APPENDIX C.2

Geotechnical Inspection Reports

September 7, 2020

Assol Kubeisinova
Technical Advisor, NWB
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Gjoa Haven, NU X0B 1J0

RE: Submission of 2019 Geotechnical Inspection Report No. 1 (July 2020)

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."

The first biannual geotechnical field inspection for 2020 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 Site and Milne Port, as well as select water crossings along the Milne Inlet Tote Road. The attached report covers the first inspection that was conducted between June 26 and July 7, 2020.

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

Mary River Mine Site

- Polishing/Wastewater Stabilization Ponds (3)
- Hazardous waste disposal cells (HWB-1 to HWB-7)
- MS-06 and MS-08 surface water collection/settling ponds and ditches
- Genset pond (i.e., located adjacent to the generators)
- Fuel Storage Farms (3) – Aerodrome jet-fuel storage, MS-03 and MS-03B diesel fuel farms
- Solid-waste disposal site (non-hazardous landfill)
- CLSP silt sedimentation check dams and berms, adjacent to the water intake
- Water (effluent) discharge area
- Deposit 1 pit walls
- QMR2, D1Q1 and D1Q2 rock quarries

Milne Inlet Port Site

- Hazardous waste disposal cells - (HWB-1 through to HWB-4)
- MP-01A, pond
- MP-03 fuel tank farm

- MP-04 landfarm and MP-04A contaminated snow pond
- MP-05, MP-06 and Settling Pond #3 surface water settling ponds and drainage ditches
- Q01 rock quarry
- Surface water collection ditches (P-SWD-3, -5, -6, -7, W3/W14, 380M pad and PSC ditches)
- Tote road culverts (conveying surface water from the quarry area)

Milne Inlet Tote Road

- Bridges (4)
- Culverts (12)

The attached report (refer to Attachment 1) presents the findings of the July 2020 inspection and recommendations for the aforementioned structures. The following subsections of this letter summarize Baffinland's plan for implementing recommendations.

Recommendations for the Mary River Mine Site Infrastructure

Polishing/Waste Stabilization Ponds (3 PWS ponds)

Some minor damage (i.e "sinkhole") was visible on the crest of Pond #3, shown in Figure 10. It appears that the finer sand particles migrated down into the larger voids within the rock fill. Furthermore, large timbers and miscellaneous other elements (e.g., used tires etc.) are utilized as weight to secure the liner in-place at the berm's crest.

Baffinland Action: Baffinland commits to having the minor damage to the liner repaired as part of the regular maintenance program. Baffinland will continue to monitor the PWSPs and initiate cleanup of this area to remove excess materials.

Mine Site Hazardous Waste Disposal Areas
HWB-3, HWB-4 and HWB-5

Some minor foot traffic had caused some disturbance on the slopes and crests of the berms and that should be avoided.

Baffinland Action: Foot and truck traffic on the slopes and the crest of the berm should be prohibited with controlled / ramped access points (preferably one) provided for the skid-steers to dispose designated materials in the cell, if required.

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

Some damage was noted at a culvert located near the southeast inlet to the pond. Additional minor damage was noted at the culvert located beneath the Tote Road, adjacent to the northeast corner of the pond.

Baffinland Action: Baffinland commits to repairing and cleaning the culverts identified during the inspection. The collected excess silt will be deposited at an appropriate disposal location onsite.

MS-08 – Surface Water Collection Pond Adjacent to the Waste Rock Facility

There was a small area on the MS-08 pond berm where the finer soil from the berm's crest has migrated down into the larger voids within the rock fill.

Baffinland Action: Baffinland commits to placing granular fill into the cavity in this area, followed by the reestablishment of the geotextile and geomembrane to match undisturbed arrangement elsewhere on the berm.

Generator Fuel Berm (Genset Pond)

Disturbance by foot-traffic, exposed geotextile and liner were visible along some locations on the berm's crest and minor sloughing of the upstream slope of the berm is also visible along the southern section of the berm.

Baffinland Action: Baffinland commits to bringing granular fill to this location to re-fill the slope and regrade 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.

Water (Effluent) Discharge Area

Minor surface erosion was noted adjacent to the rock fill slope, within the native material.

Baffinland Action: Baffinland commits to recovering the eroded slope with rock fill to prevent any regressive erosion in the future.

QMR2 Quarry

Additional measures for surface water management (excavation/formation of drainage ditches at strategic locations) within the quarry was recommended. In order to maintain traffic safety along the access road, immediate repair of the road was recommended.

Baffinland Action: The damaged road section was repaired during the inspection. Baffinland commits to further improving of surface water control in the quarry through excavation/formation of additional drainage ditches at strategic locations.

D1Q2 Quarry

Improvement to the surface water control processes is recommended in the area. This includes improvements and establishment of ditching along the access road and relocation of culverts.

Baffinland Action: Baffinland commits to improving the surface drainage in the area by constructing ditches with proper sloping, relocation of culverts to the lowermost point along the access road.

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Recommendations for Milne Port Infrastructure

Milne Port Hazardous Waste Disposal Areas

HWB-1
Ripped geotextile and exposed liner were noted at a few locations at higher elevations along the berm.

Baffinland Action: Baffinland commits as part of the onsite maintenance program, that the disturbed areas of the berm on the slopes and crest be regraded. In areas where the liner is exposed, Baffinland commits to covering the area with a protective layer of soil (clean sand and gravel).

HWB-2

Exposed geotextile and liner were noted at a few locations on the internal slopes of the otherwise stable berms.

Baffinland Action: Baffinland commits to addressing the exposed liner areas with a protective layer of soil (clean sand and gravel) during cell maintenance.

HWB-3 and HWB-4

The liner within the ponds are intact; however, they are exposed at a few locations on the crest and downstream slopes of the berms.

Baffinland Action: Baffinland commits to regrading and covering areas where liner is exposed with a protective granular fill (clean sand and gravel).

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

Exposed liner was visible on the downstream slope of sections of the berm for MP-04 and MP-04A, particularly along the north berm.

Baffinland Action: Baffinland commits to regrading and covering areas where liner is exposed with a protective granular fill (clean sand and gravel).

MP-05
Minor liner damage was noted on the slope of the southern intake channel to the pond. Some erosion on the slope of the drainage ditch to the MP-05 was noted.

Baffinland Action: Baffinland commits to addressing the minor liner and erosion damage observed.

Surface Water Collection Ditches
Sloughing of the sides of ditch P-SWD-3, adjacent to the LP2 laydown area, is visible at several locations along the ditch. The riprap appeared to be missing at a small section of the P-SWD-5 ditch. Minor sloughing of the riprap was also observed in the 380M ditch. It is recommended that the culvert should be shortened at the PSC drainage ditch under construction to facilitate uninterrupted flow of water within the ditch.

Baffinland Action: Baffinland commits further assessing the sloughing observed on the sides of ditch P-SWD-3 and the 380M ditch. Baffinland will replace the missing riprap observed in the P-SWD-5 ditch and further assess the culvert installation at the PSC ditch.

Tote Road between Mary River and Milne Inlet - Bridges and Culverts

Bridge 17

There are two historic abutments, located immediately adjacent to the "new" ones. The metal front and wing walls of both "old" abutments have suffered damages in the past, particularly the south abutment.

Baffinland Action: To maintain the stability of the currently used bridge abutments, Baffinland will keep the two old abutments in place since they provide support to the adjacent new structures.

Bridge 63

There are two historic abutments, located immediately adjacent to the "new" ones and damage to the metal front and wing walls of both abutments are visible.

Baffinland Action: To maintain the stability of the currently used bridge abutments, Baffinland will keep the two old abutments in place since they provide support to the adjacent new structures.

Bridge 80

There are two historic abutments, located immediately adjacent to the "new" ones, providing support to the new abutments and road embankment. Therefore, removal of these structures is not recommended.

Baffinland Action: To maintain the stability of the currently used bridge abutments, Baffinland will keep the two old abutments in place since they provide support to the adjacent new structures.

Bridge 97

At this location the old abutments are located somewhat away from the new ones and they appear to be structurally stable. Since no access is provided to them from the road they shall be left in place.

Baffinland Action: Baffinland will not be removing the old abutments identified at Bridge 97 during the inspection.

Culvert – 083

The outlet of this culvert appears to be short. It should be extended by about 1.5 m and the adjacent road embankment shall be upgraded to a more stable slope with the placement of crushed stone.

Baffinland Action: Baffinland commits to placing crushed rock fill adjacent to the culvert at its inlet. This will further prevent erosion of the road embankment by the flowing water in the creek.

Culvert – 107

Both ends of this culvert are short, particularly at the inlet side.

Baffinland Action: Baffinland commits to further inspecting this culvert and will determine if replacement with a longer, larger pipe is required.

Culvert – 112D
The outlet end of one of the culverts at this location appears to be short and no crushed rock riprap was placed around that particular culvert.

Baffinland Action: Baffinland commits to further inspecting this culvert to determine if replacement with a longer, larger pipe is required. Baffinland will place additional riprap the outlet end of the pipe to prevent slope erosion and embankment failure.

Culvert – 114D
Both ends of this double-barrel culvert are damaged and too short, particularly at the outlet end.

Baffinland Action: Baffinland commits to further inspecting this culvert to determine if replacement with a longer, larger pipe is required. If replaced, both pipes will be repaired and extended. Once the pipes are repaired and extended, the road embankment may be widened.

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 or Aaron MacDonell.

Regards,

Connor Devereaux
Environmental Superintendent

Attachments:
Attachment 1: 2020 Geotechnical Inspection Report No. 1

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, Aaron MacDonell, Amanda McKenzie (Baffinland)

Baffinland

Attachment 1

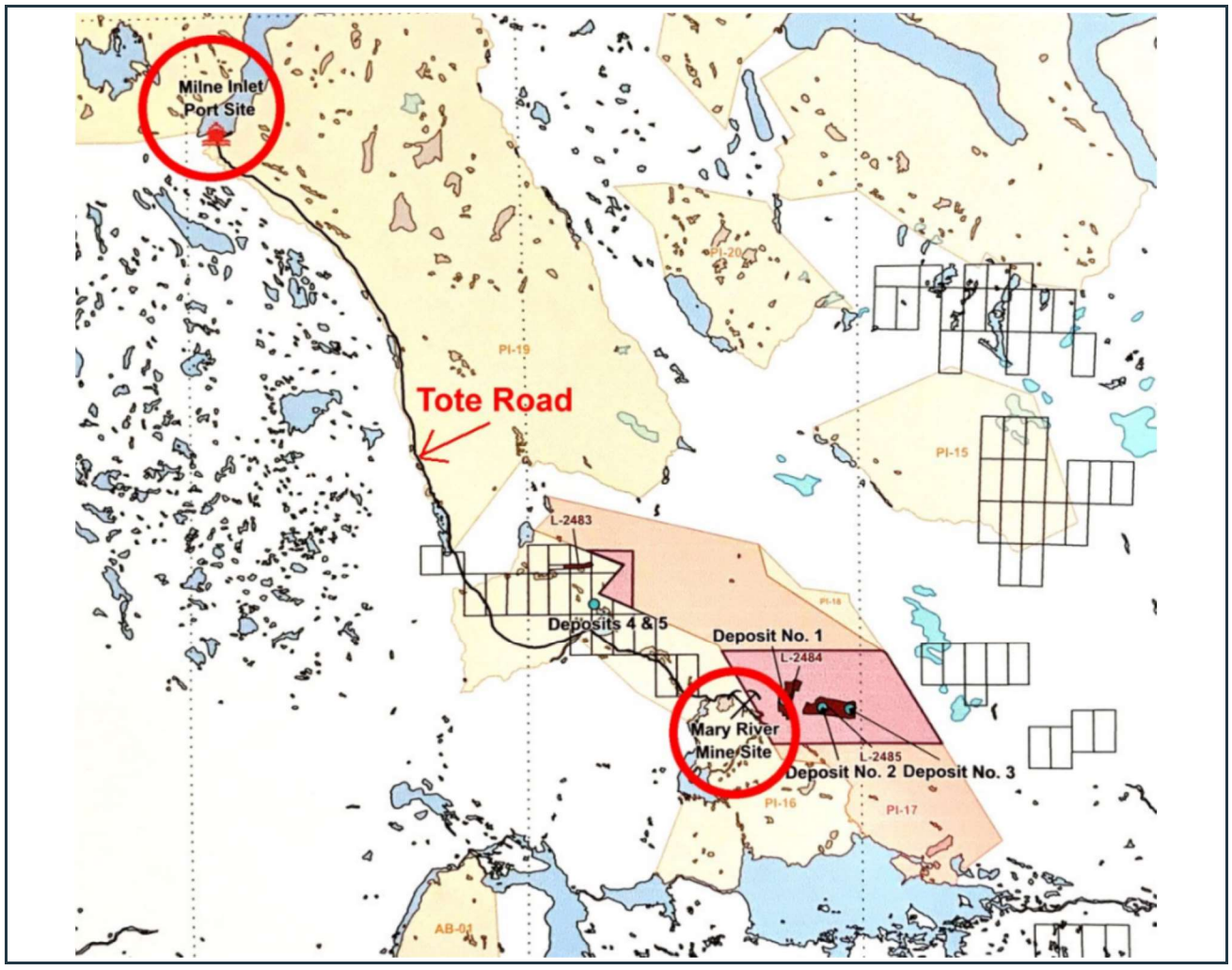
2020 Geotechnical Inspection Report No. 1

Baffinland Iron Mines Corporation

August 6, 2020
Project #: TC190307

Annual Geotechnical Inspections – 2020 Report 1.

Mary River Iron Mine Complex – Nunavut



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August 6, 2020
TC190307

Mr. Connor Devereaux - Environmental Superintendent, Mary River Iron Mine, and
Mr. Aaron MacDonell - 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 Complex, 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 Complex in Nunavut. Based on information and guidance provided in connection with the site's infrastructure, the undersigned has completed the first of the planned two inspections for 2020 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
- Tote road bridges – Abutment Review (2018 December) – B.H. Martin Consultancy
- Annual Geotechnical Site Inspections (2019) – Wood Environment & Infrastructure Solutions

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 first geotechnical field inspection of 2020 at the Mary River Iron mine complex, which is a condition of the Type "A" Water License No: 2AM-MRY1325 – Amendment No.1 ("Water License").

Based on the requirements outlined in the Water License, the field inspections shall include the review of various facilities and structures that contain waste materials (hazardous and non-hazardous), and store or retain / convey water (settling ponds and ditches) at the Mary River mine and Milne Inlet Port sites. The field review assessed the current condition of the berms and slopes, and report on potential seepage or stability problems at the ponds, if any.

In addition to the condition survey of the above noted infrastructure components, critical watercourse crossings (bridges and selected culverts) were also reviewed along the Tote Road, connecting the Mary River and Milne Inlet Port sites. As specified by the Nunavut Water Board, the conditions of the above listed infrastructure components need to be visually inspected twice a year and documented by photographs. The inspected structures and facilities in the summer of 2020 included the followings:

A. Mary River Mine Site

a) Polishing/Wastewater Stabilization Ponds (3)
b) Hazardous waste disposal cells - (HWB-1 to HWB-7)
c) MS-06 and MS-08 surface water collection/settling ponds and ditches
d) Genset pond (i.e., located adjacent to the generators)
e) Fuel Storage Farms (3) – Aerodrome jet-fuel storage, MS-03 and MS-03B diesel fuel farms
f) Solid-waste disposal site (non-hazardous landfill)
g) CLSP silt sedimentation check dams and berms, adjacent to the water intake
h) Water (effluent) discharge area
i) Deposit 1 pit walls
j) QMR2, D1Q1 and D1Q2 rock quarries

B. Milne Inlet Port Site

a) Hazardous waste disposal cells - (HWB-1 through to HWB-4)
b) MP-01A, pond
c) MP-03 fuel tank farm
d) MP-04 landfarm and 04A snow dump cells
e) MP-05, MP-06 and Settling Pond #3 surface water settling ponds and drainage ditches
f) Q01 Rock Quarry
g) Surface water collection ditches (P-SWD-3, -5, -6, -7, W3/W14, 380M pad and P-SC ditches)
h) Tote road culverts (conveying surface water from the quarry area)

C. Tote Road between the Mary River mine site and Milne Inlet Port

a) Bridges (4)
b) Culverts (12)

The above listed infrastructure components were visually inspected between June 26 and July 7, 2020, 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 their current conditions were documented, and the findings are summarized in the following report. The locations of most of the inspected structures, settling ponds and ditches are shown in the following Figures:

a) Mary River Mine site - Northern, Central, Quarry – Pit 1 and Waste rock areas: Figures 1 to 4
b) Milne Inlet Port site - Figure 5
c) Representative section of the tote/haul road: Figure 6

Photographs of the inspected structures are shown in the following documents (attached to the report):

a) Appendix A: Mary River Mine site – Figures 7 to 52
b) Appendix B : Milne Inlet Port site - Figures 53 to 88
c) Appendix C: Bridges and culverts along the tote road: Figures 89 to 120

Figure 1: Site layout – Mary River Mine Site - Northern Zone, adjacent to the runway

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

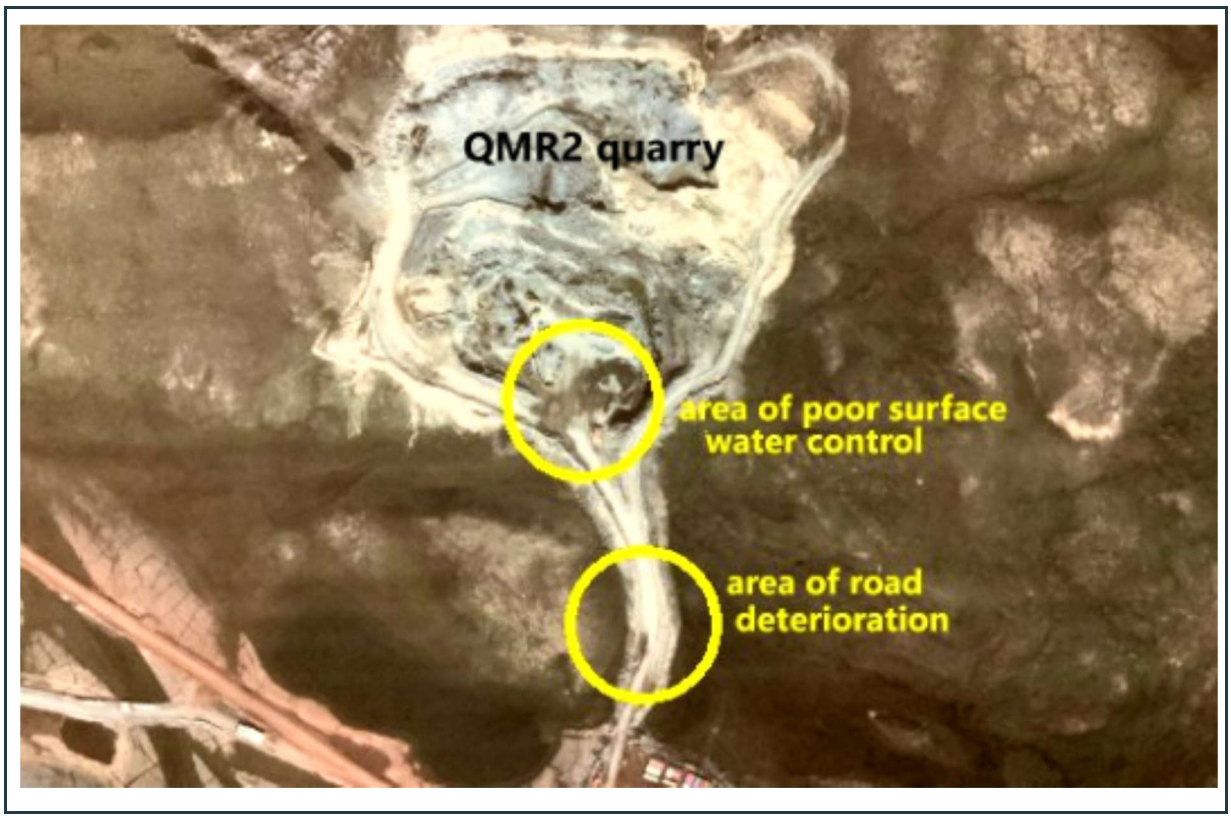

Figure 3: Site layout – Mary River Mine Site – QMR2 quarry area

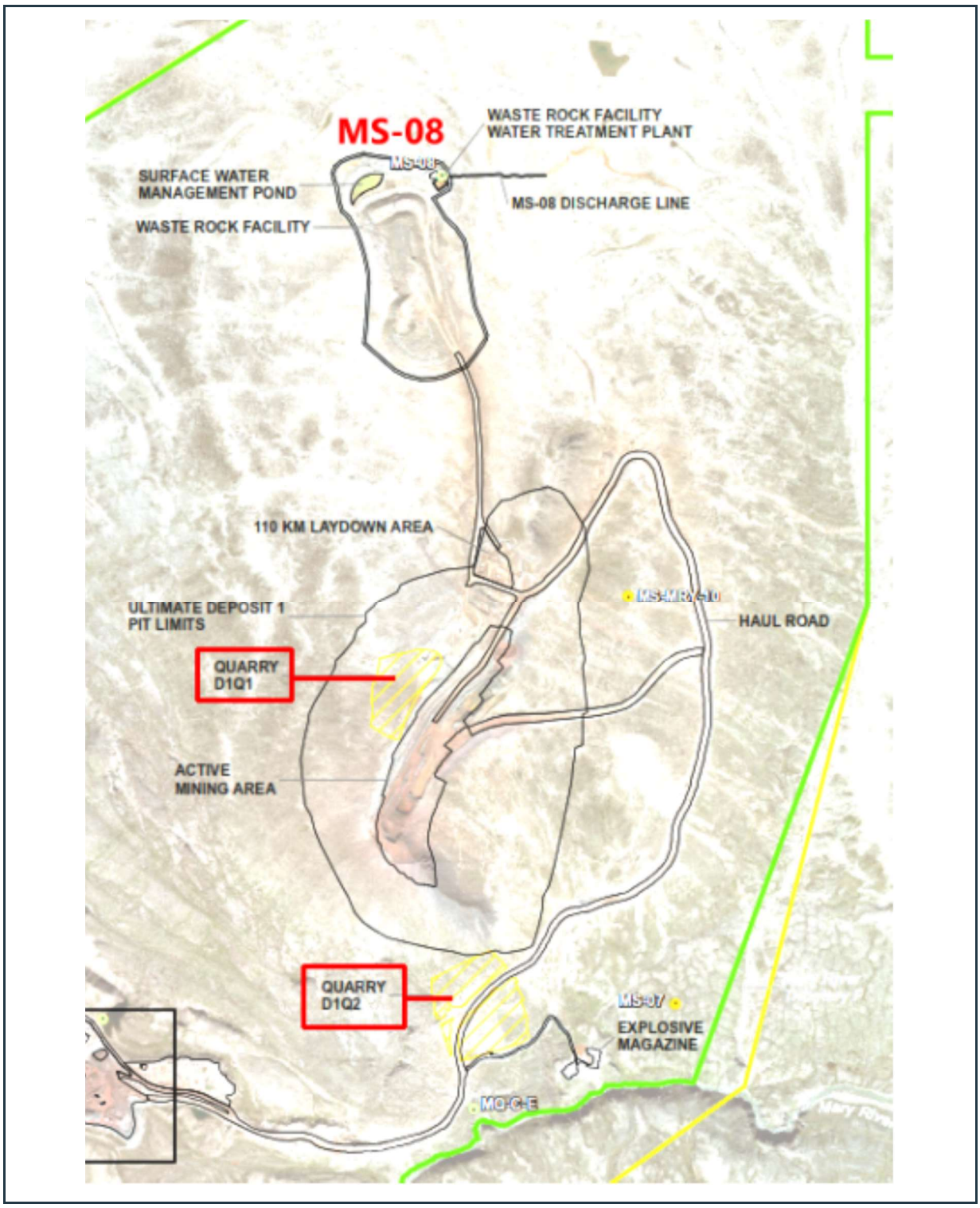

Figure 4: Site layout – Mary River Mine Site – Pit 1, D1Q1 and D1Q2 quarries and MS-08 pond

