November 25, 2019

Assol Kubeisinova
Technical Advisor, NWB
P.O. Box 119
Gjoa Haven, NU X0B 1J0

RE: Submission of 2019 Geotechnical Inspection Report No. 2 (September 2019)

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

> "The Licensee shall conduct inspections of the earthworks and geological and hydrological regimes 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, including a cover letter from the Licensee outlining an implementation plan to respond to the Engineer's recommendations."

In 2019, Baffinland addressed a significant number of the recommendations arising from the first biannual geotechnical field inspection conducted between June 27 and July 2, 2019. The following summarizes the recommendations which were addressed prior to the second inspection in late September.

- Polishing/Waste Stabilization Ponds (3 PWS Ponds) : Repaired minor damages on the liners on the crest of the berms. Backfilled areas of minor truck-tire related depressions on top of the berms with sand and gravel.
- Mine Site Hazardous Waste Berms (HWB) HWB-3 and HWB-4: Removed damaged wood pallets and other debris from the cells to prevent potential damage to the liners.
- Mine Site HWB-6: Implemented extensive clean-up and repair work at this cell to rectify berm disturbance from truck and foot traffic, and cracking and tearing of the liner identified on the upstream face and crest of the berm. Completion of additional manual fine grading of the rough fill surface will be undertaken during spring/early summer 2020. A single ramped access point was also constructed for this cell.
- Mine Site HWB-7: Reinstated geotextile (covering the liner) and soil cover in areas where minor damages were noticed to prevent potential damage to the liner in the future.
- MS-06 – Surface Water Collection Pond Adjacent to Crusher Pad: Cleaned silt blocked culvert, restoring uninterrupted flow of surface water toward the pond.
- MS-08: Upgraded surface contact water drainage ditches around the waste rock dump and reconstructed the MS-08 sedimentation pond, including removing the existing liner and repairing the subgrade.

- Jet Fuel Storage: Completed maintanance to rectify exposed geotextile fabric exposure at locations along the berm's crest. Additional manual fine grading of the soil cover placed will be completed during the spring/early summer 2020.
- CLSP Check Dams: Baffinland continues to remove and dispose of collected silt at the check dams on an as-needed basis to prevent siltation entering Camp Lake.
- Mine Site Treated Effluent Discharge Area: Placement of rock fill across a naturally eroded area to provide slope stability.
- Milne Port HWB-2: Reconstructed perimeter berm and covered exposed liner. The cell was re-graded using clean granular soils.

Note that due to potential liner damage, Mine Site HWB-1 is currently not used and has been left empty. This facility will not be used for the storage of hazardous waste or substances until it has been repaired. Alternatively, this facility may be decommissioned.

The second biannual geotechnical field inspection for 2019 was conducted by Laszlo Bodi, M.Sc., P.Eng., Principal Civil/Geotechnical Engineer with Wood Environment and Infrastructure Solutions. The focus of the inspection was on the Water Licence related infrastructure located at the Mary River Mine and Milne Port sites. The attached report covers the second inspection, which was conducted from September 23 - 26, 2019.

During the September 2019 inspection, the following site facilities were inspected:

Mary River Mine Site

- Polishing/waste stabilization ponds (PWS ponds 1 - 3)
- Hazardous waste berms - (HWB-1 to HWB-7)
- MS-06 and MS-08 surface water collection ponds and ditches
- Generator Fuel Berm
- Bulk Fuel Storage – aerodrome fuel storage, existing diesel fuel farm, and the new fuel farm
- Solid-waste disposal site (non-hazardous landfill)
- Camp Lake Silt Pond (CLSP) check dams
- Treated effluent discharge area

Milne Inlet Port Site

- Hazardous waste berms - (HWB-1 to HWB-4)
- MP-01A pond
- MP-03 fuel storage
- MP-04 and MP-04A landfarm and contaminated snow dump
- Surface water collection ponds and ditches adjacent to the ore stockpile (MP-05 and MP-06)
- Surface water collection ditches (P-SWD-3, P-SWD-5, P-SWD-6, P-SWD-7, W3/W14, 380M pad)
- Tote road ditches and culverts (conveying surface water from the quarry area)

The attached report (Attachment 1) presents the findings of the September 2019 inspection and recommendations for the aforementioned structures. The following subsections of this letter summarize Baffinland's plan for implementing recommendations.

Recommendations and Implementation Plan for the Mary River Mine Site Infrastructure

Polishing/Waste Stabilization Ponds (3 PWS ponds)

Wrinkled surficial liner was observed in areas around ponds 2 and 3. Large timbers and other miscellaneous items (e.g. used tires) used as weight to secure the liner in-place pose a risk to the liner should ice develop in areas of trapped water within the liner wrinkles and displace the items across the liner. All hard materials other than used tires should be removed from the liner, as noted during the first (June 27 – July 2) inspection. Timbers should also be removed from inside the ponds and from the surface of the berms to prevent potential liner damage.

Baffinland Action: Clean-up of the specified areas to remove hard materials (except used tires) and timbers during spring/early summer 2020.

Mine Site Hazardous Waste Berms

HWB-6

A few boulders were noted at the northern corner of the cell within the berm's profile. These boulders are prone to ice jacking and should be removed and replaced by granular fill.

Baffinland Action: Remove and replace the boulders at the northern corners with granular fill to ensure continued liner integrity in spring 2020.

MS-06 – Surface Water Collection Pond Adjacent to the Crusher Pad

Minor water seepage was observed as ice mount at the toe of the embankment where the crusher pad ditch embankment fill meets the tundra.

Baffinland Action: The identified seepage at the crusher ditch is currently being assessed and potential remedial measures are being reviewed by Golder Associates.

Generator Fuel Berm

Disturbance by foot-traffic along the berm's crest was noted as well as some sloughing of the upstream slope of the berm at the south-east corner of the pond, as previously identified during the first inspection. Note that the berm did not exhibit any signs of instability and the liner appears to be intact.

Baffinland Action: Re-fill the slope with granular fill and re-grade the area. In addition to the repair work on the slope, the southern, lower section of the berm will be reconstructed to its original geometry prior to July 2020.

Recommendations and Implementation Plan for Milne Port Infrastructure

Milne Port Hazardous Waste Berms

HWB-1

Ripped geotextile and exposed liner were visible at a few locations at higher elevations along the berm, as previously identified during the first inspection.

Baffinland Action: Manually regrade disturbed areas of the berm on the slopes and crest as part of the onsite maintenance program. Cover the exposed geotextile and liner in the specified areas with a protective layer of soil (clean sand and gravel) prior to July 2020.

HWB-3 and HWB-4
The liners within the ponds are intact; however, they are exposed at a few locations on the crest and downstream slopes of the berms as previously identified during the first 2019 inspection.

Baffinland Action: Re-grade and cover areas where liner is exposed with a protective layer of granular fill (clean sand and gravel) prior to July 2020.

MP-01A Pond
Some wooden debris (i.e., lumber, timber, a pallet) was visible inside the pond in one corner.

Baffinland Action: Remove debris to prevent potential liner damage in spring of 2020.

MP-04 and 04A Landfarm and Contaminated Snow Disposal Cells
Exposed liner was visible on the downstream slope of sections of the MP-04 berm, particularly along the north berm, as previously noted during the first 2019 inspection.

Baffinland Action: Regrade and cover areas where liner is exposed with a protective granular fill (clean sand and gravel) prior to July 2020.

Surface Water Collection Ditches (P-SWD-3, P-SWD-5, P-SWD-6, P-SWD-7, W3/W14, 380M pad)
Ditch side slope failure was observed at the LP2 drainage ditch.

Baffinland Action: Repair LP2 drainage ditch slope deterioration prior to spring freshet and continue to monitor surface water collection ditches.

Tote Road Ditches and Culverts near the Rock Quarry
The flow of water may soften the original native subgrade beneath the road embankment and eventually could create some instability of the embankment.

