GENIVAR

October 25, 2012

Baffinland Iron Mines Corporation
120 Adelaide Street West, Suite 1016
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Attention: Dave McCann
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RE: ANNUAL GEOTECHNICAL INSPECTION 2012-08-16
BAFFINLAND IRON MINES CORPORATION
OUR REFERENCE #10-098 (101-15104-01)

1.0 Introduction

GENIVAR Consulting Engineers, completed the 5th annual water license geotechnical inspection of the on-site containment structures at Baffinland Iron Mines Corporation (BIM) Mary River Project. The containment structures for the operation are located at two main campsites known as the Mary River Project.

The soil structures reviewed are as per the following:

Mary River Mine Site

- Bulk Fuel Storage Facility Containment
- Generator Fuel Storage Facility Containment
- Polishing/Waste Stabilization Pond No. 1
- Polishing/Waste Stabilization Ponds No. 2 and No. 3 (Constructed as a 2 cell structure)
- Helicopter Fuel Cell Containment
- Barrel Fuel Containment (Constructed as a 2 cell structures)
- Stove Oil Storage
- Enviro-Tank Storage (Constructed contiguous with hazardous waste storage and stove oil storage).
- Hazardous Waste Storage
- Jet fuel Tank and Pump Containment
- Solid Waste Disposal Site.

A site plan for the Mary river site showing most containment structures is attached.

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Milne Inlet Site

- Bulk Fuel Storage Facility Containment
- Polishing/Waste Stabilization Pond
- Barrel Fuel Storage (Constructed as a 2 cell structure)
- Hazardous Waste Storage (Constructed as a 2 cell structure)
- Oil and Antifreeze Containment
- Jet "A" Pump Containment
- 5M Litre Steel Fuel Storage Tank

This report presents the findings.

2.0 Methodology for Inspection

The geotechnical inspector was Mr. Barry H. Martin, P. Eng., who reviewed the sites on August 8, 9 and 10, 2012. The inspections were focused principally on the following aspects.

1. The structures were inspected for conformance with the design basis as presented in as-constructed and as-built drawings (provided in the first report).

2. The structures were specifically inspected for settlement, cracking, and seepage through the berms.

3. The areas around the sites were examined for evidence of seepage.

Photographs were taken to document observations made during the inspection and are attached.

3.0 Mary River Camp

3.01 General

This area has had precipitation almost daily since June. As a result, the containment dykes all contain water.

A monitoring surveillance program is in place to test storm water that accumulates within dykes. As required, water that does not meet water licence effluent requirements is treated on site prior to release.

At the Bulk Fuel Storage Facility Containment the water that collects within the dyke is treated at the east of the containment structure.

3.2 Bulk Fuel Storage Facility

General Conditions

The containment structure has not varied from its use as noted in the 2009 report. Some bladders are empty and some bladders are currently full.

Stability

At the time of our review the water had recently been removed (3 days earlier) from the containment and treated for release. There was a small amount of water ponding in a depression or sump in the gravel from which water was removed.

The structure was visually inspected for any signs of cracking or subsidence. There was no indication of any settlements, seepage, or cracking in the soil structures that formed the dykes. As well, there was no indication of seepage at the base of the structure around the exterior. The soil structure is considered to be stable in the present condition and is in conformance with the design basis for the facility.

There had been considerable precipitation prior to our inspection. The presence of small amounts of water in the gravel in the bottom of the structure is an indication of the integrity of the liner.

Recommendations

There are no recommendations to be made at this time other than to continue the pumping and treatment procedure currently undertaken.

3.3 Generator Fuel Storage Facility Containment

General Conditions

The containment structure has not varied from its use since our 2010 inspection. At that time our recommendation was to limit the fuel contained in this containment facility to 77.376 litres.

There is currently one bladder in this containment facility that has a capacity when full of 120,000 litres. This particular bladder contains 77,376 litres when the bladder is 32" high. The guideline for BIM is to fill this bladder to no more than 76 cm (30") which represents 70,097 litres.

A sign is posted to limit the bladder height at 30".

At the time of our visit on August 8, 2012, the bladder height was measured at 19 ½ ". There is minimal water ponding in the bottom of the containment at the time of our review.

Stability

The structure was visually inspected for any signs of subsidence or cracking. There was no sign of seepage at the base of the structure noted. The soil structure is considered to be stable in its present condition and is in conformance with our design principles.

