfied in advance of constructing those facilities.</p> <p>The QIA notes this is the same request as last year.</p>

Comment #	QIA 2021 AMR TE #4
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.4 Hydrology and Hydrogeology (PC Condition 17)</p> <p>Page: 99-98</p>
QIA Comment	<p>PC Condition 17 states, “The Proponent shall develop and implement effective measures to ensure that effluent from project-related facilities and/or activities, including sewage treatment plants, ore stockpiles, and mine pit, satisfies all discharge criteria requirement established by the relevant regulatory agencies prior to being discharged into the receiving environment” (p. 99).</p> <p>The QIA disagrees with Baffinland’s statement of compliance. Baffinland had four discharges of non-compliant effluent at MP-03, MP-04, and MP-04A. A number of these non-compliance were attributed to potential sampling errors. Due to these exceedances, this PC Condition (PCC) is considered non-compliant. The QIA notes this is an ongoing concern and additional quality control measures should be investigated and implemented.</p>
QIA Request	<p>The QIA requests that Baffinland to continue to improve their sampling procedures to provide better confidence in monitoring results.</p> <p>The QIA notes this is the same request as last year.</p>

Comment #	QIA 2021 AMR TE #5
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.4 Hydrology and Hydrogeology (PC Condition 18)</p> <p>Page: 103</p>
QIA Comment	<p>PC Condition 18 states, “The Proponent shall carry out continued analyses over time to confirm and update, accordingly, the approximate fill time for the mine pit lake identified in the FEIS” (p. 103).</p>

	<p>The QIA disagrees with Baffinland’s statement of compliance. Baffinland states that mining activities have not yet created a pit at Deposit No.1 and as such Tasks 1 and 2 of the reclamation research program for the Open Pit flooding timeline outlined in Appendix D.2 of the ICRP cannot commence until an Open Pit has formed and active dewatering is occurring. The QIA notes that it witnessed dewatering of Deposit 1 during its 2020 Environmental Audit and that Baffinland confirmed verbally during the 2021 Environmental Audit that ponding occurs with pumping to the Waste Rock Facility. The QIA disagrees that Deposit 1 is currently not a pit. As such, this PCC is deemed non-compliant until such time that analysis occurs.</p>
QIA Request	<p>The QIA requests Baffinland treat Deposit 1 as an Open Pit or provide evidence to the contrary.</p> <p>The QIA notes this is the same request as last year.</p>

Comment #	QIA 2021 AMR TE #6
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.4 Hydrology and Hydrogeology</p> <p>Page: 101</p> <p>Document Name: Baffinland Iron Mines 2020 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 210506-08MN053-2020 Annual Report-IA2E.pdf]</p> <p>Section: 3.2.4 Waste Rock Facility</p>
QIA Comment	In the 2020 AMR, Baffinland identified that “observation of seepage from the Waste Rock Facility surface water management pond (WRF Pond)” suggested that the WRF liner had become compromised. Baffinland suggest that several corrective actions were required over a four year period (2017 – 2020). There is no mention of water quality concerns connected with WRF in 2021.
QIA Request	Can Baffinland confirm that all corrective actions tied to the non-compliant effluent discharges at the Waste Rock Facility have been successful?

Comment #	QIA 2021 AMR TE #7
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.4 Hydrology and Hydrogeology (PC Condition 19)</p> <p>Page: 104-106</p>
QIA Comment	PC Condition 19 states, “The Proponent shall ensure that it develops and implements adequate monitoring and maintenance procedures to ensure that the culverts and other conduits that may be prone to blockage do not significantly hinder or alter the natural flow of water from areas associated with the proposed mine. In addition, the Proponent shall monitor, document and report the withdrawal rates for water removed and utilized for all domestic and industrial purposes” (p. 104).

	The QIA disagrees with Baffinland's statement of compliance. Baffinland exceeded the daily water withdrawal limits defined in the Type 'A' Water Licence two times for dust suppression based on operational limitations. As such, this PCC is deemed non-compliant until the measures taken by Baffinland to prevent Water License exceedances are implemented and proven to function as intended.
QIA Request	<p>The QIA Requests that NIRB assess Baffinland's measures taken to reduce water withdrawal exceedances and monitor the effectiveness of those actions.</p> <p>The QIA notes this is the same request as last year.</p>

Comment #	QIA 2021 AMR TE #8
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.5 Ground & Surface Conditions (PC Condition 27)</p> <p>Page: 124-125</p>
QIA Comment	<p>Baffinland notes that public consultation continues to “not reveal any significant concerns from affected communities about specific impacts that changes to the topography and landscape have had on the aesthetic value of the Project area” (p. 124). Baffinland describes their method for soliciting this information through engagement events.</p> <p>Based on the discussion provided in the results, it appears Baffinland passively seeks input on aesthetic value, and any impacts from changes to the topography and landscape. The passive method described will have limited efficacy in characterizing aesthetic value, as it does not specifically engage Inuit on aesthetic value. Baffinland has received comments relating to “aesthetic concerns related to the use of dust-laden snow” (p. 124), so the passive method is not unfruitful, but it could be made much more effective and robust to actively engage on this topic.</p>
QIA Request	<p>The QIA requests that Baffinland design and conduct a research program in collaboration with Inuit that will be more effective at defining aesthetic value and exploring impacts to aesthetic value and management thereof. For example, it seems critical to understand what level and nature of visible dust (especially on snow and ice) triggers aesthetic avoidance by Inuit, and how this avoidance impacts on ability and willingness to harvest, travel through, gather water from, and enjoy areas impacted by aesthetic alterations.</p> <p>The QIA requests that the results of this research are integrated into both dust management planning and reclamation planning and design.</p> <p>The QIA also requests, as required by the IIBA, a detailed engagement plan be shared with the QIA so the 2022 consultation efforts can be assessed, commented on and revised accordingly.</p>

Comment #	QIA 2021 AMR TE #9
References	Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]

	<p>Section: 4.6.6 Vegetation (PC Condition 33) Page: 145</p> <p>Document Name: Terrestrial Environment Mitigation and Monitoring Plan Rev 1 (baf-ph1-830-p16-0027-r1---terrestrial-environment-mitigation-and-monitoring-_2017-01-25-05.pdf) Section: 4.3 Summary of 2021 Compliance with Conditions Page: 61</p> <p>Document Name: Comments on Baffinland Iron Mines Corp.'s Mary River Project (08MN053) 2020 Annual Monitoring Report (210707-08MN053-QIA Comments Re 2020 Annual Report-IA1E.pdf) Page: 13</p>
QIA Comment	<p>PC Condition 33 states that the Proponent shall include relevant monitoring and management plans within its environmental management system and the terrestrial environment management and monitoring plan. The current Terrestrial Environment Mitigation and Monitoring Plan is found here: https://www.baffinland.com/media-centre/document-portal/. The plan does not seem to have been updated since 2016.</p>
QIA Request	<p>The QIA requests the Proponent to provide an updated Terrestrial Environment Mitigation and Monitoring Plan that at a minimum describes the current terrestrial monitoring program, including providing a table showing changes to these programs over time based on input from the TEWG.</p> <p>Given the disconnect between findings of monitoring programs and adaptive management responses, the QIA further requests that proposed changes to the TEMMP during the MRP Phase 2 review be incorporated into a new version of the plan to ensure a direct linkage between thresholds and responses, including a series of thresholds and responses based on Inuit Qaujimajatuqangit.</p>

Comment #	QIA 2021 AMR TE #10
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf] Section: 4.6.6 Vegetation (PC Condition 34) Page: 138</p> <p>Document Name: 2021 Terrestrial Environmental Annual Monitoring Report DRAFT for TEWG</p> <p>Document Name: Comments on Baffinland Iron Mines Corp.'s Mary River Project (08MN053) 2020 Annual Monitoring Report (210707-08MN053-QIA Comments Re 2020 Annual Report-IA1E.pdf) Page: 15</p>

	<p>Document Name: Response to Comments on Baffinland’s 2020 Annual Report to the NIRB August 11, 2021 (210811-08MN053-Baffinland Response to 2020 Annual Report Comments-IA1E.pdf)</p> <p>Page: 13-14</p>
QIA Comment	<p>PC Condition 34 states that the Proponent will monitor metals concentrations in both soils and vegetation, particularly caribou forage at varying distances from the PDA to compare metal concentrations in soil and vegetation between near (impacted) and far (control) sites.</p> <p>Baffinland states in the 2021 AMR: “Values were below or within an acceptable range for soil-metal concentrations. Lichen-metal concentrations had some discrete increases at the Project, but all sample locations were below or within an acceptable range for lichen-metal concentrations” (pg. 139). An inspection of the 2021 TEAMR show that lichen-lead concentrations have had a significant increase from baseline and that the mean concentration is above the indicator value (Tables 8-19 and 8-20, pp. 121-122). This is at odds with the statement that values are within an acceptable range.</p> <p>During the review of the 2020 AMR, the QIA raised concerns that areas most likely to have high levels of metals may not get sampled and requested that Baffinland “summarize how dustfall is quantified at each of the vegetation monitoring sites, to understand how representative the vegetation sampling locations are in areas that have reported high dustfall”. Baffinland responded that “Site sampling locations have been selected, refined, and updated to capture Project effects. This includes ‘reported high dustfall’ areas and ‘areas with sensitive (and/or) important plants.’ We consider that the sampling design (that is supported by statistical power analysis) is robust and representative of potential sensitive environments” (pg. 13).</p> <p>It is not clear how site sampling locations have been ‘selected, refined, and updated’ to make sure soil and vegetation in areas with high dustfall are being sampled. The 2021 TEAMR states, “sampling distances were informed by the results of the dustfall monitoring program.” Baffinland then cites the EDI 2015 TEAMR, which is missing from the Baffinland Download Library website.</p> <p>There is no information presented to suggest that sampling locations were selected based on anything but distance from project foot print. Baffinland states in the response to the QIA 2020 AMR TE #2 that “the vegetation and soils base metals monitoring program has been designed to align and facilitate comparisons with the dustfall monitoring program (Section 6) to assess metals uptake in vegetation and soils related to Project activities. Efforts have been made to streamline the sampling locations and study design to facilitate comparisons between these respective monitoring programs to bridge interpretations of the effects of dustfall on soil-metal and lichen-metal concentrations and align any triggers and corrective actions” (pg. 7).</p> <p>The QIA recognizes that dustfall is likely to be higher in areas closer to the project footprint. However, given the landscape features, wind direction, etc., there is likely to be variability of dustfall concentration within and between those distance</p>

	<p>categories. This is evidenced by the satellite derived dustfall extent and concentration maps included in the 2021 TEAMR (pp. 80- 89).</p> <p>Additionally, the QIA is not convinced that the dustfall monitors are accurately measuring concentrations of dust at ground level. Furthermore, Baffinland has not presented an analysis that compares the results of the dust monitoring program with the results of the soil and vegetation monitoring program. In the 2014 Annual Terrestrial Monitoring Report, EDI completed an analysis that showed correlations between metal content in dust and metal content in lichen and soil (pg. 68), however, to our knowledge, there has been no analysis of dust amount and metal content in soil and lichen.</p>
QIA Request	<p>The QIA requests that Baffinland:</p> <ol style="list-style-type: none"> 1. Provide evidence that soil and lichen sampling sites overlap with areas of high concentration of dust. 2. Provide an analysis and discussion on the relationship between dust concentration and soil- and lichen- metal concentrations and how metals may be building up in soils and lichen over time.

Comment #	QIA 2021 AMR TE #11
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.6 Vegetation (PC Condition 35)</p> <p>Page: 141</p> <p>Document Name: Comments on Baffinland Iron Mines Corporation's Mary River Project (08MN053) 2018 ,2019 , and 2020 Annual Monitoring Reports (190607-08MN053-QIA Comments-IA1E.pdf; 200728-QIA Comments-IA1E.pdf; 210707-08MN053-QIA Comments Re 2020 Annual Report-IA1E.pdf))</p> <p>Page: 14, 15</p> <p>Document Name: Response to Comments on Baffinland's 2020 Annual Report to the NIRB August 11, 2021 (210811-08MN053-Baffinland Response to 2020 Annual Report Comments-IA1E.pdf)</p> <p>Page: 14</p>
QIA Comment	<p>PC Condition 35 requires that the Proponent undertake monitoring of baseline metal levels in organ tissue from caribou harvested within the LSA.</p> <p>In the 2020 AMR, Baffinland outlined efforts to collaborate in regional data collection efforts and stated that it is a collaborator in an approved Northern Contaminants Program (NCP) project for the 2020-2021 fiscal year.</p> <p>In the 2021 AMR, Baffinland indicates that the last time samples of Baffin caribou were collected was in 2020. These samples are still undergoing analysis. Baffinland also states that the Northern Contaminants program is currently the most effective means to complete this monitoring. In Baffinland's response to Comments on the</p>

	2020 AMR, they stated that tissue sampling is low because it is dependent on hunter participation and coordination around the GN sampling program.
QIA Request	The QIA requests that Baffinland review their approach for ensuring awareness of the program to the TEWG for discussion about how to increase Inuit participation in this voluntary program.

Comment #	QIA 2021 AMR TE #12
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.6 Vegetation (PC Conditions 39 and 40)</p> <p>Page: 148-151</p>
QIA Comment	<p>During review of the 2019 Mary River Annual Monitoring Report, the QIA commented that despite community discussions regarding reclamation and vegetation, there was no indication that Inuit Qaujamajatuqangit (IQ) was informing Baffinland's revegetation pilot program or that Inuit had any involvement. The discussion regarding PC Conditions 39 and 40 in Baffinland's 2020 and 2021 Annual Monitoring Reports include a descriptions of desktop research conducted on potential reclamation techniques that can be used to meet the reclamation land use goals, as well as a field program that is being conducted to assess reclamation techniques on two categories of mine disturbance type. The Proponent notes that results indicate natural revegetation does occur at the project site although the sample size is small.</p> <p>Baffinland does not describe Inuit involvement or if IQ has informed this program, for example in defining reclamation goals, end land uses, the reclamation techniques, or the criteria and measurements to determine reclamation success. This remains an outstanding concern for the QIA.</p>
QIA Request	<p>The QIA continues to request that the Proponent provide a detailed description of how Inuit have been and will be engaged in progressive and end-of-life reclamation planning. Inuit should be involved in the development of the programs that are used to identify progressive and end-of-life reclamation techniques.</p> <p>The QIA requests that the Proponent describe if and how IQ has informed revegetation studies, plans, and programs. The QIA notes Baffinland stated in their 2020 Annual Report that they would be establishing more test plots across the landscape (p. 155). How was Inuit input and IQ utilized to identify test plot locations?</p> <p>Baffinland is also requested to identify whether and how Inuit will be involved in all future reclamation planning and projects.</p>

Comment #	QIA 2021 AMR TE #13
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.8 Terrestrial Environment (PC Conditions 49 through 64)</p> <p>Page: 173 - 221</p>
QIA Comment	<p>The Report states that the Inuit communities are concerned about sensory disturbance on caribou, collision with trains and trucks, interruption of movement (e.g., by the railway), effect of disturbance on caribou who are in a low abundance cycle, impact on caribou calving areas, and caribou eating vegetation with dust (p.173). Baffinland concludes that they have low confidence of potential effects on regional caribou population due to caribou being in a low abundance cycle (Table 4.18, p.174).</p> <p>Elsewhere Baffinland describes activities undertaken to monitor and build understanding of wildlife and habitat e.g., PC Condition 51, and to develop mitigation, e.g., PC Condition 52 and 53.</p> <p>Inuit and Inuit organizations' participation in monitoring activities has been described, for example in PC Condition 49.</p> <p>However, it is unclear how IQ has informed the understanding of wildlife populations and habitat. For example, was Inuit Qaujamajatuqangit (IQ) used to make conclusions on the effects on caribou regional population, and place confidence in the prediction? Also, it is unclear whether Inuit and community 'monitoring' has been utilized. For example, do the incidental observations noted on p. 201, 209, and 219 only come from Baffinland monitoring activities, or have Inuit and community observations been included?</p>
QIA Request	The QIA requests that the Proponent describe if and how IQ has informed terrestrial environment monitoring design, the analysis and interpretation of results, and conclusions.

Comment #	QIA 2021 AMR TE #14
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.8 Terrestrial Environment (PC Condition 51)</p> <p>Page: 183-184</p>
QIA Comment	<p>Baffinland provides general context to their cooperation and support of regional initiatives with the Government of Nunavut, e.g., North Baffin Island caribou surveys (population and composition), including collaring, and the surveys relating to metals composition in caribou tissue.</p> <p>These regional surveys explore population and health. The PC Condition directs Baffinland to also give special consideration to harvest programs, but there is no mention of studies relating to harvest programs.</p>

	The PC Condition also directs Baffinland to consider, and cooperate with, as appropriate, community-based initiatives. There is no discussion of whether there are any relevant community-based initiatives underway or in development in the region.
QIA Request	The QIA requests that Baffinland describe availability of studies related to harvest programs and whether there are any relevant community-based initiatives underway or in development in the region. If any of these are available, the QIA requests a description from Baffinland on whether and how they intend to incorporate, and cooperate with, these harvest program studies and/or community-based monitoring initiatives. If any of these are not available, the QIA requests a gap analysis from Baffinland on whether and what regional study initiatives are missing that would help better understand and mitigate Project-induced impacts.