Baffinland Action: Regrade the upstream area leading to the culverts by placing additional rock fill along the affected sections (toe-berm reinforcement for increased embankment stability) prior to spring freshet 2020.

We trust that this submittal meets the requirements for geotechnical inspections as outlined in the Water Licence. Should you have any questions, please do not hesitate to contact the undersigned.

Regards,

Connor Devereaux
Environmental Superintendent

Attachments:
Attachment 1: 2019 Geotechnical Inspection Report No. 2 (November 22, 2019)

Cc: Karén Kharatyan (NWB)
Chris Spencer, Jared Ottenhof (QIA)
Bridget Campbell, Godwin Okonkwo, Jonathan Mesher, Justin Hack (CIRNAC)
Tim Sewell, Shawn Stevens, Megan Lorde-Hoyle, Lou Kamermans, Christopher Murray, Sylvain Proulx, Francois Gaudreau, Amanda McKenzie, Allison Parker (Baffinland)

Attachment 1

2019 Geotechnical Inspection Report No. 2

Baffinland Iron Mines Corporation

November 22, 2019
Project #: TC190307

Annual Geotechnical Inspections – 2019 Report 2.

Mary River Iron Mine – Nunavut

November 22, 2019
TC190307

Mr. Connor Devereaux - Environmental Superintendent, Mary River Iron Mine
Baffinland Iron Mines Corporation
2275 Upper Middle Road East, Suite 300
Oakville, Ontario
L6H 0C3

Re: Annual Site Inspections and Reporting - Mary River Iron Mine, Nunavut

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood), has been retained by Baffinland Iron Mines Corporation to carry out Annual Geotechnical Engineering Services at the Mary River Iron Mine in Nunavut. Based on information and guidance provided in connection with the site's infrastructure, the undersigned has completed the second of the required two 2019 inspections and summarized the findings in the following report. In addition to field observations, the following historic reports had also been reviewed:

- Annual Geotechnical Site Inspections (2016) – SNC Lavalin
- Annual Geotechnical Site Inspections (2017) – ARCADIS Design and Consultancy
- Annual Geotechnical Site Inspections (2018) – SNC Lavalin
- Annual Geotechnical Site Inspections (2018 August and October) – B.H. Martin Consultancy
- Annual Geotechnical Site Inspections – Wood E&I Report 1 – August 2019

We trust that the content of this report meets your expectations. Should you have any questions regarding the details presented in the following document, please do not hesitate to contact our office.

Sincerely,

Wood Environment & Infrastructure Solutions
a Division of Wood Canada Limited

Laszlo Bodi, M.Sc.; P.Eng. – Principal Civil/Geotechnical Engineer
Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited

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1.0 Introduction

Wood Environment & Infrastructure Solutions (Wood), has completed the second geotechnical field inspection of 2019 at the Mary River Iron Ore Mine, which is a condition of the Type A Water Licence No: 2AM-MRY1325 – Amendment No.1 (Water Licence).

In accordance with the Water Licence, the field inspections shall include the review of various engineering facilities that contain waste materials (hazardous and non-hazardous), and store or retain/convey water (ponds and drainage ditches) at the Mary River Iron Mine and Milne Inlet Port sites. The field review assessed the stability of the berms and slopes, and potential seepage problems from the ponds, if any. As specified by the Nunavut Water Board, the conditions of the above listed infrastructure components need to be visually inspected and documented by photographs.

In addition to the condition survey of the above noted infrastructure components, critical watercourse crossings (bridges and selected culverts) were also reviewed during the June 27 to July 2, 2019 inspection along the Tote Road, connecting the Mary River and Milne Inlet Port sites. The culverts and bridges were not inspected during the second visit, because their condition remained the same as reported by William Bowden, Environmental Superintendent at the site. Minor work at four culverts, recommended in the August 31, 2019 report, will be carried out during the coming winter of 2019/2020, and those selected culverts will be revisited during next year's summer inspection.

The structures inspected during the second visit (between September 23, 2019 and September 26, 2019) included the following:

A. Mary River Iron Mine Site

a) Polishing/Waste Stabilization Ponds (3)
b) Hazardous Waste Berms - (HWB-1 to HWB-7)
c) MS-06 and MS-08 surface water collection ponds and ditches
d) Generator Fuel Berm (genset pond, located adjacent to the generators)
e) Fuel Storage Areas (3) – (jet fuel storage, existing and new fuel storage)
f) Solid-waste disposal site (non-hazardous landfill facility)
g) Camp Lake Silt Pond (CLSP) silt sedimentation control cells and berms
h) Water (effluent) discharge area

B. Milne Inlet Port Site

a) Hazardous Waste Berms - (HWB-1 through to HWB-4)
b) MP-01A pond
c) MP-03 fuel storage
d) MP-04 landfarm and 04A snow disposal cell

e) Surface water collection ponds and ditches adjacent to the ore stockpile (MP-05 and MP-06)
f) Surface water collection ditches (P-SWD-3, P-SWD-5, P-SWD-6, P-SWD-7, W3/W14, 380M pad)
g) Tote road ditches and culverts (conveying surface water from the quarry area)

The above listed infrastructure components were visually inspected between September 23 and 26, 2019, by the author of this report, Laszlo Bodi, P.Eng. of Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited. During the inspection program the condition of the structures was documented, and the findings are summarized in the this report. It shall be pointed out that at the time of the inspection the surface of the stored water in most of the ponds (wherever present) was covered with a thin layer of ice. Snow also covered some of the infrastructure components, as shown in relevant photographs in Appendices A and B.

The locations of key inspected structures, ponds and ditches are shown in the following figures:

a) Mary River Iron Mine site - Northern, Central and Southern zones: Figures 1, 2 and 3
b) Milne Port site - Central zone: Figure 4

A full set of photographs of the inspected structures are presented in the following appendices:

- Appendix A: Mary River Mine site – Figures 5 to 38
- Appendix B : Milne Port site - Figures 39 to 60