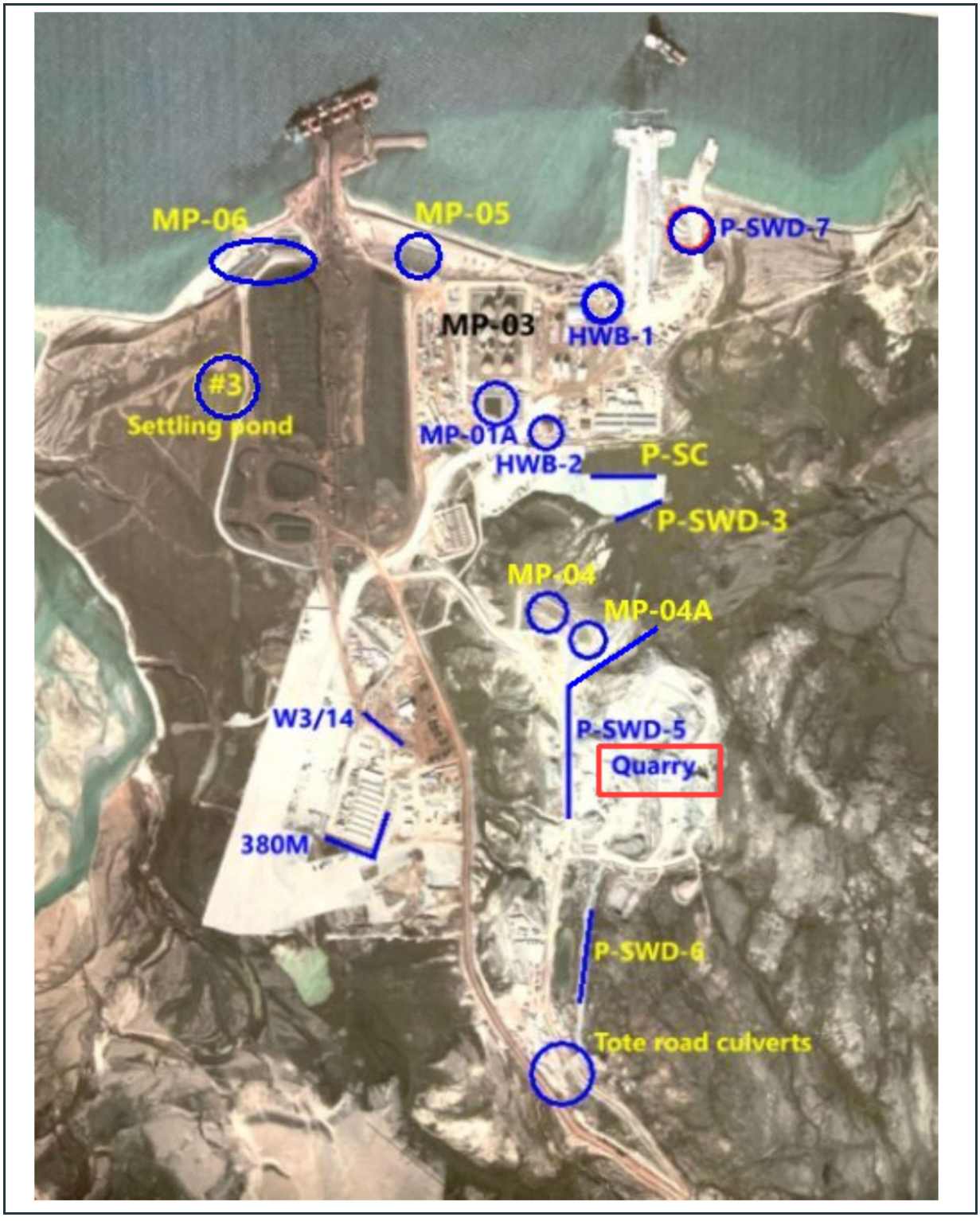

Figure 5: Site layout – Milne Inlet Port Site

Figure 6: Section of the tote/haul road between the Mary River Mine site and Milne Inlet Port

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, B and C, as integral parts of the document.

2.0 Mary River Mine Site

2.1 Polishing/Waste Stabilization Ponds (3 PWS ponds)

There are three polishing/waste stabilization ponds, located adjacent to the central part 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, as shown in Figure 7. 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 would arise, which would prevent the discharge of treated effluent directly to the receiving environment.

The stable berms around the ponds generally comprise granular materials (rock fill, 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 on the upstream face of the slopes (see Figures 8 and 9). However, there was a minor "sinkhole" visible on the crest of Pond #3, shown in Figure 10. It appears that the finer sand particles migrated down into the larger voids within the rock fill. The sinkhole should be filled with clean sand and gravel and the crest of the berm should be

regraded by using hand tools (shovels and rakes). Timber/lumber debris was also noted around the sinkhole, which should be removed to prevent potential damage to the liner.

As show in Figure 7, the berms around the three ponds appear to be stable, having shallow downstream slopes. They were built by using non-frost-susceptible compacted granular materials. Based on site observations, it appears that the subgrade around the berms comprise thaw-stable, predominantly granular soils with trace to some fines. With this observation, the berms are assumed to have stable foundations, which is further supported by the fact that there are no indications of ground displacement or sloughing at and around the berms.

As pointed out above, the berms appear to be structurally stable, and no visible wet downstream slopes and toe seepage was noted. However, as shown in Figure 11, 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.

Pieces of 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). 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 at least counterweight the removed weight, will protect from / reduce risk of wind uplift effects. Furthermore, timbers should also be removed from inside the ponds.

2.2 Hazardous Waste Disposal Areas (HWB-1 to HWB-7)

There are seven hazardous waste disposal areas at the Mary River mine site (HWB-1 to HWB-7). HWB-6 is located at the north side of the runway near the incinerator, as shown in Figure 1. The other six areas are located opposite of HWB-6, at the south side of the runway.

All HWB areas are lined and comprise shallow, stable perimeter berms. There is no visible instability at the berms (sloughing, excessive settlement, or tension cracks), other than some soil displacement caused by foot and truck traffic on the surface of the slopes and crests at some locations, as shown in the relevant images in Appendix A. It is recommended that foot and truck traffic on the slopes and crest of the berms should be limited, with controlled/ramped access point (preferably one) provided for trucks and skid-steers to dispose/remove materials in the cells.

a) HWB-1

This cell is currently empty, as shown in Figure 12. Based on information obtained during the 2019 summer inspection, concerns had been raised in the past to suspected liner damage within this cell, and consequently no material is stored in this cell.

b) HWB-2

As shown in Figure 13, the perimeter berm around this cell appears to be stable. The presence of water visible within the cell demonstrates that the liner is intact. No visible seepage from the cell was noted around the berm, and the cell operates as intended, although no material is currently stored here.

c) HWB-3 and HWB-4

These cells are located side-by side and were called in previous reports as "Fuel Containment" cells. As shown in Figures 14 and 15, currently there are fuel barrels stored on wooden pallets in both cells.

The photographs of the cells attest stable berm condition, and good liner performance (e.g., ponding water in the cells). However, it is also shown in the images that foot traffic had caused some disturbance on the slopes and crests of the berms and that should be avoided.

d) HWB-5

As shown in Figure 16, the shallow berms around this cell appear to be stable and there is no visible liner damage. It is also shown that the cell is currently empty. As recommended above, foot and truck traffic on the slopes and the crest of the berm should be prohibited with controlled / ramped access points (preferably one) provided for the skid-steers to dispose designated materials in the cell, if required.

e) HWB-6

The HWB-6 cell was in poor condition during the 2019 summer inspection. However, as shown in Figures 17 and 18, extensive rehabilitation of this cell has recently been completed. The berms have been regraded, stabilized and the floor of the cell covered with granular fill. Currently, there are a few waste cubes on wood pallets stored in the cell, located adjacent to the incinerator.

f) HWB-7

HWB-7 cell was a bulk fuel storage facility in the past. Currently, only one large fuel tank is stored in the cell, as shown in Figure 19. The perimeter berms around the cell appear to be stable and the visible water (rain and melted snow) within the cell is indicative of adequate liner performance.

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 settling 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 open ditches to the settling pond. There are two intake locations to the pond at the northeast and southeast corners, and there is an emergency spillway located opposite to the intakes. The liner within the pond and on the upstream slopes of the berm is intact (see Figure 21), and no wet downstream slopes or toe seepage were visible at the time of the inspection.

The side slopes of the surface-water collection ditches were observed to be stable (see Figure 22) and the ditches are clean. However, some damages to two culverts were noted where the ditches cross the roads, as shown in Figures 23 to 25. One of the two culverts is located near the southeast inlet to the pond, while the other is located beneath the tote road, adjacent to the northeast corner of the pond. It is recommended that these culverts be cleaned, and their inlet and outlet ends be repaired to facilitate uninterrupted flow of water via the ditches into the settling pond.

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

The recently reconstructed MS-08 settling pond is surrounded by new perimeter berms, as shown in Figures 26 to 28, in Appendix A. The berms have been completely reconstructed using granular soils form borrow sources similar in composition as the ones underlying the base of the pond / mine complex. The pond is lined with exposed new HDPE liner that is secured in place in anchor trenches on the crest of the berms. Based on information provided at the site, the retained water is not suitable for direct discharge to the environment as it does not meet discharge criteria. Therefore, the collected water is pumped to the adjacent plant for treatment.

The berm structures around the MS-08 pond appear to be stable (no evidence of tension cracks or crest subsidence). There was a small area on the berm; however, where the finer soil from the berm's crest has migrated down into the larger voids within the rock fill, shown in Figure 28. Granular fill should be placed into the cavity in this area, followed by the reestablishment of the geotextile and geomembrane to match undisturbed arrangement elsewhere on the berm.

Contact water from the waste dump area is collected in two perimeter ditches and flows to the settling pond from the east and west. As shown in Figures 29 and 30, the drainage ditches are well maintained, having stable slopes and clean channels. The two images also show that, according to Baffinland's environmental group, Non-Acid Generating (NAG) rock fill berms were placed along the drainage ditches (along waste rock dump side), to further minimize the potential impact of potentially PAG waste rock to the environment.

As pointed out above, the water from the pond is pumped to the nearby designated facility for treatment. There is a lined treatment cell in a good condition located immediately next to the plant with confined stable perimeter berms, as shown in Figure 31.

2.4 Genset Pond

The "genset pond" contains melted snow and rainwater that previously contained fuel bladder for the gensets. The pond is located immediately adjacent to the power generators, south-west of the hazardous waste cells (Figure 1). As shown in Figures 32 to 34, the perimeter berm around the pond generally comprises granular materials and the pond is lined. Disturbance by foot-traffic, exposed geotextile and liner were visible along some locations on the berm's crest and minor sloughing of the upstream slope of the berm is also visible along the southern section of the berm.

In addition, minor slope deterioration was also visible along the berm adjacent to the generators, as shown in Figure 33. Trucks bypassing ponding surface water on the nearby road encroach into the toe of the berm and this encroachment requires re-establishment to the original configuration using compacted granular fill to prevent potential for local instability (i.e. regressive erosion / sloughing). The slope should be regraded manually, and the new fill shall be compacted using a plate tamper or like equipment. In addition to the repair work on the slope, the southern, somewhat lower section of the berm should also be reconstructed to its original geometry, and truck traffic on the berm must be avoided.

2.5 Fuel Farms (3)

There are three fuel farms at the Mary River mine site. One is located at the airfield and two adjacent to the main office complex of the mine. The berms and liners at these facilities are in excellent condition, as shown in the relevant images in Appendix A.

a) Jet fuel Tank Farm

The jet fuel tank farm is located at the aerodrome and it is surrounded by a stable perimeter berm. In addition, a second berm provides additional protection at two sides of the facility, constructed by using crushed rock fill, as shown in Figures 35 and 36. The facility is lined to the crest of the perimeter berms, and the liner within the cell appears to be in good condition.

b) MS-03 Diesel Fuel Tank Farm

The stable berms around the first (historic) diesel fuel tank farm are in excellent condition (see Figure 37) and they are well maintained. The collected rainwater (and melted snow) within the cell is clean and its

presence indicates that the liner system is fully functional (i.e., no seepage from the cell is visible and the liner is well protected by granular fill throughout the facility).

c) MS-03B New Fuel Tank Farm

A new, large capacity fuel tank farm has recently been constructed adjacent to the tote road, shown in Figure 38. Based on our field review in 2019 the new tank farm was constructed as specified in the design drawings (subgrade, berms, bedding layer, liner, and protective cover). Our recent observations confirmed that the liner is intact, and all berms are stable and well maintained. This facility is surrounded by a chain-link fence with locked gates for security reasons.

2.6 Solid Waste Disposal Area

The solid waste disposal area is located in the southern zone of the Mary River mine site, as shown in Figure 3. Only non-hazardous solid waste is placed into this unlined facility without a leachate collection system. As shown in Figure 39, the solid waste placed into the facility is covered as required with layers of locally available clean soils (daily covers). The facility is now surrounded by a new chain-link fence and a lockable gate for security reasons. No stability issue was noted/recorded at the solid waste disposal site.

2.7 CLSP Silt-sedimentation Check Dams and Berms

The CLSP silt sedimentation control berms and check dams 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 (silts and clays) that are eroded down from the adjacent road and slopes, and to prevent the siltation of the lake around the water intake structure. As shown in Figure 40, the berms are stable, and the check dams are fully functional. Erosion of the channel's floor, at its steepest section, was recently eliminated by the placement of crushed rock fill (riprap) along the channel's floor and side-slope, as shown in Figure 41.

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 42. The rock fill slope appears to be stable although minor surface erosion was noted at a small section of the slope, as shown in the image.

At this stage this erosion does not seem to affect the overall stability of the rock-fill slope as this relates to the water discharge area; however, it would be beneficial to fill the eroded section of the slope with crushed rock fill to prevent any localized regressive erosion in the future.

2.9 Deposit-1 Pit Walls

The pit wall at the "deposit-1" open pit is globally in stable condition (Figure 43) with sporadic local friable weathered zones (Figure 44) visible at a few locations. The access/haul road into the open pit is appropriately wide and the eroded rock fragments are removed from the toe of the pit walls as needed, and the traffic on the haul road is safely maintained.

2.10 Quarry Areas (QMR2, D1Q1 and D1Q2)

a) QMR2 quarry

No activity was noted in the QMR2 quarry (Figure 45) at the time of the inspection. The rock slopes in the quarry generally appeared to be in stable conditions, although potential fall hazards were noted in a few areas. Such hazards, represented by the presence of weak veins within the pit walls, loose boulders, and rock wedges prone to skidding are shown in Figure 46. It is recommended that such hazards (noted at approximately 2% to 3% of the pit walls) should be eliminated by rock scaling, prior to restarting the quarry's operation.

As shown in Figure 47, the lowest plateau of the quarry exhibited poor surface water control. Rainwater and melted snow cover the quarry's main level feeding a flow path along the edge of the access road into the quarry. High energy of this large surface water volume has damaged the embankment by erosion, as shown in Figure 48. This embankment was most likely constructed with the use of poorly graded rock fill, covered with finer sand and gravel sized crushed rock. The flowing water has washed the finer material into the large voids of the underlying rock fill in some areas, resulting in large cavities along the edge of the road. In order to maintain traffic safety along the access road, immediate repair of the road was recommended, together with the solution of adequate surface water control (excavation/formation of drainage ditches at strategic locations) in all parts of the quarry. The damaged road section was repaired during our inspection, however, the surface water control still needs to be sorted out in the area.

b) D1Q1 quarry

The D1Q1 rock quarry will be the source of crushed aggregate in the future. Currently, the designated area is undeveloped, with no road or any excavation activity at this particular location. As shown in Figure 49, the gentle slope in the area is covered by cobbles and boulders that will be mined and crushed in the future.

The area will be revisited during the fall inspection, should any activity be reported by that time.

c) D1Q2 quarry

Similar to the D1Q1, the D1Q2 quarry will be developed as future source of crushed aggregate. As shown in Figure 4, the selected area of this quarry is located south of the "deposit-1" open pit, along both sides of the haul road. Maintenance work on the access road to the southern part of the future quarry was carried out during our inspection in July 2020. As shown in Figures 50 to 52, improvement to the surface water control process must still be completed in the area. Currently all rainwater and melted snow flow without control (proper ditching) along the access road and the culverts, shown in Figure 51, require relocation. In order to improve the surface drainage in the area, ditches with proper sloping reporting to culverts at the lowermost point should be excavated along the road, as proposed in Figure 52.

3.0 Milne Inlet Port Site

3.1 Hazardous Waste Disposal Areas (HWB-1 to HWB-4)

There are four hazardous waste disposal cells 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 were constructed as twin-cells, located south/south-west of the fuel storage farm.

a) HWB-1

The HWB-1 cell covers a relatively large area, surrounded by a stable perimeter berm, constructed of granular fill material, as shown in Figures 53 and 54, in Appendix B. The stored materials in the cell appear to be well organized and predominantly contain cubes of lubricants and other materials, stored on wooden pallets. Ponding water was visible across the deeper area of the cell, indicating that the liner within the cell is intact. No seepage from the cell was visible around the toes of the berm. However, ripped geotextile and exposed liner were noted at one location at higher elevation along the sea-side berm (near its crest), as shown in Figure 54 (yellow circle). It is recommended that as part of the maintenance program the disturbed areas of the berm (generally caused by foot traffic) on the slopes and crest should be re-graded manually and the exposed liner areas should be covered with a protective layer of soil (clean sand and gravel).

b) HWB-2

The HWB-2 is a small cell that is currently empty, except rainwater and melted snow ponding within the cell. Exposed geotextile and liner were noted at a few locations on the internal slopes of the otherwise stable berms, as shown in Figure 55 (yellow circles). It is recommended that the exposed liner areas should be covered with a protective layer of soil (clean sand and gravel) during cell maintenance.

c) HWB-3 and HWB-4

The HWB-3 and HWB-4 cells are located immediately next to each other (twin-cells) and contain solid waste in shipping containers only, as shown in Figures 56 to 59. The berms around and in between the cells appear to be in stable condition with no indication of slope movements or settlement. The liner within the ponds are intact; however, they are exposed at a few locations on the crest and downstream slopes of the berms. It is suggested that all exposed liner areas be regraded and covered with protective granular fill (clean sand and gravel), to prevent potential damage to the liner in the future.

3.2 MP-01A Pond

The MP-01A polishing waste stabilization pond is located immediately south of the MP-03 fuel tank farm. As shown in Figure 60, the berm around the well-maintained pond is in excellent condition and the liner appear to be intact. No sign of slope instability, settlement or seepage from the pond was noted during the field inspection.

3.3 MP-03 Fuel Tank Farm

The MP-03 fuel tank farm occupies a large area in the center of the Milne Inlet port complex. As shown in Figures 61 and 62, the stable berms around the facility are well maintained and are in excellent condition. The visible ponding water within the internal cells of the fuel farm is an indication of proper liner functionality. The facility is fenced in and no indication of berm instability or seepage was noted on and around the berms, comprising compacted granular materials.

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

The MP-04 cell is located south of the port complex at higher elevation, adjacent to the rock quarry and it is almost full of waste materials. It is a large landfarm cell that generally stores contaminated soils and some solid waste, as shown in Figures 63 and 64. The berm structure around the cell appears to be in stable condition. The ponding water in one corner of the cell indicates proper liner functionality and no wet downstream slopes and toe seepage were noted (see Figure 63). Exposed liner was visible on the downstream slope of sections of the berm, particularly along the north berm. It is recommended that the exposed liner be covered (weighed down by a gravel layer) along the toe of the slope to prevent wind uplift related impacts.

MP-04A is a smaller cell used generally for the disposal of contaminated snow. This pond was constructed immediately adjacent to the MP-04 landfarm cell, shown in Figure 65. No seepage from the cell was noted anywhere around the pond; however, exposed liner was visible at the access ramp to the cell, as shown

in Figure 66. The exposed liner area of the ramp should be regraded and covered with protective granular fill material (clean sand and gravel), to prevent potential damage to the liner in the future.

3.5 Surface Water Collection Ponds and Ditches (MP-05, MP-06 and Settling Pond #3)

The high-grade iron ore that is mined, crushed, and screened at the Mary River mine is transported to the Milne Inlet port, and stockpiled across a large area that can accommodate up to 4 million metric tonnes of ore. Contact water from the area is collected along the west and north sides of the ore stockpile in side-ditches and conveyed into three (3) water collection settling ponds strategically located around the ore storage area.

a) MP-5 Settling Pond

The MP-05 settling pond is located adjacent to the north-east corner of the stockpile, while MP-06 has been constructed at the north-west corner. Both settling ponds are in excellent condition with stable, well maintained berms and intact geomembrane liners, as shown in Figures 67, 70 and 71.

No instability, erosion or settlement was noted at the berms and no toe seepage from the pond is visible anywhere around the ponds' perimeter. The surface water from around the stockpile is collected in generally well-maintained drainage ditches. Minor liner damage: however, was noted on the slope of the southern intake channel to the pond, as shown in Figure 68. Also, erosion on the slope of the drainage ditch to the MP-05 pond was noted at one location, shown in Figure 69. It was recommended that the liner and erosion damage should be repaired as soon as possible.

b) MP-06 Settling Pond

The MP-06 settling pond (Figure 70) is divided into two parts by a liner-covered internal berm and the northern cell is called the "overflow pond" (Figure 71). Both settling ponds have emergency spillways and the water level in both ponds was well below the spillways' inverts at the time of the inspection. The stable berms around the ponds are in excellent condition and no seepage was noted from the cells. The drainage ditch to the MP-06 pond is in excellent condition, as shown in Figure 72.

c) Settling Pond #3

This settling pond was recently constructed west of the ore storage area, as shown in Figure 5. The pond is surrounded along three sides with a stable, lined berm and contains two sumps, as shown in Figures 73 and 74. The geomembrane and protective geotextile on the internal slope of the berm extend 2.5 m below

the surface and anchored into the permafrost zone to prevent any seepage from the pond into the ground below. Excess water from pond #3 is pumped into the nearby, large capacity MP-06 settling pond.