Recommendation

We recommend that BIM control the fuel in the bladder at 70,097 litres (30" high).

3.4 Polishing/Waste Stabilization Pond No. 1

General Conditions

PWSP No. 1 continues to be utilized as a holding facility for sewage plant effluent that does not meet water effluent quality criteria.

Currently the pond is being used primarily as a repository for sewage sludge that is periodically removed from the RBC.

The supernatant from PWSP no. 1 is periodically decanted to PWSPs Nos. 2 and 3 where it is tested and treated as required to meet Water Licence effluent requirements.

At the time of our visit there was considerable freeboard to accommodate further sewage and the structure readily conforms to its design intent.

Stability

Our review of the area around the pond at the base of the slopes showed no sign of seepage and hence we conclude that the liner has been effective in containing sewage and there are no tears or ruptures in the membrane, excepting some minor tears from past activity at the top of the dyke wall above the allowable effluent level in the structure.

A review of the top of the dyke showed no indication of cracking or settlement which would indicate stresses within the structure.

Most tears that had occurred in the liner on the top of the dyke and have been patched during the period between reviews in 2008 and 2009 are holding well. As well there are no signs of weather related deterioration of the liner where it is exposed.
Monitoring points have been set up on the top of the dyke and have been monitored since 2009. Settlements of approximately 10 cm have occurred since that time. These settlements have not led to any stress cracks in the structure.

There appears to be no sign of erosion of the dykes, even with the large amount of precipitation that occurred this current summer season.

Recommendations

We recommend that monitoring of the top of the berm continue on an annual basis through 2013. With the excellent condition of the dyke construction, we see no reason to complete this function other than annually prior to the next inspection.

3.5 Polishing Ponds/Waste Stabilization Ponds #2 and #3

General Conditions

This structure was designed and constructed as a 2 cell structure.

Treated sewage effluent from the RBC is currently discharged to PWSPs Nos. 2 and 3. The treated effluent is tested for Water Licence effluent requirements, treated if necessary, and discharged to the environment.

At the time of our visit there was considerable freeboard to accommodate further sewage and the structure readily conforms to its design intent.

Stability

Our review of the area around the pond at the base of the slopes showed no sign of seepage and hence we conclude that the liner has been effective in containing the sewage and there are no tears or ruptures in the membrane.

Longitudinal cracking which appeared in the dykes of PWSP#3 due to the melt of permafrost wedges in 2009 has not reoccurred and we consider this structure to be stable in its present condition.

Monitoring points have been set upon the top of the dyke and have been monitored since 2009. Settlements in the order of up to 10 cm have occurred since that time. These settlements have not led to any stress cracks in the structure.

There appears to be no sign of erosion of the dykes and plants are continuing to seed themselves on the dykes. This growth is minimal however.

Recommendations

We recommend that monitoring of the top of the dyke continue on an annual basis through 2012. With the excellent condition of the dyke construction we see no reason to complete this function other than annually prior to the next inspection.

3.6 Helicopter Fuel Tank Containment

General Conditions

The structure was designed and constructed as a single cell structure that contains a 1000 gal fuel storage tank.

The structure currently conforms to its design intent.

In the past a liner clad wood curb has been added to the top of the berm to prevent the erosion of gravel off the berm, caused by pulling the fuelling hose from within the dyke out to the helicopters to provide them with fuel.

Stability

Our review of the area around the pond at the base of the slopes showed no sign of seepage. There is a minor amount of water ponding in the bottom indicating the integrity of the liner.

A review of the exterior and the top of the berms showed no sign of cracking or settlement which would indicate stress within the structure.

The structure is considered to be stable in its present condition.

Recommendation

We have no recommendations with respect to this structure.

3.7 Barrel Fuel Containment

General Conditions

This particular structure which we called "Barrel Fuel Containment" in our 2010 inspection report is a two cell structure which is currently used to accommodate barrels of Jet A fuel and cubes of lubricant in one cell and a number of stove fuel barrels on skids and a number of fuel dispensing tanks in the other cell.

This structure was used as containment for skids of barrels containing stove fuel in 2011, but is empty at this time.

Stability

Our review of the area around this containment structure showed no sign of seepage. This shows that there is reasonably little chance of tearing or rupture of the membrane.