Figure 1: Site layout – Mary River Iron Mine Site - Northern Zone

Figure 2: Site layout – Mary River Iron Mine Site - Central Zone

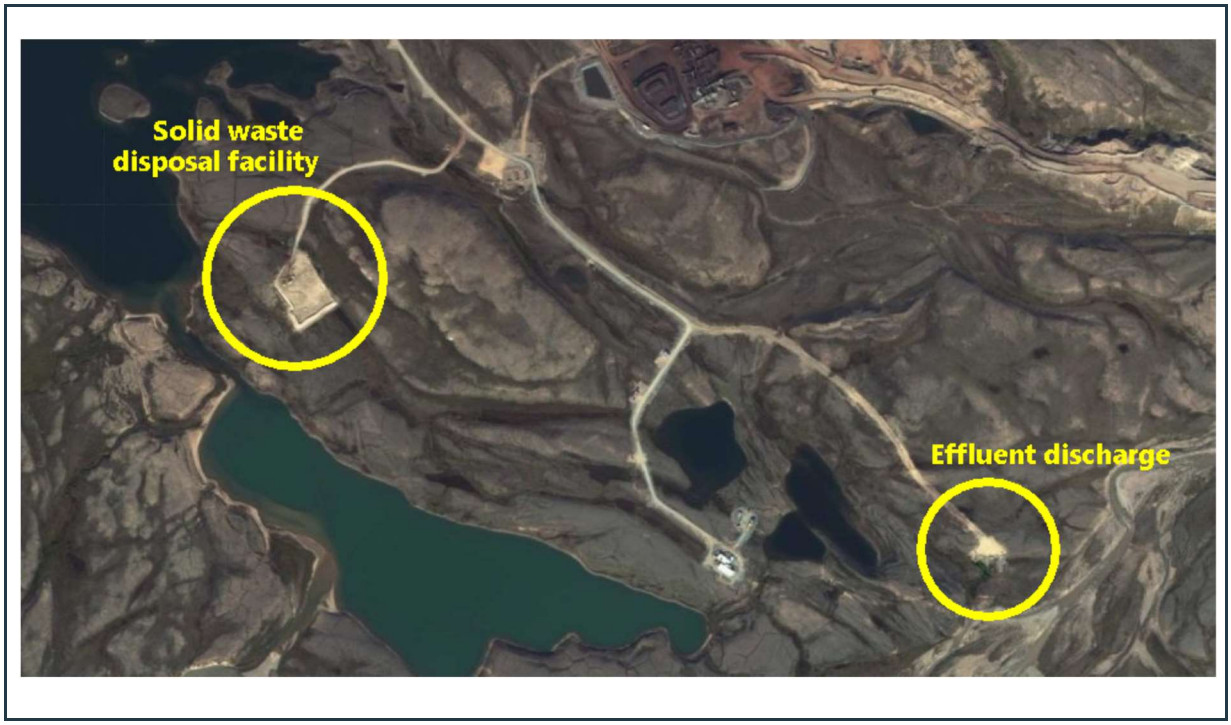

Figure 3: Site layout – Mary River Iron Mine Site - Southern Zone

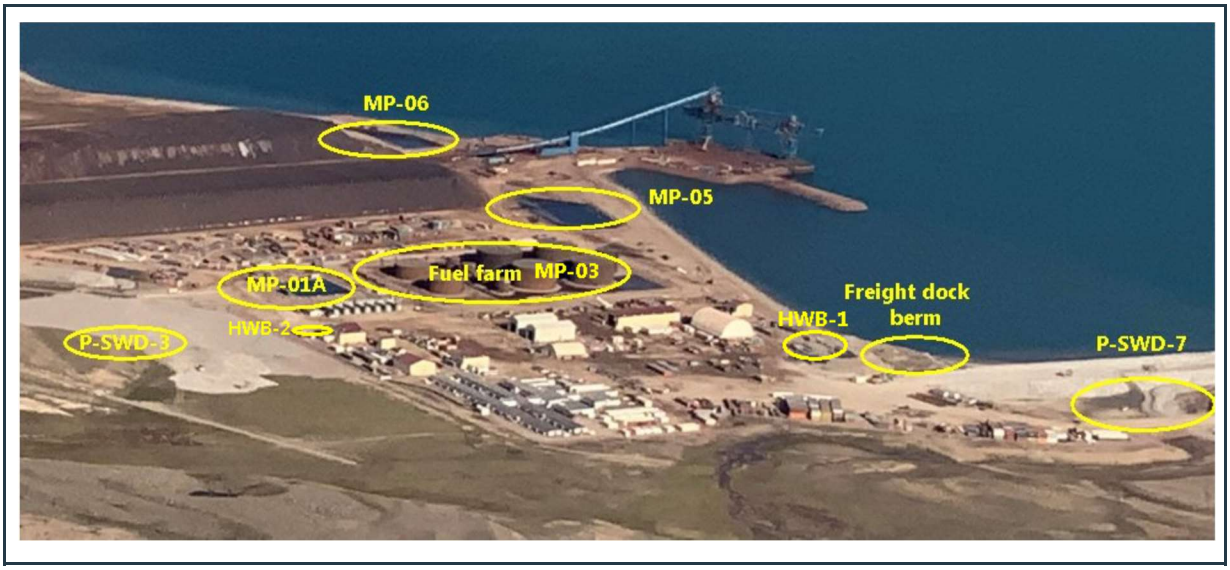

Figure 4: Site layout – Milne Inlet Port Site – Central Zone

Details of the condition survey of the individual structures are summarized in the following sections of the report, while the photographs are shown in Appendix A (mine site) and Appendix B (port site), as integral parts of the document.

2.0 Mary River Iron Mine Site

2.1 Polishing/Waste Stabilization Ponds (3 PWS ponds)

There are three polishing/waste stabilization ponds, located adjacent to the central section of the runway, as shown in Figure 1. Pond #1 is a single structure, while Ponds #2 and #3 had been constructed as a twin-cell structure. According to previous inspection reports, these ponds were associated with the exploration phase of the mine, and currently serve as emergency holding ponds in case problems arise, to prevent the discharge of non compliant effluent directly to the receiving environment.

The berms around the three ponds generally comprise granular soils (sand and gravel), supporting High Density Polyethylene (HDPE) geomembrane liners. The liners are secured in anchor trenches on the crest of the berms, and no damage is visible on the membranes within the ponds. Minor damages on the liners on the crest of the berms (above the maximum water/freeboard line), observed during the June 27 to July 2, 2019 inspection, have been repaired, as shown in Figure 5.

As shown in Figures 5 to 7, the berms around the three ponds are stable, having shallow downstream slopes. They were built by using non-frost-susceptible well compacted granular materials. Based on previous site observations, it appears that the subgrade beneath and around the berms comprise thaw-stable granular soils with trace to some fines. Hence, the berms are assumed to have stable foundations.

This assumption is further supported by the fact that there are no indications of differential settlements, sinkholes, sloughing, etc. at the perimeter berms. Previously, some minor truck-tire related damages (e.g., depression on the crest's surface and related densification) were observed at the top of the berms; however, most of these depressions have recently been backfilled by using sand and gravel, as shown in Figures 5 and 6.

As pointed out above, the berms appear to be structurally stable, and no visible wet downstream slopes and toe seepage was noted. However, as was previously identified in the August 31 inspection report and shown in Figure 8, the surface appearance was not found to be orderly at the front of the water discharge pipes at the middle of the south-western perimeter berm at its juncture with the central berm between ponds #2 and #3. Namely, heavily wrinkled surficial liner was observed to cover the crest at this location and at the junction of the berms. It is suspected that this may have been a water discharge point for further conveyance of the discharged water into the two adjacent ponds.

Large timbers and miscellaneous other elements (e.g., used tires etc.) are utilized as weight to secure the surficial liner in-place at the berm's crest at this location. The downside of this measure is potential ice development in areas of trapped water within the wrinkles, and this could have a potential to displace the above elements across the liner and consequently, result in liner damage (e.g., cracking). Under this scenario, there is a potential of berm fill saturation. As a cautionary measure, it is recommended to clean-up this area and remove all hard materials other than used tires from above the liner. Existing tires, and perhaps addition of more used tires to counterweight the removed weight, will reduce the risk against wind uplift. Furthermore, timbers (shown in Figure 7) should also be removed from inside the ponds and from the surface of the berms, to prevent potential liner damage.

2.2 Hazardous Waste Berms

There are seven hazardous waste berms at the Mary River mine site (HWB-1 to HWB-7), as shown in Figure 1. HWB-6 is located at the north side of the runway near the incinerator. The other six cells are located along the south side of the runway. All HWB cells are lined and comprise shallow perimeter berms. There is no visible instability at the berms (sloughing, excessive settlement or tension cracks), other than some soil displacement by foot and truck traffic on the surface of the slopes and crests at a few locations. It was recommended in the August 31, 2019 inspection report that foot and truck traffic on the slopes and crest of the berms should be limited, with controlled/ramped access points (preferably one) provided for trucks and skid-steers to dispose/remove materials in the cells. Following those recommendations, ramped access points have been provided to the cells and one representative recently constructed ramp is shown in Figure 15.

a) HWB-1

This cell is currently empty, with no water or ice visible within the cell (Figure 9). Based on information obtained during the June 27 to July 2, 2019 visit, it is understood that potential liner damage was suspected here, and consequently no material is stored in the cell.

b) HWB-2

As shown in Figure 10, the perimeter berm around the HWB-2 cell appears to be stable. All previously stored materials have been removed and hence, no waste is currently stored in the cell.

c) HWB-3 and HWB-4

These cells are located side-by side and were called, in previous reports, "Fuel Containment" cells. As shown in Figures 11 and 12, there are only fuel barrels visible now in these two cells, stored on wooden pallets. The berms are stable and there is no visible liner damage in these cells. As recommended in the August 31, 2019 report, all damaged wood pallets and other debris have been removed from the cells to prevent potential damage to the liners.

d) HWB-5

As shown in Figure 13, this cell is currently empty. The few totes of lubricants that were visible during the June 27 to July 2, 2019 inspection, have been removed from the cell. As pointed out in the earlier report, the berms around the cell appear to be stable and there is no visible liner damage.

e) HWB-6

It was highlighted in the August 31, 2019 report that the HWB-6 cell was in poor condition. The berms showed extensive damage by truck and foot traffic, particularly at the northern section of the berm. Cracking and tearing of the liner were also visible at several locations on the upstream face and crest of the berm during the June 27 to July 2 inspection.