3.6 Q01 Rock Quarry

No activity was noted in the Q01 quarry at the time of the inspection. The rock slopes in the quarry appeared to be stable conditions, as shown in Figure 75. Surface water is collected and drained well, into nearby drainage ditches.

3.7 Surface Water Collection Ditches (P-SWD-3, -5, -6, -7, W3/W14, 380M and P-SC ditches)

There are several surface water collection drainage ditches (listed above in the title of this section), some of them still under construction or improvement, as shown in Figures 76 to 85. These open ditches are excavated somewhat into the native soils and then their sides and inverts receive erosion protection layers comprised of fine crushed rock aggregate. It was noted during the inspection that geotextile have been used wherever the native subgrade composed of fine-grained material to prevent migration of fines into the rockfill and eventually into the ditches. The condition of these ditches should be monitored, particularly prior to the spring freshet, and any potential slope deterioration should be rectified prior to the anticipated increased flow during the thaw period of the years. Some current problems in these ditches are summarized below:

- Sloughing of the sides of ditch P-SWD-3, adjacent to the LP2 laydown area, is visible at many locations along the ditch, as shown in Figures 76 and 77. The sloughing is a result of uncontrolled sheet-flow of surface water, drained into this area by the P-SWD-5 ditch. It is suggested that the two ditches be connected by one drainage ditch to eliminate the development of sheet-flow from the current end of the P-SWD-5 toward the P-SWD-3 ditch.
- The riprap is missing at a small section of the P-SWD-5 ditch, shown in Figure 78. The riprap should be replaced in this area of the ditch to prevent erosion of the finer soil within the channel.
- Minor sloughing of the riprap in the 380M ditch was also visible that should be repaired (Figure 83).
- The P-SC drainage ditch is still under construction. The riprap on the slope at a culvert in that ditch should be rectified, and the culvert should be shortened at this location to facilitate uninterrupted flow of water within the ditch (Figure 85).

3.8 Tote Road Ditches and Culverts Near the Rock Quarry

Surface water from higher elevation of the rock quarry is collected in drainage ditch P-SWD-6, and conveyed down the slope through corrugated galvanized steel culverts (Figure 86), installed under an internal haul road and then under the tote road (Figure 87). The water in the ditches is conveyed to small natural ponds, located along the west side of the tote road, as shown in Figure 88. No siltation in the ditches or within the culverts was noted during the recent inspection.

4.0 Tote Road between Mary River and Milne Inlet - Bridges and Culverts

Four (4) bridges and twelve (12) culverts were inspected during the recent site visit. The general conditions of those structures are summarized below, and the images are shown in the attached Appendix C document.

4.1 Bridges (4)

a) Bridge 17 (located approximately 17 km from Milne Inlet port)

As shown in Figures 89 and 90, the abutments of this bridge are stable and no scour in the riverbed around the abutments was noted during the recent site visit. The abutments show no differential settlement or any structural discrepancy like deterioration of the foundation concrete. There are two historic abutments located immediately adjacent to the "new" ones. The metal front and wing walls of both "old" abutments have suffered some damages in the past, particularly the south abutment. To maintain the stability of the currently used bridge abutments it was recommended during the last year inspection that the two old (somewhat damaged) abutments should be kept in place since they provide additional support to the adjacent new abutments.

b) Bridge 63 (located approximately 63 km from Milne Inlet port)

As shown in Figures 91 and 92, the abutments of this bridge are stable and no scour in the riverbed was noted during the recent site visit. The abutments show no differential settlement or any structural discrepancy like cracking on the foundation concrete. Similar to the previous bridge, there are two historic abutments, located immediately adjacent to the "new" ones and damage to the metal front and wing walls of both old abutments are visible. In order to maintain the stability of the currently used bridge abutments, the two old abutments should be kept in place since they provide support to the adjacent new abutments.

c) Bridge 80 (located approximately 80 km from Milne Inlet port)

As shown in Figures 93 and 94, the abutments of this bridge are stable and no scour in the riverbed was noted during the recent site visit. The abutments show no differential settlement or any structural discrepancy like cracking on the foundation concrete. Similar to the previous bridges, there are two historic abutments, located immediately adjacent to the "new" ones, providing support to the new abutments and road embankment. Therefore, removal of these structures is not recommended.

d) Bridge 97 (located approximately 97 km from Milne Inlet port)

As shown in Figures 95 and 96, the abutments of this bridge are stable and no scour in the riverbed was noted during the site visit. The abutments show no differential settlement or any structural discrepancy like cracking on the foundation concrete. Similar to the previous three bridges, there are two historic abutments located adjacent to the "new" ones. At this location, the old abutments are located somewhat away from the new ones and they appear to be structurally stable. Since no access is provided to them from the road they shall be kept in place.

4.2 Culverts (12)

Twelve culverts (CV-076, CV-078, CV-083, CV-094, CV-102, CV-107, CV-110A, CV-111, CV-112D, CV-114D, CV-202, and CV-225) were inspected during the recent site visit, installed beneath the tote road between the Mary River and Milne Inlet sites. These culverts were selected for inspection based on construction work on these crossings, completed recently. The majority of the culverts are in good condition and they provide uninterrupted flow of water from their upstream to their downstream sides. Photographs of the inlet and outlet ends of all inspected culverts are shown in Figures 97 to 120, in Appendix C.

Culverts (6) that require some repair/rehabilitation work are listed below:

CV-078 (Figures 99 and 100): The outlet end of one of the four culverts at this location is damaged slightly, although the "cut" at the top of the corrugated pipe has no effect on the flow within the pipe. The pipe should be checked during regular maintenance and be repaired if necessary.

CV-083 (Figures 101 and 102): The outlet of this culvert appears to be short. It should be extended by about 1.5 m and the adjacent road embankment shall be upgraded to a more stable slope with the placement of crushed rock riprap around the culvert. Crushed rock fill should also be placed adjacent to the culvert at its inlet to prevent erosion of the road embankment by the flowing water in the creek.

Improvement of the creek's alignment at the front of the inlet is also recommended (minimize water flow parallel with the embankment at its toe, to prevent toe erosion and subsequent potential slope instability).

CV-107 (Figures 107 and 108): Both ends of this culvert are short, particularly at the inlet side. Consideration shall be given to replace this culvert with a longer and somewhat larger pipe. It is visible in Figure 107 that the inlet's invert is currently located above the water level in the creek resulting in ponding water at the front of the pipe's inlet. A larger and longer pipe would facilitate uninterrupted flow of water from upstream to the downstream side of the road embankment.

CV-110A (Figures 109 and 110): Minor damage is visible on the outlet of this culvert at the slope of the embankment (yellow circle in Figure 110); however, the "cut" at the top of the corrugated pipe has no effect on the flow within the pipe. The culvert should be checked during regular maintenance and be repaired if necessary.

CV-112D (Figures 113 and 114): The outlet end of one of the culverts at this location appears to be short and no crushed rock riprap was placed around that particular culvert. As a result, erosion of the embankment slope is visible which may lead to sloughing of the edge of the embankment. This culvert should be extended, and riprap should be placed around the outlet end of the pipe to prevent slope erosion and embankment failure.

CV-114D (Figures 115 and 116): Both ends of this double-barrel culvert are damaged and too short, particularly at the outlet end. Both pipes should be repaired and extended (or simply replaced with longer culverts). Once the pipes are repaired and extended, the road embankment should be widened at the downstream end of the pipes, and riprap must be placed around the culverts to provide stable embankment slopes.

5.0 Conclusions

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood), has completed the first of the two required geotechnical field inspections of 2020 at the Mary River iron mine complex in Nunavut. Based on field observations, the condition of the inspected infrastructure components can be summarized as follow:

- All settling ponds and waste disposal cells are enclosed by relatively shallow, stable berms. The berms show no signs of instability, there are no tension cracks or excessive settlements and no detrimental slope erosion is visible at the berms. These structures were constructed by using thaw-stable granular materials, placed over thaw-stable subgrades (based on observations of adjacent areas along their footprints). Minor disturbance on the surface of the slopes and crests were noted at some of the berms, however, these discrepancies can be rectified by a more frequent maintenance (regrading) program. Foot and truck traffic on the berms must be limited and only one ramped access point should be provided to each waste disposal cell.
- The water and waste storage settling ponds and cells comprise HDPE liners, generally in good condition. No seepage from the currently operating cells was noted. Minor damages to the liner

were noted at a few locations above the water lines. As specified within this report, these damages to the liners should be repaired as soon as practically possible.

- Open drainage ditches across the Mary River and Milne Inlet sites are generally in good conditions with some erosion and slope sloughing visible at a few locations. As part of a more frequent maintenance program the eroded sides of the ditches should be repaired/regraded.
- The abutments at the four inspected bridges are in good condition and no scour in the riverbed around the abutments were noted at the time of the site visit.
- Water crossings by culverts at the inspected locations are generally in good conditions. At a few locations, culverts were noted as being either too short or somewhat damaged. As specified within the report, those culverts should be repaired as soon as practically possible.

6.0 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

August 6, 2020
Project #: TC190307

Annual Geotechnical Inspections – 2020 Report 1.

APPENDIX "A" - Mary River Mine Complex - Photographs

Figure 7 to Figure 52

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1.0 Mary River Mine Complex

1.1 Polishing/Wastewater Stabilization Ponds (3 PWS ponds)

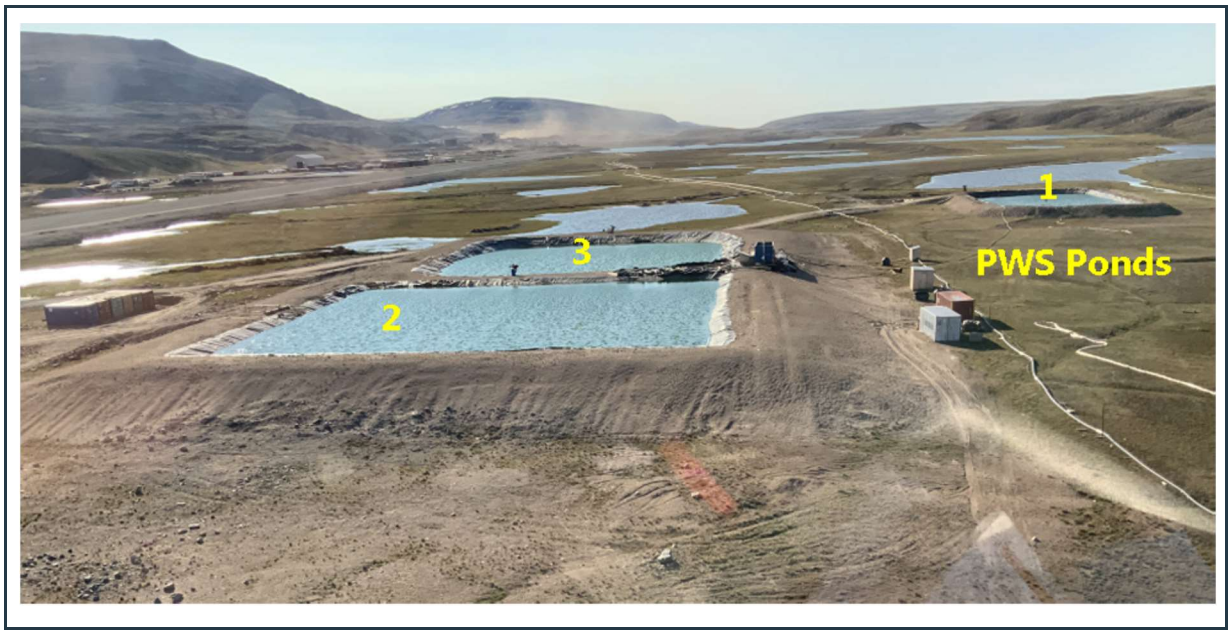

Figure 7: Aerial view of the three PWS ponds (this photo was taken in 2019)

Figure 8: PWS pond #1. Well maintained perimeter berm and liner (note some floating ice in the pond).

Figure 9: PWS pond #2 – Berm and liner in good condition. The water was recently lowered, and ice still visible in the pond.

Figure 10: PWS pond #3 – Timber/lumber debris visible on the crest. Note the loss of some finer berm material (sand) into the voids of rock fill. The "sinkhole" should be filled and the debris removed.

Figure 11: PWSP #2 and #3 – Untidy conditions at the water discharge point between ponds #2 and #3.

1.2 Hazardeous Waste Disposal Cells (HWB-1 to HWB-7)

a) HWB-1

Figure 12: View of HWB-1 – Currently this cell is empty.

b) HWB-2

Figure 13: View of the stable berm at HWB-2. Other than some plastic, the cell is currently empty.

c) HWB-3 and HWB-4

Figure 14: View of stable berms and the stored fuel barrels in HWB-3.

Figure 15: View of HWB-4 next to HWB-3, with jetfuel barrels stored on wooden pallets.

d) HWB-5

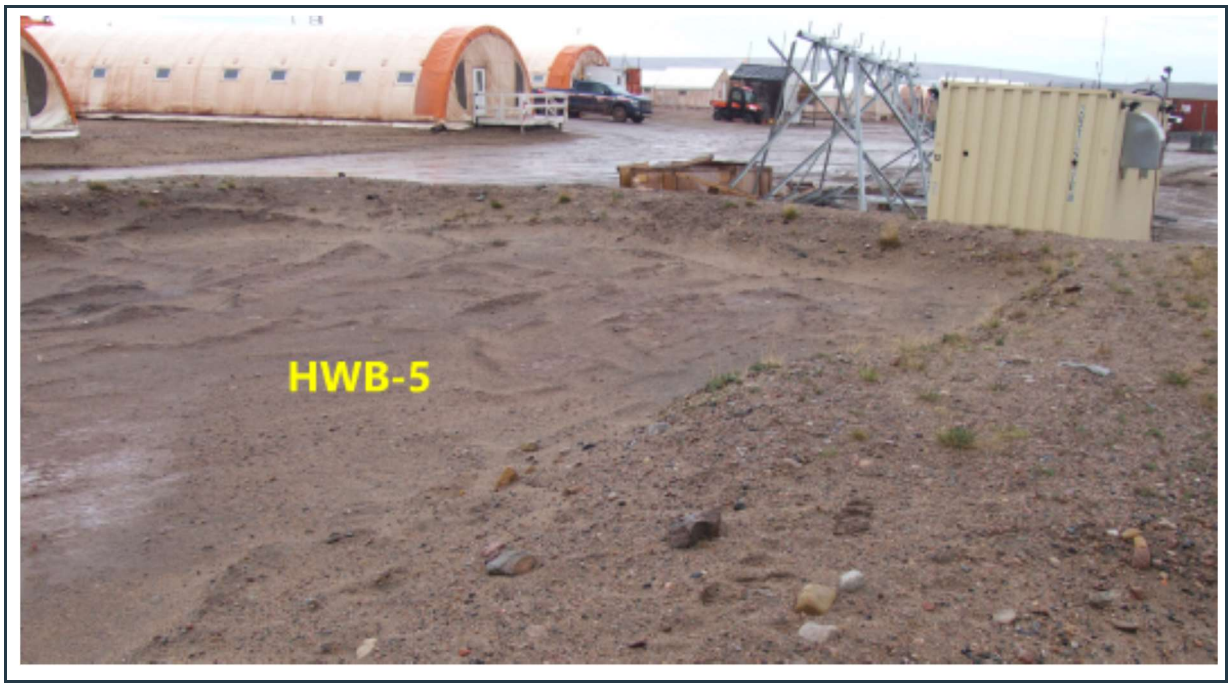

Figure 16: View of the HWB-5 cell, currently empty.

e) HWB-6

Figure 17: View of the recently upgraded stable berm around HWB-6.

Figure 18: View of HWB-6. Note the well maintained "floor" (protecting the liner) within the cell.

f) HWB-7

Figure 19: View of the large HWB-7, with only one fuel tank stored in this cell.

Figure 20: View of the stable berm around the HWB-7 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 21: MS-06 surface-water collection pond with stable berms and intact liner.

Figure 22: Well maintained surface-water collection ditch around the crusher plant, leading to MS-06.

Figure 23: Damaged and clogged (silted) culvert in the ditch shown in Figure 22, near the MS-06 pond.

Figure 24: The other end (inlet) of the culvert shown in Figure 23.

Figure 25: Partially clogged inlet of a culvert, located under the access road next to the truck weighing scale. It drains surface-water from the crusher area to the MS-06 pond.

b) MS-08 Pond next to the waste rock dump

Figure 26: View of the recently completed enlarged MS-08 pond, downstream of the waste rock dump

Figure 27: View of the new, robust berm with shallow side-slopes around the MS-08 pond

Figure 28: Area of minor fine-soil migration into the underlying rock fill at the northern section of the berm. The geotextile should be rearranged and the hole filled with fine crushed aggregate.

Figure 29: Well-maintained drainage ditch along the east side of the waste rock dump

Figure 30: Well-maintained drainage ditch along the west side of the waste rock dump

Figure 31: Water treatment pond adjacent to the waste rock dump and MS-08

1.4 Genset Berm

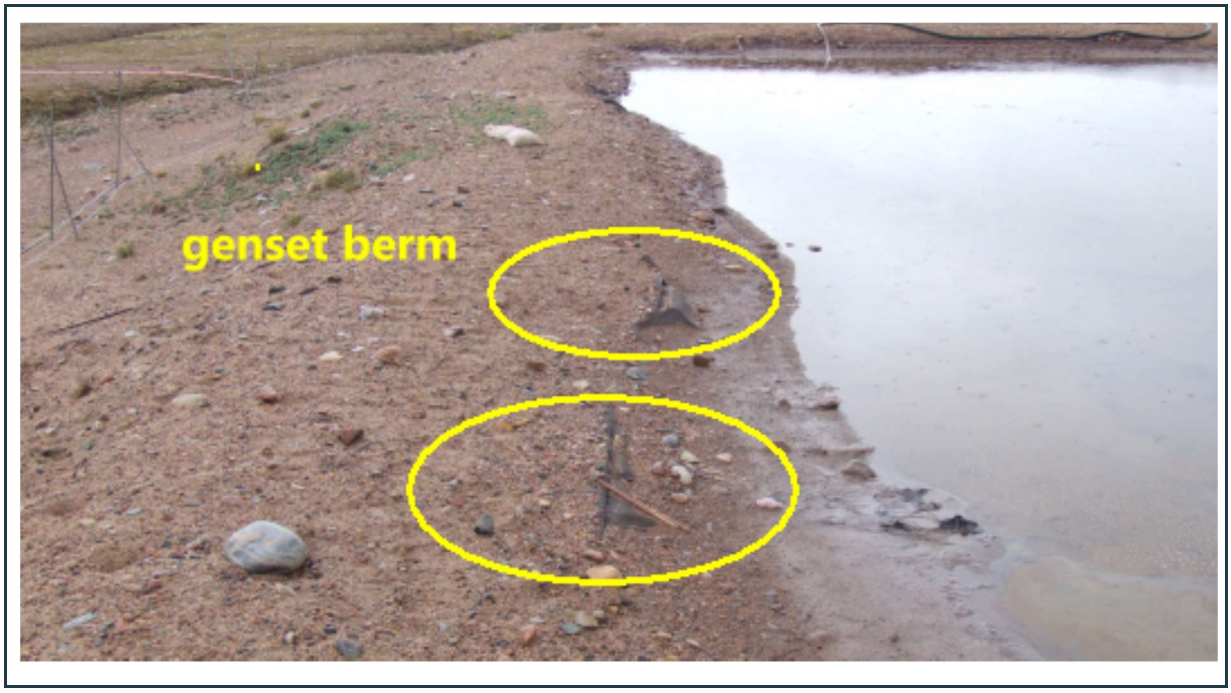

Figure 32: View of the berm near the generator, with exposed geotextile and liner at a few locations.

Figure 33: View of slope deterioration at a section of the berm near the generators. Trucks bypassing ponding surface water on the road are "cutting" into the toe of the berm.

Figure 34: View of the south-east berm that needs to be repaired (raised and regraded). Note the exposed geotextile and liner that shall be covered with sand/gravel during berm rehabilitation.

1.5 Fuel Farms

a) Jetfuel Tank Farm

Figure 35: View of the well-maintained berm at the jetfuel storage cell.

Figure 36: View of the jetfuel farm's double berm system (note the additional crushed rock berm between the cell's perimeter berm and the tote road/parking lot).

b) MS-03 Diesel Fuel Tank Farm

Figure 37: View of the MS-03 diesel fuel farm. Note some floating debris that should be removed.

c) MS-03B New Fuel Tank Farm (Tank #5)

Figure 38: View of the recently completed fuel tank farm with well-constructed stable perimeter berms.

1.6 Solid Waste Disposal Area

Figure 39: Solid waste landfill facility (note the recently installed perimeter fence).

1.7 CLSP Silt-sedimentation Check Dams and Berms

Figure 40: CLSP check dams and berms, forming efficient silt sedimentation cells

Figure 41: Recently placed rip-rap in one of the cells to prevent erosion of the channel floor at the critical vertical drop in elevation along the chain of sedimentation cells.

1.8 Water Discharge Area

Figure 42: Minor crest/slope erosion (cobbles and boulders rolling down the slope) at the water discharge area. Placement of rock fill is required here to improve slope integrity and prevent erosion.

1.9 Deposit-1 Pit Walls

Figure 43: Stable pit-wall in the area of deposit-1.

Figure 44: Minor weathering and pit-wall erosion in the area of deposit-1.

1.10 Quarry Areas

a) QMR2 quarry

Figure 45: View of QMR2 quarry with poor surface water control area marked by the yellow circle.

