



October 2, 2015

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

Dear Ms. Beaulieu:

**Re: Baffinland Iron Mines Corporation (Baffinland) - Submission of 2014 Annual Geotechnical Inspection, Water Licences Type 'A' No. 2AM-MRY1325**

---

## **1. INTRODUCTION**

Under Part D, Item 18, of Baffinland Iron Mines Corporation (BIMC) Type "A" Water Licence 2AM-MRY1325, Amendment No. 1, there is a requirement to conduct 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."

During 2015, the geotechnical field inspection was conducted by Barry Martin of Barry H. Martin Consulting Engineer and Architect (BMCE) of Timmins, Ontario. The focus of the inspection was 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. This report covers the first of two biannual inspections that was conducted July 30<sup>th</sup> to August 4<sup>th</sup>. A second inspection was completed September 24<sup>th</sup> to September 29<sup>th</sup>, and that report is forthcoming.

During the July/August, 2015, 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
- Barrel Fuel Containment (constructed as a two-cell structure)(MS-HWB-3 and MS-HWB-4)
- Hazardous Waste Storage (MS-HWB-2)
- Enviro-Tank Storage (constructed contiguous with hazardous waste storage and stove oil storage)
- Stove Oil Storage (MS-HWB-5)
- Jet Fuel Tank and Pump Containment
- Solid Waste Disposal Site

- Mine Site Steel Fuel Tank Farm Containment
- Quarry
- Crusher Pad Drainage Containment
- Waste Pile Drainage Containment
- Jet "A" Aircraft Containment
- Hazardous Waste Containment

#### **Milne Inlet Site**

- Existing Polishing/Waste Stabilization Pond
- Barrel Fuel Storage (constructed as a two-cell structure)
- Hazardous Waste Storage (constructed as a two-cell structure) (MP-HWB-3, MP-HWB-4, and MP-HWB-5)
- Fuel Tank Farm
- New Sewage Effluent Pond
- Land Farm
- Contaminated Snow Containment
- Ore Stockpile Sediment Ponds East and West
- Quarry

Attached, herewith, is BMCE's 2015 geotechnical report no. 1 (of two) which presents the findings of the July/early August 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**

- **Barrel Fuel Containment (Now MS-HWB-3 and MS-HWB-4)**

The north dyke in the north cell has had a track fork lift travel over the berm at the east end. It was recommended that signage be placed to prevent this before damage occurs to the liner.

Baffinland Action: This issue has been brought up by supervisors to their team members and the berms are being monitored to ensure no further disturbance. Consideration is being given to the strategic installation of barriers and/or signs. This will be further discussed with the AANDC Water Resource Inspector and the plan further developed/refined as appropriate to prevent this from reoccurring. Final measures to be implemented by end of October 2015.

- **Enviro Tank Storage (Now MS-HWB-1)**

The cell was observed to be dry, raising concerns regarding the integrity of the liner. It was recommended that the geotextile over the liner be checked and the granular cover be made good prior to continuing use of this cell.

Baffinland Action: Site Services supervisors have already been made aware that this area shall no longer be used for the storage of hazardous waste or substances until it is fully examined and repaired.

- **Mine Site Steel Fuel Tank Farm Containment**

All work was observed to be complete excepting the installation of the sump pits that are on site awaiting installation and which shall be utilized to facilitate the removal of water that collects from precipitation. It was recommended that at least one sump be installed as per the drawings prepared for this facility

Baffinland Action: A sump will be installed during the open water season of 2016, as soon as conditions allow.

- **QMR2 Quarry**

At the time of the inspection, the quarry was being actively mined. Overburden from the top surface of the quarry was being cleaned and pushed as thawing permits, to serve as long term protection against moving aggregate and to promote long term stability. There were a number of cobbles and larger boulders above the upper bench of the quarry that may be unstable and potentially hazardous. It was recommended that at the time of closure, the quarry shall be closed in a manner as set out to maintain long term stability.

Baffinland Action: The quarry is still active and the unstable area noted in the inspection had already been identified and measures are planned for stabilizing. The QMR2 Quarry Management Plan and Interim Closure and Reclamation Plan include requirements to ensure for long term stability at the time of closure.

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

- **Hazardous Waste Storage (MP-HWB-3, MP-HWB-4, and MP-HWB-5)**

A temporary containment cell (MP-HWB-5) was constructed in 2014 using a one piece liner and wood timber curb for the short term storage of excess hazardous waste. It was recommended that the use of this cell be discontinued when storage capacity is available elsewhere.

Baffinland Action: Containment cell MP-HWB-5 was decommissioned during August 2015.

- **Fuel Tank Farm**

It was noted that the sump placed in the facility was located at the high end of the containment. There was water observed ponding in the low end of the containment. It was recommended that the sump be relocated to the low point at the north end of the containment or an addition sump be installed.

Baffinland Action: The design engineers for the facility have been notified of this observation and have been asked to develop an action plan to address this concern. An action plan will be presented in the cover letter that will accompany the second 2015 geotechnical inspection report to be provided in November 2015.

- **Landfarm**

It was observed that the landfarm containment was complete with the exception of some soil cover in the area of the sump. It was recommended that the remaining dyke structure without protective cover over it be covered as per the design drawings.



Baffinland Action: This is duly noted and the geotextile liner will be covered prior to April 30, 2016.

- **Ore Stockpile Sediment Ponds East and West**

There were concerns noted regarding the stability of the liners. It was recommended that more soil ballast on the south edge be applied and possibly tire ballast over the liner which appears subject to impacts from wind. Used tires were suggested for this purpose.

Baffinland Action: The design engineers for these facilities have been notified of these observations and have been asked to develop an action plan to address the issues. Action plans will be presented in the cover letter that will accompany the second 2015 geotechnical inspection report to be provided in November 2015.

- **Loading Area Contaminated Storage (Now MP-HWB-1)**

It appeared that travel has taken place over the north dyke of the facility during the placing of containers. However, it did not appear that the liner had been damaged. It was recommended that action be taken to prevent travel over the berms to prevent potential damage to the liner.

Baffinland Action: This issue has been brought up by supervisors to their team members and the berms are being monitored to ensure no further disturbance. Consideration is being given to the strategic installation of barriers and/or signs. This will be further discussed with the AANDC Water Resource Inspector and the plan further developed/refined as appropriate to prevent reoccurrence. Final measures to be implemented by end of October 2015.

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 647-253-0596 or 902-403-1337 or by e-mail at [jim.millard@baffinland.com](mailto:jim.millard@baffinland.com).

Best Regards,

James Millard, M.Sc., P.Geo.  
Environmental Manager

Attach: Annual Geotechnical Inspections, Mary River Project, Initial Inspection of Two, July/August 2015, prepared by Barry Martin Consulting Engineer and Architect for Baffinland, dated August 5, 2015.

cc. Justin Buller (QIA)  
Justin Hack, Erik Allain (AANDC)  
Erik Madsen, Bernard Laflamme (Baffinland)