Following our recommendations, an extensive clean-up, repair and construction program was implemented at this cell. Reportedly, based on verbal information from William Bowden, Environmental Superintendent at the site, the damaged liner areas was patched and granular soil was brought to the site to cover the liner and improve the berm's profile. As specified in the August 31, 2019 report, a single ramped access point has also been provided to the cell, as shown in Figure 15. The images in Figures 14 and 15 indicate that the earthwork (fill placement on the crest and slopes of the berm) was undertaken using construction equipment (e.g., dozer and backhoe). Additional manual fine grading of the rough fill

surface will be completed during the spring, 2020. A few boulders have also been noted at the northern corner of the cell within the berm's profile. These boulders are prone to ice jacking and should be therefore removed and replaced by granular fill.

f) HWB-7

Based on information obtained from historic reports, the HWB-7 cell was a bulk fuel storage facility in the past. There were fuel barrels, lubricant totes and a large fuel tank visible in the cell during the June 27 to July 2, 2019 inspection. All items except the large fuel tank, have been removed from this cell, as shown in Figure 16. The perimeter berm around three sides of the cell has remained stable since the preceding inspection. There is an access ramp on the outer side of the cell with shallow slopes allowing safe truck access.

2.3 MS-06 and MS-08 Surface Water Collection Ponds and Ditches

a) MS-06 – Surface Water Collection Pond Adjacent to the Crusher Pad

The MS-06 pond collects surface water from the area of the crusher site. The water is collected in perimeter ditches around the crushed and stockpiled ore and conveyed via those open ditches into the pond. There are two intake locations at the northeast and southeast corners, and there is an emergency spillway located opposite and to the east of the intakes. The liner on the upstream slopes of the berm is intact, as shown in Figure 17, and thin ice covered the stored water in the pond. The liner integrity within the pond is assumed to be intact as no wet downstream slopes or toe seepage were visible on and at the toe of the perimeter berm.

The side slopes of the water collection ditches were observed to be stable, as shown in Figure 18. The corrugated steel culvert, conveying the collected surface run-off from the crusher area to the pond (located beneath the tote road), was almost fully clogged with silt during the June 27 to July 2, 2019 visit. That culvert has been cleaned, providing uninterrupted flow of surface water toward the pond (Figure 19).

Minor water seepage was observed as ice mount at the toe of the embankment where the crusher pad ditch embankment fill meets the tundra, as shown in Figure 20.

b) MS-08 – Surface Water Collection Pond Adjacent to the Waste Rock Dump

The waste rock dump is located east of the mine at higher elevation, and it is surrounded by new surface water collection ditches that were being upgraded based on preceding recommendations, as shown in Figures 21 to 23. Similarly, the MS-08 sedimentation pond was being upgraded during the inspection. Some water seepage from the pond had been reported historically, however, no seepage or evidence of seepage was observed during either the June 27 to July 2, 2019 or the September 23-26, 2019 inspections. As part of added assurance in relation to seepage risk mitigation, Baffinland is currently undertaking

complete reconstruction of the MS-08 pond and replacement of the "old" crescent-shaped semicircular berm with new perimeter berms. The pond was being lined at the time of the current inspection, as shown in Figures 24 and 25. As noted during the inspection, the liner is properly anchored into the berm crest around the pond and extends beyond the active zone into to the permafrost, to prevent under-drainage.

Water from the pond is pumped to the nearby designated facility for treatment. There is a lined treatment area located immediately next to the treatment plant with stable perimeter berms. Water treatment issues in relation to this area have not been reported and the entire facility appears to be fully functional. At the time of the inspection, the water in the pond was covered with ice and snow, as shown in Figure 26.

2.4 Generator Fuel Berm

The generator fuel berm contained water with frozen surface during the inspection, covered with some snow. According to information provided by William Bowden, Environmental Superintendent at the site, this cell historically contained a fuel bladder for the gensets at the weatherhaven complex. The pond is located adjacent to the power generators, south-west of the hazardous waste cells (Figure 1). As shown in Figures 27 and 28, the perimeter berm around the pond generally comprises granular materials and the pond is lined. Disturbance by foot-traffic along most of the berm's crest with some visible sloughing of the upstream side of the berm at the south-east corner of the pond has remained the same since the preceding (June 27 to July 2, 2019) inspection (see Figure 28).

Placement of granular fill on the crest and slopes, particularly at the southern, somewhat lower section of the berm, was recommended in the preceding inspection report to re-establish its original configuration. It is understood that the recommended maintenance work at this pond will be carried out during spring/early summer, 2020.

The berm did not exhibit any signs of instability and exposed sections of the liner were observed to be intact. Also, no seepage from the pond was noted on the berm's downstream slope at the time of the inspection.

2.5 Bulk Fuel Storage

There are three bulk fuel storage areas at the Mary River mine site, two operating and one recently constructed. The berms around them are in excellent conditions, as shown in Figures 29 to 33 in Appendix A.

a) Jet Fuel Storage

The jet fuel storage area is located at the aerodrome and it is surrounded by perimeter berm with no visible signs of instability. In addition, a second berm provides additional protection at two sides of the

facility, constructed by using crushed rock fill. The geotextile fabric (liner cover) was exposed at a few locations along the berm's crest during the June 27 to July 2, 2019 inspection. Completion of maintenance work carried out prior to the subject inspection included placement of roughly graded soil cover, composed of sand and gravel, as shown in Figures 29 and 30. Additional fine grading (manual) is recommended on the berms following the next spring.

b) MS-03 Diesel Fuel Storage

The berms around the diesel fuel storage are in excellent condition (see Figure 31), and they are well maintained year-round. The contained clean water from precipitation within the cell is an indication of the proper liner system functionality (i.e., no seepage from the cell is visible and the liner is well protected by granular fill throughout the facility).

c) New Fuel Storage (recently constructed)

The new fuel storage, shown in Figures 32 and 33, has been recently constructed. The tank farm's new containment earthern structure did not exhibit any signs of instability, including seepage. Based on field observations it appears that the geosynthetic liner component of the structure has received protective soil cover throughout.

2.6 Solid Waste Disposal Area

The solid waste disposal area is in the southern zone of the Mary River mine site, as shown in Figure 3. Only non-hazardous solid waste is placed into this facility. As shown in Figure 34, the solid waste placed into the facility is covered with a layer of locally available clean soils. No signs of instability were observed during the inspection.

2.7 CLSP Silt-sedimentation Check Berms

The CLSP silt sedimentation control berms are located along the access road to the mine's water intake jetty. The primary purpose of these structures is to collect fine soil particles that are eroded from the adjacent area, and to prevent siltation around the water intake structure. As shown in Figures 35 and 36, the berms do not exhibit any signs of instability, and were observed to be efficient for sediment catchment.

2.8 Water (Effluent) Discharge Area

The effluent discharge point is located south of the Mary River mine complex, as shown in Figure 3. There are several discharge pipes at that location, conveying the discharged water down the slope toward the

adjacent river. Trucks also bring water for discharge to this location and let the water flow down on the adjacent embankment, comprising crushed rock fill, as shown in Figure 37. The rock fill slope appears to be stable and no evidence of surface erosion or instability was observed during the inspection within the immediate discharge area.

