



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
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Your file - Votre référence
2AM-MRY1325
Our file - Notre référence
CIDM# 1284448

March 30, 2020
Assol Kubeisinova
Technical Advisor
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0
E-mail: licensing@nwb-oen.ca

Re: Crown-Indigenous Relations and Northern Affairs Canada Reply to Baffinland Iron Mines Corporation Response to Comments on the Phase I Waste Rock Management Plan for the Mary River Project, Water Licence No2AM-MRY1325 – Amendment No. 1

Dear Ms. Kubeisinova,

Thank you for your March 17, 2020 invitation to review the referenced response to intervenor comments regarding the Phase I Waste Rock Management Plan, submitted by Baffinland Iron Mines Corporation (BIMC).

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the response pursuant to CIRNAC's mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*. Comments have been provided in the attached Technical Memorandum.

If there are any questions or concerns, please contact me at (867) 975-4282 or bridget.campbell@canada.ca.

Sincerely,

Bridget Campbell,
Water Resources Coordinator



Technical Review Memorandum

Date: March 30, 2020

To: Assol Kubeisinova - Technical Advisor, Nunavut Water Board

From: Bridget Campbell – Water Management Coordinator, CIRNAC

Subject: Crown-Indigenous Relations and Northern Affairs Canada Reply to Baffinland Iron Mines Corporation Response to Comments on the Phase I Waste Rock Management Plan for the Mary River Project, Water Licence No2AM-MRY1325 – Amendment No. 1

A. BACKGROUND

Baffinland Iron Mines Corporation (BIMC) currently operates the Mary River iron ore mine in Nunavut, Canada. The current approved project allows a total iron ore production rate of 22.2 million tonnes per annum (Mtpa). The transportation allowances are divided so that 4.2 Mtpa may be transported by tote road to Milne Port, and 18 Mtpa may be transported by rail to Steensby Port. The 18 Mtpa Steensby rail project has not been constructed, however 4.2 Mtpa of iron ore is currently being transported north by road to Milne Port.

BIMC submitted an application to the Nunavut Water Board (NWB) to amend NWB Water Licence No. 2AM-MRY1325 - Amendment No. 1 for Phase 2 of the Mary River Project on October 1, 2018. Following the Information Request (IR) process, BIMC was instructed to resubmit all outstanding information to the NWB. A second application for Phase 2 was submitted to the NWB by BIMC on May 5, 2019.

The Phase 2 Proposal involves increasing the quantity of ore shipped through Milne Port to 12 Mtpa, via the construction of a new railway running adjacent to the existing Tote Road (called the North Railway). The total mine production will increase to 30 Mtpa with 12 Mtpa being transported via the North Railway to Milne Port and 18 Mtpa transported via the South Railway to Steensby Port.

Phase 2 also involves the development of additional infrastructure at Milne Port, including a second ore dock. Shipping at Milne Port will continue to occur during the open water season, and may extend into the shoulder periods when the landfast ice is not being used to support travel and harvesting by Inuit. Various upgrades and additional infrastructure will also be required at the Mine Site and along both the north and south transportation corridors to support the increase in production and construction of the two rail lines.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) conducted a completeness review of the resubmitted application and submitted Information Requests (IRs) to the NWB on May 14, 2019 (Crown-Indigenous Relations and Northern Affairs Canada, 2019a). These IRs identified Waste Rock Management as an issue remaining unresolved pending the results of ongoing studies meant to inform the management strategy in the Phase 1 Waste Rock Management Plan. CIRNAC indicated readiness to move on to the Technical Review stage, and submitted Technical Comments (Crown-



Indigenous Relations and Northern Affairs Canada, 2019b) to the NWB on July 15, 2019, based on the understanding that the Phase 1 Waste Rock Management Plan would be submitted for review in December 2019.

