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October 25, 2019

Megan Lord-Hoyle  
Vice President, Sustainable Development  
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2275, Upper Middle Road East  
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Sent via email: [megan.lord-hoyle@baffinland.com](mailto:megan.lord-hoyle@baffinland.com)

**Re: The Nunavut Impact Review Board's 2018-2019 Annual Monitoring Report for the Mary River Project and Board's Recommendations**

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Dear Megan Lord-Hoyle:

The Nunavut Impact Review Board (NIRB or Board) is hereby releasing its *2018-2019 Annual Monitoring Report for Baffinland Iron Mines Corp.'s Mary River Project* which includes and the NIRB's Assessment of Baffinland's Compliance Status with the Mary River Project Certificate No. 005 (Appendix II). The enclosed Monitoring Report is based on the NIRB's monitoring activities as set out within the Mary River Project Certificate No. 005 and pursuant to Sections 12.7.1 and 12.7.2 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)*. This report provides the findings that resulted from monitoring of this Project that took place from October 2018 through September 2019.

By way of a motion carried during its regular meeting held in October 2019, the Board has issued the following recommendations to assist Baffinland in achieving compliance with the Mary River Project Certificate and to ensure the NIRB has all information necessary to adequately discharge its mandate with respect to the provisions within section 12.7 of the *Nunavut Agreement* and s. 112(1) of the *Nunavut Planning and Project Assessment Act (NuPPAA)* as pertains to the Mary River Project.

The Board respectfully requests that for items requiring follow-up action by Baffinland that a response be provided within the timeline as requested for each of the recommendations.

## DUST

At the time of the August 2019 site visit, the NIRB staff noted that dust emissions, including visible dust plumes generated from the crusher plant were significantly reduced in comparison to previous monitoring years. Proper engineering designs and controls have been implemented by Baffinland and have reduced emissions at the crusher plant as well as the addition of chutes to further enclose particles during ship loading. During the March 2019 site visit, NIRB staff noted significant dust deposition around the site and on the sea ice at Milne Inlet resulting from Ore stockpiling activities; however, in August of 2019 as much as the sea ice was melted prior to the visit, dust around the site appeared to be reduced with notable reduction in dust being disbursed by ship-loading activities. However, dust at Milne Port and along the Tote Road continue to be an ongoing concern.

During the comment period for the 2018 Annual Report, the Qikiqtani Inuit Association, the Government of Nunavut, and Crown-Indigenous Relations and Northern Affairs Canada expressed concerns related to the dust program at the Mary River site. In the subsequent written response to items discussed during the 2019 August site visit, Baffinland stated it had conducted a micro trial of Dust Stop in August 2019 on the Mine Site and Tote Road from km 103.5 to 97 to determine efficacy of the product on site. Baffinland observed improved dust suppression through the application zones and Dust Stop also showed signs of water shedding during rain events supporting road sealant and application lifespan. In September 2019 once additional Dust Stop was received, Baffinland stated it would be implementing an expanded trial in order to assess success in a larger area and if deemed successful, Baffinland would procure more to be delivered in the 2020 sealift.

**Recommendation 1:** The Board requires that within 30 days Baffinland submit the design of the experiment including the method, areas selected for trial, observations, timeline and evidence of conclusion for the expanded dust trial which commenced in September for the Mary River Project. Further, if applicable Baffinland is required to report in its 2019 Annual Report to the NIRB an updated its Air Quality and Noise Abatement Management Plan (2017) and Roads Management Plan (2017) with the results of the experiment and the plans should clearly indicate when application of dust suppressants (including water) should be completed.

## Fish Passage and Sampling

Pursuant to Term and Condition 47 of the Project Certificate, Baffinland is required to ensure that all Project infrastructure in watercourses are designed and constructed in such a manner that they do not unduly prevent and limit the movement of water in fish bearing streams or rivers. In their 2018 Annual Report, Baffinland has noted that 2 crossings (CV-111 and BG-29) contained physical obstructions and a total of seven (7) culverts were perched. Of those seven (7), one (BG-50) prevented fish passage. Board Recommendation #8 from 2018 relates to concerns regarding fish crossing at that same culvert (BG-50), despite receiving an update from Baffinland referencing general repairs of crossings to fish bearing streams, culvert BG-50 remains an outstanding concern.

**Recommendation 2:** The Board requests Baffinland continue to maintain connectivity for fish species present in streams and ensure that all existing culverts are functional. Baffinland shall provide the Nunavut Impact Review Board with a summary of how it has consulted with Fisheries and Oceans Canada and modified its fish habitat monitoring program and updated associated to address issues related to culvert perching and fish passage problems along the Tote Road.

This update and revised plan are to be provided within 30 days.