Minor surface erosion was noted adjacent to the rock fill slope during the June 27 to July 2, 2019 inspection, within the native material of the slope. It was pointed out that although the erosion did not seem to affect overall slope stability, placement of crushed rock fills over the eroded areas was suggested, to prevent any potential regressive erosion in the future. Following our recommendations, rock fill has been placed across the eroded area, as shown in Figure 38. The crushed rock fill provides long-term erosion protection and improves the stability of the slope in the area.

3.0 Milne Inlet Port Site

3.1 Hazardous Waste Berms - (HWB-1 to HWB-4)

There are four hazardous waste berms at the Milne Inlet Port site. HWB-1 and HWB-2 cells are single detached structures, located north-east and south-east of the large fuel storage area, respectively. HWB-3 and HWB-4 are twin-cells, located south/south-west of the fuel storage tank farm.

a) HWB-1

The HWB-1 cell covers a relatively large area, surrounded by well-built perimeter berm, constructed of granular fill material, with no visible signs of instability or seepage (Figures 39 and 40, in Appendix B). The cell predominantly contains bagged waste materials, stored on wooden pallets. No ponding water and no signs of seepage from the pond were visible along the berm toe. However, ripped geotextile and exposed liner were noted at a few locations at higher elevations along the berm, as shown in Figure 40. It is recommended that, as part of the maintenance program, the disturbed areas of the berm (generally by foot traffic) on the slopes and crest be re-graded manually and all exposed geotextile and liner areas covered with a protective layer of soil (clean sand and gravel).

b) HWB-2

The HWB-2 is a relatively small cell with stable shallow berms that has recently been re-graded by using clean granular soils. As shown in Figure 41, only empty containers on wooden pallets and clean construction machine attachments are currently stored in this cell.

c) HWB-3 and HWB-4

The HWB-3 and HWB-4 cells are located immediately next to each other (twin-cells) and contain shipping containers only, as shown in Figures 42 to 44. The berms appear to be in good condition with no visible signs of slope instability (e.g., movements or settlement). The liner was found to be exposed at a few locations on the crest and downstream slopes of the berms, as shown in Figures 43 and 44. It is recommended that all exposed liner areas be regraded and covered with a protective layer of granular fill (clean sand and gravel), to ensure proper liner performance in the long run.

3.2 MP-01A Pond

The MP-01A polishing waste stabilization pond is located immediately south of the MP-03 fuel storage. As shown in Figure 45 the berm around the pond had no visible signs of instability and exposed liner areas were found to be intact. No seepage from the pond was noted during the field inspection. However, some wooden debris (i.e., lumber, timber and pallet) were visible inside the pond in one corner (see Figure 45). The debris must be removed to prevent potential damage to the liner.

3.3 MP-03 Fuel Storage

The MP-03 fuel tank farm is a fenced facility that occupies a large area in the center of the Milne Inlet port site. As shown in Figure 46, the berms around the facility, composed of compacted granular materials, were observed to be well maintained and with no visible signs of instability or evidence of seepage. The minor visible ponded water (with a thin ice cover) within the internal cells, is supportive of proper liner functionality.

3.4 MP-04 and 04A Landfarm and Contaminated Snow Disposal Cells

The MP-04 and MP-04A cells are located south of the port complex at higher elevation, adjacent to the rock quarry. MP-04 is a large landfarm cell that predominantly stores contaminated soils, as shown in Figure 47. The berm structure around the cell did not exhibit any signs of instability or evidence of seepage. However, the liner was found to be exposed (e.g. lacking protection of soil cover) on the downstream slope sections of the berm. This was particularly prominent along the north berm. It is recommended that the respective exposed liner areas (see Figure 48) be provided with protective gravel layer (e.g. wind uplift prevention).

MP-04A is a smaller cell used generally for the disposal of contaminated snow impacted by hydrocarbons. This pond was constructed immediately adjacent to the MP-04 landfarm cell, shown in Figure 49. There were no visible signs of instability or evidence of seepage pertaining to the earthen containment. The

evidence of ponded water in conjunction with the lack of downstream seepage is supportive of proper liner performance.

3.5 Surface Water Collection Ponds and Ditches (MP-05 and MP-06)

The high-grade iron ore that is mined, crushed, and screened at the Mary River site is transported to the Milne Inlet port, and stockpiled across a large flat area. Contact water in the area is collected along all sides of the ore stockpile in collection ditches and conveyed into two water collection ponds, MP-05 and 06 respectively (Figure 51).

The MP-05 pond is located adjacent to the north-east corner of the stockpile, while MP-06 has been constructed at the north-west corner. Both ponds were observed to be functional with well-maintained containment berms and intact liners, exhibiting no visible signs of instability (e.g., erosion or settlement, etc.), as shown in Figures 50 and 52.

Both water collection ponds have emergency spillways and the frozen water level in both ponds was well below the spillways' inverts at the time of the inspection.

3.6 Surface Water Collection Ditches (P-SWD-3, P-SWD-5, P-SWD-6, P-SWD-7, W3/W14, 380M pad)

There are several water collection drainage ditches (listed above), most of them still under construction or continuous improvement, as shown in Figures 53 to 58. These open ditches are excavated partly into the native soils with their sides and inverts ligned with erosion protection layers composed of fine crushed rock from the local quarry. It was noted during the inspection that geotextile have been used in areas where the native soil subgrade was composed of fine-grained material to prevent migration of fines into the voids of the rockfill. It is recommended that the condition of these ditches be monitored, particularly prior to the spring freshet, and that any slope deterioration be rectified to ensure an unobstructed functionality of the ditches. One such obstruction, a consequence of ditch side slope failure observed at the LP2 drainage ditch (see yellow circle in Figure 53) will require repair ahead of the spring freshet.

3.7 Tote Road Ditches and Culverts Near the Rock Quarry

Surface water from higher elevation around the rock quarry is collected in drainage ditches and conveyed down the slope through corrugated galvanized steel culverts, installed under the quarry road and then under the Tote Road. The water in the ditches is then conveyed to small natural ponds, located along the west side of the Tote Road, as shown in Figure 59. As reported earlier, the fill in the area (road embankment and slope cover) comprises crushed rock fill, and therefore a portion of the surface water have the tendency to bypass the two culverts beneath the Tote Road embankment (through-flow) and finds its way to the nearby ponds (see Figure 59) in open, shallow channels. The flow of such water may

soften the original native subgrade beneath the road embankment and potentially destabilize the road embankment. As recommended in the August 31, 2019 inspection report, and to increase the stability of the Tote Road's embankment in the affected areas, construction of a rock fill toe berm is recommended along the affected sections (approximately 50 m south and north from the twin culverts, shown in Figure 59) of the Tote Road.

4.0 Conclusions

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood), has completed the second of the two required geotechnical field inspections of 2019 at the Mary River Iron Ore Mine Complex in Nunavut. Based on field observations, the condition of the inspected infrastructure components can be summarized as follows:

- All ponds and waste disposal cells are enclosed by relatively shallow, stable berms. The berms show no signs of instability (e.g., tension cracks, excessive settlements, notable slope erosion, etc.). These structures were constructed using thaw-stable granular materials, placed over thaw-stable subgrades (based on extrapolated observations from areas adjacent to their footprints). Minor disturbance on the surface of the slopes and crests were noted at some of the berms, however, these remaining discrepancies can be rectified by a continued maintenance (regrading) program. Additional manual grading of the recently placed granular fills on selected berms will be necessary during spring 2020. As specified in the August 31, 2019 inspection report, foot and truck traffic on the berms should generally be limited to one ramped access point. That recommendation was implemented by Baffinland and observed during the second geotechnical inspection.
- The surface water and waste storage ponds comprise HDPE liners, generally in good conditions. No seepage from the currently operating cells was noted around the berms. Most of the previously noted damages have been repaired by Baffinland and only minor damages to the liners were noted during the recent inspection, all above the water lines only. As specified earlier and reiterated herein, such minor damages to the liners should be repaired as soon as practically possible.
- Open ditches across the Mary River and Milne Inlet sites are generally in good conditions with minor erosion and side movements visible at a few locations only. As part of a more frequent maintenance program, it is recommended that the identified eroded sides of the ditches be regraded as well as that the excess silt from the ditches be removed (if any) and disposed off in designated areas.

