



Final Closing Statements

Baffinland Iron Mines Corporation

Mary River Project Phase 2 Proposal

January 10, 2022



GCDOCS # 99405334



Crown-Indigenous Relations and Northern Affairs Canada's Closing Statements to the Nunavut Impact Review Board for the Mary River Phase 2 Development Proposal

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) would like to take this opportunity to thank the Board Panel and staff for their professionalism and hard work in leading the hearing to a successful closure. This is especially noteworthy given the challenging circumstances in which we all find ourselves. Special thanks also to the Interpreters for patiently listening and diligently interpreting all statements and responses. CIRNAC would also like to thank all intervenors, the proponent, and members of the various communities and organizations for sharing their perspectives.

CIRNAC has undertaken a review of documents submitted by Baffinland Iron Mines Corporation (Baffinland) to the Nunavut Impact Review Board (NIRB or the Board) in support of its proposed amendment (referred to as the Phase 2 Development Proposal, or the Project) to the approved Mary River Project.

Based on its mandate, CIRNAC has provided expertise on:

- Crown land contamination/degradation, particularly closure and reclamation planning;
- Surface water quality and quantity;
- Groundwater quality and quantity;
- Marine water quality, as affected from land-based activities;
- Permafrost;
- Waste management; and
- Socio-economic impact assessment and monitoring.

In addition to providing participant funding through the Northern Participant Funding Program, CIRNAC also participated in all phases of the review process:

- Participated in Scoping and Information Sessions (December 2018);
- Participated in public engagement sessions in Pond Inlet and Igloolik (January 2019);
- Reviewed the Final Environmental Impact Statement Addendum;
- Submitted 17 Information Requests and 18 Technical Review Comments;
- Participated in Technical Meetings (April and June 2019, September 2020, November 2021);
- Submitted 16 Final Comments;
- Participated in the Public Hearings until their adjournment (Nov 2019);
- Participated in the Community Round Table and Pre-Hearing Conference (Sep 2020);
- Submitted updated Final Comments (December 2020);
- Participated in the resumed Public Hearing (January-February 2021);
- Participated in the Extended Public Hearing (April 2021); and
- Participated in the resumed Extended Public Hearing and Community Round Table (November 2021).

During the Information Requests and Technical Review phases of the assessment, CIRNAC identified a number of concerns related to the Project's potential impacts on the biophysical environment and socio-economic matters. There were a total of sixteen (16) concerns; twelve (12) of them are resolved and require no additional follow up while the remaining four (4) are now considered resolved with commitments made by Baffinland.

The resolved concerns relate to: geotechnical aspects of the North Railway alignment (Route 1), hazardous material and waste management, and socio-economic considerations.

The concerns resolved with commitments / conditions relate to:



1. Thermal modeling of the Waste Rock Facility (FC#5 / CIRNAC-1 NEW);
2. Thermal monitoring of the Phase 2 project facilities (Terms and Conditions) (FC#5 / CIRNAC-1A NEW);
3. Acid Rock Drainage and Metal Leaching potential of railway cut material, quarries and pit walls (FC#7 / CIRNAC-2 NEW); and
4. Acid Rock Drainage and Metal Leaching from Waste Rock Facility (FC#8 / CIRNAC-3 NEW).

1. Thermal modeling of Waste Rock Facility

CIRNAC sought assurance that the proposed design, construction and operation of the Waste Rock Facility will perform as planned. Thermal modeling of this facility will account for the oxidation processes and internal heat generation to ensure the waste rock remains frozen inside the waste rock pile.

Baffinland agreed to the following commitments related to the thermal modeling of its Waste Rock Facility:

- a) Baffinland shall complete thermal modeling of the Waste Rock Facility and include the results in the Waste Rock Management Plan prior to the conclusion of Water Licence Amendment process, subject to NWB requirements (Commitment 100)
- b) Baffinland commits to the providing the following information during the Water Licence Amendment process, subject to Nunavut Water Board requirements (Commitment 188).
 - i. Baffinland shall provide a heat balance and relationship of the heat generation associated with the exothermic reaction of Potentially Acid Generating waste rock deposited and soluble sulphates. Baffinland shall demonstrate that the current design of the Waste Rock Facility will maintain permafrost conditions in the long term (closure and beyond).
 - ii. Baffinland shall perform an oxygen balance of the Waste Rock Facility and correlate it with soluble sulphates. This will provide an understanding of the process of Acid Rock Drainage generation and the performance of the Waste Rock Facility.