Comment #	QIA 2021 AMR TE #15
References	<p>Document Name: Baffinland Iron Mines 2020 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 210506-08MN053- 2020 Annual Report-IA2E.pdf] Section: 4.6.8 Terrestrial Environment (PC Condition 49) Page: 185-188</p> <p>Document Name: Comments on Baffinland Iron Mines Corp.'s Mary River Project (08MN053) 2018 Annual Monitoring Report (190607-08MN053-QIA Comments-IA1E.pdf) Page: 15</p>
QIA Comment	<p>In relation to PC Condition 49, the QIA has concerns that the TEWG must become a more effective forum for providing input into the Proponent's monitoring programs and mitigations. While some recommendations have been adopted by Baffinland, the Proponent has not been adequately responsive to concerns related to incorporation of IQ into decision-making, ineffectiveness of caribou monitoring programs, concerns related to helicopter compliance monitoring, and concerns related to dustfall monitoring. Specific recommendations have been put forward to improve the TEWG (see below); these must be adopted to ensure compliance with this PC Condition.</p> <p>The timing of meetings in relation to key decision points throughout the year is still problematic. No meeting was held before the field season in 2022, so there was no ability for TEWG members to comment on proposed monitoring before it is implemented (e.g., noise monitoring). Additionally, the Terms of Reference has yet to be finalized. Finally, an IQ-based CRLU monitoring program is required to properly consider IQ in identification of mitigation measures.</p>
QIA Request	<p>Requests have been put forward to improve the TEWG as part of the Phase 2 project; however, these measures should also be adopted as part of the currently approved Project. They include:</p> <ul style="list-style-type: none"> • Improved timing of meetings to ensure that advice from the TEWG can be incorporated into the upcoming field season; • Proponent to provide information well in advance of meetings, so TEWG members can a) inform the development of the agenda; b) come to the

	<p>meetings prepared to have specific discussions about programs / issues of concern (i.e., more of a workshop format than a presentation format)</p> <ul style="list-style-type: none"> • Revise and adopt new terms of reference, including requirement for Proponent to adhere to advice from TEWG on issues of key uncertainty (e.g., monitoring of impacts to caribou / caribou avoidance of the project / assessing the zone of influence around the mine); • Incorporating IQ / developing a community-based monitoring approach to complement existing science-based monitoring programs.
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Comment #	QIA 2021 AMR TE #16
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.8 Terrestrial Environment (PC Condition 53 and 54)</p> <p>Page: 188-196</p> <p>Document Name: Comments on Baffinland Iron Mines Corp.'s Mary River Project (08MN053) 2020 Annual Monitoring Report (210707-08MN053-QIA Comments Re 2020 Annual Report-IA1E.pdf)</p> <p>Page: 22-23</p> <p>Document Name: Response to Comments on Baffinland's 2020 Annual Report to the NIRB August 11, 2021 (210811-08MN053-Baffinland Response to 2020 Annual Report Comments-IA1E.pdf)</p> <p>Page: 20 – 22</p> <p>Document Name: Mary River Project Terrestrial Environment 2021 Annual Monitoring Report (2021 TEAMR)</p> <p>Section: 9.4.1</p>
QIA Comment	<p>PC Condition 53 requires Baffinland to take steps to prevent caribou injury and mortality connected to the road and the railway. PC Condition 53 (b) specifically identifies a requirement to identify monitoring and mitigation measures in areas where the railway, roads, trails and flight paths pass through caribou calving areas.</p> <p>In the 2021 AMR, Baffinland discusses caribou monitoring programs undertaken in 2021. These include 24 Height-of-Land surveys, deployment of remote cameras at six of the Height-of-Land survey stations, snow track surveys and a statement of support for regional monitoring efforts.</p> <p>The QIA has consistently put forward concerns about gaps and deficiencies in caribou monitoring survey efforts. The QIA maintains that Baffinland is not employing an effective way to monitor local caribou response to the road/road traffic and is making misleading statements about incidental observations about caribou movement around the road.</p> <p>The QIA notes that the time spent conducting the Height-of-Land surveys has increased significantly and that wildlife cameras have been set up at six different</p>

	<p>survey sites. Overall, these efforts fall short of the goals to help address gaps and study design deficiencies associated with the HOL surveys.</p> <p>Inuit knowledge holders have previously raised the need to re-evaluate HOL survey sites. This has not been explored. While the time spent conducting surveys has increased by 10 to minutes, it is not clear how much this increase in effort actually increases the likelihood of observing caribou.</p> <p>It is not clear why remote cameras were deployed at only 6 of the 24 HOL stations. Baffinland states that the cameras were deployed at “relatively even distance intervals to optimize wildlife observations along the Tote Road” (p. 143). However, 24 HOL survey sites were originally identified because it would take all 24 sites to get a representative sample of the activity around the Tote Road. The selection of HOLs 1, 3, 4, 6, 10, and 16 also seems arbitrary. The selection of stations should be based on best available IQ and western science and should be described in detail in annual reports.</p> <p>Baffinland states in the 2021 AMR: “ In 2020, caribou were confirmed to have crossed the Tote Road in three of the four incidental observations in January, suggesting that the road did not act as a barrier to movement in those instances” (pg. 191). As the QIA stated in Comments on the 2020 AMR, this is not sufficient evidence to draw the conclusion that the road is not acting as a barrier. In the 2021 AMR, the statement is especially misleading, because it suggests that three out of four caribou crossed the road in January 2020. However, the 2020 AMR states that this was actually one caribou that crossed the road three times. No other information is given about this observation.</p> <p>Baffinland continues to state that the monitoring program in place is sufficient. In their Response to 2020 Annual Report Comments, Baffinland states that they have a commitment to supporting regional monitoring efforts once they are initiated by the GN: “Baffinland has been willing, through a Memorandum of Understanding [sic] with the GN, to contribute to a broader and strategic north Baffin Island caribou research program” (pg. 21).</p> <p>2020 incidental observations recorded 11 caribou from seven groups (notably suggesting lower group size numbers than those used in the regional collar analysis above). 2021 incidental observations recorded 104 caribou from 33 groups. There is no other information given about these caribou or where they were in relation to the project, only that they were outside of the PDA.</p> <p>Baffinland uses snow track surveys to evaluate the effectiveness of caribou crossings. The QIA remains concerned that these snow track surveys are not proven to be an effective survey method. The survey methods need to be tested to ensure that they are being carried out consistently across monitoring personnel. There has been no work to interpret the snow track survey results in the appropriate context (e.g. compare to weather data, wildlife seasonal movement patterns and known corridors). Furthermore, Baffinland has not yet developed a threshold of significance</p>
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	<p>to measure survey results against. What percentage of road deflections by species should be considered significant?</p> <p>PC Condition 54 requires Baffinland to update their Terrestrial Environmental Management and Monitoring Plan to include details of the methods and rationale for conducting monitoring, description and justification of means of determining effect and proposed analysis to support any conclusions drawn, details of monitoring and mitigation activities. Baffinland has yet to update the TEAMMP. In the Response to the 2020 AMR Comments, Baffinland states, “Changes made to monitoring programs have been identified in each terrestrial environment annual monitoring report...the TEMMP is a living document... while a formal update to the TEMMP has not been completed, the process and outcomes that would be captured within updates to that Plan have been realized” (pp. 21-22).</p>
QIA Request	<p>The QIA requests the following from Baffinland:</p> <ol style="list-style-type: none"> 1. The QIA notes that Baffinland has not developed a monitoring protocol that is sufficient to capture impacts to caribou, including avoidance of the project area. Given the continued reliance on HOL surveys and the statement that a continued lack of data from these surveys reflects low caribou numbers rather than avoidance of the project area, the QIA requests that Baffinland test the effectiveness of HOL surveys outside of the project zone of influence to determine detection levels at areas that are not impacted by mining activity. This is particularly important given that Inuit observations indicate caribou avoidance of the project area due to disturbance. Until a satisfactory monitoring protocol for identifying impacts to caribou from the project is developed, the QIA considers Baffinland to be out of compliance with PCC 53. 2. Provide more detailed information about incidental caribou sightings, in particular locations and group sizes. An approach to report out on caribou sightings and collect basic information about behaviour and condition should be developed. 3. In the absence of an effective approach for monitoring impacts to caribou from the Project, Baffinland is requested to develop an approach to identify the zone of influence around the PDA and increase reliance on IQ to proactively develop mitigation measures that reduce impacts to caribou. 4. Baffinland is requested to update the Terrestrial Environment Annual Monitoring Plan to include changes made to monitoring programs since 2016. See request related to PCC 33.
Comment #	QIA 2021 AMR TE #17
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.8 Terrestrial Environment (PC Conditions 54d(vii))</p> <p>Page: 201-203</p>

QIA Comment	<p>PC Condition 54d(vii) requires Baffinland to include in the Terrestrial Environmental Management and Monitoring Plan details of a hunter harvest survey to determine effects on caribou populations and potential effects on caribou behavior.</p> <p>Baffinland has not included a discussion of the hunter harvest survey, even at high level, presumably to maintain confidentiality. It is unclear whether a hunter harvest survey was conducted and whether and how IQ has been used “to determine the effect on caribou populations and potential effects on caribou behaviour resulting from increased human access caused by upgrades to the Milne Inlet tote road (and any other roads if they are shifted from private to public use) and increase local knowledge of the mine site, including establishing pre-construction baseline harvesting data” (NIRB 2020, condition 54d(vii)).</p>
QIA Request	The QIA requests that the Proponent describe the hunter harvest survey and how this information has been used to establish a pre-construction baseline, and to determine the effect on caribou populations and behaviour.

Comment #	QIA 2021 AMR TE #18
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.8 Terrestrial Environment (PC Condition 57)</p> <p>Page: 200-205</p> <p>Document Name: Mary River Project Terrestrial Environment 2021 Annual Monitoring Report (2021 TEAMR)</p>
QIA Comment	<p>Re: Inuit involvement in field monitoring: the Proponent states that "incorporation of Inuit in field monitoring programs is an important aspect of the programs (pg 201)." Baffinland describes that funding for two-full-time on-site Environmental Monitors hired by the QIA are fully integrated into the Site Environmental Team. Inuit have participated in snow track surveys, Height of Land surveys, vegetation, and raptor monitoring. Baffinland also states that “the implementation of a community-based monitoring program” will be carried out through the Mary River IIBA. Because Baffinland has stated this within the 2021 AMR, the QIA assumes that Baffinland considers a community-based monitoring program to be an instrumental part of compliance with this PCC. The QIA agrees. The inclusion of Inuit in existing monitoring programs is not sufficient.</p> <p>According to the 2021 draft TEAMR, COVID-19 restrictions prevented Inuit participation in terrestrial monitoring programs in 2021. Inuit are expected to be able to participate again in 2022.</p>
QIA Request	The QIA requests that all future Annual Reports include a summary of progress on the implementation of the community-based monitoring program referenced under PCC 57(b).

Comment #	QIA 2021 AMR TE #19
Reference	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.8 Terrestrial Environment (PC Condition 57)</p> <p>Page: 200-205</p> <p>Document: Mary River Project Terrestrial Environment 2021 Annual Monitoring Report (TEAMR) (2021_BIM_Terrestrial_AMR Draft for TEWG.pdf)</p> <p>Section: Executive Summary; 4</p> <p>Page: pp. i + ii; 6, 9, 10</p>
QIA Comment	<p>PCC 57 requires annual reporting of "An assessment and presentation of annual environmental conditions including timing of snowmelt, green-up, as well as standard weather summaries" (p. 200).</p> <p>In 2021, Baffinland reported "Both the Mine Site and Milne Port experienced precipitation equipment malfunctions which made comparisons to previous years difficult" (2021 AMR, p. 202). "Precipitation data before late August is unreliable at both the Mine Site and Milne Port due to obstructed rain gauges" (2021 TEAMR, p. 6). "Until August 24, the rain gauge [at the Mine Site] was blocked. It is possible that this blockage began as early as October 2019. This casts uncertainty on a large portion of the year's data" (2021 TEAMR, p. 8).</p> <p>Figures 4-1 and 4-2 illustrate the April through August gap left in the 2021 precipitation record from the Mine Site (2021 TEAMR, p. 9). "The Milne Port meteorological station suffered from similar technical problems to the station at the Mine Site, with its rain gauge becoming obstructed as early as August 2020. This blockage was cleared on August 22, 2021. As such, data from August 2020 to September 2021 are considered unreliable" (2021 TEAMR, p. 10). "It may be the case that the blockage at the Milne Port rain gauge was severe enough to cause some, but not all, days of rainfall to go undetected, or that the summer of 2021 was unusually dry at this location" (2021 TEAMR, p. 10).</p> <p>Malfunctions of weather monitoring equipment also occurred in 2018, 2019, and 2020. These weather measurements are important for interpreting other monitoring data and therefore underlie a broad range of monitoring study conclusions. Persistent and protracted losses of weather data weaken the assessment of interannual trends in dustfall, dust control measures, and the interpretation of satellite imagery. In 2021 the weather dataset was excluded from calculations of the relationship between the dustfall concentrations from the passive dustfall monitors and the satellite digital imagery due to the issues with the precipitation measurements (TEAMR 7.4.2.2 Dustfall Concentration Estimation, p. 74). Incomplete weather monitoring data also weaken the interpretation of monitoring data from a variety of other terrestrial and freshwater monitoring programs.</p>

QIA Request	The QIA requests that Baffinland ensure reliable collection of weather data and prompt detection and remedy of any issues that arise in 2022 and for the duration of the Mary River Project.
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Comment #	QIA 2021 AMR TE #20
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.8 Terrestrial Environment (PC Condition 57b and 58)</p> <p>Page: 200-205; 207</p>
QIA Comment	The Proponent states that they "regard engagement and consultation with Inuit and incorporation of Inuit in field monitoring as an important aspect of the programs" (p.201). Baffinland further describes the variety of ways Inuit have been involved, ranging from participation in working groups via the MHTO to data capture. However, it is not clear on whether IQ has been incorporated in a meaningful way into such things as understanding the terrestrial ecosystem, trends, natural variability (PCC 58a), cumulative effects (PCC 58 d), and adaptive management. Barriers to Inuit participation, aside from COVID-19, and to meaningful incorporation of IQ are not described, for example situations where IQ and western science contradict one another.
QIA Request	As previously stated in the 2019 Annual Report review, the QIA requests the development of a parallel community-based monitoring program that builds opportunities for IQ knowledge transfer and integrates the harvester, tissue sampling and wildlife monitoring; Baffinland should provide a status update on its efforts to build any enhanced community-based monitoring programs or Inuit-controlled monitoring programs.

Comment #	QIA 2021 AMR TE #21
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.8 Terrestrial Environment (PC Condition 58)</p> <p>Page: 206-209</p> <p>Document Name: Response to Comments on Baffinland's 2020 Annual Report to the NIRB August 11, 2021 (210811-08MN053-Baffinland Response to 2020 Annual Report Comments-IA1E.pdf)</p> <p>Page: 23-24</p> <p>Document Name: Mary River Project Terrestrial Environment 2021 Annual Monitoring Report (2021 TEAMR)</p> <p>Document Name: Appendix G.23 Caribou Monitoring Triggers and Recommendations Report.</p> <p>Page: Appendix A, p. A-20</p>

QIA Comment	<p>Part (c) of PC Condition 58 states that Baffinland must include information on “measured levels of dustfall (fugitive and finer particles such as TSP) on lichens and blueberries, and ash content of caribou fecal pellets” (pg. 206).</p> <p>The spirit and intent of this PCC is that Baffinland document the amount of dustfall affecting species of concern. Baffinland refers to information presented under PCC 10, 34, and 54. The QIA has already outlined many concerns it has identified with dustfall monitoring in the sections above, which include:</p> <ul style="list-style-type: none"> • No evidence that the monitoring program accurately captures dust amount at ground level; • Questionable evidence that dust suppression methods are working; • Evidence that helicopters are spreading dust around the site; • Little evidence that sites for lichen and soil sampling coincide with areas of high dust concentration. <p>It is clear that documentation of the interaction of dustfall on caribou fecal pellets in the vicinity of the Project is not possible due to low density of caribou at this phase of their population cycle. Another metric for impacts on caribou forage should be identified.</p> <p>The QIA has registered its concern that lichen distribution in vegetation plots is too low and project effects could be masked due to larger number of samples with low exposure to dustfall and low lichen density. Baffinland responded to this concern in the response to 2020 AMR Comments: “trace metals sampling design is based on sampling soil and lichen at varying distance classes from each project area... within the distance classes and project area spatial boundaries, lichen abundance and proximity to dustfall monitoring stations are two of the primary factors determining site selection. Thus the trace metals sampling sites are already located in areas of high caribou forage potential” (pp. 23-24).</p> <p>The QIA notes that Appendix G.23 to the 2021 AMR includes a map of distribution and resource selection by North Baffin Island caribou (p. A-20). This map could be used with dust data to identify potential areas of concern for caribou.</p>
QIA Request	<p>The QIA requests:</p> <ol style="list-style-type: none"> 1. Baffinland develop a strategic sampling approach targeting known or potential caribou forage areas with higher abundance of lichen and risk of increased dustfall for focused studies on potential effects on lichen quality, abundance and uptake of metals. This recommendation was made in 2019 and in 2020. While Baffinland states that this concern is addressed, the QIA maintains that more information is required. 2. Baffinland provide further detail on whether and how dust issues will be jointly monitored and managed by Baffinland and Inuit parties moving forward.

