



December 11, 2016

Manager of Licensing  
Nunavut Water Board  
P.O. Box 119, Gjoa Haven NU X0B 1J0

**Re: Baffinland Iron Mines Corporation (Baffinland) - Submission October 2016 Biannual Geotechnical Inspection Report No. 2 – Water Licence Type 'A' No. 2AM-MRY1325**

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## **1. INTRODUCTION**

Under Part D, Item 18, of Baffinland Iron Mines Corporation (Baffinland) Type "A" Water Licence 2AM-MRY1325, Amendment No. 1, there is a requirement to conduct biannual geotechnical inspections of specified Mary River Project (the 'Project') infrastructure. Part D, Item 19, of the Type 'A' Licence states that:

"The Licensee shall conduct inspections of the earthwork, geological regime, and the hydrological regime of the Project Biannually during the summer or as otherwise approved by the Board in writing. The inspection shall be conducted by a Geotechnical Engineer and the inspection report shall be submitted to the Board within sixty (60) days of the inspection, with a covering letter from the Licensee outlining an implementation plan to respond to the Engineer's recommendations."

The first and second biannual geotechnical field inspection for 2016 was conducted by Barry Martin of Barry H. Martin Consulting Engineer and Architect (BMCE) of Timmins, Ontario. The focus of the inspections were on Water Licence related infrastructure located at the main camp sites, known as the Mary River Mine Site and Milne Port Site Camps. Mr. Barry Martin has been conducting annual geotechnical inspections for the Project since 2008. The attached report covers the second inspection that was conducted between October 5 and October 11, 2016. The report for the first inspection was submitted to the NWB on September 30, 2016.

During the October 2016, inspection, the following site facilities were inspected:

### **Mary River Mine Site**

- Bulk Fuel Storage Containment (Historical Bladder Farm)
- Generator Fuel Storage Facility Containment
- Polishing/Waste Stabilization Pond No. 1
- Polishing/Waste Stabilization Ponds Nos. 2 and 3 (constructed as a two-cell structure)
- Helicopter Fuel Cell Containment
- Various Hazardous Waste and Materials Storage Areas
- Jet Fuel Tank and Pump Containment
- Solid Waste Disposal Site
- Mine Site Steel Fuel Tank Farm Containment
- QMR2 Quarry
- Crusher Pad Drainage Containment
- Waste Rock Pile Drainage Containment
- Jet "A" Aircraft Containment

**Milne Inlet Site**

- Existing Polishing/Waste Stabilization Pond
- Barrel Fuel Storage (constructed as a two-cell structure)
- Various Hazardous Waste and Materials Storage Area
- Fuel Tank Farm and Fuelling Facility Containment
- New Sewage Effluent Pond
- Land Farm Containment
- Contaminated Snow Containment
- Ore Stockpile Sediment Ponds East and West
- Q1 Quarry

The attached report presents the findings of the October inspection and recommendations for the aforementioned structures. Sections 2.0 and 3.0 of this letter summarize Baffinland's plan for implementing recommendations. Where this is no mention of particular infrastructure, there were no concerns identified by BMCE for same.

**2. MARY RIVER MINE CAMP RECOMMENDATIONS**

- **Waste Storage Containment MS-HWB-1**

The integrity of the cell liner is questionable.

Baffinland Action: The cell is currently not being used and has been left empty. The Site Services Department supervisors are aware that this area shall not be used for the storage of hazardous waste or substances until it has been repaired. Alternatively, this facility may be decommissioned.

- **Hazardous Waste Containment MS-HW-6)**

The liner at the back of the cell on the dyke was observed to be torn, likely caused by placing a pallet of barreled waste into the cell. The torn liner should be repaired.

Baffinland Action: Baffinland will repair the torn liner during the 2017 open water season. In the meantime, stormwater and snowmelt in the berm will not be allowed to reach the height of the tear.

- **Solid Waste Disposal Site**

At the time of the inspection, a snow debris fence had been erected.

Baffinland Action: During the month of August, a snow/debris fence structure was erected to control debris originating from the active face of the landfill. The landfill is currently inspected bi-weekly for non-compliant conditions including the dispersion of landfill debris on the tundra from the facility. The new fence has been observed to be effective in controlling windblown debris and will continue to be monitored for effectiveness.

- **QMR2 Quarry**

It was observed that there was some instability in areas of the pit where there were fractured zones and subsidence observed.

Baffinland Action: The quarry is still active. The current quarry operational plan developed by Baffinland's Mine Engineering Department considers the controls required to operate safely in the fracture zones and areas of subsidence. The plan has been submitted to and approved by the Mines Inspector (Nunavut Workers Safety and Compensation Commission). The quarry will eventually be decommissioned and reclaimed in accordance with the current Interim Closure and Reclamation Plan.

### **3. MILNE PORT CAMP RECOMMENDATIONS**

- **Ore Stockpile Sediment Pond East**

Some tears were observed at the inlet to the containment facility. A review of the use of ballast over the exposed liner should be undertaken in consideration that there appears to be some liner damage due to uplift from wind.

Baffinland Action: Additional used tire ballast has been placed on exposed areas during November 2016. The liner near the inlet of the pond will be repaired by end of June 2017.

- **Ore Stockpile Sediment Pond West**

The west end of the south side of the liner needs to be better keyed in. The inlet to the pond is allowing water to potentially be conducted under the liner and should be repaired. Additional tire ballast should be placed on exposed areas of the liner.

Baffinland Action: The liner will be fully keyed in as recommended by the end of June 2017. The inlet to pond facility is to be repaired prior to end of May 2017. In the meantime, the flow of any water under the liner shall be minimized by the targeted application of diversion structures/pumping. Additional used tire ballast has been placed on exposed areas of the liner during November 2016.



We trust that this submittal satisfies the requirements the geotechnical requirements as outlined in our Water Licence. Should you have any questions, please do not hesitate to contact Jim Millard, Environmental Manager, at 416-364.8820 x6016 or 902-403-1337, or by e-mail at [jim.millard@baffinland.com](mailto:jim.millard@baffinland.com).

Best Regards,

James Millard  
Environmental Manager

Annual Geotechnical Inspections, Mary River Project, Second Inspection of Two, October 2016, prepared by Barry Martin Consulting Engineer and Architect for Baffinland, dated December 2016.

Cc. Justin Hack, Erik Allain (AANDC)  
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