Unexpected water quality issues associated with the waste rock facility (WRF) have been observed since mid-2017, indicating that waste rock characterization, acid rock drainage/metal leaching (ARD/ML) predictions and management plans generated in support of Phase 1 were inadequate. While the runoff water quality issue is being addressed as part of current operations and the Interim Waste Rock Management Plan, BIMC has provided significant modifications to the site waste rock management strategy in the Phase 1 Waste Rock Management Plan and ongoing research were recommended to resolve the issue.

The Phase 1 Waste Rock Management Plan (Revision 2) for the Mary River Phase 2 Project, along with a number of appendices, was submitted to the NWB on December 31, 2019. The Phase 1 Waste Rock Management Plan was created to incorporate the findings of additional assessments carried out in response to the occurrence of unexpected ARD/ML issues. CIRNAC reviewed the Phase 1 Waste Rock Management Plan and supporting documents. A list of documents submitted in this package and reviewed by CIRNAC can be found in Section B.

The application for the Phase 2 project is still undergoing assessment by the Nunavut Impact Review Board (NIRB), and as such the Phase 1 Waste Rock Management Plan is also being reviewed at that stage. CIRNAC has indicated in Comment #8 of the Final Written Submission for Baffinland Iron Mines Corporation Mary River Project Phase 2 Proposal (Crown-Indigenous Relations and Northern Affairs Canada, 2019c), submitted to the NIRB on September 23, 2019, that there is still a concern regarding BIMC's criteria for the identification of potentially acid generating rock. CIRNAC has recommended that BIMC Provide further justification for the 0.2% total Sulphur cut-off threshold for identification of Non-PAG waste rock. Responses to comments made through the NIRB process will be addressed through the NIRB process, and any concerns which are unresolved at the NIRB process will be considered by CIRNAC to also be unresolved at the Water Licensing review process.

CIRNAC provided comments and recommendations to further improve the Phase 1 Waste Rock Management Plan in a submission (Crown-Indigenous Relations and Northern Affairs Canada, 2020a) to the NWB on February 5, 2020, in parallel with the technical comments (Crown-Indigenous Relations and Northern Affairs Canada, 2020b) submitted by CIRNAC to the NIRB on February 6, 2020. BIMC responded to intervenor comments on March 13, 2020 (Baffinland Iron Mines Corporation, 2020).

A reply to BIMC responses to CIRNAC technical review comments is provided in Section C. A summary of the documents reviewed, including correspondence, can be found in Table 1 of Section B.



B. DOCUMENTS REVIEWED

The following table (Table 1) provides a summary of the documents reviewed, within the Nunavut Water Board review process, and including correspondence with the Nunavut Impact Review Board.

Table 1: Documents Reviewed

Document Title	Author, File No., Date
Phase 1 Waste Rock Management Plan Revision 2	Baffinland Iron Mines Corporation, Document #: BAF-PH1-830-P16-0029, 2019-12-31
Letter to the Nunavut Water Board Re: Response to Intervenor Comments, Phase 1 Waste Rock Management Plan Revision 2 Mary River Project, Type 'A' Water Licence - 2AM-MRY1325 - Amend. No. 1	Baffinland Iron Mines Corporation, 2020-03-13



C. REPLIES TO RESPONSES TO TECHNICAL REVIEW COMMENTS

1. Sediment Management at the WRF

Comment:

BIMC has affirmed in the Response to Intervener Comments (Baffinland Iron Mines Corporation, 2020) that re-suspension and in-line treatment in the Water Treatment Plant (WTP) is the current alternative method to in-pond treatment, which CIRNAC finds satisfactory, and that the procedure for in-pond treatment is provided in Section 9.2.6 of the Phase 1 WRMP (Baffinland Iron Mines Corporation, 2019). It is not clear under which conditions in-pond treatment will be conducted, and if or when in-pond treatment is conducted, what the procedure will be utilized for managing contact water. CIRNAC recommends that when BIMC decides to use in-pond treatment, the details be provided as requested in Comment 1 of CIRNAC's Technical Comments on the Phase 1 WRMP (Crown-Indigenous Relations and Northern Affairs Canada, 2020a).