Comment #	QIA 2021 AMR TE #22
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report MainBody-IA1E.pdf]</p> <p>Section: 4.6.8 Terrestrial Environment (PC Condition 58f)</p> <p>Page: 206-209</p>
QIA Comment	Baffinland does not provide any explicit discussion of IQ related to caribou movement and abundance, impacts, and trends in their presentation of PCC 58f summary information. Nor are there descriptions of situations where IQ and western science contradict one another and how these are being resolved.
QIA Request	The QIA requests that Baffinland include explicit discussion of IQ relating to PCC 58f.

Comment #	QIA 2021 AMR TE #23
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.8 Terrestrial Environment (PC Condition 59)</p> <p>Page: 210-214</p>
QIA Comment	Baffinland does not provide any data or discussion of whether there were any impacts to Inuit harvesting resulting from aircraft.
QIA Request	The QIA requests a discussion of whether there were any disturbances of Inuit harvesting from aircraft. This discussion should include data and information from hunters. This information should be included in annual reports going forward. If no data is currently available, Baffinland should identify how it will gather relevant data from Inuit harvesters moving forward.

Comment #	QIA 2021 AMR TE #24
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.8 Terrestrial Environment (PC Condition 60)</p> <p>Page: 215</p>
QIA Comment	<p>The QIA is concerned that minimal efforts have been made to evaluate the potential effects of blasting and explosives use on caribou and other wildlife, particularly in regards to sensitive timing windows for caribou.</p> <p>In the 2021 AMR, Baffinland states “No wildlife has been knowingly harmed or disturbed by blasting activities during construction” (p. 215). However, there is no other information provided.</p> <p>In its review of the 2020 AMR, the QIA requested that Baffinland work with the MHTO and the TEWG to evaluate concerns about impacts of explosives on caribou and identify timing windows when explosive use is not permitted. Baffinland stated in its response, “Both the QIA and MHTO are welcome to raise this issue through regular TEWG meetings if there are new substantive concerns that were not previously identified and new recommendations to consider.</p>

	The QIA would like to note that the effects of blasting on wildlife during sensitive time periods remains an outstanding concern. In future Annual Monitoring Reports, the QIA would like to see more evidence provided that wildlife was not harmed or disturbed during blasting activities.
QIA Request	What information did Baffinland utilize to make this statement? What information is collected and recorded before, during, and after blasting occurs?

Comment #	QIA 2021 AMR TE #25
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.8 Terrestrial Environment (PC Condition 63)</p> <p>Page: 218-219</p>
QIA Comment	Baffinland does not explicitly mention whether any community concerns had been raised through their liaison and meeting with local Hunters and Trappers Organizations.
QIA Request	<p>The QIA requests that Baffinland provide discussion of any community concerns raised and discussed over 2021, including a statement confirming that none were raised if that is the case, and that this information be included in annual reports going forward.</p> <p>The QIA also recommends that this PCC be deemed “non-compliant” in the future if a summary of issues and concerns raised is not included in the reporting along with a list of all actions taken to deal with those issues and concerns.</p>

Comment #	QIA 2021 AMR TE #26
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.8 Terrestrial Environment (PC Condition 59); 4.6.9 Birds (PC Condition 71)</p> <p>Page: 210-214; 233</p> <p>Document Name: Response to Comments on Baffinland’s 2020 Annual Report to the NIRB August 11, 2021 (210811-08MN053-Baffinland Response to 2020 Annual Report Comments-IA1E.pdf)</p> <p>Page: 24-25</p> <p>Document Name: Mary River Project Terrestrial Environment 2021 Annual Monitoring Report (2021 TEAMR)</p> <p>Section: 5.2</p>
QIA Comment	Baffinland continues to provide results for helicopter flights showing the breakdown of flights that are “compliant” and “compliant with rationale”. This level of reporting allows the TEWG and others to determine whether additional measures should be taken to mitigate helicopter noise near sensitive areas in the RSA. However, the QIA is concerned about the number of helicopter flights that do not meet the target

	<p>height but are compliant because a rationale is provided (Table 5-4, p. 19 of the 2021 TEAMR).</p> <p>Instances where flights in the Snow Geese area that do not achieve the 1,110 magl requirement should not be considered compliant with rationale, but non-compliant with rationale. The purpose of PCC 59 and PCC 71 is to protect Snow Geese during the moulting period. Compliance should be determined whether or not this was achieved. Baffinland states in the 2021 TEAMR that compliance with height requirements within the Snow Geese area during the moulting season (July and August) was 72% (p. 18). However, considering that Baffinland's category of "compliant with rationale" is actually not compliant, true compliance is only 20%.</p>
QIA Request	<p>Given that helicopter flights are largely non-compliant and therefore likely disturb wildlife during sensitive time periods, the QIA requests that more work be completed to ensure that helicopters are not flying over sensitive habitats. This was requested during the QIA review of the 2020 AMR. Additional work includes:</p> <ol style="list-style-type: none"> 1. Maps of known calving/post-calving locations in relation to helicopter flight lines; 2. Maps outlining any other sensitive timing windows identified through IQ; 3. Correlation between noise monitoring results and helicopter overflights that are lower than 650 magl. Information currently available does not specifically communicate what the noise level is when a helicopter flies overhead at a height of 650 magl

Comment #	QIA 2021 AMR TE #27
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.9 Birds (PC Condition 65)</p> <p>Page: 224 - 225</p>
QIA Comment	Baffinland gives information on land disturbed for the project during the breeding bird window and land disturbed for the project outside of the breeding bird window. In 2021, 79.8% of land disturbance occurred outside of nesting season (287,779 m ² out of 360,615 m ²). How is does this compare with other years?
QIA Request	The QIA requests that Baffinland include statistics about land disturbed inside and outside of the bird breeding window for each year land disturbance activities occur.

Comment #	QIA 2021 AMR TE #28
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.9 Birds (PC Condition 69)</p> <p>Page: 229-230</p>
QIA Comment	PCC 60 states that Baffinland is required to identify and install nesting deterrents to discourage birds from nesting in areas likely to be disturbed by construction and/or

	clearing activities during the nesting season. Baffinland has indicated that their efforts respecting this PCC include noting any apparent nesting attempts by birds. In 2021, they state there weren't any. Baffinland has not erected any deterrents and surveyed all land disturbed during the breeding bird window. It is not clear, however, how close to construction the surveys occur.
QIA Request	The QIA requests that, if deterrents are not installed, Baffinland complete bird nest surveys within seven days of construction.

Comment #	QIA 2021 AMR TE #29
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.9 Birds (PC Condition 73 and PC Condition 59)</p> <p>Page: 235 -236; 210-214</p>
QIA Comment	<p>PCC 73 requires that Baffinland develop detailed and robust mitigation and monitoring plans for migratory birds.</p> <p>While PCC 59 requires helicopters to fly above certain altitudes in Snow Geese areas, the QIA notes that many helicopter flights are flying below those altitudes. This suggests that Snow Geese are being affected by helicopter flights during sensitive time periods. However, there is no monitoring program set up to monitor these effects.</p> <p>Baffinland states, "Pilots were also given the spatial boundaries of any identified concentrations of migratory birds buffered by the required 1,500 m horizontal avoidance distance" (p. 210). There is no information given about the data sources or the types of birds pilots are avoiding. Does this refer to Snow Geese only?</p>
QIA Request	<p>The QIA requests that Baffinland work with the TEWG to design and implement a program for monitoring the effects of non-compliant helicopter effects on Snow Geese and other migratory birds.</p> <p>Additionally, the QIA requests that when reporting on this PCC in the future, Baffinland give more information about the information given to pilots, including the spatial boundaries, and bird species of concern.</p>

Comment #	QIA 2021 AMR TE #30
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.9 Birds (PC Condition 73; PC Condition 74)</p> <p>Page: 235-236, 237-243</p>
QIA Comment	PC Condition 73 requires Baffinland to develop detailed and robust monitoring plans for migratory birds that reflect input from the QIA and other agencies. However, now that raptor monitoring has been paused, there are no "robust" monitoring plans in place.

	<p>PC Condition 74 requires Baffinland to complete several follow-up monitoring for programs, and to include the key indicators of “peregrine falcon, gyrfalcon, common and king eider, red knot, seabird migration and winter, and songbird and shorebird diversity” (p. 237). Baffinland describes information on many of these indicators however, there seems to be no follow-up programs for eiders, seabird migration, or shorebird diversity. There appears to have been no north Baffin shorebird surveys since 2013 and no waterfowl and waterbird surveys since 2015. Baffinland also does not report the PRISM plot results.</p> <p>The QIA also notes that Figure 4.12 shows a declining trend in PEFA occupancy since 2015 after increases from 2012 to 2015.</p>
QIA Request	The QIA requests that the Proponent clarify how marine bird VECs were monitored in 2020, as required under the Project Certificate. The QIA further requests that the Proponent provide more information on monitoring of Project effects on common and king eiders and seabird migration.

Comment #	QIA 2021 AMR TE #31
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.9 Birds (PC Condition 74)</p> <p>Page: 237-243</p>
QIA Comment	Baffinland does not identify any IQ or Inuit participation in bird monitoring.
QIA Request	The QIA requests that Baffinland provide more information on the role of IQ and Inuit participation in bird monitoring.

Marine and Aquatic Environment

Comment #	QIA 2021 AMR M&AE #1
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.5 Groundwater & Surface Water (PC Condition 21)</p> <p>Page: 112-114</p>
QIA Comment	<p>PC Condition 21 states, “The Proponent shall ensure that the scope of the Aquatic Effects Monitoring Plan (AEMP) includes, at a minimum:</p> <ul style="list-style-type: none"> a. Monitoring of non-point sources of discharge, selection of appropriate reference sites, measures to ensure the collection of adequate baseline data and the mechanisms proposed to monitor and treat runoff, and sample sediments b. Measures for dustfall monitoring designed as follows: <ul style="list-style-type: none"> i. To establish a pre-trucking baseline and collect data during Project operation for comparison. ii. To facilitate comparison with existing guidelines and potentially with thresholds to be established using studies of arctic char egg survival and/or other studies recommended by the Terrestrial Environment Working Group (TEWG). iii. To assess the seasonal deposition (rates, quantities) and chemical composition of dust entering aquatic systems along representative distance transects at right angles to the Tote Road and radiating outward from Milne Port and the Mine Site” (p. 112). <p>The QIA disagrees with Baffinland’s assessment of compliance. The QIA continues to have concerns over dust deposition. Specifically, current rates of dust deposition exceed FEIS predictions. The QIA is partaking in its own dustfall monitoring program with the collaboration of the MHTO to investigate concerns raised by Inuit over dust. Outcomes of this may inform future amendments to the PCC, with a focus on Inuit-led monitoring and thresholds referring to IQ.</p>
QIA Request	The QIA requests that moving forward, Inuit observations, using IQ-enriched observational criteria, be integrated into dustfall distribution and effects monitoring.

Comment #	QIA 2021 AMR M&AE #2
Reference	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: Popular Summary (English); 4.6.5 Groundwater & Surface Water (PC Condition 21)</p> <p>Page: 8; 112-114</p> <p>Document Name: 2021 NIRB Annual Report, Appendix G.7 Lake Sedimentation Monitoring Program (220331 – 2021 NIRB Annual Report – Appendix G.7 (Lake Sed) – As Sent.pdf)</p>

	Section: 2.3.1; 2.3.2 Page: 9 (12 of 32); 11 (14 of 32)
QIA Comment	Lake sedimentation samples and dry bulk density (DBD) samples from the 2020 to 2021 ice-covered period were lost in transit to the laboratory. They were not located prior to preparation of Lake Sedimentation Monitoring Program report, so only the 2021 open-water period data were presented and discussed. Loss of a full season's data from a sampling program is significant.
QIA Request	The QIA requests that Baffinland describe the measures it has implemented to prevent sample losses in the future by this and other research programs.

Comment #	QIA 2021 AMR M&AE #3
Reference	<p> Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf] Section: Popular Summary (English); 4.6.5 Groundwater & Surface Water (PC Condition 21) Page: 8; 112-114 </p> <p> Document Name: Appendix G.7 2021 Lake Sedimentation Monitoring Program [220331 – 2021 NIRB Annual Report – Appendix G.7 (Lake Sed) – As Sent.pdf] Section: 2.4 Data Analysis Page: 15 of 32 </p> <p> Document Name: Appendix G.5 Aquatic Effects Monitoring Plan [220331 – 2021 NIRB Annual Report – Appendix G.5 (AEMP)– As Sent] Section: Table 5.1 Page: 69 of 85 </p>
QIA Comment	<p> “The proposed thresholds include a low action response threshold of 0.15 mm sediment deposition based on the upper range of natural sedimentation rate of 50 mg/cm²/year converted to a sediment thickness using the DBD [dry bulk density] of deposited sediment at Sheardown Lake, a moderate action response threshold of 0.54 mm sediment deposition based on the sediment accumulation predicted in the Final Environmental Impact Statement (FEIS; Volume 7, Section 3.4.2.3) for the Project, and a high action response threshold of 1 mm sediment deposition based on the threshold presented in the FEIS for the Project” (p. 15). </p> <p> The proposed Low-, Moderate-, and High- Action Thresholds are more precautionary and improvements on the 1 mm sedimentation threshold presented in the FEIS. However, none of these thresholds are based on studies of the effects of sediment on Arctic char egg survival, or on Project-generated sediment. </p>
QIA Request	The QIA recommends that exceedance of the moderate threshold trigger a study by Baffinland to properly validate Actions Thresholds for the effects of Project-generated sediment on Arctic char egg survival.

Comment #	QIA 2021 AMR M&AE #4
Reference	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: Popular Summary (English); 4.6.5 Groundwater & Surface Water (PC Condition 21)</p> <p>Page: 8; 112-114</p> <p>Document: Mary River Project, Terrestrial Environment, 2021 Annual Monitoring Report (2021_BIM_Terrestrial_AMR Draft for TEWG.pdf)</p> <p>Section: 7.3.2.3 Table 7-4</p> <p>Page: 35-91</p>
QIA Comment	PCC 21 relates to Groundwater/Surface Waters – Aquatic Effects Monitoring Plan [AEMP] and dustfall monitoring. Dustfall has continued to exceed predictions along the Tote Road (p. 60). The amount of dustfall and sediment from Project activities that enters the Tote Road streams, its fate in the streams, and its effects on the biota, including Arctic Char, are unknown.
QIA Request	The QIA requests Baffinland assess and monitor inputs and aquatic effects of Project-generated dust and sediment on the water quality, sediment dispositions, and biota of a representative reach(s) of Phillips Creek that is crossed by the Tote Road and rail route and would also be crossed by the proposed railway.

Comment #	QIA 2021 AMR M&AE #5
Reference	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.5 (PC Condition 21)</p> <p>Page: 112-114</p> <p>Document Name: Appendix G.17 DFO Tote Road Report [220331 – 2021 NIRB Annual Report – Appendix G.17 (DFO Tote Road) - 1 of 2 – As Sent.pdf]</p>
QIA Comment	<p>PCC 21 requires the Proponent's Aquatic Effects Monitoring Program (AEMP) include measures of dustfall monitoring designed "To assess the seasonal deposition (rates, quantities) and chemical composition of dust entering aquatic systems..." (p. 112).</p> <p>Rubber tire residues are not among the substances monitored for potential effects on water quality and aquatic biota. Rubber tires contain chemicals (e.g., antioxidants) that can be acutely toxic to aquatic biota and have caused mass mortality of salmonid fishes in streams when mobilized by runoff (e.g., Tian et al 2021; Hiki and Yamamoto 2022). This is a potential concern due to the magnitude of Project truck traffic along the tote road and unexpectedly high rate of tire wear, both of which are expected to continue. A recent study found Arctic Char were not as acutely sensitive to the chemical as Coho Salmon or Rainbow Trout (Brinkmann et al. 2022), but did not study the chemical's sublethal effects or char from a broad range of genetic stocks.</p>

	<p><u>References:</u></p> <p>Brinkmann, M., Montgomery, D., Selinger, S., Miller, J.G.P., Stock, E., Alcaraz, A.J., Challis, J.K., Weber, L., Janz, D., Hecker, M., and Wiseman, S. 2022. Acute toxicity of the tire rubber-derived chemical 6PPD-quinone to four fishes of commercial, cultural, and ecological Importance. Environmental Science Technology Letters 2022 9 (4), 333-338. DOI: 10.1021/acs.estlett.2c00050</p> <p>Hiki, K, and Yamamoto, H. 2022. Concentration and leachability of N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine (6PPD) and its quinone transformation product (6PPD-Q) in road dust collected in Tokyo, Japan. Environmental Pollution 302, 1 June 2022, 119082. https://doi.org/10.1016/j.envpol.2022.119082</p> <p>Tian, Z., Zhao, H., Peter, K.T., and 24 others. 2021. A ubiquitous tire rubber-derived chemical induces acute mortality in coho salmon. Science 371: 185-189.</p>
QIA Request	The QIA requests that Baffinland sample representative road dust and nearby stream sediment upstream and downstream to assess the potential risk to fish in Tote Road streams from chemicals released by rubber particulates worn from the tires of vehicles travelling the Tote Road.