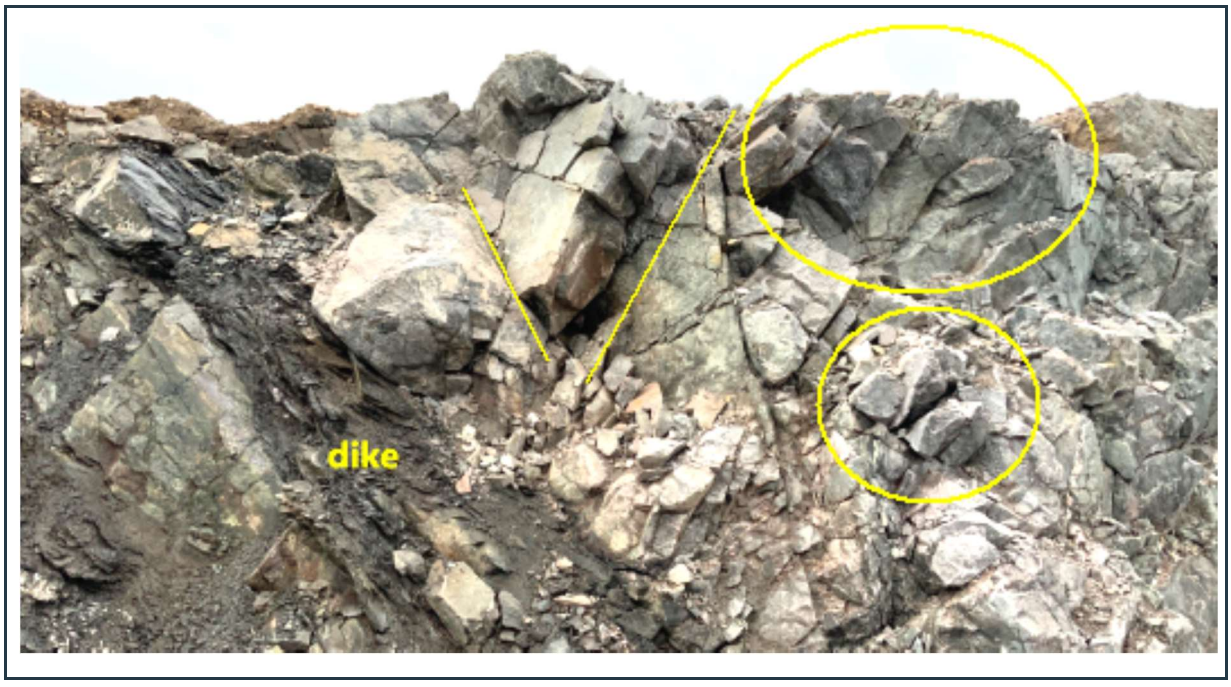

Figure 46: Potential hazards at one of the highwalls (weak dike, loose boulders and sliding wedge).

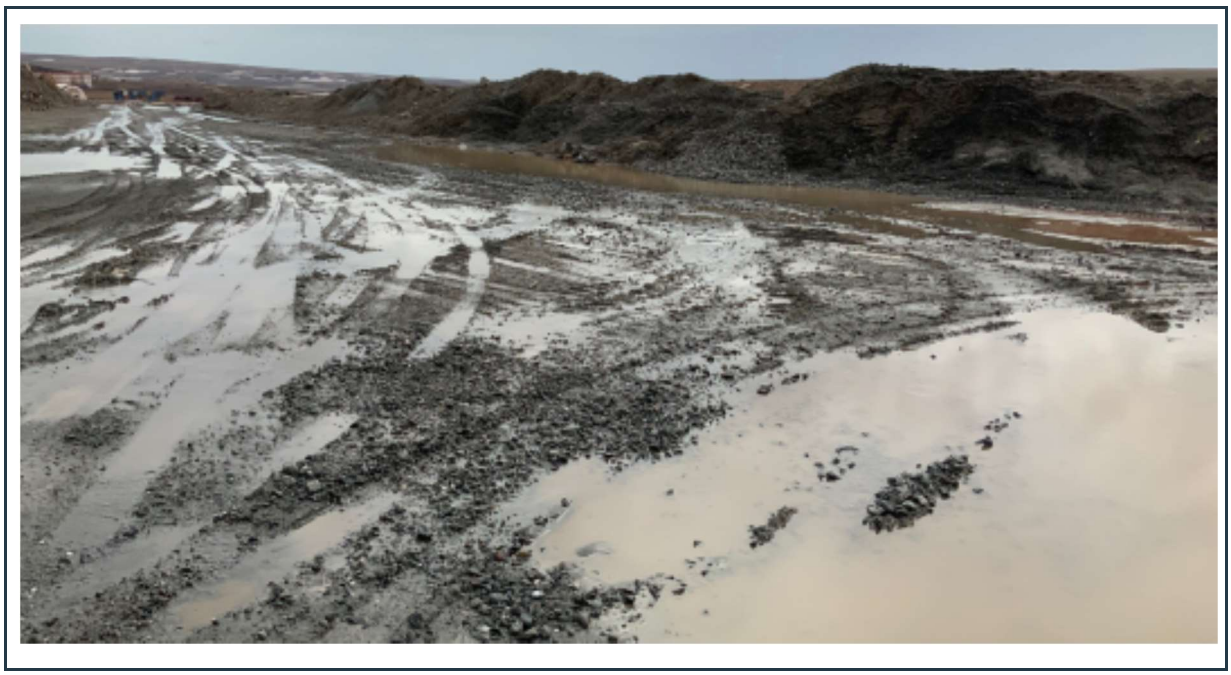

Figure 47: Poor surface water control at the main level of QMR2 quarry (enlarged from Figure 45).

Figure 48: Surface water flowing from the quarry area along the road resulted in a failure of the edge of the access road leading to the quarry. Immediate repair was requested to prevent accidents.

b) D1Q1 quarry

Figure 49: View of the northern slope of the future D1Q1 quarry.

c) D1Q2 quarry

Figure 50: View of the southern section of the future D1Q2 quarry.

Figure 51: Existing culverts installed at the wrong place (yellow circles). New culvert required at the yellow arrow to prevent serious road problems in the future. Blue arrow indicates below grade seepage.

Figure 52: Ponding water at the edge of the future D1Q2 quarry. Culvert is required at the low point of the road and the road grade should be raised in the area above the culvert.

Baffinland Iron Mines Corporation

August 6, 2020
Project #: TC190307

Annual Geotechnical Inspections – 2020 Report 1.

APPENDIX "B" – Milne Inlet Port Site - Photographs

Figure 53 to Figure 88

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Milne Inlet Port Site

1.1 Hazardeous Waste Disposal Areas - (HWB-1 to HWB-4)

a) HWB-1

Figure 53: View of the well organized interior of the HWB-1 cell.

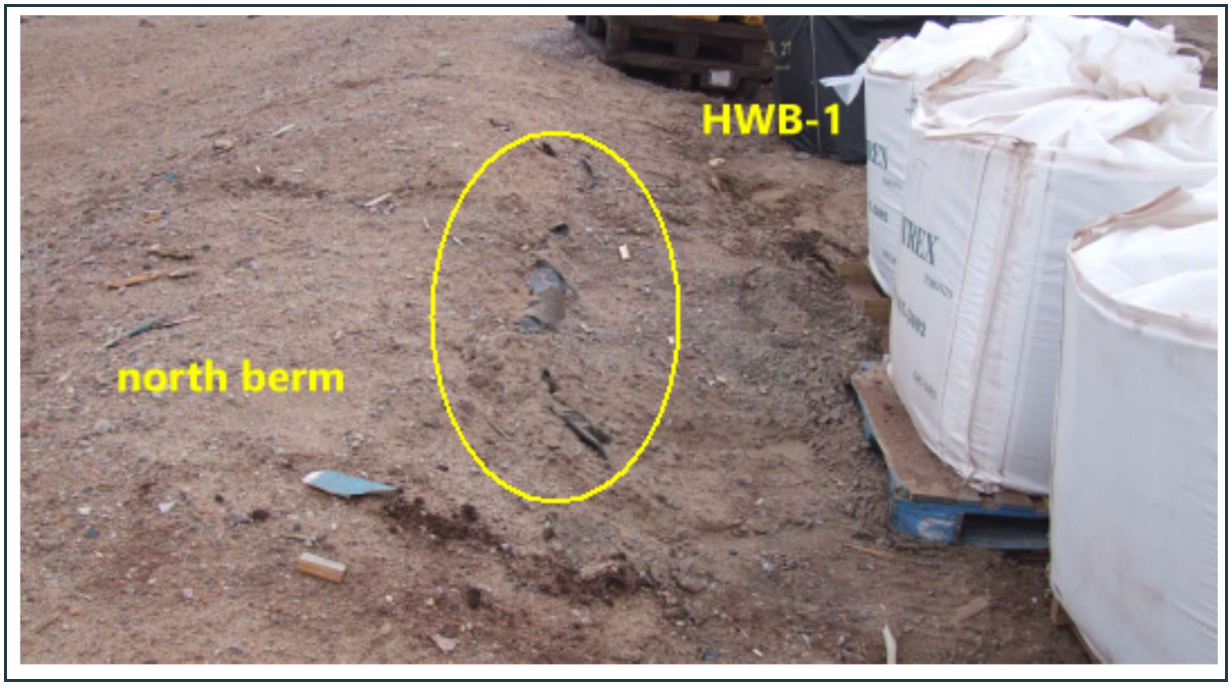

Figure 54: Ripped geotextile and exposed liner at a small area of the north berm of HWB-1 cell.

b) HWB-2

Figure 55: Ponding water in the empty HWB-2 cell with locally exposed geotextile and liner. Empty containers stored immediately adjacent to the cell.

c) HWB-3 and HWB-4 Twin Cells

Figure 56: View of the HWB-3 and HWB-4 twin cells, containing solid waste in shipping containers.

Figure 57: Stable berm around, and ponding water within the HWB-4 cell.

Figure 58: Exposed geotextile and liner on the internal berm between the HWB-3 and HWB-4 cells.

Figure 59: Exposed geotextile and liner at the HWB-4 cell, with location of potential damage to liner.

1.2 MP-01A Pond

Figure 60: Berms in excellent condition with stable slopes around the MP-01A pond.

1.3 MP-03 Fuel Tank Farm

Figure 61: View of stable, well maintained berms around the MP-03 fuel tank farm.

Figure 62: View of stable, well maintained berms around the MP-03 fuel tank farm.

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

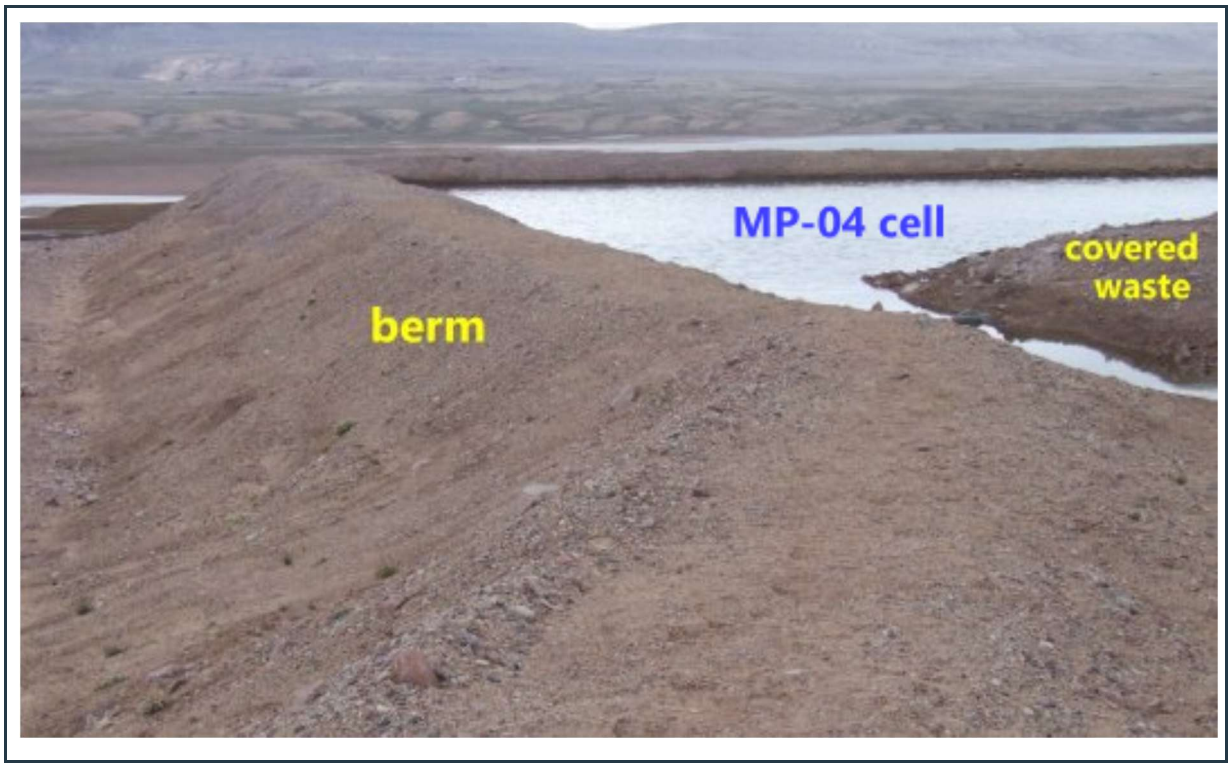

Figure 63: View of stable berm at the MP-04 landfarm, with covered waste within the cell.

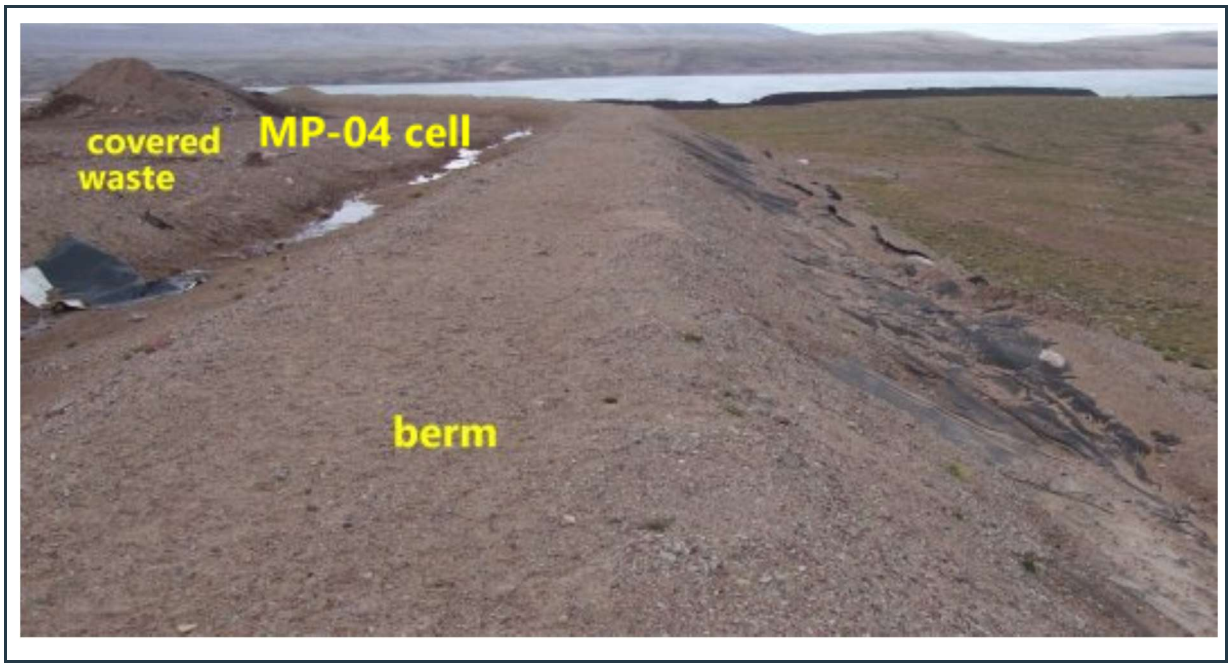

Figure 64: Stable berm at the MP-04 landfarm with exposed liner on the downstream face of the berm.

Figure 65: View of the MP-04A contaminated snow dump cell with stable berms.

Figure 66: Condition of the ramp to the MP-04A snow dump, with exposed liner (yellow circle).

1.5 Surface Water Collection Ponds and Ditches (MP-05, MP-06 and Settling pond #3)

a) MP-05 Settling Pond

Figure 67: View of stable berms at the MP-05 settling pond (north-east corner of the ore stockpile).

Figure 68: Some liner damage on the slope of the southern intake channel to the MP-05 settling pond.

Figure 69: Surface water collection ditch adjacent to the crushed ore storage, draining to MP-05 pond.

b) MP-06 Settling Pond

Figure 70: View of the lined MP-06 pond with stable berms (north-west corner of the ore stockpile).

Figure 71: View of the lined MP-06 overflow pond, with stable berms.

Figure 72: Surface water collection ditch adjacent to the crushed ore storage, draining to MP-06 pond.

c) Settling Pond #3

Figure 73: View of the lined, stable berm along the west side of settling pond #3.

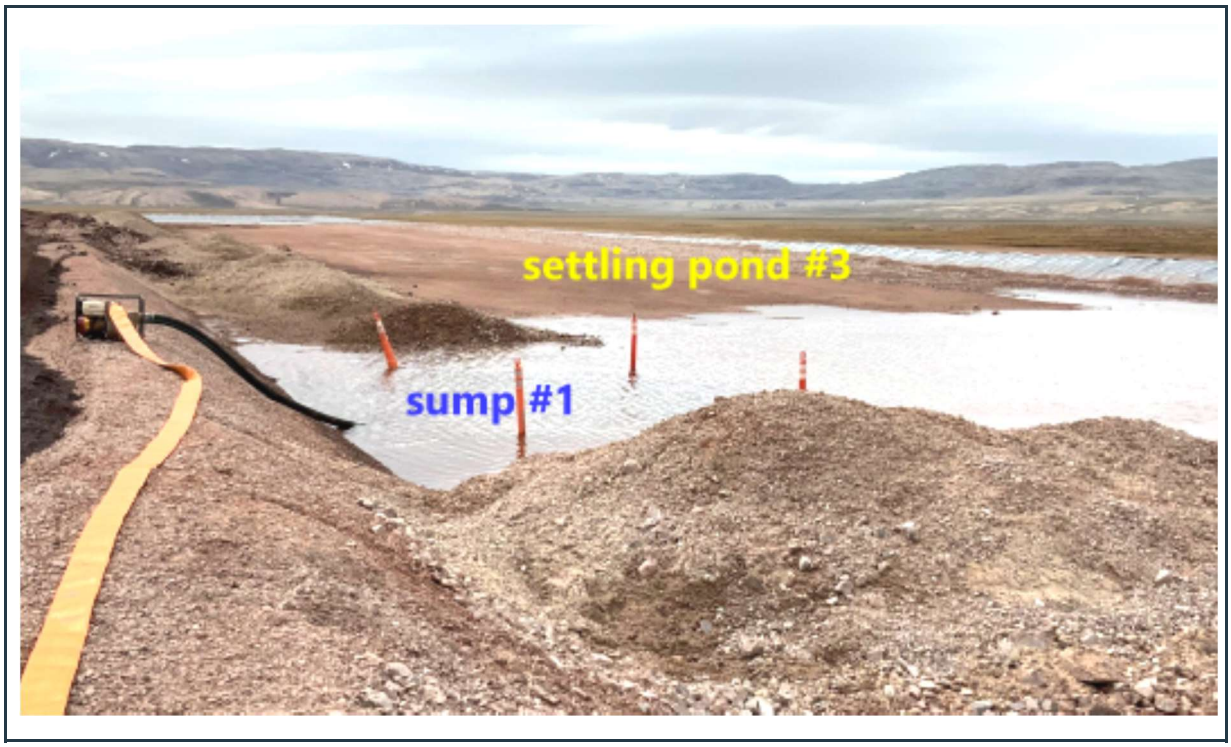

Figure 74: View of sump #1 in settling pond #3 along the west side of the ore stockpile.

1.6 Q01 quarry

Figure 75: View of stable highwalls in the Q01 quarry.

1.7 Surface Water Collection Ditches (P-SWD-3, P-SWD-5, P-SWD-6, P-SWD-7, W3/W14, 380M, and P-SC)

a) P-SWD-3 (next to the LP2 laydown area)

Figure 76: View of the "P-SWD-3 surface water collection ditch with failing side slope. The sloughing is caused by the uncontrolled water flow into the ditch along its alignment (see the next image).

Figure 77: Sheet flow of surface water resulting in sloughing of one side of the P-SWD-3 ditch.

b) P-SWD-5 (next to the Q01 quarry)

Figure 78: P-SWD-5 – "Q01-North" surface water collection ditch. Riprap is missing at one section.

c) P-SWD-6 (south of the Q01 quarry)

Figure 79: View of the well maintained P-SWD-6 - "Q01 South" surface water collection ditch.

d) P-SWD-7 (ditch and culverts adjacent to the new freight dock)

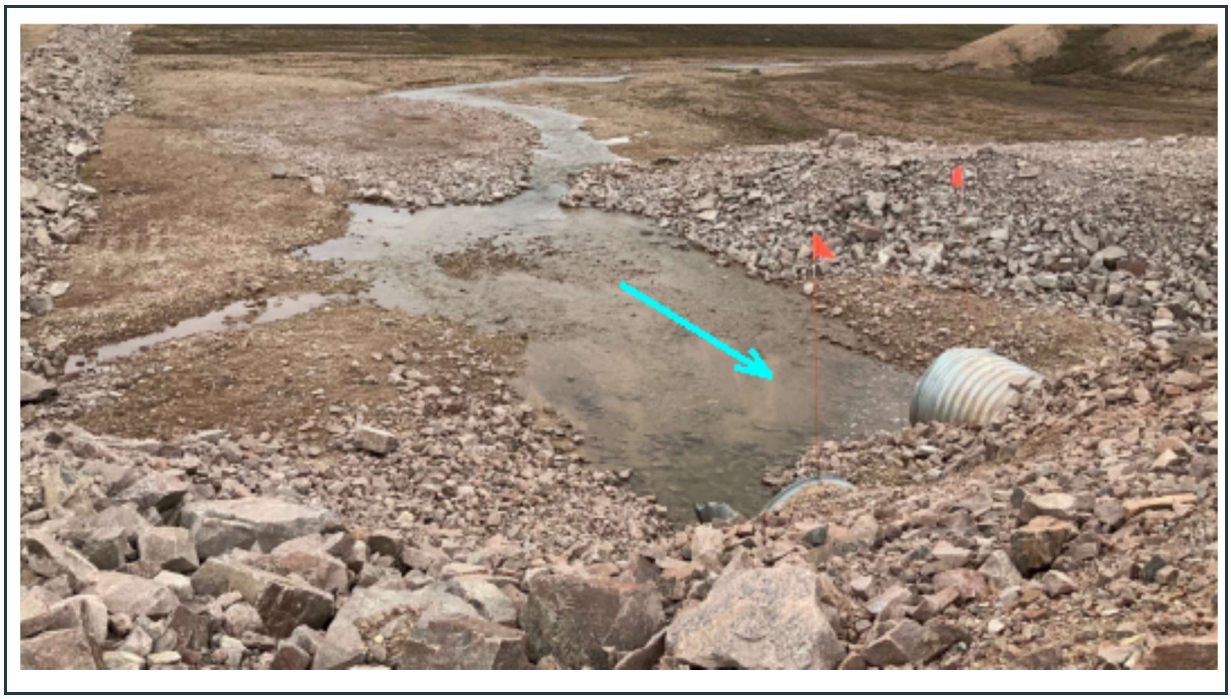

Figure 80: View of the P-SWD-7 surface water collection ditch and culverts (inlet).