2. Thermal monitoring of project facilities for Phase 2

CIRNAC sought assurance that construction and operation of the Phase 2 facilities will be monitored to preserve the integrity of permafrost, and that the provided mitigation is adequate. Baffinland agreed to the following Term and Condition, also reflected in the Commitment 187, related to the thermal monitoring of project facilities for Phase 2. CIRNAC is requesting that the NIRB add this Term and Condition to the Project Certificate, should the Project be approved.

- a) Baffinland shall develop a detailed site program to monitor the thaw consolidation and strain prediction under the structures/embankments constructed as part of the Phase 2 Project. The monitoring results shall be compared with the Final Environmental Impact Statement Addendum predictions and appropriate mitigation measures shall be identified and incorporated into the adaptive management approach.

3. Acid Rock Drainage and Metal Leaching potential of railway cut material, quarries and pit walls

CIRNAC sought assurance that Baffinland will identify the Potential Acid Generating rock material and avoid using it for road / railway construction. Furthermore, that Baffinland shall monitor water quality in the railway corridor rock quarries and implement proper mitigation as required.

Baffinland agreed to the following commitments related to the Acid Rock Drainage and Metal Leaching potential of railway cut material, quarries and pit walls (Commitment 99):

- a) Baffinland shall confirm the origin of elevated concentrations of aluminum, mercury and copper in Shake Flask Extraction test results for rock materials sourced from quarry and borrow pits for road / railway construction, and develop and implement an appropriate water quality monitoring and management strategy for railway corridor rock quarries as part of water licensing.



- b) The monitoring results shall be compared with the Final Environmental Impact Statement Addendum predictions and appropriate mitigation measures shall be identified and implemented.

4. Acid Rock Drainage and Metal Leaching from Waste Rock Facility

CIRNAC sought assurance that the proposed criteria for identification of Potentially Acid Generating rock are robust and reliable. In addition, CIRNAC sought to ensure that the operation of the Waste Rock Facility guarantees encapsulation of the Potentially Acid Generating rock and that the proposed Waste Rock Management Plan and Interim Closure and Reclamation Plan are based on best management practices. This is important in mitigating Acid Rock Drainage and Metal Leaching in the long term (mine closure and beyond).

Baffinland agreed to the following commitments related to Acid Rock Drainage and Metal Leaching from the Waste Rock Facility (Commitment 186):

- a) Baffinland shall develop reliable criteria for identification of Potentially Acid Generating rock that clearly accounts for uncertainty in the 0.2% total sulphur threshold and the presence of acidic soluble sulphates upon projected life of mine tonnages of Potentially Acid Generating and Non-Acid Generating rock.
- b) Baffinland shall incorporate these criteria, clearly stated ranges in projected life of mine Potentially Acid Generating and Non-Acid Generating rock tonnages and the resultant necessary contingencies and methods of validation that need to be incorporated into engineering design, environmental monitoring and management strategies for the Waste Rock Management Plan and Interim Closure and Reclamation Plan. These documents are to be submitted for review during the Water Licence Amendment process, subject to Nunavut Water Board requirements.
- c) Baffinland shall review the performance of these plans and provide evidence of the effectiveness of these plans by demonstrating compliance with the management measures and that the desired outcomes of mitigation are achieved on an annual basis.

Conclusion

CIRNAC conducted a review of the Final Environmental Impact Statement Addendum for those areas that fall within its mandate and found the majority of the analyses and presentations to be adequate.

Based on the information made available for review throughout the assessment process, it is unlikely that most aspects of the proposed Project falling within the scope of CIRNAC's areas of expertise will result in significant adverse effects. Potential environmental and socio-economic impacts can be prevented, mitigated and managed through the implementation of agreed-upon commitments and Terms and Conditions. CIRNAC recognizes that other Registered Intervenors and members of affected communities have outstanding concerns that require careful consideration by the Board's Panel. The Board is commended for the manner in which it implemented the reconsideration process in accordance with the requirements of the *Nunavut Planning and Project Assessment Act* as envisioned by the Nunavut Agreement and best practices.

If Phase 2 is approved, CIRNAC will continue to review and provide input on updated plans throughout the regulatory process in order to minimize potential impacts on people and the environment. CIRNAC will also continue its compliance monitoring and enforcement role as outlined in the *Nunavut Planning and Project Assessment Act*.

CIRNAC appreciates the opportunity to participate in this assessment and looks forward to continuing to work with all parties involved in the Mary River Project.