Comment #	QIA 2021 AMR M&AE #6
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.5 Groundwater & Surface Water (PC Condition 23)</p> <p>Page: 116-120</p>
QIA Comment	<p>PC Condition 23 states, "The Proponent shall develop and implement a Groundwater Monitoring and Management Plan to monitor, prevent and/or mitigate the potential effects of the Project on groundwater within the Project area" (p. 116).</p> <p>The QIA disagrees with Baffinland's assessment of compliance. The following was found during 2021 monitoring activities:</p> <p>"At the Landfill Facility; at monitoring locations MS-LF-GW1, chloride concentrations were greater than the Federal Interim Groundwater Quality (FIGQ) Guideline and were elevated compared to concentrations observed at the reference locations and further down-gradient piezometers. At monitoring locations MS-LF-GW1, MS-LF-GW2, and MS-LF-GW3, sulphate concentrations were greater than the FIGQ Guideline and were elevated compared to concentrations observed at the reference locations and further down-gradient piezometers. Dissolved metal parameters including copper, boron, cadmium, lead, nickel, and uranium exceeded their respective FIGQ Guideline at one (1) or more down-gradient monitoring locations MS-LF-GW1, MS-LF-GW2 and MS-LF-GW3. This also suggests the presence of groundwater impacts due to landfill operations; however, these results also suggest the potential impacts are limited to the immediate vicinity of the Landfill Facility.</p>

	<p>At the Mine Site Hazardous Waste Berm area; all dissolved copper and nickel were greater than their respective FIGQ Guideline at one or more drive-point piezometers during the 2021 Groundwater Monitoring Program, including at one or more of the reference locations. All Polycyclic Aromatic Hydrocarbon (PAH) parameters were reported below their respective FIGQ Guidelines with the exception for naphthalene which was reported above the FIGQ Guideline at MS-HWB-GW7." (p.117).</p> <p>As requested in the comments for the 2020 Annual Monitoring Report, Baffinland does include commentary on the direction of flow and indicates it probable that the guideline exceedances are localized and do not migrate to waterbodies.</p> <p>However, additional monitoring data is now available that exceeds guidelines yet no prevention or mitigative actions related to those exceedances are discussed.</p> <p>Further, the 2021 Geotechnical Inspection Report No. 1 reports that correction to access points for MS-HWB-17 are needed and QIA's 2021 Environmental Audit Report information requests suggested correction to MP-HWB-1-4 may be needed. In its response to QIA's requests, Baffinland referred to outcomes of the 2021 Geotechnical Inspection Report No. 2 as well as subsequent activity since the report that regrading to MP-HWB-1, 2 and 4 is needed.</p>
QIA Request	<p>The QIA requests that Baffinland confirm steps being taken to prevent and mitigate the cause and extent of the groundwater contamination around the landfill.</p> <p>The QIA requests that Baffinland confirm steps being taken to ensure stability of berms at MS-HWB1-7 and MP-HWB-1, 2 and 4, with attention to steps to maintaining stable access points and guidance for staff and contractors accessing berms in a manner that facilitates berm stability.</p>

Comment #	QIA 2021 AMR M&AE #7
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.5 Groundwater & Surface Water (PC Condition 24)</p> <p>Page: 119</p>
QIA Comment	<p>PC Condition 24 states, "The Proponent shall monitor as required the relevant parameters of the effluent generated from Project activities and facilities and shall carry out treatment if necessary to ensure that discharge conditions are met at all times" (p. 119).</p> <p>The QIA disagrees with Baffinland's statement of compliance. Baffinland had four discharges of non-compliant effluent at MP-03, MP-04, and MP-04A. A number of these non-compliance were attributed to potential sampling errors. Due to these exceedances, this PCC is considered non-compliant. The QIA notes this is an ongoing</p>

	concern and that additional quality control measures should be investigated and implemented.
QIA Request	The QIA requests that Baffinland show the QIA its measures to reduce exceedances, above and beyond improved sampling methods and internal training

Comment #	QIA 2021 AMR M&AE #8
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.5 Groundwater & Surface Water (PC Condition 25)</p> <p>Page: 119-122</p> <p>Document Name: 2019 Inspection of the Milne Inlet Tote Road and Associated Borrow Sources [NIRB Registry: 200521-08MN053-App G15-Tetra Tech 2019 Report Pt 1-IA1E.pdf, 200521-08MN053-App G15-Tetra Tech 2019 Report Pt 2-IA1E.pdf, 200521-08MN053-App G15-Tetra Tech 2019 Report Pt 3-IA1E.pdf, and 200521-08MN053-App G15-Tetra Tech 2019 Report Pt 4-IA1E.pdf]</p>
QIA Comment	<p>PC Condition 25 states, “The Proponent shall undertake additional geotechnical investigations to identify sensitive landforms, modify engineering design for Project infrastructure, develop and implement preventative and/or mitigation and monitoring measures to minimize the impacts of the Project’s activities and infrastructure on sensitive landforms” (p. 119).</p> <p>The QIA disagrees with Baffinland’s assessment of compliance, as the Tote Road has not been built to design and concerns on the state of the Tote Road are ongoing. The 2019 Tetra Tech Report confirms that most concerns along the Tote Road from the 2014 Tetra Tech Report were not addressed. The QIA understands Baffinland has a multi-year Execution Plan for addressing recommendations made by Tetra Tech regarding permafrost degradation. The QIA will continue monitoring these mitigative actions, the status of the Tote Road and settling of water retention structures and will consider assessment within the context of the 2022 Environmental Audit.</p>
QIA Request	<p>The QIA requests that PCC 25 be considered non-compliant until Baffinland builds the Tote Road as designed or provide a satisfactory effects assessment of operating the road in its current state. At a minimum, this PCC will not be re-assessed by the QIA until completion of the multi-year Execution Plan to address the priority areas identified in the Tetra Tech Report.</p> <p>The QIA notes this is the same request as last year.</p>

Comment #	QIA 2021 AMR M&AE #9
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.5 Groundwater & Surface Water (PC Condition 29)</p> <p>Page: 128</p>

QIA Comment	<p>PC Condition 29 states, “The Proponent shall provide to the respective regulatory authorities, for review and acceptance, for-construction engineering design and drawings, specifications and engineering analysis to support design in advance for constructing those facilities. Once project facilities are constructed, the Proponent shall provide copies of the as-built drawings and design to the appropriate regulatory authorities” (p. 128).</p> <p>The QIA agrees with Baffinland’s assessment of compliance. However, commentary on as-builts submitted in the 2021 QIA & NWB Annual Report for Operations was submitted under that cover. The QIA will continue to assess as-built documentation as received.</p>
QIA Request	None.

Comment #	QIA 2021 AMR M&AE #10
Reference	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.7 Freshwater Environment (PC Condition 45); 4.6.11 Marine Wildlife (PC Condition 115)</p> <p>Page: 160-164; 385-387</p> <p>Document: Mary River Project Year 2 Freight Dock Offset Habitat Monitoring Report (<i>Fisheries Act</i> Authorization 18-HCAA-00160). 145 pp. [220331 – 2021 NIRB Annual Report – Appendix G.11 (Y2 Freight Dock) – As Sent]</p> <p>Section: 1.1.1 and 1.1.2; 3.1</p> <p>Page: 11 of 145; 23 of 145</p>
QIA Comment	<p>“There are a few small and localized areas where the crushed rockfill foundation associated with the Freight Dock has become exposed; these exposed areas are vulnerable to erosion and may potentially be impacted further by seasonal abiotic processes (i.e., ice scour, wave action). The stability assessment planned for Year 5 (summer 2024) will provide additional information on the physical stability of these areas and whether remedial work may be considered.” (2021 AMR, p. 161)</p> <p>The number of ore carrier voyages to Milne Port in 2021 was stated, but these vessels do not use the freight dock (Appendix G.11, p. 11). Differences in vessel use and recolonization between the ore dock and freight dock might provide useful insights into the how well the habitat offsets work under these different use conditions.</p> <p>Additional habitat offsetting is also being considered in a <i>Fisheries Act Authorization</i> (FAA) amendment application but it is not clear whether this is related to the freight dock (Appendix G.11, p. 11).</p> <p>Intertidal coarse substrate was not accessible during the time of the dive survey due to tide height and angle of the coarse material in both the Reference and Freight Dock habitat areas.</p>

QIA Request	<p>The QIA requests the Proponent:</p> <ol style="list-style-type: none"> 1) Clarify why remedial work to the freight dock is being postponed until year five; 2) Provide an annual summary of vessel use of the freight dock including the number of vessels of each type, total number of visits, duration of use, and last port for each year for the duration of the study; 3) Identify what additional habitat offsetting measures are under consideration and how are they related to the Freight Dock; and 4) Explain what will be done to avoid loss of the year's intertidal coarse substrate monitoring data in the future.
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Comment #	QIA 2021 AMR M&AE #11
Reference	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.7 Freshwater Environment (PC Conditions 45 and 47)</p> <p>Page: 160-164, 168</p> <p>Document Name: Appendix G.17 DFO Tote Road Report [220331 – 2021 NIRB Annual Report – Appendix G.17 (DFO Tote Road) - 1 of 2 – As Sent.pdf]</p> <p>Section: 1.2 Authorization for Works; 2.1 Construction work</p> <p>Page: 7 of 70; 8 of 70</p>
QIA Comment	<p>In 2021, eleven (11) fish passage issues were identified at the 37 fish-bearing Tote Road stream culverts crossings related to: perching of at least 0.10 m (CV-129, CV-114, CV-111, CV-106, BG-50, and CV-216), ice blockage (CV-224), sediment blockage (CV-057), high current velocity (CV-225, BG-01), or seepage (CV-076) (Table 8, p. 48ff of 70). Most of these crossings have required remediation on multiple occasions since 2011 (Table 9, p. 51ff). All six culverts that were perched at least 0.10 m cm in the spring remained perched in the fall (Table 2, p. 34ff). “Crossings requiring remediation for potential fish passage issues (e.g., perched culverts) were identified, and a proposed remediation plan was prepared for discussion with the DFO during winter 2022” (Appendix G.17, p. 7), but there was “no construction work at fish-bearing stream crossings along the Tote Road in 2021” (Appendix G.17, p. 8). Ice blockage of CV-224, which persisted until after the spring freshet, was found during the spring survey (5 July) and thawed with steam soon afterward.</p> <p>These fish passage issues can delay or prevent access by small fish to summering habitats upstream of the Tote Road. The QIA recognizes that Baffinland is working to remove barriers to fish passage and that COVID-19 has constrained its operations, but remains concerned by the number of culverts each year that are perched, obstructed, or damaged and by the delays between identifying and correcting passage issues.</p>
QIA Request	<p>The QIA requests Baffinland clarify:</p> <ol style="list-style-type: none"> 1) Whether any action was taken to mitigate perched culverts in 2021 and, if not, whether it was undertaken early enough in 2022 to enable upstream fish passage in the spring; 2) How many of the streams did not allow upstream fish passage in 2021; and

	3) When the plans to complete permanent corrective actions at the culvert crossings will be released and implemented.
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Comment #	QIA 2021 AMR M&AE #12
Reference	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.7 Freshwater Environment (PC Condition 48a)</p> <p>Page: 170-172</p> <p>Document: Appendix G.22, 2021 Milne Inlet Freshwater Fish Health Assessment Preliminary Results (NIRB Registry File: 220331 – 2021 NIRB Annual Report – Appendix G.22 (Freshwater Fish Habitat) – As Sent.pdf</p> <p>Page: 4</p>
QIA Comment	<p>“Overall, the Milne Inlet Freshwater Fish Health Assessment demonstrated no adverse port-related effects on arctic char health and tissue chemistry within the Tugaat and Qurluktuk freshwater systems in 2021. The 2021 Milne Inlet Freshwater Fish Assessment, which provides a complete analysis and discussion of 2021 monitoring results, is provided in Appendix G.22 (Minnow, 2022).” (2021 AMR, p. 171)</p> <p>The QIA welcomes this ongoing study of Arctic Char, by the MHTO and Minnow Environmental Inc., to address concerns Inuit have expressed about the health of Arctic Char in the Milne Inlet area. However, information provided in the report was not sufficient to properly assess the conclusions on Project-related effects presented in relation to PCC 48(A) and in Appendix G.22.</p> <p>When the historical reports used for comparison are revisited, differences are apparent between the 2021 study and earlier works that will affect comparability of the data. In 2021, the char were caught in Tugaat and Qurluktuk lakes using 4” and 5” (stretched measure) gillnets in mid-August. The Tugaat Lake char were compared with char caught using a weir set downstream near the river mouth on August 9-28, 1992, and using 5.5” gillnets in Tugaat Lake in August 1995 (Read 2004). The Qurluktuk Lake char were compared with 1979 data from a creel census of sport fishermen angling near the mouth of the Robertson River, downstream of the falls below the rapids and along the coast of Koluktoo Bay, between 11 and 14 August (Moshenko 1981).</p> <p>Comparisons of fish caught at different locations (e.g., in or just upstream from Milne Inlet cf. a headwater lake), using different fishing gear, and/or over different periods tend to select for different subsets of a fish population (e.g., more searun fish cf. lake dwelling; more or fewer spawners of the year; more small or large fish). Consequently, extra care must be taken when interpreting the results to make sure the conclusions are valid.</p> <p>References:</p>

	<p>Moshenko, R.W. 1981. A preliminary assessment of the Arctic charr sport fishery on the Robertson River (Koluktoo Bay), Northwest Territories, 1979. Can. Data Rep. Fish. Aquat. Sci. 306: iv + 9 p.</p> <p>Read, C.J. 2004. An assessment of the Arctic char population of Tugaat River, Nunavut. Can. Manuscr. Rep. Fish. Aquat. Sci. 2699: v + 35 p.</p>
QIA Request	<p>The QIA requests that future reporting on these studies provide sufficient description of the methods and results of the earlier work to enable readers to put the studies in proper context relative to one another, without having to revisit the earlier literature.</p> <p>The QIA also requests that the 2021 study be revised to provide and consider this information.</p>

Comment #	QIA 2021 AMR M&AE #13
Reference	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.10 Marine Environment (PC Condition 76)</p> <p>Page: 249-254</p> <p>Document Name: Mary River 2021 Marine Environmental Effects Monitoring Program (MEEMP) and Aquatic Invasive Species (AIS) Monitoring Program 2021 Annual Monitoring Report Draft (2021 MEEMP AIS Report Draft for MEWG.pdf)</p> <p>Section: Executive Summary; 1.5.3.1; 3.2.1; 4.2.1</p> <p>Page: 4 of 1047; 27-29 of 1047; 513 of 1047; 569 of 1047</p> <p>Document Name: Baffinland presentation to the Marine Environment Working Group (MEWG) entitled: 2021 Marine Monitoring Studies 29 June 2021 [Final Monitoring Program Overview-29June2021_ENG.pdf].</p> <p>Slide: 4</p>
QIA Comment	<p>Baffinland informed the Marine Environment Working Group (MEWG) on 29 June 2021 that it would not be conducting the full joint radial sampling program for sediment and benthic biota in 2021 (Slide 4). Monitoring frequency also adjusted to every 3 years (MEEMP AIS Report, Table 1-5, p. 27 of 10).</p> <p>The rationale provided for making this change was that the radial sampling design had been implemented for three consecutive years without directional trends having been observed (MEEMP AIS Report, p. 513). In fact, power analyses found the 2018 design (20 stations) unable to detect change at an acceptable level and the 2019 sampling program was not completed due to time constraints (32 stns.) (MEEMP AIS Report, Table 1-5, p. 29). This leaves 2020 as the only year of full implementation of the recommended design (60 stns) and only year to use exclusively Van Veen grab samplers, with the next sampling now in 2023. This change weakens understanding of current conditions and natural variability at a time when construction of a second ore dock and doubling of shipping has been proposed.</p>

	<p>Given that directed sampling in 2021, at site SW-2 west of the ore, confirmed that anomalies in the sediment quality and benthic infauna appear to be Project-related (MEEMP AIS Report, p. 569), it also raises questions about the power of the program to detect further changes in a timely manner.</p> <p>The approach to this monitoring program going forward requires fulsome discussion by the MEWG.</p>
QIA Request	The QIA requests that Baffinland present its rationale for modifying this monitoring program to the MEWG, with analyses of how having only one year of directly comparable data may affect the power of this program to detect change and the timeliness of any mitigation required.

Comment #	QIA 2021 AMR M&AE #14
Reference	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.10 Marine Environment</p> <p>Page: 274-293</p>
QIA Comment	<p>PCC Nos. 86, 87, 88, 89, 90, and 91 (p. 372ff) all relate to mitigating risks from shipping related to ballast water and/or invasive species, and have been the subject of many the QIA and DFO comments in technical meetings, in Marine Environmental Working Group meetings, and on past Annual Reports. Despite 7 years of ore shipments information is lacking on what non-indigenous species are being released alive with ballast water discharged into Milne Port, or by biofouling on the vessel hulls. This limits understanding of risks posed by the introduction of non-indigenous species and by releases of ballast water.</p> <p>During the Phase 2 review Baffinland worked with DFO, Parks Canada, Transport Canada, and QIA to develop Commitments designed to address the shortcomings of existing monitoring related to these PCCs (Baffinland Commitment ID #s 109, 113, 114, 193, 194, 195, 196, 197, 203, 204, 205, 206, 207, 208, and 209). If implemented these commitments will improve understanding of the risks posed by Project shipping related to releases of ballast water into Milne Inlet and to biofouling on the vessels. These risks are primarily related to the introduction of non-indigenous species but also to water quality. The information gained will inform mitigation measures, and response planning should an invasive species be introduced.</p>
QIA Request	The QIA requests the Proponent implement its Phase 2 commitments (listed above) related to ballast water and hull biofouling to address existing gaps in the understanding of ballast water risk in the current Project, and enable a more comprehensive and proactive approach to preventing introductions, mitigating risks, and planning responses.