A review of the exterior and top of the dyke showed no sign of cracking or settlement which would indicate stresses within the structure.

The structure is considered to be stable in its present condition.

Recommendations

We have no recommendations with respect to this structure.

3.8 Hazardous Waste Storage

General Conditions

This particular cell was constructed contiguous with an existing cell which is referred to on site as the "Enviro Tank Storage" from drawings provided by our office in 2010 and conforms to our drawings. It is also contiguous with the Stove Oil Storage cell.

This structure was used as containment for skids of barrels containing stove fuel in 2011, but is empty at this time.

Stability

Our review of the area around this cell at the base of the slopes, showed no sign of seepage.

The structure appears stable in its present condition.

Recommendation

There are no recommendations at this time.

3.9 Enviro Tank Storage

General Conditions

This particular structure is constructed contiguous with the Hazardous Waste Storage constructed in 2010 and the Stove Oil Storage cell. It now is used to store lubricant cubes and hazardous waste.

Our review of the area around this cell at the base of the slopes showed no sign of seepage.

The structure is stable in its present condition.

Recommendations

There are no recommendations at this time.

3.10 Stove Oil Storage

General Conditions

This particular structure had been used to store barrels of stove fuel in 2011.

The structure is currently empty.

This structure was constructed in accordance with a standardized drawing provide by this office utilizing a one piece liner.

Stability

Our review of the area around the containment structure shows no signs of seepage. This shows that there is reasonably little chance of tearing or rupture of the membrane.

A review of the exterior and top of the dyke showed no sign of cracking or settlement which would indicate stresses with the structure.

The structure is considered to be stable in its present condition.

3.11 Jet Fuel Tank and Pump Containment

Past review of this structure has indicated that a one piece liner was installed under the sand/gravel but no geotextile was installed as protection over or under the liner.

I note that there is no readily evident indication that there has been any contaminant spilled. The fuel stored within it is within a double walled tank and any minor spillage from the pump would leave little noticeable residue.

However, there was no water ponding in the containment. This was brought to the attention of administration on site.

On August 14th and 15th, at the recommendation of the inspecting Engineer, the containment was reconstructed as intended with geotextile installed on both the underside and top of a new one piece liner.

Complete photographic details of the reconstruction were forwarded to the Engineer (B. H. Martin, P. Eng.,) and the reconstruction is approved.

Stability

The dykes are now readily able to contain any spillage.

Recommendation

In consideration of the recent work completed there are no recommendations at the present time.

3.12 Solid Waste Disposal Site

The Solid Waste Disposal site was initially reviewed in 2011 but not reported on as part of this report.

The initial berms were constructed on the south east, northeast and south west sides as per plans prepared.

Berms appear stable and garbage is being placed and covered as it is placed within the berm structures.

3.13 Overview

This report is the fifth annual Geotechnical Inspection carried out at the Mary River and the Milne Inlet sites on behalf of Baffinland Iron Mines Corporation.

Over this four year period between the first and the fifth inspection we have noted a number of things being the following:

Erosion

The weather conditions are such that little or no erosion takes place from wind or rain and the dykes constructed of the sand/gravel which forms the basis of the soils at the sites remain stable at slopes of 3:1 and 4:1.

Vegetation

The dykes, after a four year period have minor vegetation growing on the horizontal surfaces and it shall probably take decades for the dykes to obtain what we feel would be considered a stable condition with vegetation stabilizing the surface.

4.0 Milne Inlet

4.1 Bulk Fuel Containment Facility

General Conditions

The structure around the fuel farm currently conforms to the design of the facility. A review of the interior of the dyke showed only minor ponding of water with oil stains on the interior sand.

The treatment system used to treat the water prior to release to the environment remains in place and was operating at the time of our review.

The ponding of water, although minor, continues to confirm the integrity of the liner.

Stability

Our review of the area around the ponds at the base of the slopes showed no signs of oil, water or oil/water mixtures and hence we conclude that the integrity of the liner has been maintained. Tears or ruptures in the liner were not observed.

There was no sign of any settlements or seepage, at the soil structures forming the dykes.

There was one minor crack in the dyke on the north side of the north east dyke which does not affect the structural integrity of the dyke and appears to be due to the thawing of an ice lens under the dyke in this particular location.

The structure is considered to be stable in its present condition.