Figure 81: View of the P-SWD-7 surface water collection ditch and culverts (outlet).

e) W3/W14 (surface water collection ditch)

Figure 82: View of the W3/W14 surface water collection ditch and culvert inlet.

f) 380M (surface water collection ditch)

Figure 83: View of the south section of the 380 M surface water collection ditch, with minor riprap sloughing/rolling in the foreground.

Figure 84: View of the east section of the 380 M surface water collection ditch, in good condition.

g) P-SC (new surface water collection ditch)

Figure 85: View of the P-SC surface water collection ditch and culvert (still under construction).

1.8 Tote Road Ditch and Culverts

Figure 86: Culverts and drainage ditch, conveying surface water from the P-SWD-6 "Q01 South" ditch toward the tote road.

Figure 87: View of twin culverts, draining surface water under the tote road (inlet).

Figure 88: View of twin culverts, draining surface water under the tote road (outlet).

Baffinland Iron Mines Corporation

August 6, 2020
Project #: TC190307

Annual Geotechnical Inspections – 2020 Report 1.

APPENDIX "C" – Tote/Haul Road - Photographs

Figure 89 to 120

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1.0 Tote Road - Bridges and Culverts

1.1 Bridges (4)

a) Bridge 17 (located approximately 17 km from Milne Inlet port)

Figure 89: View of "bridge 17", looking north-east. Note the rip-rap scour protection.

Figure 90: Foundation and abutment conditions at the south-west abutment of bridge 17.

b) Bridge 63 (located approximately 63 km from Milne Inlet port)

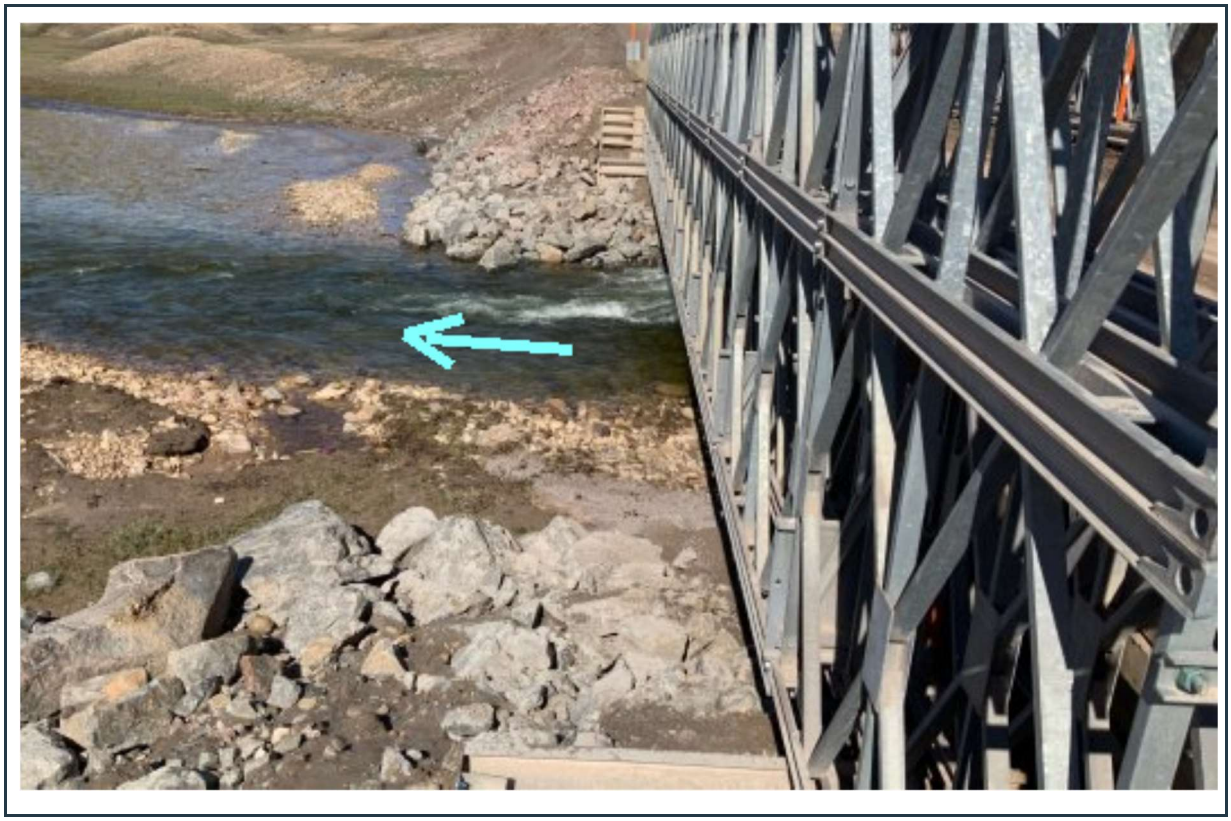

Figure 91: View of bridge 63, looking north.

Figure 92: View of the "old" abutments at bridge 63.

c) Bridge 80 (located approximately 80 km from Milne Inlet port)

Figure 93: View of bridge 80 with one of the old abutments, looking south.

Figure 94: View of bridge 80, looking north.

d) Bridge 97 (located approximately 97 km from Milne Inlet port)

Figure 95: View of bridge 97, looking south (one of the old abutments in the background).

Figure 96: View of two abutments at the east side of bridge 97.

1.2 Culverts (12)

a) CV-076

Figure 97: View of culvert 076 (inlet).

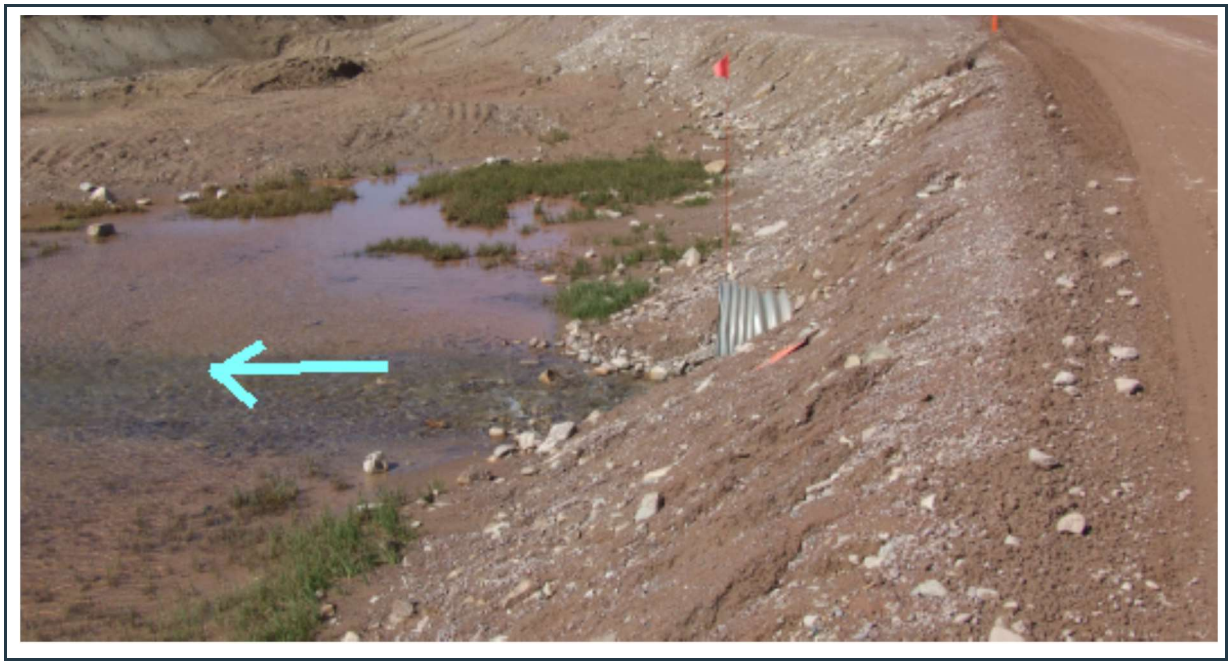

Figure 98: View of culvert 076 (outlet).

b) CV-078

Figure 99: View of culvert(s) 078 (inlet).

Figure 100: View of culvert(s) 078 (outlet). Minor damage visible on one pipe.

c) CV-083

Figure 101: View of culvert 083 (inlet)

Figure 102: View of culvert 083 (outlet), with some slope erosion around the culvert.

d) CV-094

Figure 103: View of culvert(s) 094 (inlet) in god condition.

Figure 104: View of culvert(s) 094 (outlet) in good condition.

e) CV-102

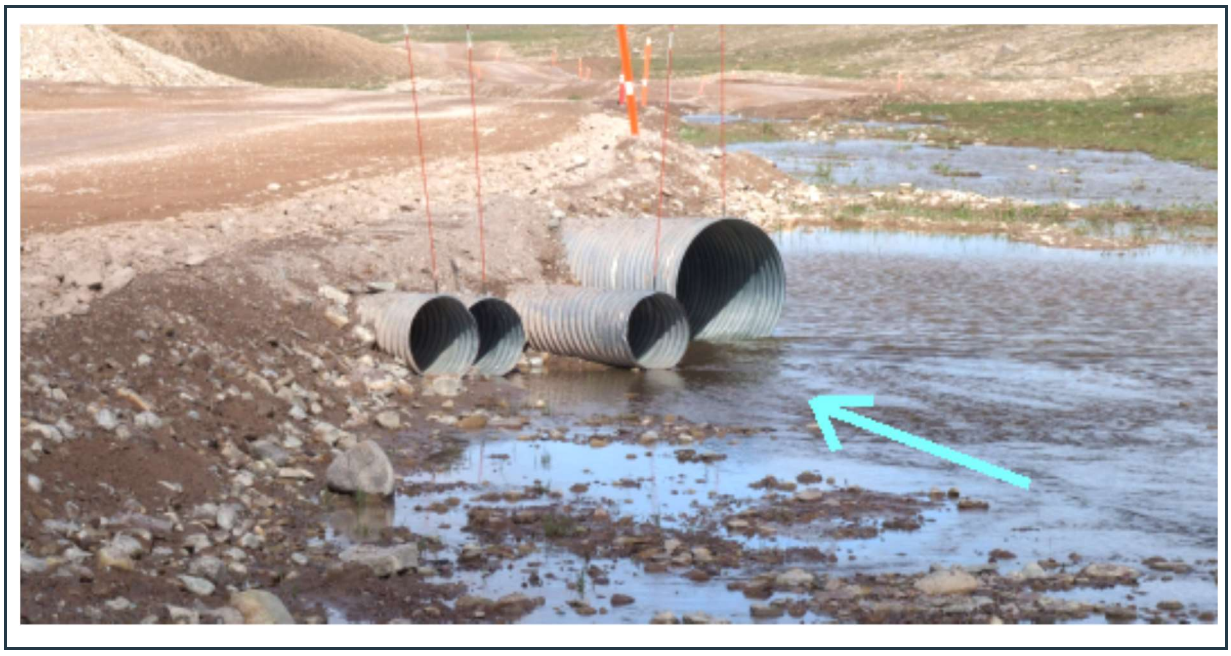

Figure 105: View of culvert(s) 102 (inlet) in good conditions.

Figure 106: View of culvert(s) 102 (outlet) in good conditions.

f) CV-107

Figure 107: View of culvert 107 (inlet). Extension of the culvert and placement of riprap are required.

Figure 108: View of culvert 107 (outlet).

g) CV-110A

Figure 109: View of culvert 110A (inlet).

Figure 110: View of culvert 110A (outlet) with minor damage on the top of the pipe (yellow circle).

h) CV-111

Figure 111: View of culvert 111 (inlet).

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i) CV-112D

Figure 113: View of culvert(s) 112D (inlet).

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j) CV-114D

Figure 115: View of culvert(s) 114D inlet. Repair of the northern pipe is required (yellow circle).

Figure 116: View of culvert(s) 114D (somewhat damaged outlet). Repair of both pipe ends required.

k) CV-202

Figure 117: View of culvert 202 (inlet).

Figure 118: View of culvert 202 (outlet).

l) CV-225

Figure 119: View of culvert 225 (inlet).

Figure 120: View of culvert 225 (outlet).

November 9, 2020

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

RE: Submission of 2020 Geotechnical Inspection Report No. 2 (September 2020)

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."

The second biannual geotechnical field inspection for 2020 was conducted by Laszlo Bodi, M.Sc., P.Eng., Principal Civil/Geotechnical Engineer with Wood Environment & Infrastructure Solutions. The focus of the inspection was on the Water Licence related infrastructure located at the Mary River Mine Site and Milne Port, as well as select water crossings along the Milne Inlet Tote Road. The attached report covers the second inspection that was conducted between September 3 and 11, 2020.

During the September 2020 inspection, the following site facilities were inspected:

Mary River Mine Site

- Polishing/Wastewater Stabilization Ponds (3)
- Hazardous waste-cell berms (HWB-1 to HWB-7)
- MS-06, MS-07 and MS-08 surface water collection/settling ponds and adjacent ditches
- Genset pond berm (located adjacent to the generators)
- Fuel Storage Farms (3) – Aerodrome jet-fuel storage, MS-03 and MS-03B diesel fuel farms
- Solid-waste disposal site (non-hazardous landfill facility)
- Camp Lake silt sedimentation check dams and berms, adjacent to the water intake
- Rock fill slope at the water (effluent) discharge area
- Deposit 1 pit walls
- Existing QMR2 and proposed D1Q1 rock quarries, and KM106 ore storage area

Milne Inlet Port Site

- Hazardous waste-cell berms (HWB-1 to HWB-4)
- MP-01A pond berm

- MP-03 fuel tank farm
- MP-04 landfarm and MP-04A contaminated snow pond berms
- MP-05, MP-06 and Settling Pond #3 surface water settling ponds and drainage ditches
- Q01 rock quarry walls
- Surface water collection ditches (P-SWD-3, -5, -6, -7, W3/W14, 380M pad and PSC ditches)
- Tote road culverts (conveying surface water from the quarry area)

Milne Inlet Tote Road

- Bridges (4)
- Culverts (12)

The attached report (refer to Attachment 1) presents the findings of the September 2020 inspection and recommendations for the aforementioned structures. The following subsections of this letter summarize Baffinland's plan for implementing recommendations.

Recommendations for the Mary River Mine Site Infrastructure

Polishing/Waste Stabilization (PWS) Ponds PWS Pond #1, Pond #2 and Pond #3
Timber/lumber debris was noted on the liner on the upstream slope of the berm in PWS Pond #2, which should be removed to prevent potential damage to the liner. A section of floating liner (whale) was observed in PWS Pond #3. The floating liner in PWS Pond #3 was previously observed during the 2019 geotechnical inspections, but there was no damage to the liner or seepage from the pond observed during the 2019 or 2020 inspections.

Baffinland Action: Baffinland will remove timber/lumber debris from the upstream slope of the berm in PWS Pond #2. Baffinland will continue to monitor the PWS Ponds and initiate cleanup of this area to remove excess materials.

Mine Site Hazardous Waste Disposal Areas

HWB-3, HWB-4 and HWB-5
Some soil displacement caused by foot and vehicle traffic was observed on the surface of the slopes and crests of the berms at a few locations.

Baffinland Action: Baffinland will provide controlled/ramped access points for skid steers and discourage foot and vehicle traffic on the slopes and the crests of the berms.

Generator Fuel Berm (Genset Pond)
Disturbance by foot-traffic and areas of exposed geotextile and liner were visible along some locations on the berm's crest and minor sloughing of the upstream slope of the berm is also visible along the southern section of the berm. Minor slope deterioration was visible along the berm adjacent to the generators due to tire tracks that are cutting into the toe of the berm.

Baffinland Action: Baffinland commits to placing granular fill in the location of the minor sloughing to re-fill the slope and regrade 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. The affected slope of the berm that has been

cut by tire tracks will be regraded manually with new fill and compacted using a plate tamper or like equipment. Truck traffic on the berm will be avoided to prevent additional damage.

Water (Effluent) Discharge Area
Minor surface erosion was noted adjacent to the rock fill slope, within the native material.

Baffinland Action: Baffinland commits to recovering the eroded slope with rock fill to prevent any regressive erosion in the future.

QMR2 Quarry
Ponding water covers a section of the main level of the quarry, with potential to cause slope stability and traffic safety issues in the area.

Baffinland Action: Baffinland commits to improving surface water drainage in the quarry through excavation/formation of additional drainage ditches that include erosion protection measures at strategic locations.

Recommendations for Milne Port Infrastructure

Milne Port Hazardous Waste Disposal Areas

HWB-1
Some disturbance at a few locations on the crest of the sea-side berm was identified during the inspection.

Baffinland Action: Baffinland commits to regrading the disturbed areas on the slopes and crest of the berm as part of the onsite maintenance program.

HWB-2
An area of exposed geotextile and liner was noted in the cell.

Baffinland Action: Baffinland commits to covering the area of exposed liner with a protective layer of clean sand and gravel during cell maintenance.

MP-04 and 04A Landfarm and Contaminated Snow Disposal Cells
Exposed liner was visible on the access ramp of the MP-04A berm.

Baffinland Action: Baffinland commits to regrading and covering the area of exposed liner with protective granular fill material consisting of clean sand and gravel.

MP-05
Minor liner damage was noted on the slope of the southern intake channel to the pond.

Baffinland Action: Baffinland repaired this liner damage on September 11, 2020.

MP-06
A small area of liner damage was observed on the slope of the inlet to the pond.

Baffinland Action: Baffinland repaired this liner damage on September 11, 2020.

Surface Water Collection Ditches
Sloughing of the sides of ditch P-SWD-3, adjacent to the LP2 laydown area, is visible at several locations along the ditch. The riprap appeared to be missing at a small section of the P-SWD-5 ditch. Minor sloughing of the riprap was observed in the 380M ditch. The length of the culvert in the PSC drainage ditch is too long to facilitate uninterrupted water flow in the ditch.

Baffinland Action: Baffinland commits to further assessing the sloughing observed on the sides of ditch P-SWD-3 and the 380M ditch. Baffinland will replace the missing riprap observed in the P-SWD-5 ditch. Baffinland will further assess the culvert installation at the PSC ditch to determine if the culvert needs to be shortened and riprap slope regraded to improve water flow.

Tote Road between Mary River and Milne Inlet - Bridges and Culverts

Bridge 17
There are two historic abutments, located immediately adjacent to the "new" ones. The metal front and wing walls of both "old" abutments have suffered damages in the past, particularly at the south abutment.

Baffinland Action: To maintain the stability of the currently used bridge abutments, Baffinland will keep the two old abutments in place since they provide support to the adjacent new structures.

Bridge 63
There are two historic abutments, located immediately adjacent to the "new" ones and damage to the metal front and wing walls of both abutments are visible.

Baffinland Action: To maintain the stability of the currently used bridge abutments, Baffinland will keep the two old abutments in place since they provide support to the adjacent new structures.

Bridge 80
A sandbar was identified immediately upstream of the south-east side of the south abutment that has potential to reduce the width of the wetted channel and cause changes to the cross-sectional area of the channel if it increases in size. There are two historic abutments, located immediately adjacent to the "new" ones, providing support to the new abutments and road embankment. Therefore, removal of these structures is not recommended.

Baffinland Action: Baffinland will monitor the sandbar upstream of the south-east side of the south abutment to identify and determine corrective measures for contraction scour beneath the bridge caused by a decrease in the width of the wetted channel. To maintain the stability of the currently used bridge abutments, Baffinland will keep the two old abutments in place since they provide support to the adjacent new structures.

Bridge 97
Water flow at the toe of the south abutment has potential to cause scour to the toe of the abutment during elevated flows. At this location the old abutments are located somewhat away from the new ones and they appear to be structurally stable and there are no concerns if they remain in place.

Baffinland

Baffinland Action: Baffinland commits to monitor the toe of the south abutment to identify and determine corrective actions if scour is identified during elevated flow conditions.

Culvert – 078
The outlet of this culvert is damaged slightly, although the "cut" at the top of the corrugated pipe has no effect on the flow within the pipe.

Baffinland Action: Baffinland commits to monitor the culvert outlet to identify and determine corrective actions to mitigate further damage, which may include removing the outlet end of the culvert if the damaged part impedes water flow.

Culvert – 083
The outlet of this culvert appears to be too short and water flow is visible parallel to the road embankment at the inlet. The culvert outlet should be extended by about 1.5 m and the slope of the adjacent road embankment covered by the placement of crushed rock riprap around the culvert.

Baffinland Action: Baffinland commits to extend the culvert and place crushed rock riprap fill adjacent to the outlet. Baffinland will monitor the water flow parallel to the toe of the embankment at the culvert inlet to identify if channel alignment is required to prevent further erosion.

Culvert – 102
Some erosion of the road embankment material is visible at the outlet of the four culverts at this location.

Baffinland Action: Baffinland commits to placing additional riprap at the outlet end of the four culverts to prevent further erosion of the road embankment material.

Culvert – 107
This is a short, small diameter culvert installed several meters north of the lowest point of the wetted channel.

Baffinland Action: Baffinland commits to further inspecting this culvert to determine if replacement with a longer, larger diameter pipe several meters south of the current location is required.

Culvert – 110A
Minor damage is visible on the outlet of the culvert at the slope of the embankment, however the "cut" at the top of the corrugated pipe has no effect on water flow. Some erosion of the road embankment is visible adjacent to the culvert.

Baffinland Action: Baffinland commits to monitor the culvert outlet to identify additional damage that has potential to affect water flow. Baffinland commits to repair the erosion on the road embankment adjacent to the culvert by placing and compacting soil into the embankment. Baffinland commits to placing crushed rock riprap around the culvert to improve erosion protection.

Culvert – 114D
Both ends of the two culvert are damaged and too short for the embankment slopes, particularly at the outlet ends.

Baffinland Action: Baffinland commits to further inspecting this culvert to determine if replacement with longer, larger diameters pipes is required. If the pipes are replaced, the road embankment will also be widened at the outlet end and riprap placed around the culverts to stabilize the embankment slopes and improve erosion protection.

Culvert – 202
Some erosion is visible immediately adjacent to the inlet of this culvert and the invert of the outlet is located below the floor of the flow channel resulting in flow blockage immediately downstream of the outlet.

Baffinland Action: Baffinland commits to fill the erosion adjacent to the inlet with compacted soil and cover the affected area with crushed rock and regrade the rockfill immediately downstream of the outlet to improve water flow.

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 or Connor Devereaux.

Regards,

Aaron MacDonnell
Environmental Superintendent

Attachments:
Attachment 1: 2020 Geotechnical Inspection Report No. 2

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, Connor Devereaux, Amanda McKenzie (Baffinland)

Baffinland

Attachment 1

2020 Geotechnical Inspection Report No. 2

Baffinland Iron Mines Corporation

November 6, 2020
Project #: TC190307.2020

Annual Geotechnical Inspections – 2020 Report 2.