Comment #	QIA 2021 AMR M&AE #15
Reference	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p>

	<p>Section: 4.6.10 Marine Environment (PC Conditions 76 and 87) Page: 249-254, 277-278</p> <p>Document Name: Mary River 2021 Marine Environmental Effects Monitoring Program (MEEMP) and Aquatic Invasive Species (AIS) Monitoring Program 2021 Annual Monitoring Report Draft (2021 MEEMP AIS Report Draft for MEWG.pdf) Section: 1.5.4.1, Table 1-7; 8.2.1 Page: 30-31 of 1047; 926 of 1047</p>
QIA Comment	<p>The objective of PCC 87 is to prevent invasive species introductions resulting from shipping. To meet this condition the Proponent has developed a monitoring program to evaluate changes to marine habitat and organisms and the presence of non-native species introduced with ballast water or by biofouling on hulls.</p> <p>In 2020, the QIA recommended that additional zooplankton sampling be conducted to adequately characterize the community structure (see Golder 2021b, s. 8.5.3, p. 1463 of 1517). Instead, Baffinland cancelled the sampling program “due to high variability in the data and limited sampling not capturing the seasonal presence of many taxa”(MEEMP AIS Report, p. 31 of 1047). Zooplankton sampling was “replaced by monitoring for recruitment” onto settlement plates and baskets (MEEMP AIS Report, p. 926).</p> <p>These plates and baskets are useful for detecting fouling species that are introduced as planktonic immature stages and settle out on substrates as they mature. They are not useful for detecting planktonic species that remain planktonic. Consequently, zooplankton sampling is important for detecting NIS that are potentially invasive, particularly when biological sampling of the ships’ ballast water is not conducted. The approach to this monitoring program going forward requires fulsome discussion by the MEWG.</p> <p><u>Reference:</u></p> <p>Golder (Golder Associates Ltd.) 2021b. Mary River Project, 2020 Marine Environmental Effects Monitoring Program (MEEMP), and Aquatic Invasive Species (AIS) Monitoring Program. Draft report. 23 April 2021. 1517 pp. [Baffinland Kiteworks File: 1663724-281-R-RevB-34000 2020MEEMP 23APR_21_secured.pdf].</p>
QIA Request	<p>The QIA requests that Baffinland present its rationale for modifying this monitoring program to the MEWG and explain how it plans to monitor for planktonic NIS and AIS in the absence of this program.</p>

Comment #	QIA 2021 AMR M&AE #16
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf] Section: 4.6.10 Marine Environment (PC Condition 76 and 87) Page: 249-254; 277-278</p>

	<p>Document Name: Mary River 2021 Marine Environmental Effects Monitoring Program (MEEMP) and Aquatic Invasive Species (AIS) Monitoring Program 2021 Annual Monitoring Report Draft (2021 MEEMP AIS Report Draft for MEWG.pdf)</p> <p>Section: Executive Summary Page: 4 – 9 of 1047.</p> <p>Section: 1.5.3.1, Table 1-5; 1.5.4.1; 2.6; 3.6; 4.6; 5.6; 8.6</p> <p>Page: 27-29 of 1047; 30-31 of 1047; 77 of 1047; 519 of 1047; 574 of 1047; 609 of 1047; 967 of 1047</p>
QIA Comment	<p>The objective of PCC 76 is to mitigate potential impacts to the marine environment (see also PCC 99 and 113). To meet this condition the Proponent has developed a Marine Environmental Effects Monitoring Program (MEEMP) and Aquatic Invasive Species (AIS) Monitoring Plan to evaluate changes to marine habitat and organisms. The Proponent has provided a list of changes to these programs in its 2021 MEEMP AIS Annual Monitoring Report draft. Notable among these are:</p> <p>For the MEEMP (p. 29)</p> <ul style="list-style-type: none"> • Monitoring frequency for the joint radial sediment and benthic infaunal sampling program was reduced from annual to every three years; • 10 additional quadrats were deployed for monitoring marine sediment quality and benthic macroflora and epifauna, ROV methods were replaced by divers to improve taxonomic resolution, and samples of macroflora and epifauna were collected opportunistically for taxonomic/genetic identification; • Longlines were added to the fishing methods used, 5 fishing areas were delineated based on habitat features and their location relative to Milne Port to help standardize sampling efforts and address variability in the catch data across Milne Port. <p>For the AIS (p. 31)</p> <ul style="list-style-type: none"> • Zooplankton tows were removed from the sampling program, and • Ship hulls were not monitored for biofouling. <p>Unlike changes in 2019 and 2020, which were generally positive and reflect monitoring advice, several changes in 2021 were not—notably the change in monitoring frequency of the radial sampling program and removal of zooplankton tows from the sampling program. The power of the quadrat surveys for detecting change was low, despite having increased the number of quadrats. Changes to these three programs are discussed further in separate comments.</p> <p>The QIA supports the following recommendations in the 2021 MEEMP AIS draft report:</p> <ul style="list-style-type: none"> • <u>Marine water quality:</u> “Marine water quality monitoring for Site drainage and treated effluent discharges is recommended to continue, to keep monitoring for potential changes in downstream water chemistry from Site operations and provide continuity in the established time series for the MEEMP.” (p. 3 and 77 of 1047) • <u>Marine sediment quality:</u> “It is recommended to continue targeted sampling in 2022 to increase understanding of sediment grain size variability and to

	<p>continue monitoring for potential effects of Project activities on grain size distribution.” (p. 4 and 519 of 1047)</p> <ul style="list-style-type: none"> • <u>Benthic infauna</u>: “...it is recommended to continue targeted sampling in 2022 to increase understanding of natural variability as well as to monitor for additional changes in benthic community indicators.” (p. 5 and 574 of 1047) • <u>Benthic epifauna</u>: “It is recommended that a diver-based methodology permanently replace the combined use of ROVs and underwater video.”; “Future dive surveys should analyze the quadrats as a whole (not by subquadrat) to reduce dive time.”; “...a new quadrat should be deployed to replace the missing quadrat (Q2) and the location of Q12 should be moved to a deeper site...”; and, “Future field surveys should incorporate enough field days to buffer for inclement weather.” (p. 609 of 1047). • <u>Fish health and tissue chemistry</u>: “...continued monitoring is recommended to maintain continuity in established time series data for Arctic Char and to provide a benchmark for Fourhorn Sculpin and <u>H. arctica</u> health and tissue chemistry on which to base future comparisons.” (p. 8 of 1047). • <u>NIS/AIS</u>: “It is recommended that sampling across multiple trophic levels continues in 2022, that taxonomic inventory for Milne Inlet continue to be expanded upon, and that all flagged specimens continue to be screened for known geographic ranges and AIS/NIS status. It is further recommended that efforts are continued to collect and review genetic evidence for <i>Marenzelleria</i> sp. and <i>Monocorophium</i> sp. (both flagged as High Risk but not Project-related), including targeted sampling to obtain specimens for DNA barcoding.” (p. 967 of 1047). <p>The QIA has provided additional detailed comments on the MEEMP AIS draft to the MEWG.</p>
QIA Request	The QIA requests that Baffinland discuss important changes to monitoring programs with the MEWG sufficiently in advance of the field season to allow them to be reinstated or altered based on those discussions.

Comment #	QIA 2021 AMR M&AE #17
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.10 (PC Condition 76 and 87)</p> <p>Page: 249-254; 277-278</p> <p>Document Name: Mary River 2021 Marine Environmental Effects Monitoring Program (MEEMP) and Aquatic Invasive Species (AIS) Monitoring Program 2021 Annual Monitoring Report Draft (2021 MEEMP AIS Report Draft for MEWG.pdf)</p> <p>Section: Executive Summar; 5.6; Appendix 5E</p> <p>Page: 5 of 1047; 609 of 1047; 680-683 of 1047</p>

QIA Comment	<p>In 2021, ten new quadrats were added to the program for monitoring marine sediment quality and benthic macroflora and epifauna, and ROV methods were replaced by divers to improve taxonomic resolution. Despite these improvements the power analysis and the taxa accumulation curve indicate that the current sampling design is insufficient to detect change and fully characterize the epibenthic community. Also, that the sampling effort required to detect change with statistical power is not feasible within the open water season. The power analyses were considering statistical power values of 0.8 and 0.9 (Appendix 5E, p. 681). Baffinland has proposed the MEWG discuss: 1) removing this component and focusing on other components that have the ability to detect change with statistical power (e.g., benthic infauna, sediment quality) or 2) to continue current sampling and accept its statistical limitations.</p> <p>A third approach, which was not discussed, is to increase the sample size incrementally to increase the number of indices capable of detecting changes of $\pm 40\%$. For example, increasing the number of quadrats in both the reference and exposure areas to 12, would increase the number of summary indices with the power to detect changes of $\pm 40\%$ from ca. 2 at present to ca. 6. (pp. 682 and 683).</p>
QIA Request	The QIA requests that Baffinland consider options for optimizing the quadrat monitoring program in 2022, rather than cancelling it or continuing with the current statistical limitations, and discuss these options with the MEWG.

Comment #	QIA 2021 AMR M&AE #18
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: Popular Summary; 4.1 Methodology and Criteria; 4.6.11 Marine Wildlife (PC Conditions 99 through 128)</p> <p>Page: 9; 40; 305, 324, 325, 353, 391-393</p>
QIA Comment	<p>Baffinland implemented a Ringed Seal Aerial Survey Monitoring Program in June 2021 in response to reports of impacts to ringed seals. Ringed seal density in June 2021 was similar to densities estimated from other recent surveys, leading the Proponent to conclude that “Project activities [sic] are being managed in a way that has not adversely affected ringed seals” (e.g., 2021 AMR, p. 393) and that no evidence of population-level effects have been observed.</p> <p>No information on the types of impacts hunters have reported, or how reported effects can be effectively monitored via an aerial survey, has been provided.</p>
QIA Request	<p>For its assessment of performance on PC Conditions, Baffinland uses a list of meeting records (formal and informal) that were held with Inuit and integrates relative feedback (2021 AMR, p. 40). What information from meeting records is available that is relevant to ringed seal monitoring and mitigation?</p> <p>The QIA requests that the Proponent provide a summary of the specific concerns and observations that have been reported by north Baffin harvesters with respect to ringed seal impacts, including how a June aerial survey provides the necessary spatiotemporal coverage to effectively monitor these concerns and impacts?</p>

	The QIA also requests that Baffinland provide details on how IQ has been incorporated into ringed seal monitoring design, e.g., study questions, monitoring techniques, locations, schedule, and how IQ will be incorporated into data interpretation and analysis.
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Comment #	QIA 2021 AMR M&AE #19
References	Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf] Section: 4.6.11 Marine Wildlife (PC Conditions 99 through 128) Page: 305-417
QIA Comment	The Proponent uses a 120 dB disturbance threshold for underwater noise impacts. This threshold, while an industry and regulatory standard, is not based on narwhal-specific data, for which there are few scientific data. There is, however, a rich body of IQ on the acoustic sensitivity of narwhal. How has IQ on narwhal acoustic sensitivity been incorporated?
QIA Request	The QIA requests that the Proponent provide additional information on the IQ they have learned on narwhal acoustic sensitivity and how that knowledge has been integrated into marine monitoring and mitigation.

Comment #	QIA 2021 AMR M&AE #20
References	Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf] Section: Popular Summary; 4.6.11 Marine Wildlife (PC Conditions 99 through 128) Page: 6; 305-417
QIA Comment	<p>The measured decrease (24% decrease in 2021 in the proportion of immatures relative to all narwhal observed) in the ratio of calf and juvenile narwhal (i.e., the Proponent's Early Warning Indicator, EWI) at Bruce Head was "possibly attributed" to low sample size in the monitoring data (2021 AMR, Popular Summary, p.6). The Proponent suggested this was more likely than it being "reflective of a true change in the population structure", and pointed to the aerial survey results as additional evidence (2021 AMR, Popular Summary, p.6). Aerial surveys have documented a 79% decline in narwhal abundance in Eclipse Sound between 2016 and 2021 (and an even more significant decline extending back to the 2004 DFO survey).</p> <p>The Bruce Head program has not documented the most extreme behavioural reaction of narwhal - departure from the RSA. The EWI metric failed to provide any early warning of significant population declines, suggesting it is either completely ineffective or ineffective to date due to insufficient data analysis. The Proponent planned to do additional analysis of aerial survey photographs.</p> <p>One early warning that was repeatedly provided to the Proponent and regulators was the observations of Inuit harvesters in Pond Inlet and the surrounding north Baffin communities.</p>

QIA Request	<p>The QIA requests that the Proponent provide the results of its additional analysis of aerial photographs to document its Early Warning Indicator.</p> <p>The QIA also requests that the Proponent provide a summary of its engagement with harvesters on their observations of changes in narwhal behaviour, distribution, and abundance, and a discussion on how these observations have been integrated into adaptive management and mitigation as well as when this integration occurred.</p>
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Comment #	QIA 2021 AMR M&AE #21
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.11 Marine Wildlife (PC Conditions 99 through 128)</p> <p>Page: 305-417</p>
QIA Comment	<p>The Ship-based Observer (SBO) Program could not be implemented again in 2021 due to boarding restrictions related to the COVID-19 pandemic. The Proponent again partnered with the Marine Mammal Observation Network (MMON), and a total of 11 vessels participated in the 2021 MMON program. Few marine mammal observations were recorded, and the program does not provide any observations of marine birds.</p> <p>Several PCC (2021 AMR, e.g., 107, 108) require monitoring of seabirds and their responses to vessels. No marine bird monitoring was done in 2021, for the reasons noted above. Alternative opportunities for marine bird monitoring should be considered, including IQ and Community-based Monitoring (CBM) programs.</p>
QIA Request	The QIA requests that the Proponent summarize the IQ it has compiled on marine birds and report on opportunities to include local observations in a marine bird monitoring program.

Comment #	QIA 2021 AMR M&AE #22
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: Popular Summary; 4.6.11 Marine Wildlife (PC Conditions 99 through 128)</p> <p>Page: 6-7; 305-417</p>
QIA Comment	<p>The QIA does not agree with the Proponent's conclusion that the significant declines in narwhal abundance in Eclipse Sound are not Project-related. Little evidence has been presented to support the Proponent's conclusion.</p> <p>The elimination of early season icebreaking did not result in any rebound in narwhal abundance in the summer stock area, which provided further support to Inuit observations that open-water shipping is impacting narwhal abundance and distribution in the RSA. The QIA is not aware of any data, from IQ or western science, that supports the conclusion that such an extensive movement of narwhal from Eclipse Sound to Admiralty Inlet is a natural phenomenon or that environmental factors such as changing sea ice conditions or killer whale distribution have played a significant role.</p>

	<p>Under PCC 109 (2021 AMR, p. 353), the Proponent notes that FEIS predictions were that no “large-scale avoidance behaviour, displacement effects, or abandonment of the summering grounds” would occur. How does the Proponent define “large-scale avoidance behaviour”, “displacement effects”, and “abandonment” in the context of Inuit observations and the 2020 and 2021 aerial survey results? What information has the Proponent collected on how Inuit understand and define these terms with respect to local marine mammal abundance and distribution?</p> <p>The Proponent’s monitoring data is heavily relied upon in the Annual Report, for example Bruce Head observations and limited satellite-tagging data, but there is very little consideration of IQ in these conclusions. IQ has provided extensive information on the impacts of ore carrier traffic on narwhal, and the 2021 scenario shows that Inuit observations of impacts from open-water shipping have been accurate. There is also a significant body of IQ that provides evidence for narwhal sensitivity to acoustic disturbance, and this IQ supports the need for caution in using the 120 dB threshold for acoustic disturbance. The Proponent has a responsibility to work with the five most impacted communities and integrate IQ into its monitoring, mitigation, and adaptive management plans.</p> <p>No thresholds (or linked adaptive management responses) for noise impacts (e.g., PCC 110, 111) are in place, and the Early Warning Indicator (EWI) currently in place is not a clear threshold for “determining if negative impacts as a result of vessel noise are occurring” (PCC 111, p.365). Baffinland’s choice of calf ratio as an EWI of project effects was highlighted as a concerning factor in the NIRB Phase 2 Recommendations Report:</p> <p>“the decline in the narwhal population raised further concerns regarding the early warning indicator (calf ratio) chosen by Baffinland to monitor for project effects, as that indicator did not predict the decreasing populations. As the early warning indicator did not detect the change in the population identified in the survey, it raises questions regarding whether this indicator is effective to provide the expected early warning of project effects” (p. 180).</p> <p>Local knowledge and IQ can and should play a significant role in this process, which has been required since the issuance of the initial Project Certificate.</p>
QIA Request	<p>The QIA requests that the Proponent provide a detailed summary of the IQ it has collected and compiled on narwhal sensitivity to acoustic disturbance and open-water shipping impacts on narwhal, including discussion on how IQ has been integrated into adaptive management.</p> <p>The QIA requests that the Proponent provide additional details on any IQ it has collected and compiled that supports the conclusion that the extensive movement of narwhal from Eclipse Sound is a natural phenomenon that has occurred in the past.</p> <p>The QIA requests that the Proponent provide quantitative definitions of “large-scale avoidance behaviour”, “displacement effects”, and “abandonment” (2021 AMR,</p>

	<p>p.353), a summary of the consultation and engagement that has occurred regarding the terminology, and a summary of any and all information the Proponent has collected on how Inuit understand and define these terms with respect to local marine mammal abundance and distribution.</p> <p>The QIA requests that the Proponent provide more details on how IQ has been integrated into its assessment of all 2021 monitoring results, and how it can be used to augment gaps in Project monitoring.</p> <p>The QIA requests that the Proponent provide a summary of the IQ it has collected and compiled that relates to the establishment of thresholds for noise impacts on marine mammals and adaptive management responses to threshold exceedances.</p>
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Comment #	QIA 2021 AMR M&AE #23
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.11 Marine Wildlife (PC Condition 125a)</p> <p>Page: 408-409</p>
QIA Comment	<p>The Proponent describes their activities over the past year consider alternatives to the Ragged Island anchoring, considerations used to analyze the alternatives, as well as their conclusion to continue use of the Ragged Island locations, albeit with a restriction to three vessels anchoring at any one time.</p> <p>Baffinland described a situation occurring in 2021 where concerns were raised regarding the drifting of ore carriers to the south of Ragged Island and states that they intend to "further workshop" the issue (2021 AMR, p.409). It is not clear what "workshop" means in this instance. Does this mean there will be a concrete plan to stop drifting from occurring at Ragged Island?</p> <p>The QIA does not agree with the results of the alternatives analysis nor accept that the analysis adequately and meaningfully considered Inuit and community input into values and criteria used to compare the alternatives or their weighting relative to one another.</p> <p>As such, the QIA does not agree with Baffinland that they are in compliance with this condition as it is still unresolved (i.e., Baffinland is still practicing vessel management that interferes with Inuit enjoyment and ecological conditions at the important Ragged Island area, despite Inuit repeatedly raising concerns with these practices).</p>
QIA Request	The QIA requests that the Proponent collaborate with Inuit, including the MHTO, in developing the values, criteria, and relative weighting of each in analyzing alternative anchoring locations and then update their conclusion on appropriate anchoring location accordingly.