5.0 Closing Remarks

We trust that the above technical report provides you with satisfactory information in connection with the reviewed infrastructure components at the selected sites of the Mary River Operation.

Should you have any questions regarding this report, please do not hesitate to contact our office.

Sincerely,

Wood Environment & Infrastructure Solutions
a Division of Wood Canada Limited

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Baffinland Iron Mines Corporation

November 22, 2019
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APPENDIX "A" - Mary River Mine Site - Photographs

Figure 5 to Figure 38

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1.0 Mary River Mine Site

1.1 Polishing/Waste Stabilization Ponds (3 PWS ponds)

Figure 5: PWS pond #1 – View of repaired liner and additional fill on the berm's crest.

Figure 6: PWS pond #2 – View of the berm and frozen water in the pond.

Figure 7: PWS pond #3 – Timber/lumber debris visible on the crest that should be removed.

Figure 8: PWSP #2 and #3 – Untidy conditions at the water discharge point between ponds #2 and #3.

1.2 Hazardous Waste Berms (HWB)

a) HWB-1

Figure 9: View of HWB-1 – Currently this cell is empty.

b) HWB-2

Figure 10: View of HWB-2 – Currently the cell is empty.

c) HWB-3 and HWB-4

Figure 11: View of HWB-3, with fuel barrels stored on wooden pallets.

Figure 12: View of HWB-4, with fuel barrels stored on wooden pallets.

d) HWB-5

Figure 13: View of HWB-5, located immediately adjacent to HWB-1. Both cells are currently empty.

e) HWB-6

Figure 14: View of the HWB-6 cell, with additional fill placed recently on the berm.

Figure 15: View of HWB-6, with recently completed access ramp through the raised berm.

Figure 16: View of HWB-7, with only one fuel tank stored in the large cell.

1.3 MS-06 and MS-08 Surface Water Collection Ponds and Ditches

a) MS-06 – Surface Wat er Collection Pond Adjacent to the Crusher Pad

Figure 17: MS-06 surface water collection pond (low water level with frozen surface).

Figure 18: Surface water collection ditch around the crusher plant.

Figure 19: Surface water collection ditch, with recently cleaned culvert.

Figure 20: Minor water seepage as ice mount at the toe of the embankment where the crusher pad ditch embankment fill meets the tundra.

b) Perimeter drainage ditches and MS-08 pond next to the waste rock dump

Figure 21: View of the waste rock dump.

Figure 22: Snow-filled ditch under construction around the waste rock dump (south-east side).

Figure 23: Snow-filled ditch under construction around the waste rock dump (north-west side).

Figure 24: Construction of the new MS-08 pond, immediately adjacent to the waste rock dump.

Figure 25: Liner installation in the new MS-08 pond, currently under reconstruction.

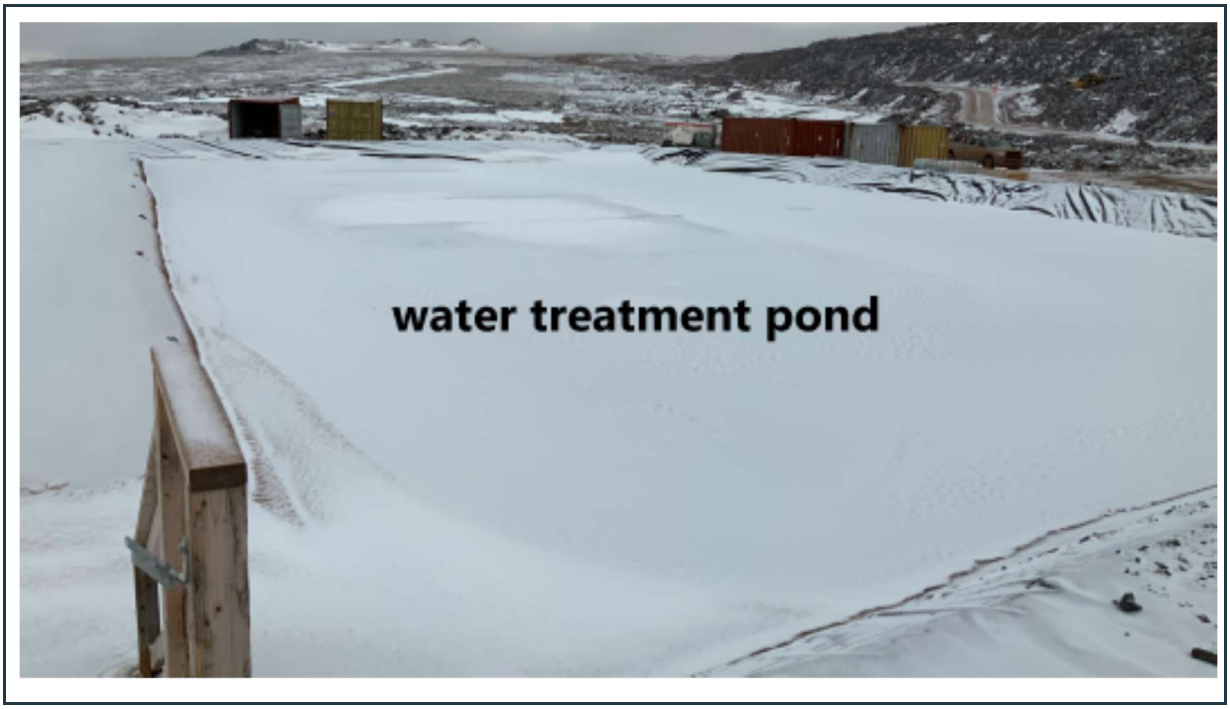

Figure 26: Water treatment pond adjacent to the waste rock dump and MS-08 (ice and snow covered).

1.4 Generator Fuel Berm

Figure 27: View of the locally low generator berm (high water level with frozen surface).

Figure 28: View of minor slope problem at the south-east corner of the generator berm.

1.5 Bulk Fuel Storage

a) Jet Fuel Storage

Figure 29: View of the berm around the jet fuel storage with two fuel tanks.

Figure 30: Recently placed granular fill on the berm's crest, to protect the previously exposed liner.

b) MS-03 Diesel Fuel Storage

Figure 31: View of the MS-03 diesel fuel storage with frozen water surface.

c) New Fuel Storage

Figure 32: View of the recently completed new fuel storage.

Figure 33: View of the recently completed new fuel storage at the Mary River site.