Mary River Iron Mine Complex – Nunavut

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November 6, 2020
TC190307.2020

Mr. Connor Devereaux - Environmental Superintendent, Mary River Iron Mine, and
Mr. Aaron MacDonell - 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 Complex, 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 Complex in Nunavut. Based on information and guidance provided in connection with the site's infrastructure, the undersigned has completed the second of the two required inspections for 2020 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
- Tote road bridges – Abutment Review (2018 December) – B.H. Martin Consultancy
- Annual Geotechnical Site Inspections (2019) – Wood Environment & Infrastructure Solutions
- Annual Geotechnical Site Inspections (2020 - Report 1) – Wood E & I Solutions

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 2020 at the Mary River Iron mine complex, which is a condition of the Type "A" Water Licence No: 2AM-MRY1325 – Amendment No.1 ("Water Licence").

Based on the requirements outlined in the Water Licence, the field inspections shall include the review of various facilities and structures that contain waste materials (hazardous and non-hazardous), and store or retain / convey water (settling ponds and ditches) at the Mary River Mine and Milne Inlet Port sites. The field review visually assessed the current condition of the berms and slopes, and report on potential seepage or stability problems at the ponds and waste disposal areas, if any.

In addition to the condition survey of the above noted infrastructure components, critical watercourse crossings (bridges and selected culverts) were also reviewed along the Tote Road, connecting the Mary River and Milne Inlet Port sites. As specified by the Nunavut Water Board, the conditions of the above listed infrastructure components need to be visually inspected twice a year and documented by photographs. The inspected structures and facilities in the fall of 2020 included the followings:

A. Mary River Mine Site

a) Polishing/Wastewater Stabilization Pond berms (3)
b) Hazardous waste-cell berms - (HWB-1 to HWB-7)
c) MS-06, MS-07 and MS-08 surface water collection/settling ponds and adjacent ditches
d) Generator fuel berm (located adjacent to the generators)
e) Fuel storage farms (3) – Aerodrome jet-fuel storage, MS-03 and MS-03B diesel fuel farms
f) Solid-waste disposal site (non-hazardous landfill facility)
g) Camp Lake silt sedimentation check dams and berms
h) Rock fill slope at the water (effluent) discharge area
i) Deposit 1 pit walls
j) Existing QMR2 and proposed D1Q1 rock quarries, and KM106 ore storage area

B. Milne Inlet Port Site

a) Hazardous waste-cell berms - (HWB-1 through to HWB-4)
b) MP-01A pond berm
c) MP-03 fuel tank farm
d) MP-04 landfarm and MP-04A contaminated snow pond berms
e) MP-05, MP-06 and Settling Pond #3 surface water settling pond berms and drainage ditches
f) Q01 rock quarry walls
g) Surface water collection ditches (P-SWD-3, -5, -6, -7, W3/W14, 380M pad and PSC ditches)
h) Tote Road culverts (conveying surface water from the quarry area)

C. Tote Road between the Mary River mine site and Milne Inlet Port

a) Bridges (4)
b) Culverts (12)

The above listed infrastructure components were visually inspected between September 3 and 11, 2020, 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 their current conditions were visually reviewed, and the findings are summarized in the following report. The locations of the inspected structures, berms, settling ponds and ditches are shown in the following Figures:

a) Mary River Mine site – Central Zone (Figure 1), Northern Zone (Figure 2), Rock quarry area (Figure 3), Southern Zone (Figure 4), and Pit-1, waste rock and ore stockpile areas (Figure 5)
b) Milne Inlet Port site – Northern Zone (Figure 6) and Southern Zone (Figure 7)
c) Representative section of the Tote Road - Figure 8

Photographs of the inspected structures are shown in the following documents (attached to the report):

a) Appendix A: Mary River Mine site – Figures 9 to 42
b) Appendix B : Milne Inlet Port site - Figures 43 to 72
c) Appendix C: Bridges and culverts along the tote road: Figures 73 to 104

Figure 1: Site layout – Mary River Mine Site - Central Zone with fuel farms and the MS-06 pond

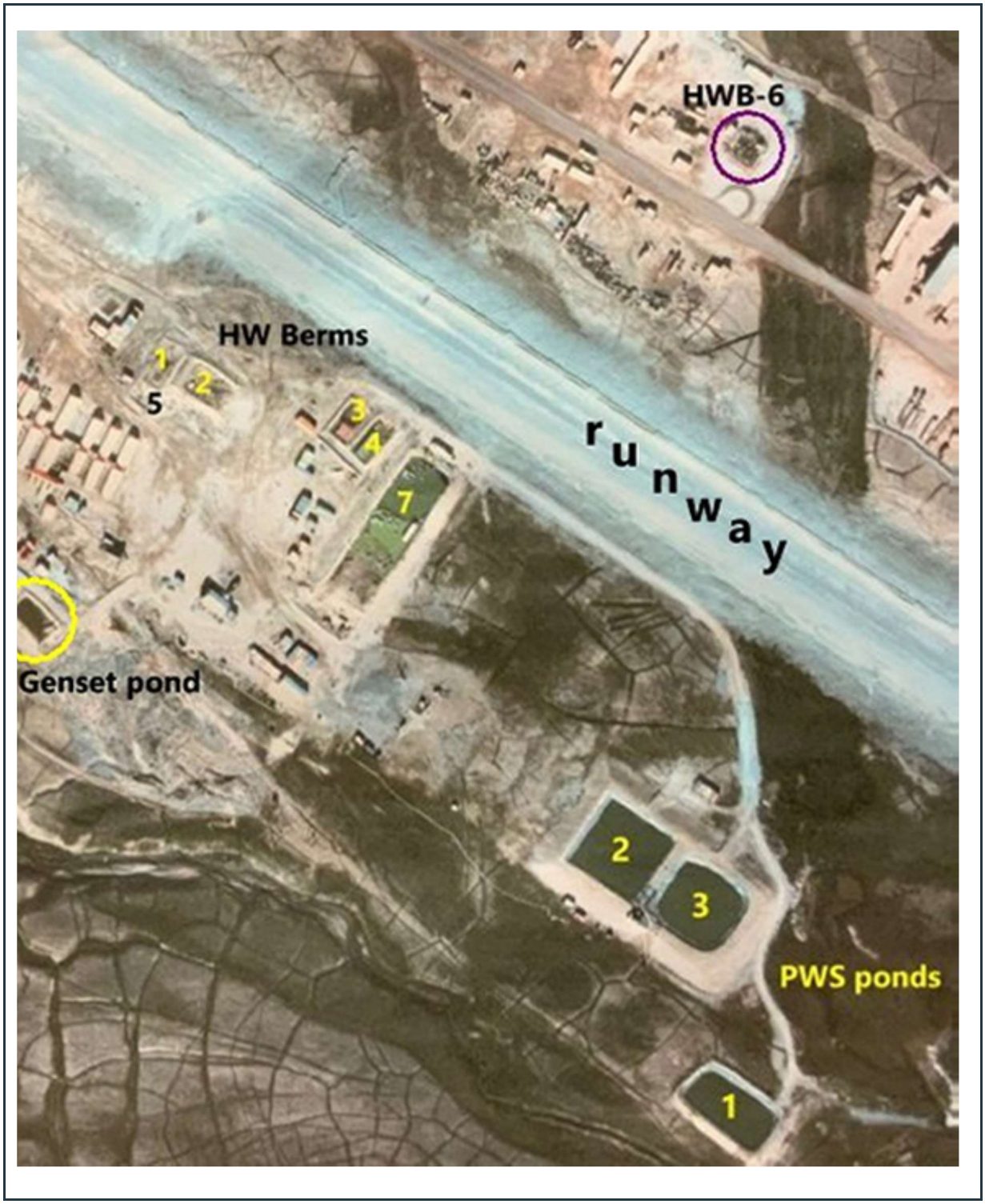

Figure 2: Site layout – Mary River Mine Site - Northern Zone with ponds and hazardous waste cells

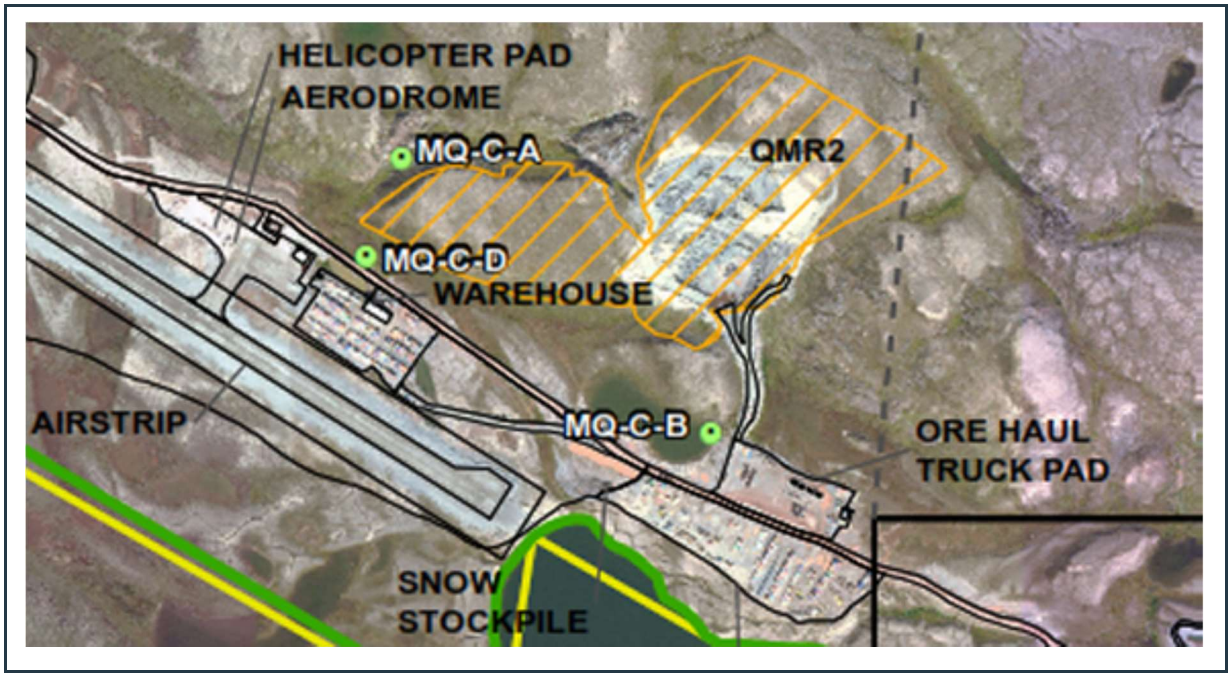

Figure 3: Site layout – Mary River Mine Site – QMR2 quarry area

Figure 4: Site layout – Mary River Mine Site – Southern Zone

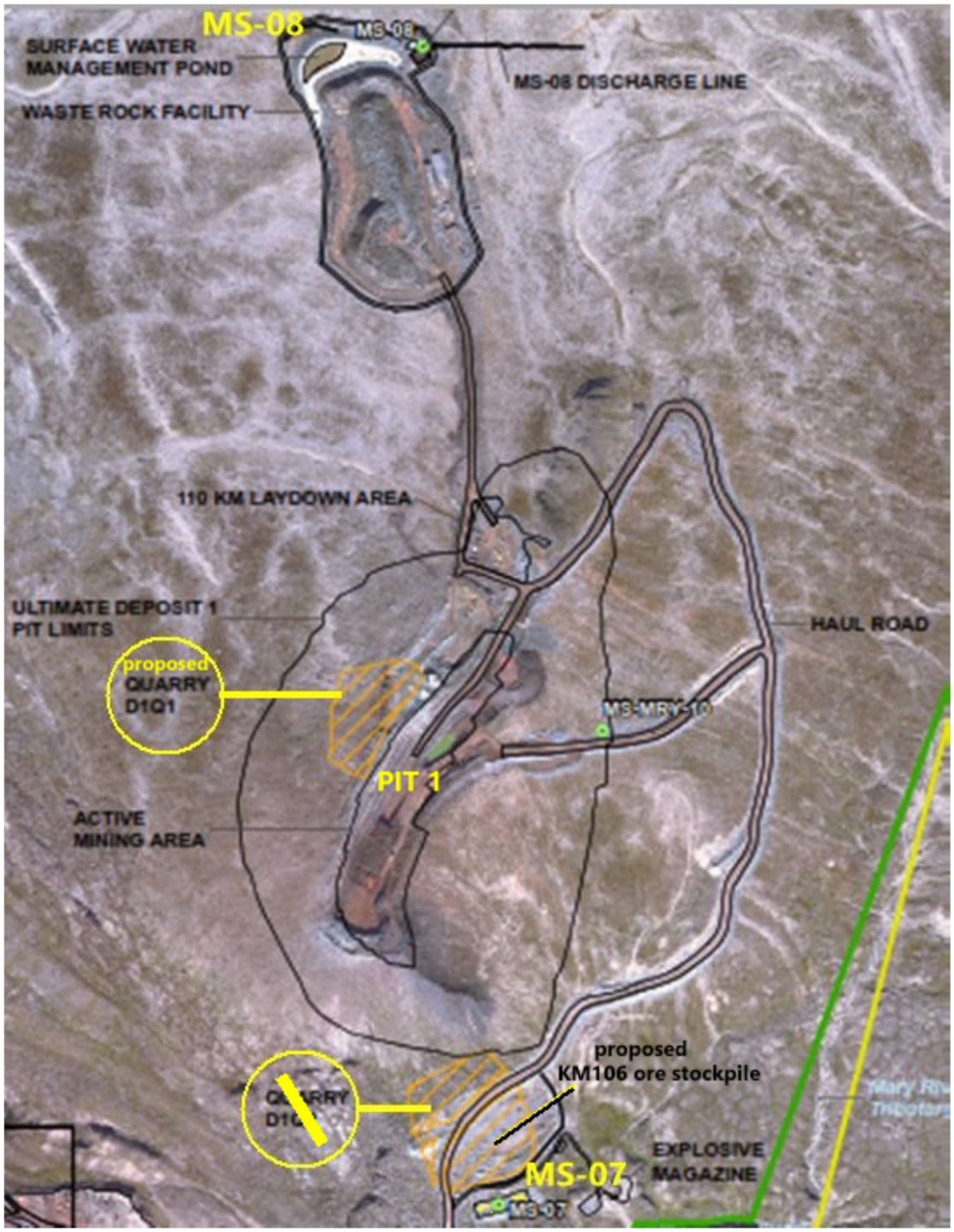

Figure 5: Mary River Site layout – Pit 1, proposed D1Q1 rock quarry and KM106 ore stockpile areas. MS-07 and MS-08 ponds

Figure 6: Site layout – Milne Inlet Port Site – Northern Zone

Figure 7: Site layout – Milne Inlet Port Site – Southern Zone

Figure 8: View of a section of the Tote Road between the Mary River Mine site and Milne Inlet Port (looking south). Bridge 97 is seen in the center, with two culverts just south of the bridge.

Details of the recent condition survey of the individual structures, reviewed in September, are summarized in the following sections of the report, while the photographs are shown in Appendix A, B and C, as integral parts of this document.

2.0 Mary River Mine Site

2.1 Polishing/Waste Stabilization Ponds (3 PWS ponds)

There are three polishing/waste stabilization ponds, located adjacent to the central part of the runway, as shown in Figure 2. Pond #1 is a single structure, while Ponds #2 and #3 had been constructed as a twin-cell structure, as shown in Figure 9. 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 would arise, which would prevent the discharge of treated effluent directly to the receiving environment.

The stable berms around the ponds generally comprise granular materials (rock fill, 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 on the upstream face of the slopes (see Figures 10 to 12). Timber/lumber debris was noted on the liner on the upstream slope of the berm in pond #2 (Figure 11), which should be removed to prevent potential damage to the liner.

As shown in the relevant images, the berms around the three ponds appear to be stable, having shallow downstream slopes. They were built by using non-frost-susceptible compacted granular materials. Based on site observations, it appears that the subgrade around the berms comprise thaw-stable, predominantly granular soils with trace to some fines. With this observation, the berms are assumed to have stable foundations, which is further supported by the fact that there are no indications of ground displacement or sloughing at and around the berms. In summary, the robust berms are structurally stable with no sign of seepage from the ponds.

A relatively common issue in water lagoons is the appearance of so-called "whales" within the ponds. Whales are sections of the liners which have risen (float) above the surface of shallow water, particularly in shallow ponds, where the weight of water above the liner is minimal. Such a small "whale" was visible during the September 2020 inspection at PWS pond #3, as shown in Figure 12. The same "whale" was noticed and recorded last year (June 2019) in this pond; however, no damage to the liner or seepage from the pond is visible, including the current survey/inspection.

2.2 Hazardous Waste-Cell Berms (HWB-1 to HWB-7)

There are seven hazardous waste cell berm structures located at the Mary River mine site (HWB-1 to HWB-7). HWB-6 is located at the north side of the runway near the incinerator, while the other six areas are located opposite of HWB-6, at the south side of the runway, as shown in Figure 2.

All HWB cells are lined with HDPE liner, and comprise shallow, stable, lined perimeter berms constructed by using locally available generally granular soils. There is no visible instability at the berms (sloughing, excessive settlement or tension cracks), other than some soil displacement caused by foot and truck traffic

on the surface of the slopes and crests at a few locations, as shown in the relevant images in Appendix A. It is recommended that foot and truck traffic on the slopes and crest of the berms be limited, with controlled/ramped access point (preferably one) provided for trucks and skid-steers to dispose/remove materials in the cells.

a) HWB-1

This cell is currently empty, as shown in Figure 13. Based on information obtained during the 2019 summer inspection, concerns had been raised in the past to suspected liner damage within this cell, and consequently no material is stored in this cell.

b) HWB-2

As shown in Figure 14, this cell is currently empty as well. It is also shown that the perimeter berm around the cell appears to be stable. The presence of water (visible within the cell) demonstrates that the liner within this cell is intact. No visible seepage from the cell was noted around the berm, and the cell operates as intended, although no material is currently stored in this cell.

c) HWB-3 and HWB-4

These cells are located side-by side and were called in historic inspection reports as "Fuel Containment" cells. As shown in Figures 15 and 16, there are fuel barrels stored on wooden pallets in both cells (jet-fuel and diesel). The photographs of the cells attest stable berm condition around both cells.

d) HWB-5

As shown in Figure 17, the shallow berms around this cell appear to be stable and there is no visible liner damage. It is also shown that the cell is generally empty, with only one single fuel barrel stored.

e) HWB-6

The berms around this cell have been regraded recently, stabilized and the floor of the cell is covered with granular fill to protect the liner. The cell was almost "full" at the time of the September 2020 inspection with waste cubes and plastic containers stored on wooden pallets, as shown in Figure 18.

f) HWB-7

Currently, only one large fuel tank is stored in this large cell, as shown in Figures 19 and 20. The robust perimeter berms around the cell appear to be stable and the visible water (rain and melted snow) within the cell is indicative of adequate liner performance.

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 settling pond collects surface water from the area of the crusher site. The water is collected in side-ditches around the crushed and stockpiled ore and conveyed to the settling pond. There are two intake locations to the pond at the northeast and southeast corners, and there is an emergency spillway located opposite to the intakes. The liner within the pond and on the upstream slopes of the berm is intact (see Figure 21), and no wet downstream slopes or toe seepage were visible at the time of the inspection.

The side slopes of the well-maintained surface-water collection ditches leading to the pond were observed to be stable (see Figure 22) and the ditches are unobstructed.

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

The recently reconstructed MS-08 settling pond is surrounded by new stable perimeter berms, as shown in Figures 23 and 24, in Appendix A. The berms have been completely reconstructed using granular soils form borrow sources similar in composition as the ones underlying the base of the pond. The pond is lined with exposed new HDPE liner that is secured in place in anchor trenches on the crest of the berms, as shown in Figure 24.

Contact water from the waste rock facility is collected in two perimeter ditches and the collected water flows to the settling pond from the east and west. As shown in Figures 25 and 26, the drainage ditches are well maintained, having stable slopes and clean channels.

The water from the MS-08 pond is pumped to the nearby designated facility for treatment. There is a lined treatment cell in a good condition located immediately next to the plant with confined stable perimeter berms, as shown in Figure 27.

2.4 Generator Fuel Berm

This pond has previously contained fuel bladder for the generators; however, it now contains melted snow and rainwater. The pond is located immediately adjacent to the power generators, south-west of the hazardous waste cells (Figure 2). As shown in Figures 28 and 29, the perimeter berm around the pond generally comprises granular materials and the pond is lined. Disturbance by foot-traffic, exposed geotextile and liner were visible along some locations on the berm's crest and minor sloughing of the upstream slope of the berm is also visible along the southern section of the berm.

In addition, minor slope deterioration was also visible along the berm adjacent to the generators, as shown in Figure 29. Trucks bypassing occasional ponding surface water on the nearby road encroach into

the toe of the berm and this encroachment requires re-establishment to the original berm configuration using compacted granular fill to prevent potential for local berm instability (i.e. regressive erosion / sloughing). The affected slope should be regraded manually, and the new fill shall be compacted. In addition to the repair work on the slope, the southern, somewhat lower section of the berm should also be reconstructed to its original geometry, and truck traffic on the berm must be avoided. Covering the exposed liner and geotextile should also be completed by using sand and fine gravel fill.

2.5 Fuel Storage Berms (3)

There are three fuel storage areas at the Mary River mine site. One is located at the airfield and two adjacent to the main office complex of the mine. The berms and liners at these facilities are in excellent condition, as shown in the relevant images in Appendix A.

a) Jet-fuel Tank Farm

The jet-fuel tank farm is located at the aerodrome and it is surrounded by a stable perimeter berm, as shown in Figure 30. In addition, a second berm provides additional protection at two sides (tote road and airport parking sides) of the facility, constructed by using crushed rock fill. The facility is lined to the crest of the perimeter berms, and the liner within the cell appears to be in good condition.

b) MS-03 Diesel Fuel Tank Farm

The stable berms around the first (historic) diesel fuel tank farm are in excellent condition (see Figure 31) and they are well maintained. The collected rainwater (and melted snow) within the cell is clean and its presence indicates that the liner system is fully functional (i.e., no seepage from the cell is visible and the liner is well protected by granular fill throughout the facility).

c) MS-03B New Fuel Tank Farm

A new, large capacity fuel tank farm is located adjacent to the tote road, shown in Figure 32. Based on our field review in 2019 the new tank farm was constructed as specified in the design drawings (subgrade, berms, bedding layer, liner, and protective cover). Our recent observations confirmed that the liner is intact, and all berms are stable and well maintained. This facility is surrounded by a chain-link fence with locked gates for security reasons.

