



Water Resources Division  
Resource Management Directorate  
Nunavut Regional Office  
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Your file - Votre référence  
2AM-MRY1325  
Our file - Notre référence  
CIDM# 1286004

June 22, 2020

Robin Ikkutisluk  
Licensing Administrator  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU, X0B 1J0  
E-mail: [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca)

**Re: Crown-Indigenous Relations and Northern Affairs Canada Review Comments  
for the Construction Summary Reports for the Mine Site Waste Rock Facility  
Pond Expansion and Drainage System for the Mary River Project, Water  
Licence No2AM-MRY1325 – Amendment No. 1**

Dear Ms. Ikkutisluk,

Thank you for your June 8, 2020 invitation to review the referenced Construction Summary Reports for the Mine Site Waste Rock Facility Pond Expansion and Drainage System for the Mary River Project, Water Licence No2AM-MRY1325 – Amendment No. 1, submitted by Baffinland Iron Mines Corporation (BIMC) on May 21, 2020.

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](mailto:bridget.campbell@canada.ca).

Sincerely,

Bridget Campbell,  
Water Resources Coordinator



## **Technical Review Memorandum**

**Date:** June 22, 2020

**To:** Robin Ikkutisluuk – Licensing Administrator, Nunavut Water Board

**From:** Bridget Campbell – Water Management Coordinator, CIRNAC

**Subject: Crown-Indigenous Relations and Northern Affairs Canada Review  
Comments for the Construction Summary Reports for the Mine Site  
Waste Rock Facility Pond Expansion and Drainage System for the Mary  
River Project, Water Licence No2AM-MRY1325 – Amendment No. 1**

**Region:**      ☐ Kitikmeot    ☐ Kivalliq    ☒ Qikiqtani

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### **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). Waste rock is stored at the Waste Rock Storage Facility, which encompasses a rock pile containing potentially acid generating (PAG) rock, a surface water drainage system, contact water holding pond, and a contact water treatment plant.

The Mary River Project is licensed under Nunavut Water Board Licence No. 2AM-MRY1325 – Amendment No. 1 . Part D, Item 17 of the licence requires the following of BIMC:

The Licensee shall submit a Construction Summary Report to the Board, within ninety (90) days following the completion of any structure designed to contain, withhold, divert or retain Waters or Wastes, as authorized by the Board. The construction summary report shall be prepared by an Engineer(s) in accordance with Schedule D, Item 1.

BIMC submitted two Construction Summary Reports on May 21, 2020, for the Mine Site Waste Rock Facility Pond Expansion and Drainage System and for the Waste Rock Water Treatment Plant. A summary of the subjects of recommendations can be found in Table 1.

A summary of the documents reviewed can be found in Table 2 of Section B. Detailed technical review comments are provided in Section C. References are listed in Section D.



**Table 1: Summary of Recommendations**

Recommendation	Subject
<b>R-01</b>	As-Built Drawings for the Waste Rock Facility Pond
<b>R-02, R-03</b>	Geotextile Performance at the Waste Rock Facility Pond
<b>R-04</b>	Construction Quality Control at the Waste Rock Water Treatment Plant

## **B. DOCUMENTS REVIEWED**

The following table (Table 1) provides a summary of the documents reviewed.

**Table 2: Documents Reviewed**

Document Title	Author, File No., Date
<b>Construction Summary Report for the Mine Site Waste Rock Facility Pond Expansion and Drainage System</b>	<b>Baffinland Iron Mines Corporation, Revision 0, 2020-05-01</b>
Appendix A:	Location of Construction Relative to Lease Boundaries
Appendix B:	Concordance Tables
Appendix C:	As-Built Documentation
Appendix D:	Golder Construction Quality Control Report & Layfield QA/QC
Appendix E:	Daily Construction Reports
Appendix F:	Design Specifications
<b>Construction Summary Report for the Waste Rock Water Treatment Plant</b>	<b>Baffinland Iron Mines Corporation, Revision 0, 2020-05-21</b>
Appendix A:	Map of WRF Expansion and Drainage System
Appendix B:	Design Basis Memorandum Waste Rock Pile Water Treatment Facility
Appendix C:	Engineering Drawings
Appendix D:	Waste Rock Management Plan
Appendix E:	WTP Operations and Maintenance Manual
Appendix F:	As-Built Documentation
Appendix G:	Concordance Tables



## **C. REVIEW COMMENTS**

### **1. As-Built Drawings for the Waste Rock Facility Pond**

#### **Comment:**

Section 6.0 (pg. 38) of the Construction Summary Report for the Waste Rock Facility Pond lists the as-built drawings which are provided in Appendix C. A number of the stamped as-built drawings in this list appear to have had no modifications from the issued for construction drawings. Although it is possible to build infrastructure exactly as it was drawn in the issued for construction drawings, changes are often made on site. It is unclear whether the infrastructure has been built exactly to the design, or if the changes have not been reflected in the as-built drawings.

#### **Recommendation:**

(R-01) CIRNAC recommends that BIMC confirm whether all of the as-built drawings listed in Section 6.0 reflect the changes on site, and whether they include all of the surveyed information.

### **2. Geotextile Performance at the Waste Rock Facility Pond**

#### **Comment:**

Issues with pond leakage have been observed from the Waste Rock Facility Pond in 2017, rendering the impermeability of the pond liner a concern to CIRNAC. Destructive and non-destructive testing on the membrane seams has been reported by Golder in Sections 4.5 to 4.8 of the Construction Summary Report for the Waste Rock Facility Pond. On page 5, Golder states that "... Layfield had not completed all non-destructive testing at the time of Golder demobilizing from site on November 27, 2019." It is not clear whether the remainder of these tests have been completed, or if this report includes results from tests carried out after Golder demobilized.

Further, based on the photos provided in Section 5 of the Construction Summary Report for the Waste Rock Facility Pond, portions of the geotextile and the membrane appear to have been installed in snow conditions. It is unclear whether the snow was cleared prior to installing the geotextile and the membrane to ensure that the installation is in compliance with the attached specifications.

#### **Recommendation:**

(R-02) CIRNAC recommends that BIMC clarify whether all tests on membrane seams have been completed and reported.

(R-03) CIRNAC recommends that BIMC clarify what measures were taken to ensure installation was in compliance with the specifications given there was snow on site.



### **3. Construction Quality Control at the Waste Rock Water Treatment Plant**

#### **Comment:**

From Section 3.0 Construction Quality Control (pg. 7) of the Construction Summary Report for the Waste Rock Water Treatment Plant, it is not clear how the material was determined to be suitable for construction and whether a third party geotechnical firm was involved in the onsite quality control. CIRNAC would consider it prudent to include discussions regarding the compaction testing on the granular base in the Construction Summary Report.

#### **Recommendation:**

(R-04) CIRNAC recommends that BIMC clarify how the granular base material was determined to be suitable for construction, and whether a third party geotechnical firm was involved in the onsite quality control.

## **D. REFERENCES**

### **Works Cited**

Nunavut Water Board. Type “A” Water Licence No. 2AM-MRY1325 – Mary River Iron Mine Project; Amendment No. 1. Signed by Thomas Kabloona, Nunavut Water Board, for Baffinland Iron Mines Corporation. Gjoa Haven, NU: July 31, 2015.