Recommendations

The performance of the structure in the past (2009) has been tested with ponded water within the structure. The observations noted during our past inspections have supported the conservative design of the structure. We have no recommendations at this time.

4.2 Polishing Pond/Waste Stabilization Pond

General Conditions

The PWSP was designed as storage for sewage effluent from the RBC sewage plant installed at the site during the start-up phase of the operation. At the time of this inspection, the camp was open for a small Environmental crew.

There was considerable capacity remaining in the storage facility to accommodate the camp during the start-up of the RBC plant until release criteria are met for the sewage plant.

Currently the Milne PWSP structure conforms to the design basis for the facility.

Stability

With the PWSP constructed as it is, the structure is considered stable for long term use.

There was no sign of seepage at the bottom of the dyke. There was no sign of settlement or cracking which are signs of stress in the structure.

Recommendations

Currently, the Milne Inlet PWSP conforms to the design intent and we have no recommendations.

4.3 Barrel Fuel Storage

General Conditions

This particular structure is constructed as a two cell structure.

The structure around these two cells conforms to standardized drawings prepared by our office for such a facility.

At the time of our inspection there was one cell in use (east cell) and one not in use (west cell). There was minor water ponding at the top of the sand cover in the east cell.

The west cell which was rebuilt this year was dry and not holding water. As the cell was only just rebuilt with a one piece liner and geotextile protection on the liner prior to my visit, it held no water.

Stability

Our review of the area around the ponds at the base of the slopes showed no signs of seepage.

The structures are considered stable in their present condition.

Recommendations

As this cell was recently constructed with a one piece liner and photos provided, we have no recommendations.

4.4 Hazardous Waste Storage

General Conditions

This particular structure is constructed as a 2 cell structure.

This structure conforms to the design basis for the facility.

I noted that during our last inspection there were two tears noted in the liner on one cell. This was brought to the attention of administration.

Repairs to these two minor tears were subsequently made, prior to issuing of the last report in final format, by replacing the total liner in one cell.

This was confirmed to us by Baffinland. Hence we confirmed that this structure was acceptable.

This cell was found to have water ponding at the top of the sand cover in the bottom of the cell.

This confirms the integrity of the liner in this cell.

The second cell (closest to the sea) was reconstructed with one piece liner and geotextile protection within the week prior to our inspection. There was no water ponding within the cell as with the others.

We excavated some of the sand over the liner in the bottom of the cell and found moisture in the sand to 4" above the liner confirming the integrity of this new liner.

Stability

Our review of the area around the dykes at the base of the slopes showed no signs of seepage. There were no signs of settlement of cracking which are signs of stress in the structure.

Recommendations

Currently this containment structure conforms to the design intent and we have no recommendations.

4.5 Oil and Antifreeze Containment

General Conditions

This particular structure is located between the air strip and the Bulk Fuel Storage.

The structure around this containment area conforms to standardized drawings prepared by our office.

Stability

Our review of the area around the ponds at the base of the slopes showed no signs of seepage.

There is no cracking or settlement observed in the dyke structures which can be signs of stress in the structure.

Recommendations

We have no recommendations to be made with respect to this structure.

4.6 Jet "A" Pump Containment

This small cell on the north side and adjacent to the Bulk Fuel Storage Facility containment had not been reported on earlier. This containment is to control spillage during refuelling.

There was water ponding above the sand cover but no sign of oil or hydrocarbon contamination was present.

Stability

Our review of the area around the dykes showed no sign of seepage.

There is no cracking or settlement observed in the dyke structures.

4.7 5M litre Steel Fuel Storage Tank

Although we were not the design Engineers for the containment around the 5M litre fuel tank, we reviewed the dyke protection around the fuel tank.

We noted the following:

1. There was water ponding at the top of the sand cover confirming the integrity of the liner.

2. There was rip-rap on the exterior of the dyke to control erosion.

3. Sumps were in place with pumps and appeared effective.

4. There was no sign of fuel contamination of water in the sump.

Stability

There was no cracking or settlement observed in the containment structures.

Recommendations

We have no recommendations to make with respect to this structure.

We trust that the foregoing report is acceptable for inclusion into your report for the Nunavut Water Board.

