



Crown-Indigenous Relations
and Northern Affairs Canada

Relations Couronne-Autochtones
et Affaires du Nord Canada

NUNAVUT IMPACT REVIEW BOARD

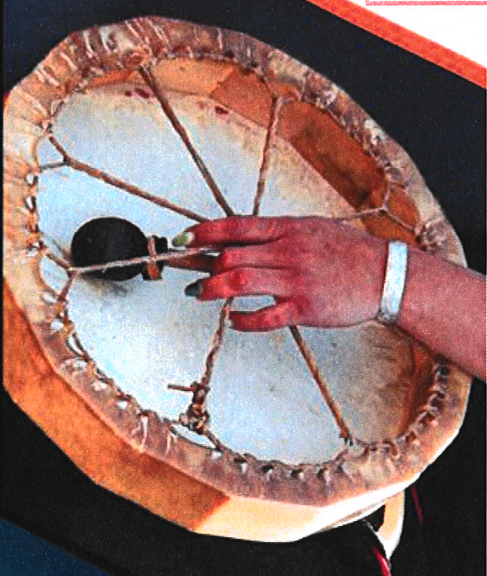
Date: February 4, 2021

Exhibit No: 45

Baffinland's Mary River Phase 2 Amendment Project

NIRB Final Hearing

Crown-Indigenous Relations
and Northern Affairs Canada
Pond Inlet, Iqaluit, Ottawa
January 25 – February 6, 2021



Canada



CIRNAC's role in the Nunavut Impact Review Board (NIRB) review of the proposed Mary River Phase 2 Project Amendment

- **Responsible Minister:** the Northern Affairs Minister, in concurrence with other responsible Ministers, will have a decision-making role under the Nunavut Agreement (NA), and *Nunavut Planning and Project Assessment Act (NuPPAA)*.
- **Intervenor:** Provides expert advice.
- **Regulator:** Administers Crown land, inspects and enforces terms and conditions of approved projects.
- **Duty to Consult:** the Northern Affairs Minister, and other responsible Ministers, have a duty to consult with Inuit before making a decision in relation to the Phase 2 proposal.





Consultation and the NIRB Process

- The Government of Canada relies primarily on the NIRB's reconsideration and related proceedings to fulfill the duty to consult.
- The NIRB's process provides Inuit with opportunities to express their concerns about project related impacts on treaty rights.
 - Participant funding facilitates informed engagement
- Government of Canada corresponds with the Designated Inuit Organization after the issuance of NIRB's final report and recommendation.
- All relevant Information, including Inuit Qaujimajatuqangit (IQ), should be shared with the NIRB prior to the close of the public record.





CIRNAC provided expertise on the following mandate areas:

- Environmental Impact Assessment methodology and best practices, including cumulative effects assessment;
- Crown land contamination/degradation; particularly closure and reclamation planning;
- Surface water quality and quantity;
- Groundwater quality and quantity;
- Marine water quality only as affected from land;
- Permafrost;
- Waste management; and
- Socio-economic impact assessment and monitoring.





Summary of CIRNAC's participation in the review of the Mary River Phase 2 Amendment Project

- Scoping and Information Sessions (Dec 2018)
- Review of Final Environmental Impact Statement Addendum
 - Submitted 17 Information Requests and 18 Technical Review Comments
 - Participated in Technical Meetings (April and Jun 2019, Sep 2020), Provided 16 Final Comments (FC)
- Participated in the November 2019 Public Hearings until their adjournment
- Participated in the Community Round Table and Pre-Hearing (Sep 2020)



Resolved concerns

FC #1-4 Geotechnical aspects of the North Railway alignment (Route 1)

- Seismic data for North Railway alignment
- North Railway geotechnical investigations
- North Railway management plan
- Risk of excessive settlement of North Railway embankment

FC #9-12 Hazardous material and waste management

- Updates to management plans
- Snow management

FC #13-16 Socio Economic

- Baseline data
- Use of IQ / Community concerns
- Addressing NIRB guidelines
- Cumulative effects and alternatives





Concerns resolved with commitments / conditions

FC#5, #1 NEW	Thermal modelling of Waste Rock Facility	Resolved with commitment
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FC#5, #1A NEW	Thermal monitoring of the Phase 2 project facilities	Resolved with Term and Condition
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FC#7, #2 NEW	Acid Rock Drainage/Metal Leaching (ARD/ML) potential of railway cut material, quarries and pit walls	Resolved with commitment
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FC#8, #3 NEW	ARD/ML characterization within ore and waste rock from Deposit 1	Resolved with commitment
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Concern

Thermal Modelling

FC#5 /
CIRNAC-1
NEW

Commitment
from
Baffinland

- Prior to the approval of the revised version of the Waste Rock Management Plan (or during the Water Licence Amendment process, subject to Nunavut Water Board requirements) 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).
- Baffinland shall perform an oxygen balance of the waste rock facility and correlate it with soluble sulphates in order to demonstrate an understanding of the process of Acid Rock Drainage generation and the performance of the Waste Rock Facility.





Concern

Thermal Modelling

FC#5 /
CIRNAC-
1a NEW

Proposed
Terms and
Conditions

Baffinland shall develop a detailed site program to monitor the thaw consolidation and soil deformation 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.





Concern

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

FC#7 /
CIRNAC-2
NEW

Commitment
from
Baffinland

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





Concern

Acid Rock Drainage/Metal Leaching Characterization

FC#8 /
CIRNAC-3
NEW

Commitment

from
Baffinland

- 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.
- 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.
- 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.





Conclusions

- For aspects within CIRNAC's mandate, the proposed Project is not likely to cause significant adverse environmental effects with exception of issues related to the Acid Rock Drainage/Metal Leaching Characterization within ore and waste rock from Deposit 1 and thermal modeling of Waste Rock Facility.
- These outstanding concerns can be addressed at the regulatory phase subject to implementation of proposed commitments and Terms and Conditions as agreed to by Baffinland.



