November 16, 2021

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

RE: Submission of 2021 Geotechnical Inspection Report No. 2 (September 2021)

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 [Nunavut Water 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 geotechnical inspection for 2021 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 second geotechnical inspection for 2021 was conducted between September 14 and 17, 2021.

During the inspection, the following structures and facilities were inspected:

Mary River Mine Site

a) Berms of Polishing/Wastewater Stabilization Ponds (3)
b) Berms of hazardous waste disposal cells - (HWB-1 to HWB-7)
c) MS-06, MS-07 and MS-08 surface water collection/settling ponds and adjacent ditches
d) Berms of the generator fuel bladder cell (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 (riprap) at the water (effluent) discharge area
i) Deposit 1 pit walls
j) QMR2 and D1Q1 rock quarries, and KM106 ore storage area

Milne Inlet Port Site

a) Berms of hazardous waste disposal cells - (HWB-1 through to HWB-4)
b) Berms of the MP-01A Polishing Waste Stabilization Pond (PWSP)
c) MP-03 fuel tank farm
d) Berms of the MP-04 landfarm and MP-04A contaminated snow disposal pond
e) Berms of the Pond #3, MP-05, and MP-06/MP-06A settling ponds and drainage ditches
f) Q01 rock quarry and north quarry ditch system
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 Q01 rock quarry area)

Milne Inlet Tote Road

a) Bridges (4)
b) Culverts (7)

The attached report (Attachment 1) presents the findings and recommendations of the September 2021 inspection for the aforementioned structures. The following subsections of this letter summarize Baffinland's plan for implementing the recommendations identified in the report.

Recommendations for the Mary River Mine Site Infrastructure

Hazardous Waste Berm – HWB-3

There is some wooden debris left in cell 3, which should be removed during regular maintenance.

Baffinland Action: Baffinland has removed the wooden debris from HWB-3 during routine maintenance activities.

Hazardous Waste Berm – HWB-6

Some containers and wooden debris have been placed on the slopes and crest of the perimeter berm instead of inside the cell. Those items should be removed from the berm and stored inside the cell. This process should be followed by regrading the damaged slopes and crest by hand to prevent damage to the liner.

Baffinland Action: Baffinland has removed the items from the slopes and crest of the perimeter berm, and will regrade the slopes and crest of the berm by hand (Completion prior to Freshet 2022).

MS-06 – Surface Water Management Pond Adjacent to Crusher Pad

The inlet-end of a culvert under the Tote Road that connects one (1) of the side ditches with the north corner of the settling pond is clogged with granular soil which must be removed to restore proper flow through the side-ditch.

Baffinland Action: Baffinland will remove the granular soil material from the identified culvert to restore the proper flow pattern (Completion prior to Freshet 2022).

The temporary containment sump that was excavated to contain seepage water for diversion back to the settling pond could endanger the stability of the existing berm, and therefore must be backfilled with native soil prior to freshet.

Baffinland Action: Baffinland will backfill the containment sump to maintain the structural integrity of the pond berm (Completion prior to Freshet 2022).

Historic Generator Fuel Bladder Berm

As previously recommended in the June 2021 report, to prevent further deterioration of the pond's berm, the drainage of melting snow in the area must be rectified permanently. The surface water should be redirected away from the berms by excavating properly designed and constructed drainage ditches in the area, preferably around the adjacent snow stockpile.

Baffinland Action: Drainage ditches will be constructed in the area to prevent further deterioration of the pond's berm (Completion prior to Freshet 2022).

Water (Effluent) Discharge Area

Some of the rock fill has been "washed down" from the crest to the toe of the slope in a small area. It is recommended that area be filled with additional rock fill to prevent the erosion of the underlying finer material down the slope.

Baffinland Action: Baffinland will place additional rock fill on the slope in this area to maintain slope stability (Completion prior to Freshet 2022).

QMR2 Rock Quarry

Ponding water continues to cover 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 continuing to improve surface water drainage in the quarry including implementation of water management strategies as needed and installation of erosion control protection measures at strategic locations. Surface water was diverted throughout the 2021 open water season and will continue to be a focus after rain events. (Completion prior to Freshet 2022).

KM 106 Ore Facility

The "diversion" berm is constructed from granular fill that may not function well in diverting all surface runoff to the adjacent MS-07 pond. Consideration shall be given to add a fine-grained core into the granular berms at the critical locations where seepage through the berms was noted. To eliminate the need for pumping the collected water into the nearby MS-07 pond, consideration shall be given to provide a seal on the upstream side of the berm along the critical sections, by placing either a clay core or a synthetic liner to prevent seepage through the berm.