Respectfully submitted,

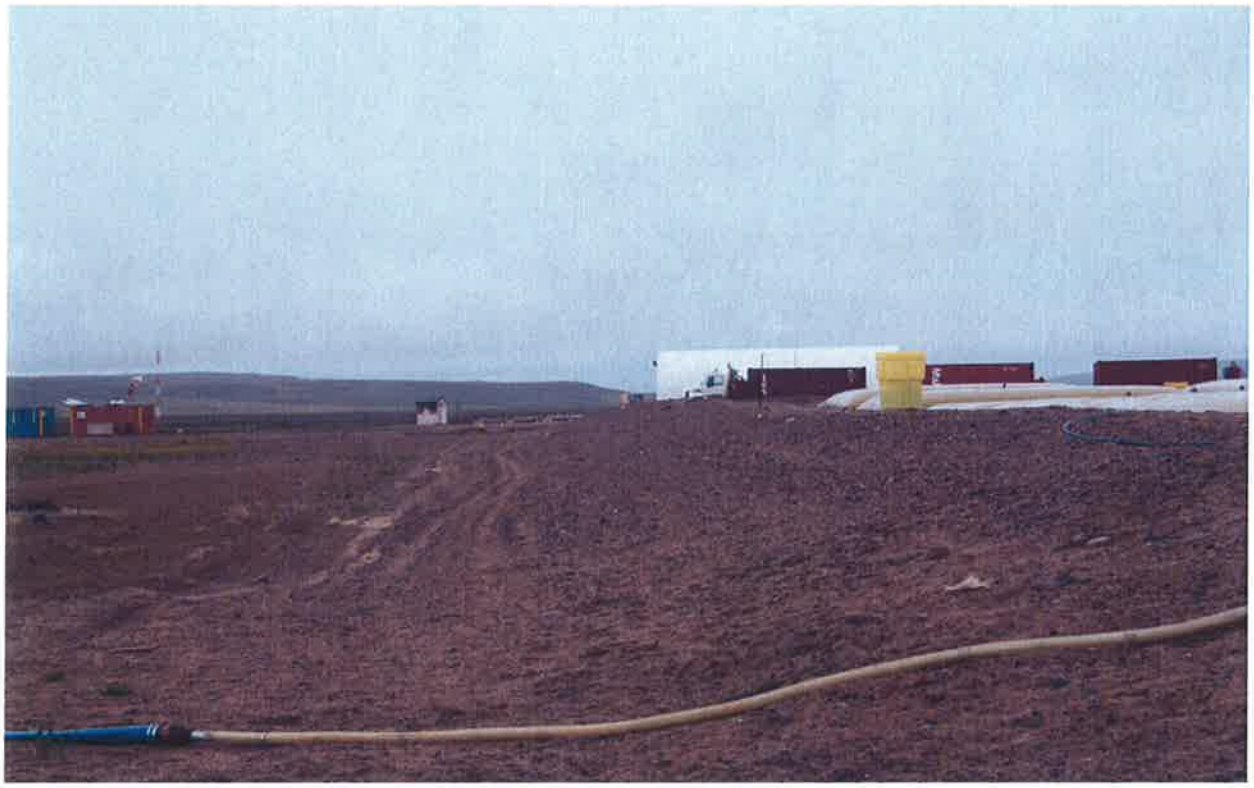
GENIVAR

Barry H. Martin, P. Eng., MRAIC
BHM/jw

c.c. Jim Millard

Bulk Fuel Storage Facility Containment.

Treatment operation at the Bulk Fuel Storage Facility Containment.



Outside slope of dyke at the Bulk Fuel Storage Facility containment.

Polishing/Waste Stabilization Pond No. 1

Polishing/Waste Stabilization Pond No. 3.

Vegetation Starting to grow on top of dyke only on PWSP #2.

Outside slope of dyke at PWSP No. 3.

PWSP No. 2

Outside slope of dyke at PWSP No. 2

Helicopter Fuel New Containment Cell, recently reconstructed.

Barrel Fuel Containment Cell.

Barrel Fuel Containment Cell

Outside slope of dyke at Barrel Fuel Containment Cell.

Stove Oil Storage now empty.

Hazardous Waste Storage now empty. Note water just at top of gravel.

Enviro Tank Storage now used as hazardous waste and lubricant cube storage.

Jet Fuel Tank and Pump Containment.

South east containment berm at solid waste disposal site looking north east.

North east containment berm at solid waste disposal site looking north west.

Solid waste disposal site looking west showing solid waste ready to be covered.