Comment #	QIA 2021 AMR M&AE #24
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.11 Marine Wildlife (PC Condition 128)</p> <p>Page: 415-417</p>
QIA Comment	<p>The Proponent provides an overview of the freshwater and marine offsetting options, field work, observations from their post-construction monitoring of the Milne Port Ore Dock offsetting works, and discusses the upcoming planning for additional off-setting works, as needed.</p> <p>As the QIA stated in comments respecting the 2020 Annual Report, it is unclear whether and how IQ has been incorporated into such things as offsetting location selection and design, monitoring criteria, interpretation of results, or as a source of information on baseline and/or post-construction condition. Additionally, it is unclear what levels and tasks of the offsetting program Inuit participated in.</p>
QIA Request	The QIA requests that Baffinland describe in detail the incorporation of IQ, participation of Inuit at all levels of the program, and if applicable, any concerns or issues raised by Inuit and how these have been addressed.

Comment #	QIA 2021 AMR M&AE #25 Question directed at DFO
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.8.2 Alternatives Analysis (PC Conditions 178 through 184)</p> <p>Page: 561-566</p>
QIA Comment	<p>In the discussion for Project Certificate Condition No. 183, the Proponent notes that “DFO has not provided any directions” with respect to this condition, and that DFO responded to MHTO written questions on March 22, 2021 indicating that “to date, there has not been a situation, within DFO's mandate, that provided sufficient evidence that there would be imminent negative impacts to the marine environment such that it required a direction” (2021 AMR, p. 566).</p> <p>In 2020, the Eclipse Sound narwhal population as estimated at approximately 5,000 animals, less than half the estimated population size several years earlier and significantly lower than the 2004 DFO estimate of approximately 20,000 animals. The abundance in the summering stock area, which is used by DFO for the purpose of setting Total Allowable Harvest (TAH) and Total Allowable Landed Catch (TALC) levels, has since significantly declined again, to approximately 2,500 narwhal in 2021.</p>
QIA Request	The QIA requests that DFO provide communities and co-management partners with information on what level of population declines are needed before DFO considers it to be an “imminent negative impact to the marine environment” and how DFO anticipates responding to the significant declines in the Eclipse Sound summer stock area (2021 AMR, p.566).

Socio-economic Environment

Comment #	QIA 2021 AMR SE #1
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.6.3 Noise and Vibration (PC Condition 15)</p> <p>Page: 93-95</p>
QIA Comment	The Proponent has concluded that they are in compliance with the communication requirements of PC Condition 15. Baffinland has provided a discussion of communication methods being employed to enhance public safety, with reference to engagement activities to inform and gather feedback. However, Baffinland have not reported on specific Inuit and Stakeholder input, especially as regards to the effectiveness of communication and engagement methods. It is unclear how Inuit perceive these methods and their experience with how effective these methods are in enhancing safety.
QIA Request	The QIA requests that the Proponent describe and/or provide specific Inuit and Stakeholder feedback on communication/engagement methods and their experience and perception of the effectiveness of the engagement and communication methods in ensuring safety.

Comment #	QIA 2021 AMR SE #2
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.1 Population Demographics (PC Condition 129)</p> <p>Page: 420-421</p>
QIA Comment	<p>PC Condition 129 states “The Proponent is strongly encouraged to engage in the work of the Qikiqtaaluk Socio-Economic Monitoring Committee along with other agencies and affected communities, and it should endeavour to identify areas of mutual interest and priorities for inclusion into a collaborative monitoring framework that includes socio-economic priorities related to the Project, communities, and the North Baffin region as a whole” (p. 420).</p> <p>The QIA agrees with Baffinland’s assessment of compliance. Baffinland indicates engagement (e.g., written correspondence) took place in lieu of a Qikiqtaaluk Socio-Economic Monitoring Committee meeting that the Government of Nunavut cancelled given the detection of COVID-19 in Iqaluit. However, the QIA expects greater in-person engagement in the coming year, with virtual engagement as needed should there be COVID-19 restrictions.</p>
QIA Request	The QIA requests a minimum of two Qikiqtaaluk Socio-Economic Monitoring Committee meetings in 2022 to ensure concerns for 2021 are discussed and recorded for NIRB’s consideration, and to facilitate the working relationship of the Committee.

Comment #	QIA 2021 AMR SE #3
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.1 Population Demographics (PC Condition 131)</p> <p>Page: 424-425</p>
QIA Comment	<p>PC Condition 131 states, “The Qikiqtaaluk Socio-Economic Monitoring Committee is encouraged to engage in the monitoring of demographic changes including the movement of people into and out of the North Baffin communities and the territory as a whole. This information may be used in conjunction with monitoring data obtained by the Proponent from recent hires and/or out-going employees in order to assess the potential effect the Project has on migration” (p. 424).</p> <p>The QIA believes the information provided to be insufficient. Baffinland states that data on in-migration and out-migration was provided by Community Liaison Officers based on what they knew had taken place in their community, rather than official data. Community specific information is not provided. Further, impacts of migration are not explored, aside from a suggestion that continual low-levels of out migration may have a negative demographic effect.</p> <p>The QIA notes this is the same comment as provided in the 2020 Annual Monitoring Report Review.</p> <p>The QIA will also investigate the appropriateness of sharing with the QSEMC the results from an updated Labour Market Analysis required under the IIBA that is expected to be completed in 2022.</p>
QIA Request	<p>The QIA requests that NIRB encourage Baffinland to expand and improve breadth and scope of information that is made available to the QSEMC to enable an examination of both the incidence and the impacts of the Project on migration.</p> <p>The QIA notes this is the same request as provided in the 2020 Annual Monitoring Report Review.</p>

Comment #	QIA 2021 AMR SE #4
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.1 Population Demographics (PC Condition 132)</p> <p>Page: 426-428</p>
QIA Comment	<p>PC Condition 132 states, “The Proponent is encouraged to partner with other agencies such as Hamlet organizations in the North Baffin region, the Municipal Training Organization, and the Government of Nunavut in order to adapt preexisting, or to develop new programs which encourage Inuit to continue living in their home communities while seeking ongoing and progressive training and development. Programs may include driver training programs offered within Hamlets, providing upgraded equipment to communities for use in municipal works, providing incentives for small businesses to remain operating out of their</p>

	<p>community of origin, or supplementing existing recreational facilities and programming in North Baffin communities” (p. 426).</p> <p>The QIA believes the information provided to be insufficient. Baffinland describes a number of training initiatives and partnerships but does not clearly describe how these meet the objective of the PCC to encourage Inuit to continue living in their home communities. There is no evidence offered that the cumulative impact of Baffinland's efforts is achieving the outcomes that NIRB has prioritized.</p> <p>The QIA notes this is the same comment as provided in the 2020 Annual Monitoring Report Review.</p>
QIA Request	<p>The QIA requests Baffinland Improve breadth and scope of reporting on this issue to tie training offerings and outputs to the objective of the condition.</p> <p>The QIA notes this is the same request as provided in the 2020 Annual Monitoring Report Review.</p>

Comment #	QIA 2021 AMR SE #5
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.1 Population Demographics (PC Condition 133)</p> <p>Page: 429-435</p>
QIA Comment	<p>PC Condition 133 states, “The Proponent is encouraged to work with the Qikiqtaaluk Socio-Economic Monitoring Committee and in collaboration with the Government of Nunavut’s Department of Health and Social Services, the Nunavut Housing Corporation and other relevant stakeholders, design and implement a voluntary survey to be completed by its employees on an annual basis in order to identify changes of address, housing status (i.e. public/social, privately owned/rented, government, etc.), and migration intentions while respecting confidentiality of all persons involved. The survey should be designed in collaboration with the Government of Nunavut’s Department of Health and Social Services, the Nunavut Housing Corporation and other relevant stakeholders. Non-confidential results of the survey are to be reported to the Government of Nunavut and the NIRB” (p. 429).</p> <p>The QIA agrees with Baffinland’s assessment of compliance. Baffinland noted its intention to complete the Inuit Employee Survey; however, COVID-19 restrictions for Nunavummiut communities in 2021 restricted access.</p>
QIA Request	QIA requests Baffinland administer the outstanding survey by Q4 of 2022.

Comment #	QIA 2021 AMR SE #6
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.1 Population Demographics (PC Condition 134)</p> <p>Page: 433-435</p>

QIA Comment	<p>PC Condition 134 states, “The Proponent shall include with its annual reporting to the NIRB a summation of employee origin information as follows:</p> <ul style="list-style-type: none"> a. The number of Inuit and non-Inuit employees hired from each of the North Baffin communities, specifying the number from each; b. The number of Inuit and non-Inuit employees hired from each of the Kitikmeot and Kivalliq regions, specifying the number from each; c. The number of Inuit and non-Inuit employees hired from a southern location or other province/territory outside of Nunavut, specifying the locations and the number from each; and d. The number of non-Canadian foreign employees hired, specifying the locations and number from each foreign point of hire” (p. 433). <p>The QIA disagrees with Baffinland’s assessment of compliance. Baffinland does not provide the information required by this PCC. Specifically, Baffinland provides Full-Time Equivalents (FTE) for its employees and contractor employees with some community breakdowns but does not provide an annual indication of where people are being hired from. No information is provided for the Kitikmeot, or for non-Canadian foreign employees. It is not possible to compare predictions of labour availability and employment opportunities with actual levels of employment from various demographic segments over different geographical areas, per the objective of the PCC.</p>
QIA Request	The QIA requests Baffinland bring reporting into compliance with the PCC.

Comment #	QIA 2021 AMR SE #7
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.2 Education and Training (PC Condition 135)</p> <p>Page: 437-438</p>
QIA Comment	<p>PC Condition 135 states, “The Proponent is encouraged to consider offering additional options for work/study programs available to Project employees (in addition to study programs at project sites that would be offered to employees when off shift)” (p. 437).</p> <p>The QIA believes the information provided to be insufficient. Baffinland does not provide the information required by this PCC. Specifically, Baffinland describes certain training offerings, including site-based, online and in communities, but does not describe any “work/study programs” for Project employees (p.437). It appears Baffinland considers this PCC met by virtue of the suite of training offered, but there is little evidence offered that the objective of the condition is being satisfied. Participation and outcomes for the training initiatives described are not provided.</p> <p>The QIA notes this is the same comments as provided in the review of the 2020 Annual Monitoring Report Review.</p>
QIA Request	The QIA requests that Baffinland bring reporting into compliance with the PCC, by indicating where additional opportunities for work/study programs have been considered (if at all) and/or request how Baffinland is interpreting this condition,

	<p>rather than repeating descriptions of its general suite of training and/or those trainings required under other agreements like the IIBA.</p> <p>The QIA notes this is the same request as provided in the 2020 Annual Monitoring Report Review.</p>
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Comment #	QIA 2021 AMR SE #8
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.2 Education and Training (PC Condition 137)</p> <p>Page: 441-445</p>
QIA Comment	<p>PC Condition 137 states, “Prior to construction, the Proponent shall develop an easily referenced listing of formal certificates and licences that may be acquired via on-site training or training during employment at Mary River, such listing to indicate which of these certifications and licences would be transferable to a similar job site within Nunavut. This listing should be updated on an annual basis and is to be provided to the NIRB upon completion and whenever it is revised” (p. 441).</p> <p>The QIA disagrees with Baffinland’s assessment of compliance. The list provided by Baffinland does not indicate which certifications would be transferable to other employment. Baffinland states that training it provides is job-specific, which runs counter to the objective of this PCC; the objective being encouraging efforts to strengthen long-term employability beyond the Project. This is a legacy benefit that is important to Inuit and not being pursued adequately by Baffinland.</p> <p>The QIA notes this is the same comments as provided in the review of the 2020 Annual Monitoring Report Review.</p>
QIA Request	<p>The QIA requests Baffinland bring both actions and reporting into compliance with the PCC.</p> <p>The QIA notes this is the same request as provided in the 2020 Annual Monitoring Report Review.</p>

Comment #	QIA 2021 AMR SE #9
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: Popular Summary; 4.7.2 Education and Training (PC Condition 138)</p> <p>Page: 3; 445-451</p>
QIA Comment	<p>PC Condition 138 states, “The Proponent is encouraged to work with the Qikiqtani Inuit Association to ensure the timely development of effective Inuit training and workready programs” (p. 445).</p> <p>The QIA believes the information provided to be insufficient. It is important to point out that in 2021, Inuit completed 32,974 hours of training, or 27.2% of all training (Popular Summary, p. 3). This is up from 14,384 hours (13.7%) in 2020 but down</p>

	from 45,975 hours (48.3%) in 2019. This suggests that benefits through a pivot to community-based training have not been fully realized compared to previous years. Where non-Inuit continue to receive training, there may be growing skills gaps that may persist beyond the COVID-19 pandemic and that compound existing barriers for Inuit employment and advancement.
QIA Request	<p>The QIA requests that Baffinland provide supplementary analysis on the impacts of COVID-19 restrictions on Inuit training as it relates to intermediate and longer term employment outcomes, and opportunities to overcome those impacts.</p> <p>The QIA notes this is the same request as included in the 2020 Annual Monitoring Report Review.</p>

Comment #	QIA 2021 AMR SE #10
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.2 Education and Training (PC Condition 139)</p> <p>Page: 450-453</p>
QIA Comment	<p>PC Condition 139 states, “Prior to commencing construction, the Proponent is requested to undertake and provide the results of a detailed labour market analysis which provides quantitative predictions of the number of employees that may reasonably need to be sourced from southern Canada and from foreign markets, identifying where applicable, the country of origin for the foreign labour. Within 90 days of the issuance of the Project Certificate, the Proponent is required to submit an updated Labour Market Analysis which considers requirements of the ERP as well as hiring points within Nunavut and outside of the North Baffin region and RSA” (p. 450).</p> <p>The QIA has provided feedback to Baffinland independently. The LMA completed is of limited utility in setting Inuit employment targets, and many results suggest that little has improved since the original study was done in 2013.</p>
QIA Request	None.

Comment #	QIA 2021 AMR SE #11
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.2 Education and Training (PC Condition 141)</p> <p>Page: 457-460</p>
QIA Comment	<p>PC Condition 141 states, “The Proponent is encouraged to work with the Qikiqtani Inuit Association prior to construction in order to prioritize the provision of training of Inuit to serve as employees in monitoring or other such capacities” (p. 457).</p> <p>The QIA believes the information provided to be insufficient. Baffinland reporting does not specifically address what is being sought by NIRB through this PCC. It is evident that Baffinland seeks for Inuit to participate in their environmental monitoring programs, but through review of Baffinland’s response to PCC 141 in the</p>

	<p>Annual Report, and review of their more detailed discussion of education and training in Appendix G.13, it is evident that Baffinland does not have any initiatives relating to science and engineering, including environmental monitoring.</p> <p>The QIA notes this is the same comment as provided in the 2020 Annual Monitoring Report Review.</p>
QIA Request	<p>The QIA requests that Baffinland identify education and training initiative(s) related to Science, Technology, Engineering, and Math it is supporting Inuit with.</p> <p>The QIA notes this is the same request as provided in the 2020 Annual Monitoring Report Review.</p>

Comment #	QIA 2021 AMR SE #12
References	<p>Document Name: Baffinland Iron Mines 2020 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 210506-08MN053- 2020 Annual Report-IA2E.pdf]</p> <p>Section: 4.7.3 Livelihood & Employment (PC Condition 142)</p> <p>Page: 462-464</p>
QIA Comment	<p>PC Condition 142 states, “The Proponent is encouraged to address the potential direct and indirect effects that may result from Project employees’ on-site use of various Inuktitut dialects as well as other spoken languages, specifically paying attention to the potential alienation of some employees that may occur as a result of language or other cultural barriers” (p. 462).</p> <p>The QIA believes the information provided to be insufficient. Baffinland does not address the PCC. While there is a policy and certain practices in place, they do not justify a claim that language barriers or alienation is proactively addressed. Baffinland relies on historical IIBA Workplace Conditions Review information as a source of feedback from employees, but does not acknowledge that Inuit employees cite language as a significant barrier to socialization between Inuit and non-Inuit coworkers.</p>
QIA Request	The QIA requests that Baffinland bring both actions and reporting into compliance with the PCC.