2.6 Solid Waste Disposal Area

The solid waste disposal area is located in the southern zone of the Mary River mine site, as shown in Figure 4. Only non-hazardous solid waste is placed into this unlined facility. As shown in Figure 33, the solid waste placed into the facility is covered as required with layers of locally available clean soils (daily

cover). The facility is surrounded by a new chain-link fence and a lockable gate. No stability issue was noted/recorded at the solid waste disposal site during the September 2020 site visit.

2.7 Camp Lake Silt-sedimentation Check Dams and Berms

The Camp Lake silt sedimentation control berms and check dams (all stable) 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 (silts and clays) that are eroded down from the adjacent slopes, and to prevent the siltation of the lake around the water intake structure, as shown in Figure 34.

2.8 Water (Effluent) Discharge Area

The effluent discharge point is located south of the Mary River mine complex, as shown in Figure 4. There are two discharge pipes at that location, conveying the discharged water down the slope's surface. Trucks also bring water for discharge to this location and let the water flow down on the embankment, comprising crushed rock fill and some soil, as shown in Figure 35. The rock fill slope appears to be stable although minor erosion of the finer material was noted at a small section of the slope, as shown in the photograph. This minor erosion has no adverse effect on the stability of the slope; however, the eroded zone shall be filled with crushed rock fill during regular maintenance.

2.9 Deposit-1 Pit Walls

The pit wall at the "deposit-1" open pit is in stable condition with only sporadic local friable weathered zones (Figure 36) visible at a few locations. The access/haul road into the open pit is appropriately wide and the eroded rock fragments are removed from the toe of the pit walls as needed (regular maintenance).

2.10 Rock Quarries (QMR2, D1Q1) and KM106 Ore Stockpile Area

a) QMR2 Rock Quarry

There was no activity noted in the QMR2 rock quarry (Figure 37) at the time of the September 2020 inspection. The exposed slopes (rock face) in the quarry appeared to be in stable condition overall, with few localized fall hazards (no changes since the 2020 June inspection). Such hazards, represented by the presence of weak veins within the pit walls, loose boulders, and rock wedges prone to skidding down to the toe of the slope (Figure 38). Boulders placed along the slope toes prevent traffic from accessing the toe of the rock wall.

As shown in Figure 37, the lowest plateau of the quarry still exhibits poor surface water control and therefore ponding rainwater covers a section of the quarry's main level. Although a recently constructed berm, placed across the head of the access road, apparently prevents the water from flowing down on

the surface of the access road, no drainage of this water is provided down on the side-slope of the plateau. This ponding water presents not only potential slope stability issues in the area, but also traffic safety issues as well, particularly after freezing. In order to maintain traffic safety and stable side slopes at the edge of the plateau, the ponding water must be properly drained from the area down on the side-slope toward the tote road. Based on field observation, it is evident that the side-slope comprises not only rock fill but also erodible fine soils (silts and fine sand). It is recommended that consideration be given to the installation of a slope-drain pipe, chute, or flume drain, as an erosion protection measure.

b) D1Q1 Rock Quarry

The proposed D1Q1 rock quarry will be a source of crushed aggregate in the future. Currently, the designated area is undeveloped, with no road or any excavation activity at this particular location. As shown in Figure 39, the gentle slope in the area is covered by cobbles and boulders that will be mined and crushed for future use.

c) KM 106 Ore Storage (former D1Q2 quarry area) and MS-07 Pond

The area previously considered as future D1Q2 rock quarry is now under development as an ore stockpile. As shown in Figure 5, the selected area is located south of the "deposit-1" open pit, along the east side of the ore haul road. Preparation of the ore storage area and placement of diversion and drainage control berms were in progress at the time of the September 2020 inspection, as shown in Figure 40.

In addition to the earthwork for the KM 106 ore storage facility, construction of a new sedimentation control pond (MS-07) was in progress at the time of the September 2020 inspection. As shown in Figures 41 and 42, the perimeter berm around the future pond has already been completed as per design specifications. Figure 42 shows the area where placement of geotextile was in progress over well-prepared granular subgrade across the base of the pond and on the upstream slopes of the berms. According to design details (prepared by Knight Piésold Ltd in 2019), geomembrane liner will be installed over the geotextile and anchored into trenches on the crest of the perimeter berm.

3.0 Milne Inlet Port Site

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

There are four hazardous waste-cell 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 were constructed as twin-cells, located south/south-west of the MP-03 fuel storage farm.

a) HWB-1

The HWB-1 cell covers a relatively large area, surrounded by stable perimeter berm, constructed of granular fill material, as shown in Figure 43, in Appendix B. The stored materials in the cell appear to be well organized and predominantly contain cubes of lubricants stored on wooden pallets and one shipping container. Ponding water was visible across the deeper area of the cell, indicating that the liner within the cell is intact. No seepage from the cell was visible around the downstream toes of the perimeter berm. However, some disturbance at a few locations on the crest of the sea-side berm was noted, as shown in Figure 43. It is recommended that the disturbed areas of the berm (generally caused by foot traffic) on the slopes and crest be re-graded manually as part of the maintenance program.

b) HWB-2

The HWB-2 is a small cell that is currently empty, except rainwater ponding within a portion of the cell. Exposed geotextile and liner were noted in a small area, as shown in Figure 44. It is recommended that the exposed liner/geotextile areas be covered with a protective layer of soil (clean sand and gravel) during cell maintenance.

c) HWB-3 and HWB-4

The HWB-3 and HWB-4 cells are located immediately next to each other (twin-cells), as shown in Figures 45 to 47. These cells contained only shipping containers in the past; however, the cells have been recently emptied and refurbished. At the time of the September 2020 inspection, the cells contained fuel barrels on wooden pallets, with only two shipping containers present in HWB-4. Some of the berms around the cells have been regraded and appear to be in stable condition with no indication of slope movements or settlement. Ponding water at the back of the cells indicate that the liner within the ponds are intact. As shown in the relevant images, new granular fill was placed across the floor of the cells, providing additional protection to the liner.

3.2 MP-01A Pond

The MP-01A polishing waste stabilization pond is located immediately south of the MP-03 fuel tank farm. As shown in Figure 48, the berm around the well-maintained pond is in excellent condition and the liner appear to be intact. No sign of slope instability, settlement or seepage from the pond was noted during the field inspection.

3.3 MP-03 Fuel Tank Farm

The MP-03 fuel tank farm occupies a large area in the center of the Milne Inlet port site. As shown in Figure 49, the stable berms around the facility are well maintained and are in excellent condition. The visible ponding rainwater within the internal cells of the fuel farm is an indication of proper liner functionality. The facility is fenced in and no indication of berm instability or seepage was noted on and around the berms, comprising compacted granular materials.

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

The MP-04 cell is located south of the port complex at a higher elevation, adjacent to the rock quarry. It is a large landfarm cell that stores contaminated soils and a few empty shipping containers (Figure 50). The berm structure around the cell appears to be in stable condition. The ponding water in one corner of the cell indicates proper liner functionality and no wet downstream slopes and toe seepage were noted.

MP-04A is a smaller cell used generally for the disposal of contaminated snow. This pond was constructed immediately adjacent to the MP-04 landfarm, with the same stable perimeter berm, as shown in Figure 51. No seepage from the cell was noted anywhere around the pond; however, exposed liner was visible at the access ramp to the cell, as shown in Figure 52 (yellow circle). The exposed liner area of the ramp should be regraded and covered with a protective layer of granular fill material (clean sand and gravel), to prevent potential damage to the liner in the future.

3.5 Surface Water Collection Ponds and Ditches (MP-05, MP-06 and Settling Pond #3)

The high-grade iron ore that is mined, crushed, and screened at the Mary River mine is transported to Milne Inlet, and stockpiled across a large area near the ship loader. Contact water from the area is collected along the west and north sides of the ore stockpile in side-ditches and conveyed into three (3) water collection settling ponds, strategically located around the ore storage area, as shown in Figure 6.

a) MP-05 Settling Pond

The MP-05 settling pond is located adjacent to the north-east corner of the stockpile, while MP-06 has been constructed at the north-west corner. Both settling ponds are in excellent condition with stable, well maintained berms and intact geomembrane liners within the ponds, as shown in Figures 53 and 57.

No instability, erosion or settlement was noted at the berms of the MP-05 pond and no toe seepage from the pond is visible anywhere around the ponds' perimeter. Minor liner damage: however, was noted on the slope of the southern intake channel to the pond, as shown in Figure 54. The surface water from around the ore stockpile is collected in generally well-maintained drainage ditches. The slopes of the drainage ditch leading to the MP-05 pond appeared to be in good condition, shown in Figure 55. It was recommended that the liner damage at the intake channel be repaired as soon as practically possible.

b) MP-06 Settling Pond

The MP-06 settling pond (Figure 56 and 57) is divided into two parts by a liner-covered internal berm and the northern cell is called the "overflow pond" (Figure 57). The liner in the ponds appeared to be intact, except at the intake to the MP-06 pond, where the liner was recently ripped in a small area, as shown in Figure 56. The damaged section of the liner should be repaired as soon as possible. Both settling ponds have emergency spillways and the water level in both ponds was well below the spillways' inverts at the time of the inspection. In fact, the stored water was quite shallow in both ponds at the time of the most recent inspection in September 2020. The berms around the ponds are in good condition and no seepage was noted from the cells. The drainage ditch to the MP-06 pond is also in good condition, as shown in Figure 58.

c) Settling Pond #3

Settling Pond #3 was recently constructed west of the ore storage area, as shown in Figure 6. The pond is surrounded along three sides with a stable, lined berm (Figure 59) and contains two sumps. According to the design, the geomembrane and protective geotextile on the internal slope of the berm extend 2.5 m below the surface and anchored into the permafrost zone to prevent any seepage from the pond into the ground below and around the pond. Excess water from pond #3 is pumped into the nearby, large capacity MP-06 settling pond.

3.6 Q01 Rock Quarry

No activity was noted in the Q01 quarry at the time of the inspection. The rock slopes in the quarry appeared to be in stable condition, as shown in Figure 60. Surface water is collected and drained well, into nearby drainage ditches.

3.7 Surface Water Collection Ditches (P-SWD-3, -5, -6, -7, W3/W14, 380M and PSC ditches)

There are several surface water collection drainage ditches (listed above), some of them still under construction or improvement, as shown in Figures 61 to 70. These open ditches are excavated somewhat into the native soils and then their sides and inverts received erosion protection layers comprising fine crushed rock aggregate. It was noted during the inspection that geotextile have been used wherever the native subgrade composed of fine-grained material to prevent migration of fines into the rockfill and eventually into the ditches. Some currently noted problems at these ditches are summarized below:

- As noted recently and during the earlier summer inspection, sloughing of the sides of the P-SWD-3 ditch, adjacent to the LP2 laydown area, is visible at several locations along the ditch, as shown in Figures 61 and 62. It appears that the sloughing is a result of uncontrolled sheet-flow of surface water, drained into this area from the adjacent higher ground (possibly thawing of the active layer during the summer-months of the year). It is suggested that capturing seepage water from higher elevations in the area be carried out. Excavation of a few test pits is recommended to effectively find the locations and evaluate the flow rate of seepage water flowing toward the drainage ditch P-SWD-3 in this area.
- Minor sloughing of the riprap in the 380M ditch was visible that should be repaired (Figure 68).
- The PSC drainage ditch is still under construction. The riprap on the slope at a culvert in that ditch should be rectified, and the culvert should be shortened at this location to facilitate uninterrupted flow of water within the ditch (Figure 70).

3.8 Tote Road Ditches and Culverts Near the Rock Quarry

Surface water from higher elevation of the rock quarry is collected in drainage ditch P-SWD-6, and conveyed down the slope through corrugated galvanized steel culverts, installed under an internal haul road adjacent to the rock quarry and then under the Tote Road (Figures 71 and 72). The water in the ditches is conveyed to small natural ponds, located along the west side of the tote road, as shown in Figure 72. No siltation in the ditches or within the culverts was noted during the recent inspection.

4.0 Tote Road between Mary River and Milne Inlet - Bridges and Culverts

Four (4) bridges and twelve (12) culverts were visually inspected during the recent site visit. The general conditions of those structures are summarized below, and the relevant images are shown in the attached Appendix C document.

4.1 Bridges (4)

a) Bridge 17 (located approximately 17 km from Milne Inlet port)

As shown in Figures 73 and 74, the abutments of this bridge are stable and no scour in the riverbed around the abutments was noted during the recent site visit in September. The abutments show no visible differential settlement or any structural discrepancy like deterioration of the foundation concrete. There are two historic abutments located immediately adjacent to the "new" ones. The metal front and wing walls of both "old" abutments have suffered some damages in the past, particularly the south abutment. To maintain the stability of the currently used bridge abutments it was recommended during the 2019 inspection that the two old (somewhat damaged) abutments should be kept in place since they provide additional support to the adjacent new abutments.

b) Bridge 63 (located approximately 63 km from Milne Inlet port)

As shown in Figures 75 and 76, the abutments of this bridge are stable and no scour in the riverbed was noted during the recent site visit. The abutments show no visible differential settlement or any structural discrepancy like cracking on the foundation concrete. Similar to bridge 17, there are two historic abutments, located immediately adjacent to the "new" ones and damage to the metal front and wing walls of both old abutments are visible. In order to maintain the stability of the currently used bridge abutments, the two old abutments should be kept in place since they provide support to the adjacent currently used abutments.

c) Bridge 80 (located approximately 80 km from Milne Inlet port)

As shown in Figures 77 and 78, the abutments of this bridge are stable and no visible scour in the riverbed was noted during the recent site visit. The abutments show no differential settlement or any structural discrepancy like cracking on the foundation concrete. However, the water level in the river at this bridge was somewhat lower than during the 2020 June inspection. As a result, a long sandbar became visible in the riverbed at the south-east side of the south abutment of the bridge. The formation of such sandbars, immediately upstream of the bridge, may result in contraction scour beneath the bridge that can occur at the abutments as a result of the reduction in the river channel's cross-sectional area that may occur due to the deposition of sand and gravel into a sandbar by the river during low flow. The reduction in channel's cross section may result in scouring, due to an increase in flow velocity. This in turn could render sediments located at the front and beneath the foundation of the abutments unstable. As pointed out above, there is no indication of scour yet; however, the potential increase in size of the sandbar should be monitored. Should the river bring and deposit more sand and gravel at the sandbar in the future, removal of the sandbar may become necessary.

d) Bridge 97 (located approximately 97 km from Milne Inlet port)

As shown in Figures 79 and 80, the abutments of this bridge appear to be stable and no scour in the riverbed was noted during the site visit. The abutments show no differential settlement or any structural discrepancy like cracking on the foundation concrete. There are two culverts installed under the tote road just south of the bridge, to convey some of the water in the river channel to the west side of the tote road (bypassing the bridge, as shown in Figure 8). Due to the local topography of the riverbed, some of the water flows from the front of the culverts toward the bridge immediately adjacent to the toe of the south approach embankment. No scour at the toe of the embankment was noted, however, the flow and its potential impact on the stability of the embankment should be closely monitored in the future.

4.2 Culverts (12)

Twelve culverts (CV-076, CV-078, CV-083, CV-094, CV-102, CV-107, CV-110A, CV-111, CV-112D, CV-114D, CV-202, and CV-225) were inspected during the recent site visit, installed beneath the Tote Road between the Mary River and Milne Inlet sites. As reported in earlier inspection documents (June 2019 and June 2020), the majority of the culverts are in good condition and they provide uninterrupted flow of water from their upstream to their downstream sides. Photographs of the inlet and outlet ends of all inspected culverts are shown in Figures 81 to 104, in Appendix C.

Culverts (7) that require some repair/rehabilitation work are listed below:

CV-078 (Figures 83 and 84): The outlet end of one of the four culverts (second from the north) at this location is damaged slightly, although the "cut" at the top of the corrugated pipe has no effect on the flow within the pipe at this stage. However, the outlet end of this culvert may need to be removed (cut) if the damaged part would impede the flow of water in the future.

CV-083 (Figures 85 and 86): The outlet of this culvert appears to be somewhat short. As a result, erosion of the road embankment is visible around the culvert pipe. It should be extended by about 1.5 m and the slope of the adjacent road embankment shall be covered by the placement of crushed rock riprap around the culvert. Improvement of the creek's alignment at the front of the inlet is also recommended (minimize water flow parallel with the embankment at its toe to prevent erosion and subsequent potential slope instability at the road embankment).

CV-102 (Figures 89 and 90): As shown in Figure 90, some erosion of the road embankment material is visible at the outlet ends of the four culverts at this location. In order to prevent more serious erosion problems, placement of crushed rock riprap around the culverts is suggested.

CV-107 (Figures 91 and 92): This is a short, small diameter culvert that was installed at somewhat higher elevation instead of the lowest point of the native ground in the area. Consideration shall be given to replace this culvert with a longer and somewhat larger pipe a few meters south of the current location, as

shown by the green arrows on the two relevant images (Figures 91 and 92). The arrows mark the location of the lowest point of the drainage channel in the area, where the culvert would be able to convey the surface water more efficiently from one side of the road to the other.

CV-110A (Figures 93 and 94): Minor damage is visible on the outlet of this culvert at the slope of the embankment (yellow circle in Figure 94); however, the "cut" at the top of the corrugated pipe has no effect on the flow within the pipe (yet). The culvert should be checked during regular maintenance and repaired if necessary. Figure 94 also shows some erosion of the road embankment adjacent to this culvert, which erosion was not present during the 2020 June inspection. This recently eroded area of the embankment shall be repaired by placing and compacting soil fill into the embankment, and the slope around the culvert should be covered with crushed rock riprap for erosion protection.

CV-114D (Figures 99 and 100): Both ends of the two culverts here are damaged and too short, particularly at the outlet ends. Both pipes should be repaired and extended (or simply replaced with new, longer culverts). Once the pipes are repaired or replaced, the road embankment should be widened at the downstream end of the pipes, and riprap should be placed around the culverts at their ends, to provide stable embankment slopes protected from erosion.

CV-202 (Figures 101 and 102): There are two problems with this culvert. At the inlet end of the pipe, there is some erosion visible immediately adjacent to the pipe, which should be rectified by filling the eroded rill with compacted soil and should be covered with crushed rock fill. The second issue is visible at the outlet end of the pipe, where its invert is located below the floor of the flow channel. The rock fill at the front of the pipe outlet should be regraded and uninterrupted flow from the culvert should be provided.

5.0 Conclusions

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood), has completed the second of the two required geotechnical field inspections of 2020 at the Mary River iron mine complex in Nunavut. Based on field observations, the condition of the inspected infrastructure components can be summarized as follow:

- All settling ponds and waste areas are enclosed by relatively shallow, stable berms. The berms show no signs of instability, there are no tension cracks or excessive settlements, and no detrimental slope erosion is visible on the berms. These structures were constructed by using thaw-stable generally granular materials, placed over thaw-stable subgrades (based on observations of adjacent areas along their footprints). Minor disturbance on the surface of the slopes and crests were noted during the field inspection at some of the berms, however, these discrepancies can be rectified by a more frequent maintenance (regrading) program. Foot and truck traffic on the berms (crest and slopes) must be limited.

- The water and waste storage settling ponds and cells comprised of HDPE liners are generally in good condition. No seepage from the currently operating cells was noted. Minor damages to the liner were noted at a few locations above the water lines, as detailed in this report. As specified, these minor damages to the liners should be repaired as soon as practically possible.
- Open drainage ditches across the Mary River and Milne Inlet sites are generally in good condition with some erosion and slope sloughing visible at a few locations. As part of a more frequent maintenance program the eroded sides of the ditches should be repaired/regraded.
- The abutments at the four inspected bridges appear to be in good condition and no scour in the riverbed around the abutments were noted at the time of the site visit in September. Sandbar development was noted at bridge 80 (near the north-east corner of the south abutment) which should be monitored and may need to be removed should its size continue to increase.
- Water crossings by culverts at the inspected locations are generally in good condition. At a few locations, culverts were noted as being either too short or somewhat damaged. As specified within the report, those culverts should be repaired/replaced as soon as practically possible.

6.0 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
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Baffinland Iron Mines Corporation

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APPENDIX "A" - Mary River Mine Complex - Photographs

Figure 9 to Figure 42

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1.0 Mary River Mine Complex

1.1 Polishing/Wastewater Stabilization Pond Berms (3 PWS ponds)

Figure 9: Aerial view of the stable berms around the three PWS ponds.

Figure 10: PWS pond #1. Well maintained stable perimeter berm and liner.

Figure 11: PWS pond #2 – Stable berm around the pond. The water was lowered in the summer.

Figure 12: Stable perimeter berms at the PWS pond #3 – A small "floating" section of the liner is visible in the pond (yellow circle).

1.2 Hazardous Waste Disposal Cell Berms (HWB-1 to HWB-7)

a) HWB-1

Figure 13: View of HWB-1 – Currently this cell is empty.

b) HWB-2

Figure 14: View of stable berms around HWB-2. The cell is currently empty with ponding water only.

c) HWB-3 and HWB-4

Figure 15: View of stable berms and the stored fuel barrels in HWB-3.

Figure 16: View of stable berms at HWB-4 next to HWB-3, with jet-fuel barrels stored on wooden pallets.

d) HWB-5

Figure 17: View of the HWB-5 berms. Only one fuel barrel stored in the otherwise empty cell.

e) HWB-6

Figure 18: View of the recently upgraded stable berm around HWB-6.

f) HWB-7

Figure 19: View of the large, flooded HWB-7 cell, with only one fuel tank stored.

Figure 20: View of the robust, stable berms around the HWB-7 cell.

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

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

Figure 21: MS-06 surface-water collection pond with robust, stable berms and intact liner.

Figure 22: Well maintained surface-water collection ditch next to the crusher plant, leading to MS-06.

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

Figure 23: View of the MS-08 pond at the waste rock facility.

Figure 24: View of the robust, stable berm around the MS-08 pond with shallow slopes and intact liner.

Figure 25: Well-maintained drainage ditch around the east side of the waste rock facility.

Figure 26: Well-maintained drainage ditch along the west side of the waste rock facility.

Figure 27: Stable rock fill berm at the water treatment pond adjacent to the waste rock facility.

1.4 Generator Fuel Berm

Figure 28: View of the generator fuel berm with exposed geotextile at a few locations.

Figure 29: View of slope deterioration at a section of the generator fuel berm. Trucks bypassing occasional ponding surface water on the road are "cutting" into the toe of the berm.

1.5 Fuel Farm Berms

a) Jet-fuel Tank Farm

Figure 30: View of the well-maintained berm at the jet-fuel storage facility.

b) MS-03 Diesel Fuel Tank Farm

Figure 31: View of the well-maintained stable berm around the MS-03 diesel fuel farm.

c) MS-03B New Fuel Tank Farm

Figure 32: View of the recently completed fuel tank farm with well-constructed stable perimeter berms.

1.6 Solid Waste Landfill Facility

Figure 33: Solid waste landfill facility with new perimeter fence and gate.