Recommendation:

CIRNAC recommends that whenever BIMC considers in-pond treatment as a viable option, details be provided by BIMC prior to conducting in-pond treatment, and include:

- i. an estimate of volume of sediment to be produced;
- ii. an assessment of the need for standby pond capacity;
- iii. details regarding the procedures for sediment handling, transport, and disposal; and
- iv. monitoring and sediment disposal record keeping practices.

2. Recommendations from Supporting Studies

Comment:

Recommendations were made by Golder Associates Inc. (Golder) to BIMC in Technical Memoranda and were submitted to the NWB by BIMC as Appendix A (Appendix A-3: Water Balance Memorandum and Appendix A-4: Water Quality Memorandum) of the Phase 1 WRMP (Baffinland Iron Mines Corporation, 2019). These recommendations refer specifically to actions to take at the Waste Rock Facility. CIRNAC requested that BIMC demonstrate that BIMC is committed to following Golder recommendations, and how these recommendations would be written into the Phase 1 WRMP. BIMC has achieved this by providing a Disposition Table in the Response to Intervener Comments (Baffinland Iron Mines Corporation, 2020) indicating where in the WRMP readers can find these commitments.

Within the Disposition Table, BIMC also states that they do not consider the recommendations for Water Balance or the Water Quality Model to be relevant to the



Waste Rock Management Plan, and have chosen some of the recommendations to implement in the Phase 1 WRMP. It is unclear whether BIMC plans to follow the remaining Golder recommendations, which are relevant for the WRF. In their response BIMC states that; "All models used in the development of the WRMP (water quality, water balance, thermal, geochemistry) will be updated prior to the next revision of the WRMP in 2021 following the collection of additional relevant data". CIRNAC recommends that the relevant data include use of mass loading rates based on observed run-off flow, water quality and geochemistry of the WRF, and a continued collection of climate data at the Mary River station.

Recommendation

CIRNAC recommends that BIMC follows the Golder recommendations for Water Balance to include relevant data such as mass loading rates based on observed run-off flow, water quality and geochemistry of the WRF, and a continue collection of climate data at the Mary River station.



D. REFERENCES

Works Cited

- Baffinland Iron Mines Corporation. (2019, December 31). Phase 1 Waste Rock Management Plan. *Revision 2*. BAF-PH1-830-P16-0029.
- Baffinland Iron Mines Corporation. (2020, March 13). Letter to the Nunavut Water Board Re: Response to Intervenor Comments, Phase 1 Waste Rock Management Plan Revision 2. *BIMC Response to Intervener Comments*.
- Crown-Indigenous Relations and Northern Affairs Canada. (2019a, May 14). Letter to the NWB Re: Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) Completeness Review for Baffinland Iron Mines Corporation (BIMC) Second Submission of Phase 2 Amendment Application for the Mary River Project under Type "A" Water Licence No. 2AM-MRY1325 Amendment No. 1.
- Crown-Indigenous Relations and Northern Affairs Canada. (2019b, July 15). Letter to the NWB Re: Crown-Indigenous Relations and Northern Affairs Canada Technical Review Comments on Baffinland Iron Mines Corporation Phase 2 Amendment Application for the Mary River Project, Water Licence 2AM-MRY1325 - Amendment No. 1.
- Crown-Indigenous Relations and Northern Affairs Canada. (2019c, September 23). Final Written Submission for Baffinland Iron Mines Corporation Mary River Project Phase 2 Proposal. Final Comment #8.
- Crown-Indigenous Relations and Northern Affairs Canada. (2020a, February 5). Letter to the Nunavut Water Board Re: Rock Management Plan (Revision 2) as part of the Phase 2 Amendment Application for the Mary River Project, Water Licence 2AM-MRY1325 - Amendment No. 1.
- Crown-Indigenous Relations and Northern Affairs Canada. (2020b, February 6). Technical Comments: Baffinland Iron Mines Corporation Mary River Project Phase 2 Proposal.