Baffinland Action: Baffinland has retained third party consulting firm to investigate the km106 diversion berm to determine appropriate corrective actions to ensure the berm functions as per design criteria (Completion prior to Freshet 2022). Temporary diversion swales and a sump were installed to capture contact water and convey it to the Km 106 surface water management pond and will continue to be used until another solution is implemented.

Recommendations for Milne Port Infrastructure

Hazardous Waste Berm – HWB-1

Large tire-tracks were visible on one of the berms, indicating that trucks were apparently driving over the berm, which should be avoided. It is recommended that the affected crest and slopes of that berm be regraded without damaging the underlying liner (re-grading the surface by hand is preferred).

Baffinland Action: Baffinland will regrade the crest and slopes of the affected area of berm by hand (Completion Q2 2022). Baffinland continues to educate personnel to access the interior of the berm via the access ramp.

MP-01A Polishing Waste Stabilization Pond (PWSP)

Some sewage sludge accumulation was visible in one (1) corner of the pond, which should be removed from the cell. This should be completed carefully, so as not to damage the liner.

Baffinland Action: Baffinland will assess the solids build up within PWSP MP-01A and if necessary will develop an implementation plan to remove the solids from the corner of the pond using a method that does not damage the liner (Completion Q3 2022).

MP-05 Settling Pond

Minor liner damage was noted near the crest of the southern inlet channel to the pond. Consideration should be given to place protective berms adjacent to the slope's crest near the channel to prevent such damages.

Baffinland Action: Baffinland is reviewing snow clearing practices for protection of this area and other suitable controls to prevent recurring minor liner damage (Completion prior to Freshet 2022). Baffinland will repair the liner damage that is above the water line (Completion Q3 2022).

Surface Water Drainage Ditch - P-SWD-3

Sloughing of the sides of the P-SWD-3 ditch, adjacent to the LP2 laydown area, has occurred at several locations along the ditch. It is suggested that the existing condition of the P-SWD-3 drainage ditch and adjacent topography be re-evaluated in detail, and that the ditch be redesigned and reconstructed to drain the large amount of surface water to the correct direction. Some debris in the northern part of the ditch should also be removed.

Baffinland Action: Baffinland commits to further assessing the sloughing and existing drainage of the PSWD-3 drainage ditch and adjacent topography to ensure remedial actions address this issue. All water is currently actively pumped downstream of this area to proper receiving location. (Completion prior to Freshet 2022). The debris has been removed from the ditch.

Baffinland Action: Baffinland has started remedial actions and will continue to monitor the existing drainage of the P-SWD-3 drainage ditch and adjacent topography, to ensure remedial actions address this issue (Completion prior to Freshet 2022). All water is currently actively pumped downstream of this area to the proper receiving location. The debris has been removed from the ditch.

Surface Water Drainage Ditch - P-SWD-5

A short section of the P-SWD-5 ditch was noted with missing riprap. Rock fill riprap should be placed at this section to prevent unwanted erosion of the soil present at the base and slopes of the ditch.

Baffinland Action: Baffinland will repair the slopes at the identified section of the P-SWD-5 ditch (Completion prior to Freshet 2022).

Surface Water Drainage Ditch – PSC

The PSC drainage ditch is still under construction, however, minor localized slope movements at the west end of the ditch should be repaired, regraded and the riprap rock fill cover reinstated.

Baffinland Action: Baffinland will repair and regrade the identified area in the ditch and reinstate the riprap rock cover prior to completion of the construction of the PSC drainage ditch.

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

KM 32 Lake Access Road Check Dams

One of the berms installed upstream of the culvert's inlet has started to wash away and should be reinstated. Silt should be removed from the clogged culvert, and periodically from the upstream ditch, to restore and maintain proper drainage.

Baffinland Action: Baffinland will reinstate the impacted berm at the culvert inlet and remove built up silt from the ditch and culvert prior to freshet 2022 (Completion Q2 2022).

Culvert - CV-098

Additional rock fill should be placed upstream of the culverts' inlet to minimize siltation within the culvert.

Baffinland Action: Baffinland will place addition rock fill upstream of the culvert's inlet in accordance with the approved Civil Design Criteria (Completion Q2 2022).

Culvert - CV-093

The end of one of the culverts is partially blocked by rock fill that should be removed from the front of the pipe and spread around the outlet.

Baffinland Action: Baffinland will clear the rock fill from the blocked culvert to ensure proper flow through the culvert (Completion prior to Freshet 2022).