Comment #	QIA 2021 AMR SE #13
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.3 Livelihood & Employment (PC Condition 143)</p> <p>Page: 465</p>
QIA Comment	<p>PC Condition 143 states, “The Proponent is encouraged to consider the use of both existing and innovative technologies (e.g. community radio station call-in shows, cell phones, video-conferencing, Skype, etc.) as a way to ensure Project employees are able to keep in contact with family and friends and to ward off the potential for feelings of homesickness and distance to impact on employee retention and family stability” (p. 465).</p> <p>The QIA believes the information provided to be insufficient. Baffinland states that</p>

	<p>internet and telephone access is available, but that bandwidth and utilization levels may limit their use. Innovative technologies or additional efforts to keep Inuit employees connected to their families are not mentioned. Baffinland has acknowledged that exit interviews indicate that family impacts are often cited as reasons for resigning, though little effort seems to be made relative to this PCC (e.g., innovative technologies).</p> <p>The QIA notes this is the same comments as provided in the 2020 Annual Monitoring Report Review.</p>
QIA Request	None.

Comment #	QIA 2021 AMR SE #14
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.3 Livelihood & Employment (PC Condition 144)</p> <p>Page: 466</p>
QIA Comment	<p>PC Condition 144 states, “The Proponent is encouraged to make requirements for employment clear in its work-readiness and other public information programs and documentation, including but not limited to: education levels, criminal records checks, policies relating to drug and alcohol use and testing, and language abilities” (p. 466).</p> <p>The QIA agrees with Baffinland’s assessment of compliance. However, Baffinland does not provide a comprehensive response to this PCC.</p>
QIA Request	None.

Comment #	QIA 2021 AMR SE #15
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.3 Livelihood & Employment (PC Condition 145)</p> <p>Page: 467-469</p>
QIA Comment	<p>PC Condition 145 states, “The Proponent is encouraged to work with the Government of Nunavut and the Qikiqtaaluk Socio-Economic Monitoring Committee to monitor the barriers to employment for women, specifically with respect to childcare availability and costs” (p. 467).</p> <p>The QIA disagrees with Baffinland’s assessment of compliance. Baffinland notes its Inuit Women Advisory Committee, including some actions and activities, that provides advice and suggestions on effective methods of reducing barriers for Inuit and female employees. However, the activities of the Inuit Women Advisory Committee are presumed to be based on a historical Arnait Action Plan, developed through the IIBA, that requires review and implementation through an Inuit Women-specific lens and not Inuit generally. Further, Baffinland notes that the QSEMC did not meet in 2021.</p>

QIA Request	The QIA requests details on activities of the QSEMC as it relates to a relative action plan for Inuit Women and childcare barriers as well as its relationship with Government of Nunavut and Baffinland's Inuit Women Advisory Committee.
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Comment #	QIA 2021 AMR SE #16
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.3 Livelihood & Employment (PC Condition 147)</p> <p>Page: 471-472</p>
QIA Comment	<p>PC Condition 147 states, "The Proponent is encouraged to work with the Government of Nunavut and the Nunavut Housing Corporation to investigate options and incentives which might enable and provide incentive for employees living in social housing to maintain employment as well as to negotiate for and obtain manageable rental rates" (p. 471).</p> <p>The QIA agrees with Baffinland's assessment of compliance.</p>
QIA Request	The QIA requests more details be shared with respect to the Memorandum of Understanding between Baffinland and the Government of Nunavut.

Comment #	QIA 2021 AMR SE #17
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.4 Economic Development, Self-Reliance, and, Contracting and Business Opportunities (PC Condition 148)</p> <p>Page: 475-477</p> <p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board, Appendix G.13, 2021 Socio-Economic Monitoring Report" [NIRB Registry: 220401-08MN053-2021 Annual Report-App G.13 SEMR-IA1E.pdf]</p> <p>Section: 8, Resource and Land Use (related to PC Condition 148)</p> <p>Page: 72-75</p>
QIA Comment	<p>PC Condition 148 states, "The Proponent is encouraged to undertake collaborative monitoring in conjunction with the Qikiqtaaluk Socio-Economic Monitoring Committee's monitoring program which addresses Project harvesting interactions and food security, and which includes broad indicators of dietary habits" (p. 475).</p> <p>The FEIS prediction statement "...the amount of country food harvested per level of effort is not anticipated to change meaningfully" (Appendix G.13, p.72) is not being meaningfully assessed or verified by existing monitoring techniques or indicators.</p> <p>Baffinland provides some information about their own employees' food security and harvesting time but fails to provide information on food security, harvesting interactions or dietary habits outside of its own employees. Baffinland does not discuss specific Project interactions with harvesting in this section.</p>

Baffinland is using visitor person-days, number of Wildlife Compensation Fund claims, and impact of Project employment on Inuit employees harvesting participation. These are interesting variables to monitor, but they are only part of the variables needed to answer the key research question – is the Project impacting amount of country food harvest per level of effort. This is acknowledged by Baffinland in the 2021 Annual Report: “appropriate community-level indicator data are currently unavailable for this topic” (2021 Annual Report Main Body, p. 510). No baseline study on harvesting effort has been conducted and there is no current effort to track change. There has been no documented attempt to test the veracity of this FEIS prediction, and it is a significant shortfall in the Baffinland monitoring efforts to date.

The serious gap in understanding of harvest per unit of effort has been further identified in the NIRB Phase 2 Recommendations Report (at p. 219). The NIRB also found the evidence available suggests the following:

“The Project’s impacts on wildlife cannot be separated from the direct consequences on food security when harvesting becomes more difficult, more expensive, and less likely to be successful. The Board heard multiple statements from hunters in the vicinity of the Project, identifying that they are experiencing difficulties in harvesting wildlife and are worried about and/or no longer consuming country food due to dust pollution, which has a significant and detrimental effect on their food security... uncertainty regarding negative effects on wildlife and concerns of losing the ability to access and harvest country food also represents the potential for significant adverse effects on Inuit culture and well-being.” (p. 221)

If Baffinland can use evidence to make VSEC predictions in an EIS, the NIRB should ensure that the data is generated to monitor and assess Project impacts against these predictions. This speaks to a clear need for Inuit-led monitoring with direct links to adaptive management responses. Understanding the QSEMC did not meet in 2021, if the QSEMC process is not capable of producing community level data to advance discussion and solutions to these critical topics, this emphasizes the importance of advancing an Inuit-led social monitoring program.

The Qikiqtani Inuit Association’s Tusaqtavut studies (Qikiqtani Inuit Association, 2021), referred to in Baffinland’s PC 148 methods discussion, “reported baseline interactions with the existing approved project, as well as anticipated Phase 2 interactions” (2021 Annual Report, p. 475), however Baffinland provides no additional monitoring data and analysis intended to develop an understanding of the project’s interactions with harvesting, food security, or dietary habits.

The QIA is not satisfied with Baffinland’s continuing reliance upon the QSEMC process, community engagement, as well as the Aboriginal People’s Survey and other non project-specific data sources, as these are not explicitly directed towards meeting the objective of this condition.

	<p>Any conclusion about conformance with this FEIS statement (see 2021 Annual Report Main Body, Table 4.52, p. 510) should state “unknown, possibly much higher than predicted”, not “Effect within FEIS predictions”, until such time as this value is adequately monitored and assessed against the FEIS prediction. The compliance status cannot be higher than “in progress” at best for this PCC.</p> <p><u>Reference</u> Qikiqtani Inuit Association. 2021. “Tusaqtavut – Mary River Mine Project” [https://www.qia.ca/wp-content/uploads/2022/03/qia-tusaqtavut-report_2021_web.pdf]</p>
QIA Request	<p>The QIA continues to request, as we have in previous years, that the Proponent work with the QIA, and engage Elders and community members (PCC 162), to identify more appropriate techniques to monitor changes in Resource and Land Use than those currently in use, and to expand the variables being monitored. As previously stated, these should involve Inuit-designed indicators of changing harvesting patterns, behaviours and harvesting effort and should be designed to identify changes in harvester behaviour as well as reasons. This should be designed to work in concert with ongoing tracking of food harvesting to provide meaningful monitoring of changing effort levels for the procurement of country food.</p> <p>The QIA also requests the Proponent actively engage with SEMWG and QSEMC, as well as Inuit communities, on the four components of food security, indicators, and actions outlined in Table 25 of Appendix G.13 to confirm values and indicators as part of the development of an effective monitoring program, and provide its plans for addressing its monitoring obligations.</p> <p>Baffinland should provide a list of next steps for fulfilling monitoring objectives, including reference to the role it envisions the fledgling Inuit Stewardship Plan, and the role IQ, will play in this work. This should also include steps for collecting Project-specific data, analysis, and development of thresholds in collaboration with SEMWG and QSEMC.</p>

Comment #	QIA 2021 AMR SE #18
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board, Appendix G.13, 2021 Socio-Economic Monitoring Report” [NIRB Registry: 220401-08MN053-2021 Annual Report-App G.13 SEMR-IA1E.pdf]</p> <p>Section: 8.1, Recorded land use visitor person-days at project sites (related to PC Condition 148)</p> <p>Page: 73-74, 66</p>
QIA Comment	<p>Visitor person-days include contextualization parameters of group-size and month of visit (Table 21, p. 73-74). As the QIA commented on the 2020 Annual Report, additional context and detail to visitor days, including weather data, snow cover, destination, etc. are necessary in order to gain insight into changes. Currently, only very limited conclusions can be drawn from changes in the number of visitor days as to any project effects on harvesting patterns and behaviours, specifically within the Project area.</p>

QIA Request	The QIA continues to request that additional data be recorded alongside visitor days and should be considered in the analysis of visitor days to provide additional explanation of any changes. In addition, the QIA requests that the reliance on this form of passive “visitor” monitoring be replaced by a substantial, preferably Inuit-led, and multi-faceted data collection program to capture inputs from more Inuit on more topics related to Resource and Land Use.
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Comment #	QIA 2021 AMR SE #19
References	Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board, Appendix G.13, 2021 Socio-Economic Monitoring Report” [NIRB Registry: 220401-08MN053-2021 Annual Report-App G.13 SEMR-IA1E.pdf] Section: 8.2 Wildlife compensation fund claims (related to PC Condition 148) Page: 74
QIA Comment	As stated in comments on Baffinland’s 2019 and 2020 Annual Reports, the QIA maintains that the statement "WCF claims provides insight into land use and harvesting issues which may be arising because of the Project" (Appendix G.13, p.74) is inaccurate. The WCF claims provide a record of specific reports of direct harvesting loss due to the Project only – not all "issues which may be arising". The insights that currently can be accurately said to be provided by changes in claim amounts are that Inuit harvesting continues to be impacted by the Project. Nor is the WCF claims system designed to track indirect effects to harvesting or the land observed or experienced by hunters.
QIA Request	The QIA continues to request that Baffinland work with the MHTO and QIA to identify more meaningful ways to track data around harvester-observed project effects. As stated in the QIA’s comments on the 2019 Annual Report, this should include an MHTO-led review of the WCF system and the information tracked by claims, as well as Baffinland working with the QIA to identify more appropriate techniques to monitor changes in Resource and Land Use than those currently in use. These should involve Inuit-designed indicators of changing harvesting patterns and behaviours and should be designed to identify changes as well as reasons.

Comment #	QIA 2021 AMR SE #20
References	Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board, Appendix G.13, 2021 Socio-Economic Monitoring Report” [NIRB Registry: 220401-08MN053-2021 Annual Report-App G.13 SEMR-IA1E.pdf] Section: 8, Resource and Land Use; Appendix B Socio-Economic Monitoring Indicators (related to PC Condition 148) Page: 72-75; 97
QIA Comment	There is limited correlation between the topics being monitored under the Resource and Land Use category (Section 8) and the indicators being used (Table 28 - Topics: 8 Resource and Land Use and 10. Economic Development and Self-Reliance, p.97). As well, indicators being monitored under Baffinland’s environmental monitoring programs are being used as a proxy; those indicators a part of the suite of dependent variables need to answer the question of whether the Project is leading to changes in harvesting, but they are in no way the full suite of variables needed to understand the question.

	Visitor days and wildlife compensation claims are not appropriate, accurate or reliable indicators of the variety of avoidance behaviours which are indicated as topics being monitored. Sensory disturbance, harvester safety and routing choices, meat and water quality, taste, and odor, etc. are among the qualitative questions which require different approaches to monitor.
QIA Request	The QIA continues to request that the Baffinland work with the QIA to identify more appropriate techniques to monitor changes in Resource and Land Use than those currently in use. These should involve Inuit-designed indicators of changing harvesting patterns and behaviours and should be designed to identify changes as well as reasons.

Comment #	QIA 2021 AMR SE #21
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.4 Economic Development, Self-Reliance, and, Contracting and Business Opportunities (PC Condition 148 through 152)</p> <p>Page: 473-484</p> <p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.4 Economic Development, Self-Reliance, and, Contracting and Business Opportunities (PC Condition 148)</p> <p>Page: 475-477</p> <p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board, Appendix G.13, 2021 Socio-Economic Monitoring Report [NIRB Registry: 220401-08MN053-2021 Annual Report-App G.13 SEMR-IA1E.pdf]</p> <p>Section: 10.2 Project harvesting Interactions and food security</p> <p>Page: 79</p>
QIA Comment	<p>The Proponent notes that they have difficulty monitoring and assessing the increased industrial utilization of lands' impact on Inuit harvesting and travel, or how that may change "how people engage in the land-based economy" (2021 Annual Report Main Body, Table 4.48).</p> <p>As stated in the QIA's comments on the 2020 Annual Report, claims that Mary River Project harvesting interactions are being monitored (see 2021 Annual Report Main Body p. 477), and thresholds are being developed (see Appendix G.13, p. 5), mean very little as Baffinland has completed no baseline study of preconstruction harvesting amounts, patterns or diets and existing food security research relied on within the Socio-economic monitoring work is high-level, not community specific and largely focused on store-bought rather than harvested country foods (see Appendix G.13, Section 10.2).</p> <p>It is recognized by the QIA that the Proponent has provided funding to conduct a Country Food Baseline study with the community of Pond Inlet (see p. 477 of the</p>

	<p>Annual Report). The QIA continue to conduct this study and anticipates that this Inuit-led work will be ongoing until the third quarter of 2022. The QIA looks forward to working with Baffinland to analyse project effects on harvesting, community food security, and access to, and availability of, country food.</p> <p>The QIA also notes Baffinland’s openness to discussing the development of community-level indicators with SEMWG and QSEMC (see 2021 Annual Report Main Body p. 477).</p>
QIA Request	<p>The QIA requests that the Proponent properly monitor Inuit use and alienation and loss of use as a priority, a monitoring program that has been neglected for the better part of a decade. Baffinland should be considered non-compliant with PC Condition 148 until a monitoring program directed to these values is implemented.</p> <p>The QIA requests that Baffinland develop a workplan and schedule with the QIA to use the results of the QIA’s baseline food study to analyze effects pathways whereby project effects on harvesting are impacting community food security and access to country food, and to develop thresholds, triggers, and actions.</p> <p>The QIA requests that Baffinland identify how, and with collaboration with which parties, it will contribute to the development of appropriate community-level indicators to study project interactions with harvesting, food security, and dietary habits; as well as to support Inuit to develop a workplan and schedule for an Inuit-led Culture, Resources and Land Use Monitoring for the Mary River Project’s current operations.</p>

Comment #	QIA 2021 AMR SE #22
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.4 Economic Development, Self-Reliance, and, Contracting and Business Opportunities (PC Condition 149)</p> <p>Page: 478-479</p>
QIA Comment	<p>PC Condition 149 states, “Prior to the commencement of operations, the Proponent is required to undertake an analysis of the risk of temporary mine closure, giving consideration to how communities in the North Baffin region may be affected by temporary and permanent closure of the mine, including economic, social and cultural effects and taking into consideration the potential drop in employment between the construction and operations phases of the Project” (p. 478).</p> <p>The QIA believes the information provided to be insufficient. Baffinland confirms it has submitted a ‘<i>Temporary Closure Planning: Socio-Economic Considerations for the Mary River Project</i>’. However, the <i>Temporary Closure Planning</i> document is outdated and does not address situations where some or all Nunavummiut are demobilized (e.g. 2019 Work Plan; COVID-19), nor includes a sensitivity analysis to consider appropriate scenarios against shifting assumptions.</p>
QIA Request	The QIA requests that the NIRB encourage Baffinland to update this study to reflect events that have transpired since it was submitted in 2014.