Term and Condition 48(a) requires Baffinland to provide plans to conduct additional surveys for the presence of Arctic char in freshwater bodies and implement ongoing monitoring of Arctic char health in areas affected by the Project in consultation with the Mittimatalik Hunters and Trappers Organization (MHTO). While Baffinland noted a significant effort to capture and assess the health of Arctic char in associated water bodies through its 2018 Annual Report and has methodologies outlined in its Aquatic Effects Monitoring plan, there has been little indication of this work being performed in consultation with the MHTO.

**Recommendation 3:** The Board requests Baffinland provide the summary of consultation with the Mittimatalik Hunters and Trappers Organization in 2018 to conduct this required consultation toward the Arctic char monitoring framework and how it has updated the monitoring plan to incorporate this feedback especially to better understand where fish would be present to enable actual observations to be collected.

The submission should also include information regarding the timeline and anticipated activities including consultation and implementation of the sampling program in 2019 are to be provided within 30 days.

## **Marine Mammal Monitoring Protocol**

Baffinland is required pursuant to Terms and Conditions 110 and 111 of the Mary River Project Certificate to develop a monitoring protocol to prevent impacts to marine mammals from Project shipping activities in consultation with the Marine Environment Working Group (MEWG), and to determine appropriate early warning indicators that will ensure rapid identification of negative impacts along the shipping routes. Baffinland has several marine monitoring programs outlined in their Shipping and Marine Wildlife Management Plan as well as their 2018 Annual Report; however, none of these documents clearly outline the required protocol and the 2018 Annual Report does not include any information regarding the timeline to complete the plan nor how feedback from the MEWG would be incorporated into any marine plans. In the meeting minutes that Baffinland included in the 2018 Annual Report, it is noted that several MEWG meeting discussions have revolved around this topic of early warning indicators for marine mammal health and development of thresholds; however, to date, no definitive conclusions have been provided.

**Recommendation 4:** The Board requires that within 30 days Baffinland provide a definitive update and a timeline for the development of the early warning indicators of negative impacts associated with vessel noise and activities on marine mammals with the Marine Environmental Working Group. Further, Baffinland is required to report in its 2019 Annual Report to the NIRB the specific indicators being developed noting how the Marine Environmental Working Group has been involved in identifying such indicators for use, including a description of how the indicators are to be used to inform marine mammal-vessel interactions.

## Survey of Baseline Metal Levels in Foraging Caribou

Term and Condition 35 requires that Baffinland undertake monitoring of baseline metal levels in organ tissue from caribou harvested within the local study area prior to commencing operations. In their 2018 Annual Report as well as the Terrestrial Environment Mitigation and Monitoring Plan, Baffinland indicated that due to the low population of caribou near the Project, they deem that this condition is not applicable to the current monitoring period. In respect of the current limitations imposed on caribou hunting by the Government of Nunavut since January 1<sup>st</sup>, 2015, the Board still expects that once the ban is lifted, these experiments and participation from either regulatory agencies or the Terrestrial Environmental Working Group be completed.

**Recommendation 5:** The Board requests Baffinland to develop a timeline in conjunction with the Government of Nunavut, the Mittimatalik Hunters and Trappers Organization and other Terrestrial Environment Working Group members to complete development of a sampling protocol and study methodology to monitor baseline metals in organ tissue from caribou and/or other wildlife harvested in the regional study area.

The timeline is due in 30 days and a complete update on the implementation of the program is expected in the 2019 Annual Report.

## Groundwater Management

Term and Condition 17, 20, and 23 of the Project Certificate states that Baffinland is required to develop and implement a Groundwater Monitoring and Management Plan to monitor, prevent and/or mitigate the potential effects of the Project on groundwater resources. In the 2018 Annual Monitoring Report, Baffinland indicated that a groundwater monitoring program was implemented at various Mine Site locations and select water samples collected downstream of active quarries showed elevated levels of ammonia and nitrate levels when compared to baseline measurements and furthermore that the 2018 groundwater monitoring sample sizes were very low resulting in a limited data set and a limited ability to identify long-term trends. To date, the management plan has not been completed nor has there been any timeline presented by Baffinland to complete this plan and groundwater monitoring has not been that successful to date. The Plan should include a consistent, site-wide groundwater monitoring program for all major project facilities likely to affect groundwater resources (mining, landfill, etc.) as well as increased sampling efforts for the Groundwater Monitoring Program as currently it is not able to identify any trends.

**Recommendation 6:** The Board requests Baffinland develop and implement a Groundwater Monitoring and Management Plan to monitor, prevent and/or mitigate the potential effects of the Project on groundwater. This management plan should include consistent and site-wide groundwater monitoring program for all major project facilities likely to affect groundwater resources. This program should have an increased sampling effort for the Groundwater Monitoring Program with incorporation of information from other northern mine sites and should closely monitor water samples collected for elevated chemical levels and apply mitigations when exceedances are noted.