1.7 Camp Lake Silt-Sedimentation Check Dams and Berms

Figure 34: Camp Lake check dams and berms, forming efficient silt sedimentation cells

1.8 Rock Fill Slope at the Water Discharge Area

Figure 35: Minor slope erosion (cobbles and boulders rolling down the slope) at the water discharge area.

1.9 Deposit-1 Pit Walls

Figure 36: Stable pit-walls with minor rock weathering and pit-wall erosion in the "deposit-1" open pit.

1.10 Rock Quarry and KM106 Ore Stockpile Areas

a) QMR2 Rock Quarry

Figure 37: View part of the QMR2 quarry with area that still requires a more efficient surface water control. Rainwater should be properly drained from the traveled areas of the quarry.

Figure 38: Stable rock face with some minor potential hazards (weak dike, loose boulders and sliding rock wedges). Boulders placed along the toe of the "rock face" block access to the slope.

b) D1Q1 Proposed Rock Quarry

Figure 39: View of the northern slope of the future D1Q1 rock quarry (currently undeveloped).

c) KM106 Ore Stockpile area and the MS-07 pond (former D1Q2 quarry area)

Figure 40: View of the proposed ore stockpile area, adjacent to the haul road.

Figure 41: Construction of the MS-07 pond is in progress south of the proposed ore stockpile area.

Figure 42: Construction of the MS-07 pond is in progress south of the proposed ore stockpile area.

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APPENDIX "B" – Milne Inlet Port Site - Photographs

Figure 43 to Figure 72

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Milne Inlet Port Site

1.1 Hazardeous Waste-cell Berms - (HWB-1 to HWB-4)

a) HWB-1

Figure 43: View of the, stable berm around the HWB-1 cell.

b) HWB-2

Figure 44: Ponding water in the empty HWB-2 cell with locally exposed geotextile and liner. Empty containers stored immediately adjacent to the cell.

c) HWB-3 and HWB-4 Twin Cells

Figure 45: View of the HWB-3 and HWB-4 cells, containing fuel barrels and two shipping containers.

Figure 46: Upgraded stable berm and ponding water within the reconstructed HWB-4 cell.

Figure 47: Stable berms around and ponding water within the HWB-3 and HWB-4 cells.

1.2 MP-01A Pond

Figure 48: Berms and liner in excellent condition with stable slopes around the MP-01A pond.

1.3 MP-03 Fuel Tank Farm

Figure 49: View of the stable, well maintained berms around the MP-03 fuel tank farm.

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

Figure 50: View of stable berm at the MP-04 landfarm, with covered waste and ponding water within the cell.

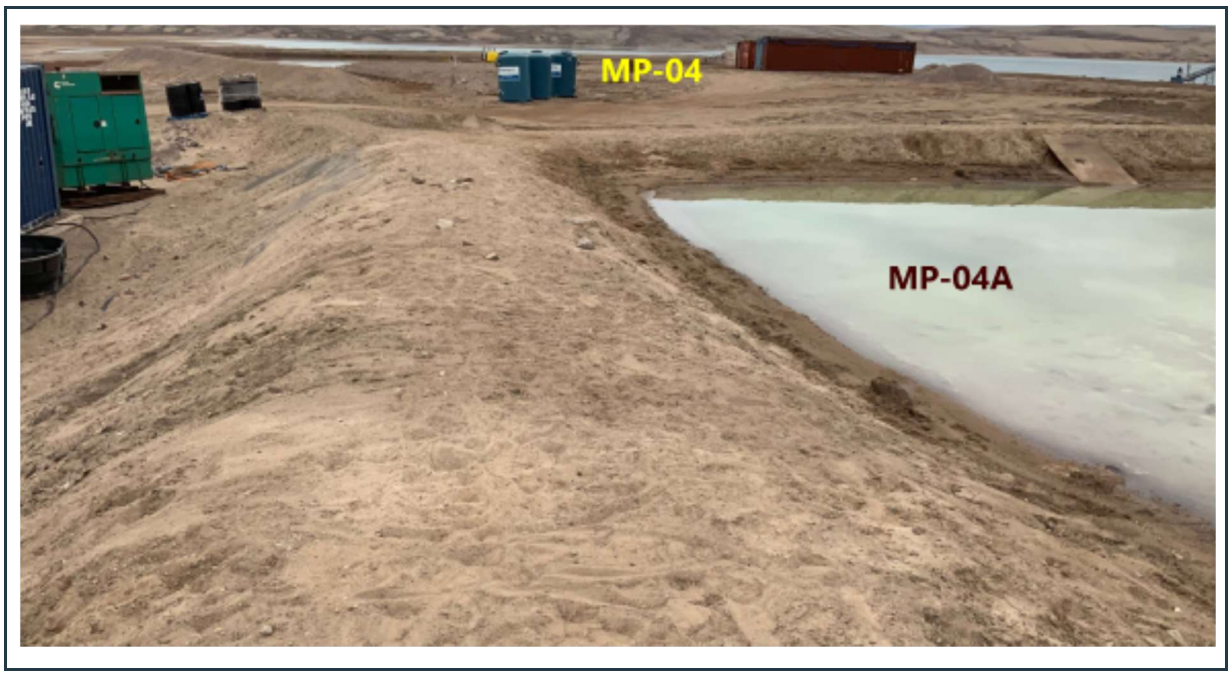

Figure 51: View of the MP-04A contaminated snow dump cell with stable berms and ponding water.

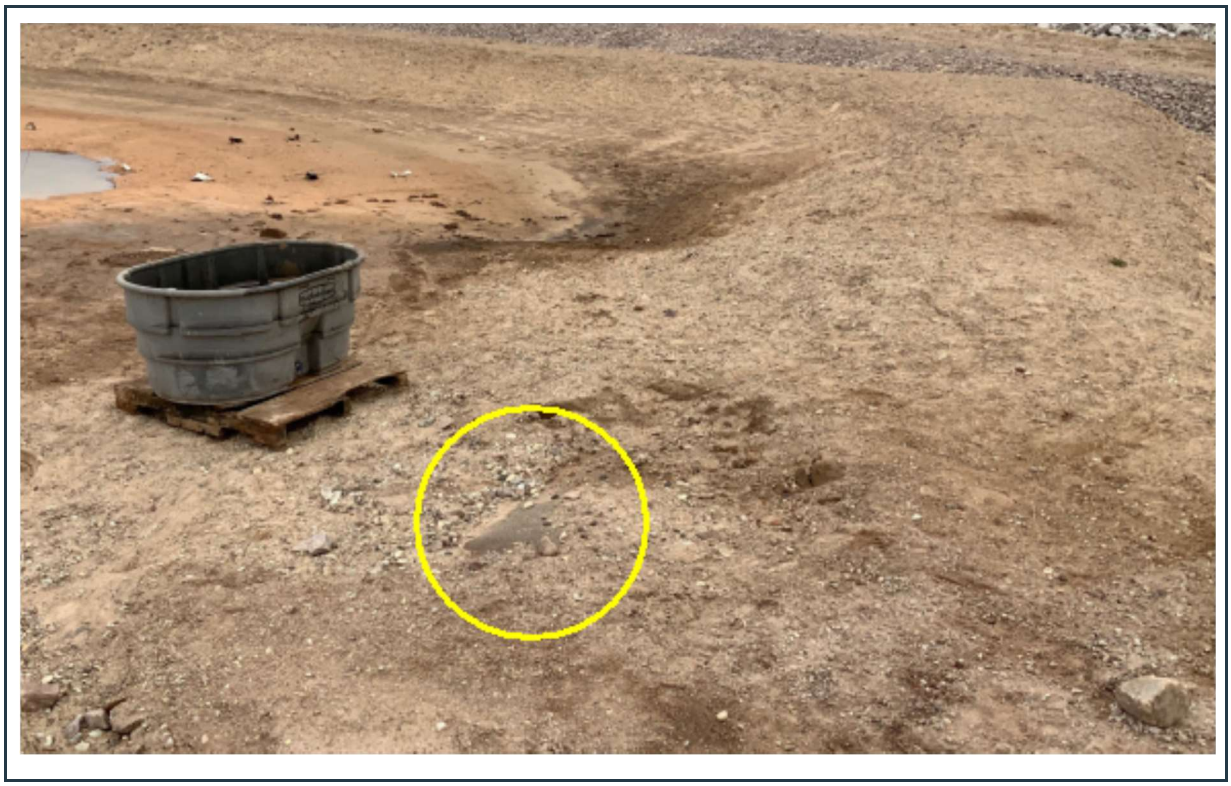

Figure 52: Condition of the ramp to the MP-04A snow dump, with exposed liner (yellow circle).

1.5 Surface Water Collection Ponds and Ditches (MP-05, MP-06 and Settling Pond #3)

a) MP-05 Settling Pond

Figure 53: View of the stable berms at the MP-05 settling pond (north-east corner of the ore stockpile).

Figure 54: Some liner damage on the slope of the southern intake channel to the MP-05 settling pond.

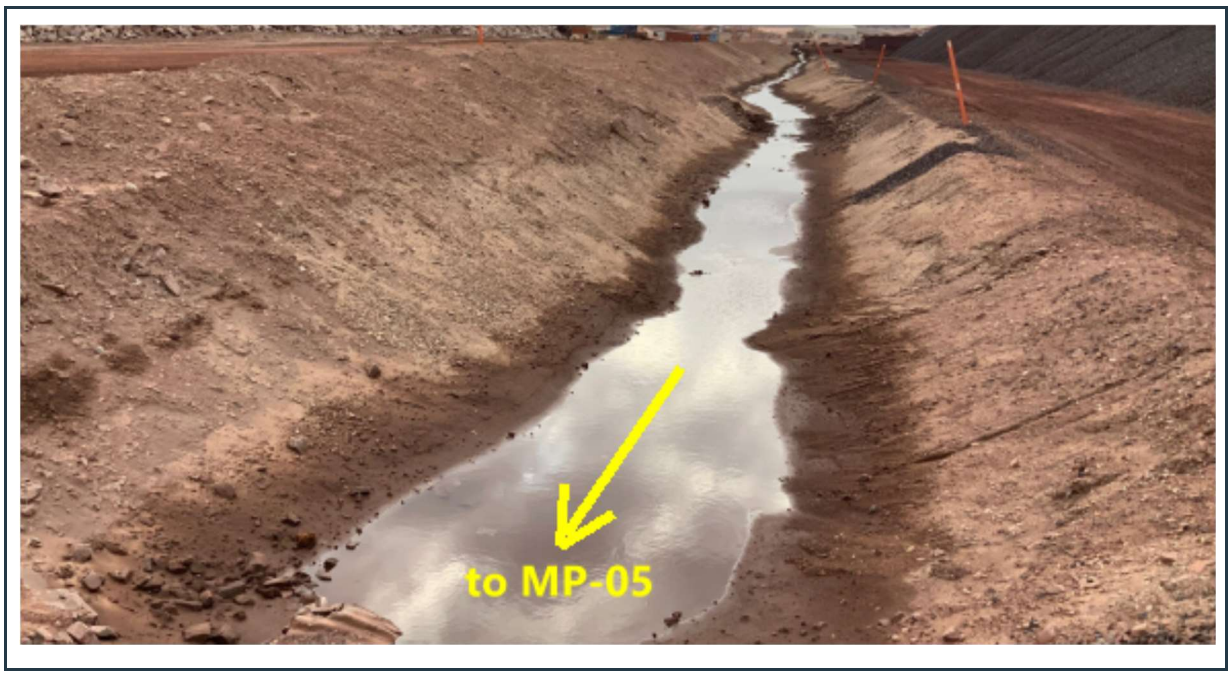

Figure 55: Surface water collection ditch adjacent to the crushed ore storage, draining to MP-05 pond.

b) MP-06 Settling Pond

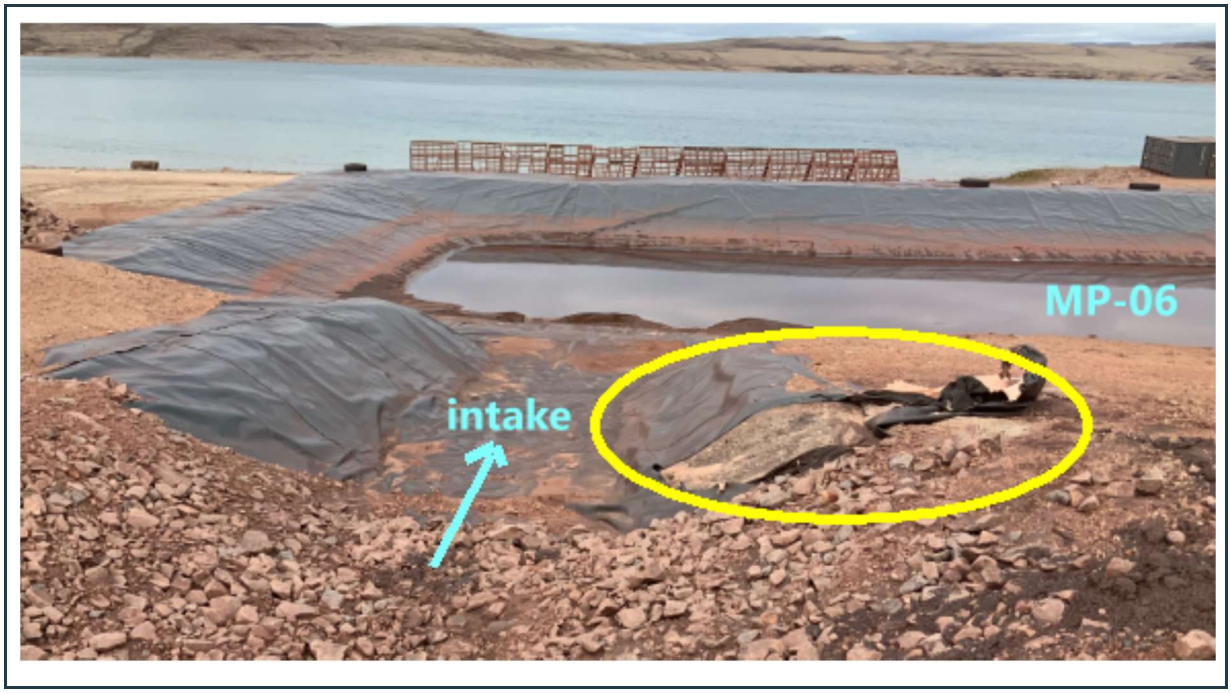

Figure 56: View of the lined MP-06 pond with robust, stable berms (north-west corner of the ore stockpile). Note the liner damage on the slope of the intake to the pond (yellow circle).

Figure 57: View of the lined MP-06 overflow pond, with stable berms.

Figure 58: Surface water collection ditch adjacent (west) to the crushed ore storage area, draining to the MP-06 pond.

c) Settling Pond #3

Figure 59: View of the lined, stable berm along the west side of settling pond #3.

1.6 Q01 rock quarry

Figure 60: View of stable highwalls with minor weathering and bench erosion in the Q01 rock quarry.

1.7 Surface Water Collection Ditches (P-SWD-3, P-SWD-5, P-SWD-6, P-SWD-7, W3/W14, 380M, and PSC)

a) P-SWD-3 (next to the LP2 laydown area)

Figure 61: View of the "P-SWD-3 surface water collection ditch with failing side slope. The sloughing is caused by the uncontrolled water flow into the ditch along its alignment (see the next image).

Figure 62: Continuous sheet flow of surface water from a large area, resulting in sloughing of one side of the P-SWD-3 ditch.

b) P-SWD-5 (next to the Q01 rock quarry)

Figure 63: P-SWD-5 – "Q01-North" surface water collection ditch.

c) P-SWD-6 (south of the Q01 rock quarry)

Figure 64: View of the well maintained P-SWD-6 - "Q01 South" surface water collection ditch.

d) P-SWD-7 (ditch and culverts adjacent to the new freight dock)

Figure 65: View of the P-SWD-7 surface water collection ditch and culverts (inlet).

Figure 66: View of the P-SWD-7 surface water collection ditch and culverts (outlet).

e) W3/W14 (surface water collection ditch)

Figure 67: View of the W3/W14 surface water collection ditch.

f) 380M (surface water collection ditch)

Figure 68: View of the south section of the 380 M surface water collection ditch.

Figure 69: View of the east section of the 380 M surface water collection ditch, in good condition.

g) PSC (new surface water collection ditch)

Figure 70: View of the PSC surface water collection ditch and culvert (still under construction). The culvert will need to be shortened and the slope with rip-rap regraded.

1.8 Tote Road Ditch and Culverts

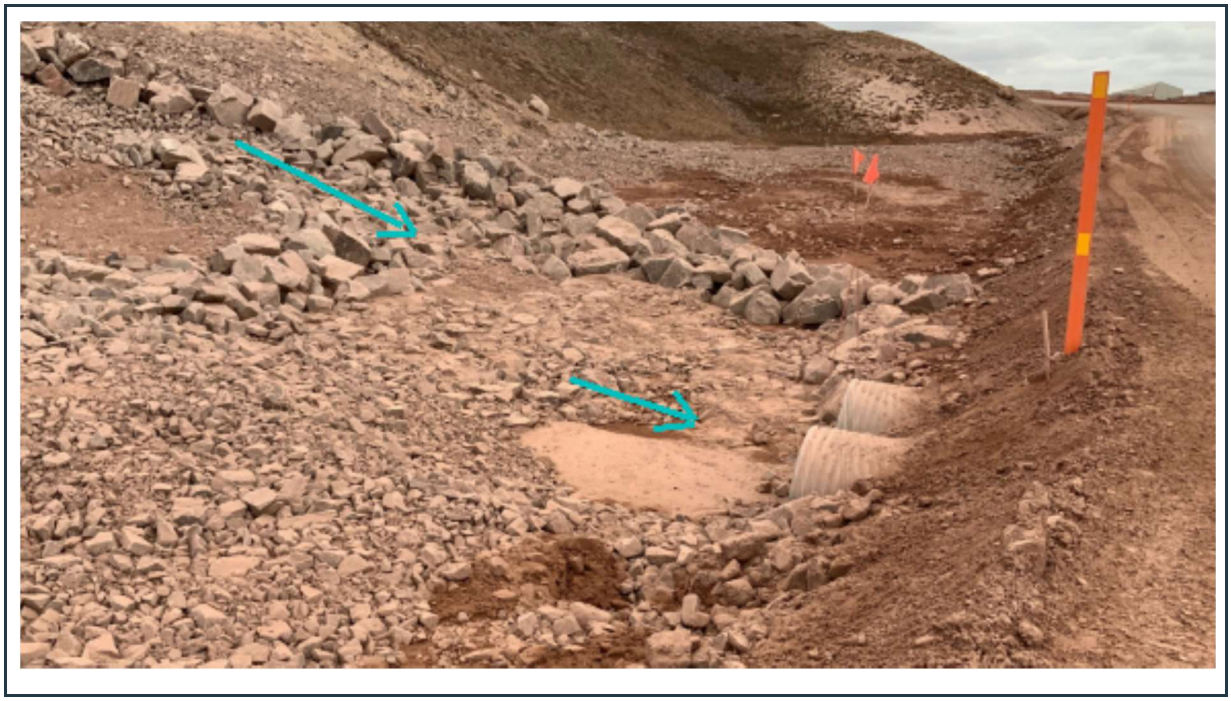

Figure 71: View of twin culverts, draining surface water from the quarry area under the tote road (inlet).

Figure 72: View of twin culverts, draining surface water from the quarry under the tote road (outlet).

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APPENDIX "C" – Tote/Haul Road - Photographs

Figure 73 to 104

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1.0 Tote Road - Bridges and Culverts

1.1 Bridges (4)

a) Bridge 17 (located approximately 17 km from Milne Inlet port)

Figure 73: View of the north side of "bridge 17". Note the rip-rap scour protection at the abutments.

Figure 74: View of the south side of "bridge 17". Note the rip-rap scour protection at the abutments.

b) Bridge 63 (located approximately 63 km from Milne Inlet port)

Figure 75: View of the west side of bridge 63, looking south. Note the low flow and stable abutments.

Figure 76: View of the east side of bridge 63, and one of the old abutments, looking south.

c) Bridge 80 (located approximately 80 km from Milne Inlet port)

Figure 77: View of the west side of bridge 80.

Figure 78: View of bridge 80, looking north. Note the sandbar in the river, blocking some of the flow.

d) Bridge 97 (located approximately 97 km from Milne Inlet port)

Figure 79: View of the west side of bridge 97, with one of the old abutments in the background.

Figure 80: View of two abutments and the east side of bridge 97. Note the flow of water at the toe of the south abutment between the side-culverts and the bridge (yellow circle and also in Figure 8).

1.2 Culverts (12)

a) CV-076

Figure 81: View of culvert 076 inlet (looking south).

Figure 82: View of culvert 076 outlet (looking south).

b) CV-078

Figure 83: View of culvert(s) 078 inlet (looking north-west).

Figure 84: View of culvert(s) 078 outlet (looking south). Minor damage visible on one of the pipes (second from north - yellow circle).

c) CV-083

Figure 85: View of culvert 083 inlet (looking north). No flow was noted at the time of the inspection.

Figure 86: View of culvert 083 outlet (looking north-east), with slope erosion of the embankment around the culvert.

d) CV-094

Figure 87: View of culvert(s) 094 inlet, in good condition (looking south).

Figure 88: View of culvert(s) 094 outlet, in good condition (looking south).

e) CV-102

Figure 89: View of culvert(s) 102 inlets in good condition (looking west).

Figure 90: View of culvert(s) 102 outlets in good condition (looking south). Note some erosion on the slopes of the road embankment around the culverts (yellow circles).

f) CV-107

Figure 91: View of culvert 107 inlet (looking south). See detailed comments in the report.

Figure 92: View of culvert 107 outlet (looking south). See detailed comments in the report.

g) CV-110A

Figure 93: View of culvert 110A inlet (looking north).

Figure 94: View of culvert 110A outlet (looking south-west). Note the minor damage on the top of the pipe (yellow circle), and the recent erosion of the road embankment adjacent to the culvert.

h) CV-111

Figure 95: View of culvert 111 inlet (looking south).

Figure 96: View of culvert 111 outlet (looking west).

i) CV-112D

Figure 97: View of culvert(s) 112D inlets (looking west). Thin ice was already visible in the creek during the first week of September.

Figure 98: View of culvert(s) 112D outlets (looking south-east).

j) CV-114D

Figure 99: View of culvert(s) 114D inlets (looking west). Repair of the northern pipe is required (yellow circle).

Figure 100: View of culvert(s) 114D damaged outlets (looking south-east). Repair of both pipe ends is required.

k) CV-202

Figure 101: Culvert 202 inlet (looking south). Note the slope erosion at the edge of the road, adjacent to the culvert (yellow circle).

Figure 102: View of culvert 202 outlet (looking south). Flow of water is blocked by the crushed rock fill.

l) CV-225

Figure 103: View of culvert(s) 225 inlets (looking north-east).

Figure 104: View of culvert(s) 225 outlets (looking west).