Comment #	QIA 2021 AMR SE #23
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.4 Economic Development, Self-Reliance, and, Contracting and Business Opportunities (PC Condition 151)</p> <p>Page: 482-483</p>
QIA Comment	<p>PC Condition 151 states, “The Proponent is encouraged to investigate measures and programs designed to assist Project employees with homeownership or access to affordable housing options” (p. 482).</p> <p>The QIA believes the information provided to be insufficient. Baffinland does not appear to have implemented measures specific to assisting with homeownership and improving access to affordable housing, and notes that it is not its responsibility. For example, and understanding a 2021 Employee Survey was not delivered due to COVID-19 restrictions, the 2019 Employee Survey showed that nearly seven in ten respondents were not aware of the Nunavut Down Payment Assistance Program, though Baffinland does not appear to have used that finding to work with NHS to improve awareness among employees of this available support.</p> <p>The QIA notes this comment is the same as that provided in the 2020 Annual Monitoring Report Review.</p>
QIA Request	The QIA requests more details to be shared with respect to the Memorandum of Understanding between Baffinland and the Government of Nunavut.

Comment #	QIA 2021 AMR SE #24
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.5 Human Health & Wellbeing (PC Condition 154)</p> <p>Page: 491-490</p>
QIA Comment	<p>PC Condition 154 states, “The Proponent shall work with the Government of Nunavut and the Qikiqtaaluk Socio-Economic Monitoring Committee to monitor potential indirect effects of the Project, including indicators such as the prevalence of substance abuse, gambling issues, family violence, marital problems, rates of sexually transmitted infections and other communicable diseases, rates of teenage pregnancy, high school completion rates, and others as deemed appropriate” (p. 491).</p> <p>The QIA believes the information provided to be insufficient. Baffinland presents information where available but does not describe efforts beyond the QSEMC process to develop indicators for the indirect effects where data does not currently exist. For example, no information is presented on gambling, marital problems, teenage pregnancy, or family violence. Understanding the QSEMC was unable to meet in 2021, if the QSEMC process is not capable of producing community level data to advance discussion and solutions to these critical topics, this emphasizes the</p>

	<p>importance of advancing an Inuit-led social monitoring program. Further, if Baffinland is capable of using evidence to make VSEC predictions in an EIS, NIRB should ensure that the data is generated to monitor and assess Project impacts against these predictions. This speaks to a clear need for Inuit-led monitoring with direct links to adaptive management responses.</p> <p>The QIA notes this is the same comment as provided in the 2020 Annual Monitoring Report Review.</p>
QIA Request	<p>The QIA requests that Baffinland Consider Inuit-led monitoring programs to track potential indirect effects of the Project, filling in gaps the QSEMC process is not achieving.</p> <p>The QIA notes this is the same request as provided in the 2020 Annual Monitoring Report Review.</p>

Comment #	QIA 2021 AMR SE #25
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.5 Human Health & Wellbeing (PC Condition 155)</p> <p>Page: 493-495</p>
QIA Comment	<p>PC Condition 155 states, “The Proponent is strongly encouraged to provide the NIRB with an updated report on its development of mitigation measures and plans to deal with potential cultural conflicts which may occur at site as these may become needed” (p. 493).</p> <p>The QIA believes the information provided to be insufficient. Baffinland does not provide NIRB with an updated report as strongly encouraged in the PCC. The initiatives that Baffinland describes are affirmative in that they seek to create conditions where conflict is less likely. However, Baffinland does not readily acknowledge that conflict is possible and describe actions that can be taken if conflict does arise.</p> <p>The QIA notes this is the same comment as provided in the 2020 Annual Monitoring Report Review.</p>
QIA Request	<p>The QIA requests that Baffinland bring reporting into compliance with the PCC.</p> <p>The QIA notes this is the same request as provided in the 2020 Annual Monitoring Report Review.</p>

Comment #	QIA 2021 AMR SE #26
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.5 Human Health & Wellbeing (PC Condition 156)</p> <p>Page: 496-498</p>

QIA Comment	<p>PC Condition states, “The Proponent is encouraged to assist with the provision and/or support of recreation programs and opportunities within the potentially affected communities in order to mitigate potential impacts of employees’ absences from home and community life” (p. 496).</p> <p>The QIA believes the information provided to be insufficient. Baffinland's reporting does not seem relevant to this PCC. Baffinland makes brief reference to a sponsorship category for "Arts, Sports and Culture" but does not indicate whether and to what extent it has supported or provided recreation programs and opportunities (p. 497).</p> <p>The QIA notes this is the same comment as provided in the 2020 Annual Monitoring Report Review.</p>
QIA Request	<p>The QIA requests that Baffinland bring reporting into compliance with the PCC.</p> <p>The QIA notes this is the same request as provided in the 2020 Annual Monitoring Report Review.</p>

Comment #	QIA 2021 AMR SE #27
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.5 Human Health & Wellbeing (PC Condition 157)</p> <p>Page: 497-499</p>
QIA Comment	<p>The PC Condition states, “The Proponent should consider providing counseling and access to treatment programs for substance and gambling addictions as well as which address domestic, parenting, and marital issues that affect employees and/or their families” (p. 497).</p> <p>The QIA agrees with Baffinland’s assessment of compliance. However, in the 2020 NIRB Annual Report, Baffinland indicated it would investigate the establishment of alcohol and narcotic anonymous programs at Project sites. Baffinland noted investigation was impacted by COVID-19 and community employees being demobilized from site.</p>
QIA Request	The QIA requests that Baffinland report on the status of alcohol and narcotic anonymous programs at Project sites in 2022 NIRB Annual Monitoring Report.

Comment #	QIA 2021 AMR SE #28
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.6 Community Infrastructure and Public Service (PC Condition 159)</p> <p>Page: 505-506</p>
QIA Comment	The PC Condition states, “The Proponent is encouraged to work with the Government of Nunavut to develop an effects monitoring program that captures increased Project-related pressures to community infrastructure in the Local Study Area communities, and to airport infrastructure in all point-of-hire communities and

	<p>in Iqaluit” (p. 505).</p> <p>The QIA believes the information provided to be insufficient. There is no indication that an effects monitoring program is in place for community infrastructure and airport infrastructure. Rather this is covered through the work of the QSEMC and QSEMWG. Baffinland does provide data on the number of aircraft movements in point of hire communities and acknowledges that the Project puts “incremental pressure” on airport infrastructures but concludes that it is not significant given it represented only 8.4% of total movements in 2018 (p. 506). In the three years prior to 2020, when the pandemic significantly reduced airport traffic, traffic had been steadily increasing. This would have associated increases in direct and indirect impacts to the airports (and travelers), but this is not examined.</p> <p>The QIA notes this is the same comment as provided in the 2020 Annual Monitoring Report Review.</p>
QIA Request	<p>The QIA requests that Baffinland bring monitoring reporting into compliance with the PCC.</p> <p>The QIA notes this is the same request as provided in the 2020 Annual Monitoring Report Review.</p>

Comment #	QIA 2021 AMR SE #29
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.7 Culture, Resources & Land Use (PC Condition 162)</p> <p>Page: 513-515</p>
QIA Comment	<p>PC Condition 162 states, “The Proponent should make all reasonable efforts to engage Elders and community members of the North Baffin communities in order to have community level input into its monitoring programs and mitigative measures, to ensure that these programs and measures have been informed by traditional activities, cultural resources, and land use as such may be implicated or impacted by ongoing Project activities” (p. 513).</p> <p>The QIA believes the information provided to be insufficient. Baffinland's ineffective efforts to obtain and include Inuit Elder and community member input into Project decision making is a primary contributor to Inuit dissatisfaction with the Project. QIA acknowledges that advancement of Inuit Certainty Agreement implementation may help to rectify concerns.</p>
QIA Request	<p>The QIA requests that Baffinland advance Inuit-led monitoring programs that include a framework for tracking and integrating Elder and community engagement, so community level input can be demonstrably integrated into Baffinland monitoring programs and mitigative measures.</p>

Comment #	QIA 2021 AMR SE #30
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.7 Culture, Resources & Land Use (PC Condition 162 through 166)</p> <p>Page: 510-524</p> <p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board, Appendix G.13, 2021 Socio-Economic Monitoring Report” [NIRB Registry: 220401-08MN053-2021 Annual Report-App G.13 SEMR-IA1E.pdf]</p> <p>Section: 8, Resource and Land Use; Appendix B Socio-Economic Monitoring Indicators (related to PC Condition 148)</p> <p>Page: 72-75</p> <p>Document Name: Nunavut Impact Review Board Reconsideration Report and Recommendations for Baffinland’s Phase 2 Development Proposal, May 2022.</p> <p>Section: 5.2.1.3 Food Security</p> <p>Page: 222</p>
QIA Comment	<p>Baffinland provides a summary of valued components, effects, observations made through monitoring programs, and a statement on whether impact predictions made in the FEIS are consistent with these observations (2021 AMR, Table 4.52, pp. 510 -511)). It is not clear how Baffinland has concluded the observed effects are consistent with the FEIS predictions for the following values:</p> <ul style="list-style-type: none"> • Inuit Harvesting of Wildlife • Travel and Camps <p>For example, Baffinland concludes that impacts to Inuit harvesting, and travel and camps are within the FEIS predictions because land user visits were recorded. As stated in our comments on the 2020 Annual Report, land user visits do not adequately provide a proxy indication of total or even a small proportion of impacts on culture, resources and land use, especially if one considers the reasons visitors provided for the reason of their visit, e.g., collecting fuel, having a meal, resting and warming up, etc. (Appendix G.13, p. 73). As the QIA stated in the comments on the 2020 Annual Report, Inuit have suggested in multiple forums that impacts have been greater than expected re: ability/willingness to drink water from the land, dust distribution, willingness to harvest, sense of enjoyment out on the land, amount of narwhal and seal and changing body condition, among other considerations.</p> <p>As in the 2020 Annual Report, Baffinland states that “community members and other stakeholders continue to provide valuable input that guide the development of monitoring programs and mitigation measures” (p.514) and provides examples of their engagement and involvement of Inuit on specific monitoring programs (p. 514-515). These statements demonstrate the engagement level and responsiveness of Baffinland, but as the QIA commented on the 2020 Annual Report, it also highlights that Baffinland monitoring is not effectively measuring effects to culture, resources and land use since there is such wide discrepancy between Inuit and Baffinland observations/experiences of these effects.</p>

	<p>We know as well that the NIRB Phase 2 Recommendations Report has found that impacts on Inuit Harvesting of Wildlife are already being reported by Inuit, impacts of a nature that are already potentially significant. This is direct contradiction with the Proponent's statement that Inuit harvesting of wildlife has stayed within predictions made in the FEIS, which were of insignificant adverse effects on Inuit harvesting of wildlife.</p>
QIA Request	<p>The QIA continues to request that Baffinland revisit its conclusion against what Inuit are saying and observing regarding changes to culture, resources and land use to match both what Inuit have been saying and what the NIRB has now found.</p> <p>PC Condition 162 should be considered non-compliant until a monitoring program that more effectively measures these values is implemented.</p>

Comment #	QIA 2021 AMR SE #31
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.7 Culture, Resources & Land Use (PC Condition 163)</p> <p>Page: 516-517</p>
QIA Comment	<p>PC Condition 163 states, "The Proponent shall continue to engage and consult with the communities of the North Baffin region in order to ensure that Nunavummiut are kept informed about the Project activities, and more importantly, in order that the Proponent's management and monitoring plans continue to evolve in an informed manner" (p. 516).</p> <p>The QIA believes the information provided to be insufficient. Baffinland's ineffective efforts to provide Inuit with input into Project decision making is a primary contributor to Inuit dissatisfaction with the Project. It is the QIA's hope that this is addressed through the Inuit Certainty Agreement.</p>
QIA Request	None.

Comment #	QIA 2021 AMR SE #32
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.7 Culture, Resources & Land Use (PC Condition 164)</p> <p>Page: 518-520</p>
QIA Comment	<p>When commenting on the 2020 Annual Report, the QIA requested that Baffinland provide a description of any incidences, near misses, or concerns communicated by Inuit and Stakeholders via the communications protocol and provide commentary on the effectiveness of the communications protocol to date. This request has not been fulfilled.</p>
QIA Request	<p>The QIA again requests that Baffinland provide a description of any incidences, near misses, or concerns communicated by Inuit and Stakeholders via the</p>

	communications protocol, in tabulated format, and provide commentary on the effectiveness of the communications protocol to date.
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Comment #	QIA 2021 AMR SE #33
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.7 Culture, Resources & Land Use (PC Condition 165)</p> <p>Page: 521-522</p>
QIA Comment	<p>PC Condition 165 states, “The Proponent is strongly encouraged to provide buildings along the rail line and Milne Inlet Tote Road for emergency shelter purposes and shall make these available for all employees and any land users travelling through the Project area. In the event that these buildings cannot, for safety or other reasons be open to the public, the Proponent is encouraged to set up another form of emergency shelters (e.g. seacans outfitted for survival purposes) every 1 kilometre along the rail line and Milne Inlet Tote Road. These shelters must be placed along Tote Road and rail routing prior to operation of either piece of infrastructure, and must be maintained for the duration of project activities, including the closure phase” (p. 521).</p> <p>The QIA believes the information provided to be insufficient. Baffinland has 4 refuge stations, and 11 sea can structures, which is far less than what is recommended in this PCC. No usage data or analysis is offered to suggest that what is in place is adequate aside from reporting that no Project related health and safety incidents with hunters and visitors occurred in 2021.</p>
QIA Request	The QIA requests that Baffinland bring reporting into compliance with the PCC.

Comment #	QIA 2021 AMR SE #34
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.9 Governance and Leadership (PC Condition 168)</p> <p>Page: 529-531</p>
QIA Comment	<p>PC Condition 168 states, “The specific socioeconomic variables as set out in Section 8 of the Board’s Report, including data regarding population movement into and out of the North Baffin Communities and Nunavut as a whole, barriers to employment for women, Project harvesting interactions and food security, and indirect Project effects such as substance abuse, gambling, rates of domestic violence, and education rates that are relevant to the Project, be included in the monitoring program adopted by the Qikiqtani Socio-Economic Monitoring Committee” (p. 529).</p> <p>The QIA believes the information provided to be insufficient. Baffinland presents information where available but does not describe efforts beyond the QSEMC process to develop indicators for the indirect effects where data does not currently exist. For example, no information is presented on gambling, marital problems, teenage pregnancy, or family violence. Understanding the QSEMC was not able to meet in 2021, if the QSEMC process is not capable of producing community level</p>

	<p>data to advance discussion and solutions to these critical topics, this emphasizes the importance of advancing an Inuit-led social monitoring program. Further, if Baffinland is capable of using evidence to make VSEC predictions in an EIS, NIRB should ensure that the data is generated to monitor and assess Project impacts against these predictions. This speaks to a clear need for Inuit-led monitoring with direct links to adaptive management responses.</p> <p>The QIA notes this is the same comment as provided in the 2020 Annual Monitoring Report Review.</p>
QIA Request	<p>The QIA requests that Baffinland develop indicators that can be monitored to fill gaps in the QSEMC process.</p> <p>The QIA notes this is the same request as provided in the 2020 Annual Monitoring Report Review.</p>

Comment #	QIA 2021 AMR SE #35
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053-2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.7.9 Governance and Leadership (PC Condition 169)</p> <p>Page: 532-533</p>
QIA Comment	<p>PC Condition 169 states, “The Proponent provide an annual monitoring summary to the NIRB on the monitoring data related to the regional and cumulative economic effects (positive and negative) associated with the Project and any proposed mitigation measures being considered necessary to mitigate the negative effects identified” (p. 532).</p> <p>The QIA agrees with Baffinland’s assessment of compliance. However, Baffinland summarizes that no negative regional or cumulative socio-economic effects directly associated with the Project were identified in 2021. This statement requires verification through an updated Inuit employee survey, as one was not completed in 2021, and through the anticipated additional community engagements and QSEMC meetings, who did not meet last year.</p>
QIA Request	The QIA requests that Baffinland ensure subsequent year’s annual monitoring summary to the NIRB includes findings of the Inuit employee survey, efforts of the QSEMC, as well as COVID-19 related impacts that are associated with the Project.

Comment #	QIA 2021 AMR SE #36
References	<p>Document Name: Baffinland Iron Mines 2021 Annual Report to the Nunavut Impact Review Board [NIRB Registry: 220401-08MN053- 2021 Annual Report Main Body-IA1E.pdf]</p> <p>Section: 4.8.2 Alternatives Analysis (PC Condition 183)</p> <p>Page: 561-566</p>
QIA Comment	As the QIA commented on the 2020 Annual Report, it is not clear how the monitoring programs have responded to and incorporated Inuit Qaujimajatuqangit.
QIA Request	The QIA continues to request that Baffinland provide explicit description and demonstrate specific elements of the monitoring programs that have incorporated

	and/or been founded upon Inuit Qaujimajatuqangit. The QIA also continues to request that Baffinland demonstrate how analysis and interpretation of results has been informed by Inuit Qaujimajatuqangit, and dealt with situations where western science and Inuit Qaujimajatuqangit conflicted with one another, if at all.
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