1.6 Solid Waste Disposal Area

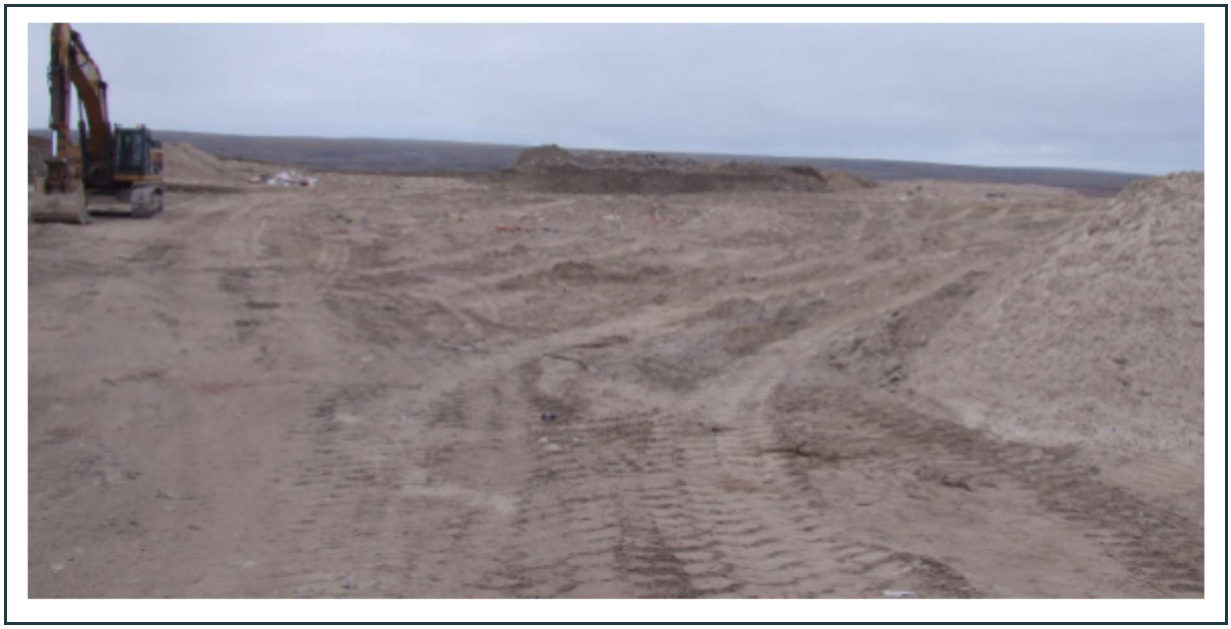

Figure 34: Solid waste disposal facility (waste continuously covered with clean soil fill).

1.7 CLSP Silt-sedimentation Check Berms

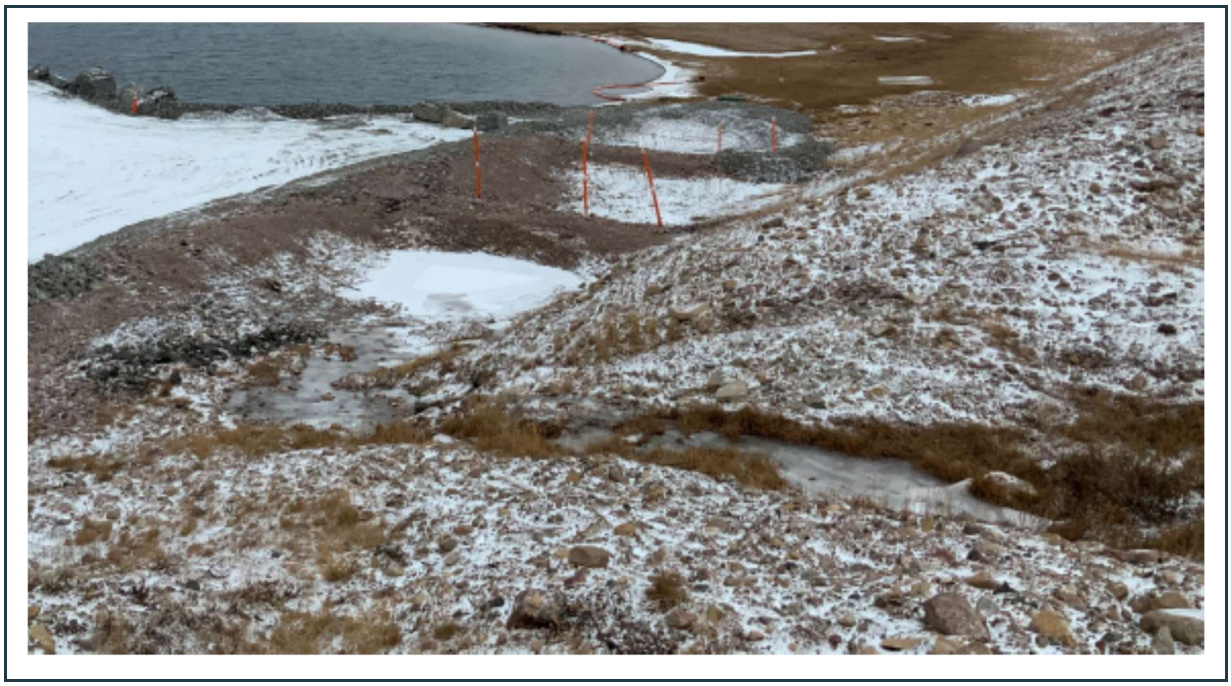

Figure 35: CLSP check berms and silt sedimentation cells.

Figure 36: Use of floating silt curtains in the vicinity of the CLSP check berms.

1.8 Water (Effluent) Discharge Area

Figure 37: Water (effluent) discharge area. Stable slope, comprising a mix of crushed rock and soils.

Figure 38: Recently stabilized slope erosion adjacent to the water (effluent) discharge site.

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APPENDIX " B" – Milne Inlet Port Site - Photographs

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1.1 Hazardous Waste Berms - (HWB-1 to HWB-4)

a) HWB-1

Figure 39: View of the HWB-1 cell, with large empty area in its center.

Figure 40: Ripped geotextile and exposed liner at the stable northern berm of the HWB-1 cell.

b) HWB-2

Figure 41: View of the HWB-2 cell (only empty containers and "clean" machine attachments are stored).

c) HWB-3

Figure 42: View of the HWB-3 cell, containing frozen water and shipping containers.

d) HWB-4

Figure 43: Perimeter berm at the HWB-4 cell, with exposed geotextile and liner.

Figure 44: Exposed liners between the HWB-3 and HWB-4 cells.

1.2 MP-01A Pond

Figure 45: Berms and liner in good condition, with stable slopes around the MP-01A pond.

1.3 MP-03 Fuel Storage

Figure 46: View of stable, well maintained berms around the MP-03 fuel storage.

1.4 MP-04 and 04A Landfarm and Contaminated Snow Disposal Cell

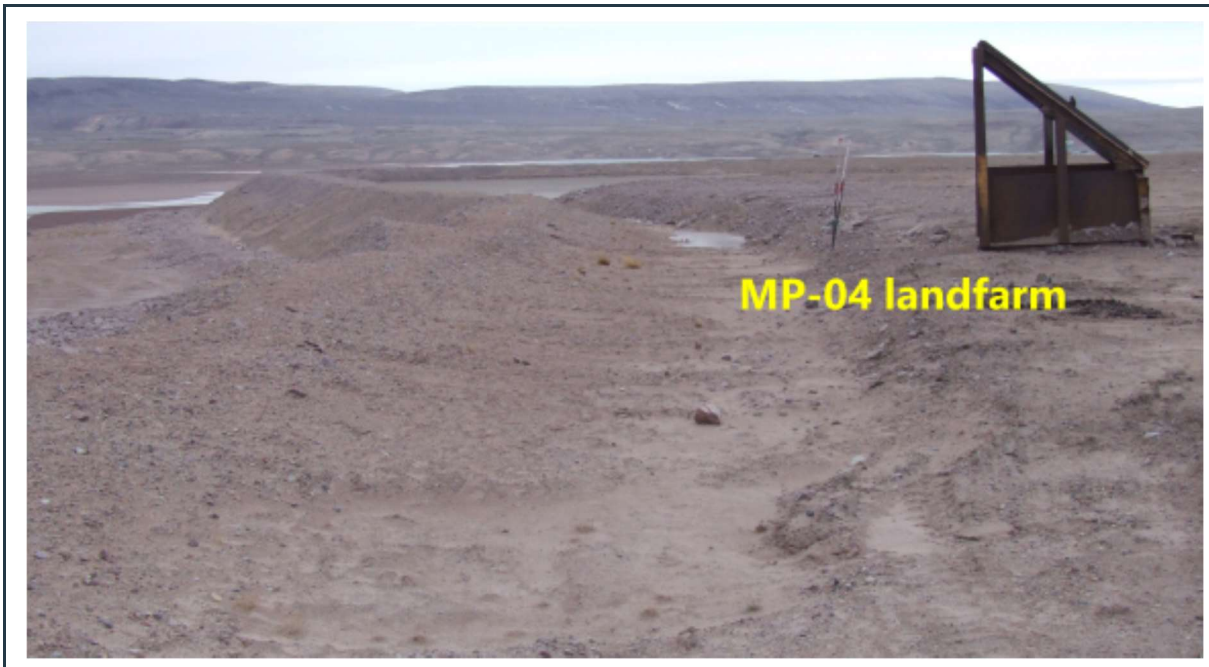

Figure 47: View of stable berms around the MP-04 landfarm.