## Waste Management

During the March and August 2019 NIRB site visits, it was observed again that the current fence at the landfill was insufficient in containing wind-blown debris and not sufficient to eliminate carnivore access to the area. Pursuant to condition 64, Baffinland is required to have complete fencing around their landfill unless it can present an alternative to a fence to the Board for

consideration. The Board notes that the Waste Management Plan (2018) submitted to the NIRB stated that the landfill only required a fence for windblown debris which does not match the project certificate requirements for this Project. The NIRB staff on the 2019 site visits noted that the condition of the fencing around the landfill had not improved compared to previous years as Baffinland has yet to install a complete long-term fence as recommended by the NIRB in 2014, 2015, 2016, 2017 and 2018. Further in 2019 NIRB staff observed wildlife (e.g., foxes) scavenging within the landfill and noted it in the 2019 August Site Visit Report. NIRB staff discussed during the site visit the lack of a fence and Baffinland committed to submitting plans for the construction of a fence to enclose the landfill and commence construction as materials were on the 2019 sea lift; on August 26, 2019 Baffinland submitted the plans for a full fence around the landfill in its written response to the NIRB following the site visit.

**Recommendation 7:** The Board requires Baffinland install the fence around the landfill immediately and once the fence is constructed Baffinland will submit a final report to the Nunavut Impact Review Board which includes photos, modifications during construction, and inspection schedule.

The Board requires Baffinland submit an updated Waste Management Plan to reflect the requirement of a wildlife fence specifically for carnivores and to limit wildlife attraction to site within 30 days. Subsequently Baffinland shall provide information regarding the maintenance of the fence within each Annual Report.

The Board also requests that Crown-Indigenous Relations and Northern Affairs Canada and Qikiqtani Inuit Association conduct follow-up inspections to observe if litter continues to be an issue at all Mary River properties (Milne Inlet, Mary River, Steensby Inlet and the Tote Road) and follow up as necessary reporting on activities annually.

## **Cross- Cultural Training**

During the Final Hearing for the original Mary River Project in 2012, the Board expressed concerns regarding the lack of cross-cultural training provided to non-Inuit staff as Baffinland was not certain where the majority of the staff for the site would be coming from.<sup>1</sup> Since the project was originally approved, NIRB continues to be concerned about the ongoing frustration from Nunavut communities resulting from Baffinland not meeting its local hiring targets in addition to challenges with retention of these local hires. The Board would like to stress the importance of cross-cultural training provided by Baffinland to non-Inuit staff to ensure an inclusive work environment for all employees.

**Recommendation 8:** The Board requires Baffinland to provide a detailed description of their cross-cultural training programs for employees. This document should include a description of the current programs offered as well as how they were developed and whether or not Inuit were consulted prior to, or as part of, the program development. Baffinland shall provide a discussion on the success and challenges associated with this program to date and include the rationale for determining the overall effectiveness of cross-cultural training programs implemented, and how the program's effectiveness will be evaluated in the future.

The Board requests this information to be provided to the NIRB within 30 days.

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<sup>1</sup> NIRB Final Hearing Report for Baffinland's Mary River Project (September 14, 2019); ID No. 286425

## Withholding Recommendation on Project Certificate Audit

Term and Condition 179c was added to the Mary River Project Certificate in October 2018 as required by the Minister of Intergovernmental and Northern Affairs and Internal Trade, representing several other Responsible Ministers, when they temporarily approved the production increase amendment “to ensure that all commitments made by the proponent with respect to the 2018 production increase and delivery of benefits to Inuit are adhered to, and, can be determined through a body of evidence”. In addition, the audit was to be completed biannually. The NIRB did not receive the third-party audit within the 2018-2019 reporting period as it was received October 2, 2019, which did not allow sufficient time for review and incorporation of these materials into this current monitoring report and associated Board recommendations.

Despite the current reconsideration process occurring for the “Phase 2 Development” proposal by Baffinland, the Board expects that Baffinland commit sufficient time and resources to completing required project monitoring and addressing the recommendations accompanying this report to ensure compliance with Project Certificate No. 005.

Pursuant to *Nunavut Agreement* Sections 12.7.2, 12.7.3 and s. 112(1) of the *Nunavut Planning and Project Assessment Act (NuPPAA)*, the NIRB will continue to work with Baffinland and other authorizing agencies to undertake the required evaluation of Project information, conduct and coordinate monitoring efforts, and to review results and Project compliance in accordance with the requirements set out in the Mary River Project Certificate No. 005.

Should you have any questions or require further clarification regarding the Board’s recommendations or the NIRB’s monitoring program for the Mary River project, please contact the undersigned directly at (867) 983-4607 or [cbarker@nirb.ca](mailto:cbarker@nirb.ca); or contact Solomon Amuno at (867) 983- 4603 or [samuno@nirb.ca](mailto:samuno@nirb.ca).

Sincerely,



Cory Barker, M.Sc.  
Technical Advisor I  
Nunavut Impact Review Board

cc: Lou Kamermans, Baffinland Iron Mines Corp.  
Mary River Distribution List

Enclosure (1): The Nunavut Impact Review Board’s 2018 – 2019 *Annual Monitoring Report for Baffinland Iron Mines Corp.’s Mary River Project*.