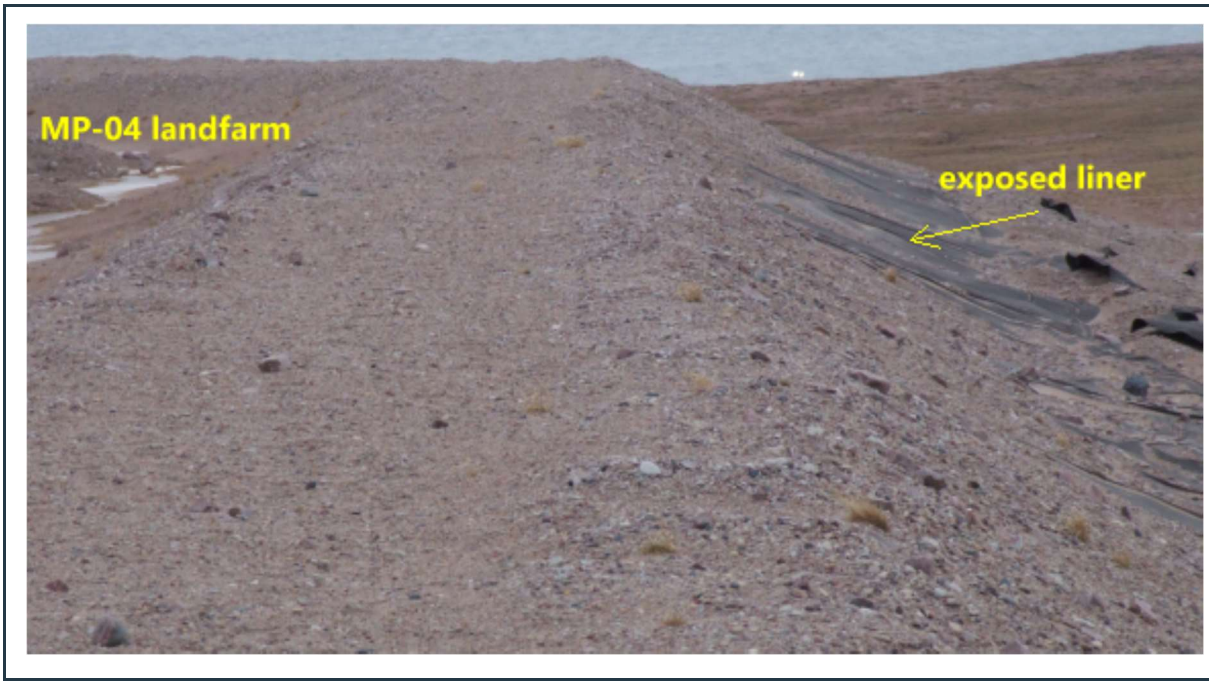

Figure 48: Stable berm at the MP-04 landfarm, with exposed liner on the downstream slope.

Figure 49: Stable berms and frozen water at the MP-04A contaminated snow dump.

1.5 Surface Water Collection Ponds and Ditches (MP-05 and MP-06)

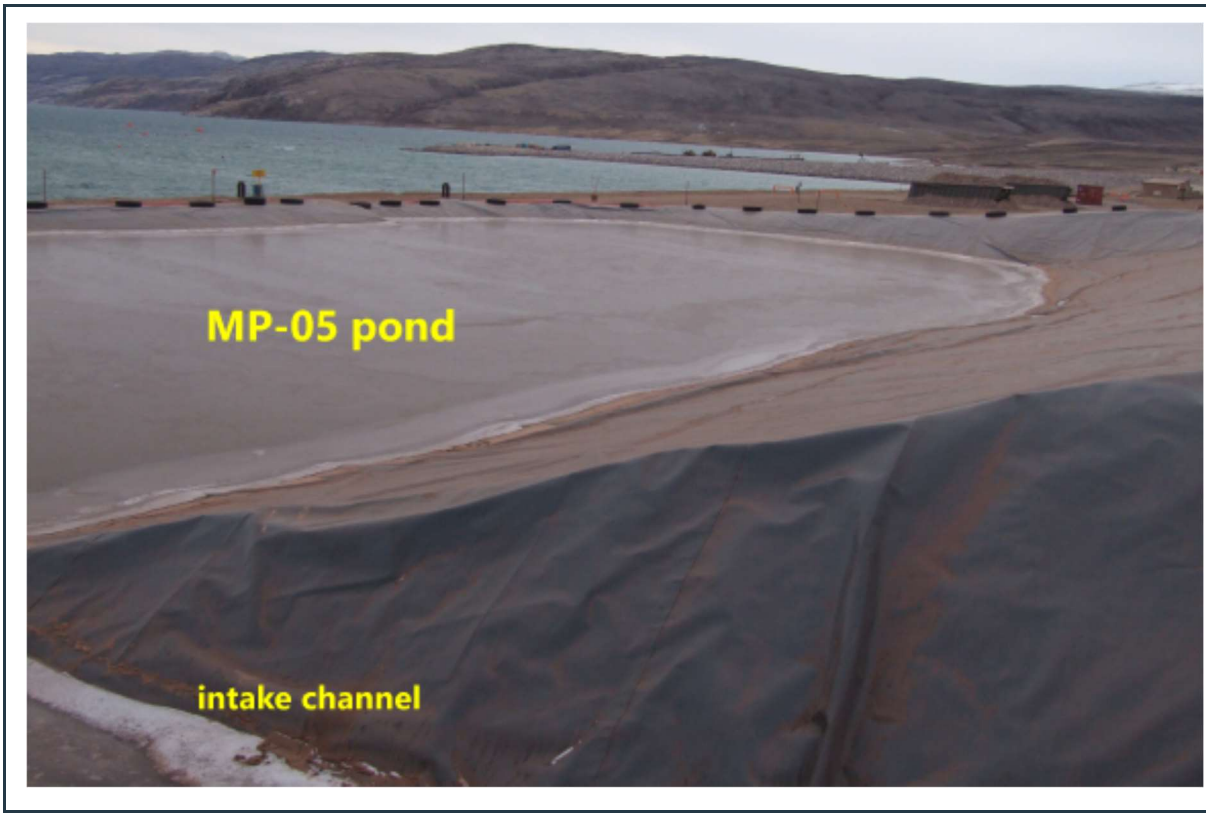

Figure 50: View of the MP-05 pond, adjacent to the north-east corner of the ore stockpile.

Figure 51: Surface water collection ditch, adjacent to the ore stockpile (leading to the MP-05 pond).

Figure 52: View of the MP-06 pond at the front of the north-west corner of the ore stockpile.

1.6 Surface Water Collection Ditches (P-SWD-3, P-SWD-5, P-SWD-6, P-SWD-7, W3/W14, 380M pad)

Figure 53: View of the LP2 surface water collection ditch – still under construction.

Figure 54: Well maintained "P-SWD-5 Q1 North" surface water collection ditch.

Figure 55: Well maintained "P-SWD-6 Q1 South" surface water collection ditch.

Figure 56: View of the P-SWD-7 surface water collection ditch and culverts, adjacent to the new freight dock (under construction).

Figure 57: W3-W14 surface water collection ditch (still under construction).

Figure 58: "380 M" surface water collection ditch (under construction).

1.7 Tote Road Ditches and Culverts

Figure 59: Water seepage through and beneath the road embankment near the tote road culverts.