Culvert - CV-030 A&B

One (1) of the culverts is blocked with silt. It is suggested that the blocked pipe be replaced, and both ends of the pipes be protected from siltation by placing riprap around them.

Baffinland Action: Baffinland commits to assessing the blocked culvert to determine if replacement is required and placing riprap at both ends of the culvert to prevent further siltation for occurring (Completion prior to Freshet 2022).

Culvert – BG-03A

The inlet-end of this culvert appears to be short, and no rock fill riprap is protecting the vicinity of the inlet from erosion/siltation. The diameter of the culvert may potentially be too small for this location, which could result in flooding of the area upstream of the inlet during spring freshet. It is suggested that the efficiency of the culvert be monitored in the spring/early summer of 2022.

Baffinland Action: Baffinland will monitor the efficiency of the culvert during freshet 2022 (Completion Q3 2022).

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

Regards,

Kendra Button
Environmental Superintendent

Attachments:
Attachment 1: 2021 Geotechnical Inspection Report No. 2

Cc: Karén Kharatyan (NWB)
Chris Spencer, Hugh Karpik (QIA)
Andrew Keim, Jonathan Mesher, Justin Hack (CIRNAC)
Tim Sewell, Megan Lorde-Hoyle, Lou Kamermans, Sylvain Proulx, Francois Gaudreau, Martin Beausejour, Connor Devereaux, Allison Parker (Baffinland)

Attachment 1

2021 Geotechnical Inspection Report No. 2

2275 Upper Middle Road East, Suite 300 | Oakville, ON, Canada L6H 0C3
Main: 416.364.8820 | Fax: 416.364.0193 | www.baffinland.com

Baffinland Iron Mines Corporation

November 16, 2021
Project #: TC190307.2021

Annual Geotechnical Inspections – 2021 Report 2.

Mary River Project – Nunavut

Mary River Mine: View of the Office Complex and Camp – Source: Baffinland

November 16, 2021
TC190307.2021

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

Re: Annual Site Inspections and Reporting - Mary River Iron Mine 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 Project 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 2021 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, 2018) – SNC Lavalin
- Annual Geotechnical Site Inspections (2017) – ARCADIS Design and Consultancy
- 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, 2020 and 2021 1st report) – Wood E & I Solutions
- Construction Summary Reports – Crusher Pad Sedimentation Pond Expansion (2019); Waste Rock Pond Expansion Drainage System; and KM-106 Run of Mine Stockpile & Sedimentation Pond (2020)

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

REGISTERED PROFESSIONAL ENGINEER
L. BODI
LICENSEE
NT/NU

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 2021 at the Mary River Project, 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 included visual assessment of the current condition of the berms and slopes and reporting 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) 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. Several culvert crossings and other infrastructure associated with construction activities completed over the past year along the Tote Road were also reviewed during the second geotechnical field inspection of 2021. The inspected structures and facilities in the fall (September) of 2021 included the following:

A. Mary River Mine Site

a) Berms of Polishing/Wastewater Stabilization Ponds (3)
b) Berms of hazardous waste disposal cells - (HWB-1 to HWB-7)
c) MS-06, MS-07 and MS-08 surface water collection/settling ponds and adjacent ditches
d) Berms of the generator fuel bladder cell (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 (riprap) at the water (effluent) discharge area
i) Deposit 1 pit walls
j) QMR2 and D1Q1 rock quarries, and KM106 ore storage area

B. Milne Inlet Port Site

a) Berms of hazardous waste disposal cells - (HWB-1 through to HWB-4)
b) Berms of the MP-01A Polishing Waste Stabilization Pond (PWSP)
c) MP-03 fuel tank farm
d) Berms of the MP-04 landfarm and MP-04A contaminated snow disposal cell
e) Berms of Pond #3, MP-05, and MP-06/MP-06A settling ponds and drainage ditches
f) Q01 rock quarry and north quarry ditch system
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 Q01 rock quarry area)

C. Tote Road between the Mary River Mine Site and Milne Inlet Port

a) Bridges (4)
b) Culverts (5)

The above listed infrastructure components were visually inspected between September 14 and 17, 2021, by the author of this report, Laszlo Bodi M.Sc.; P.Eng. of Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited. During the inspection the current condition of the structures 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), Pit-1, waste rock and ore stockpile areas (Figure 2), Northern Zone (Figure 3), Rock quarry (Figure 4), Southern Zone (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 40
b) Appendix B : Milne Inlet Port site - Figures 41 to 68
c) Appendix C: Bridges and culverts along the Tote Road: Figures 69 to 89

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

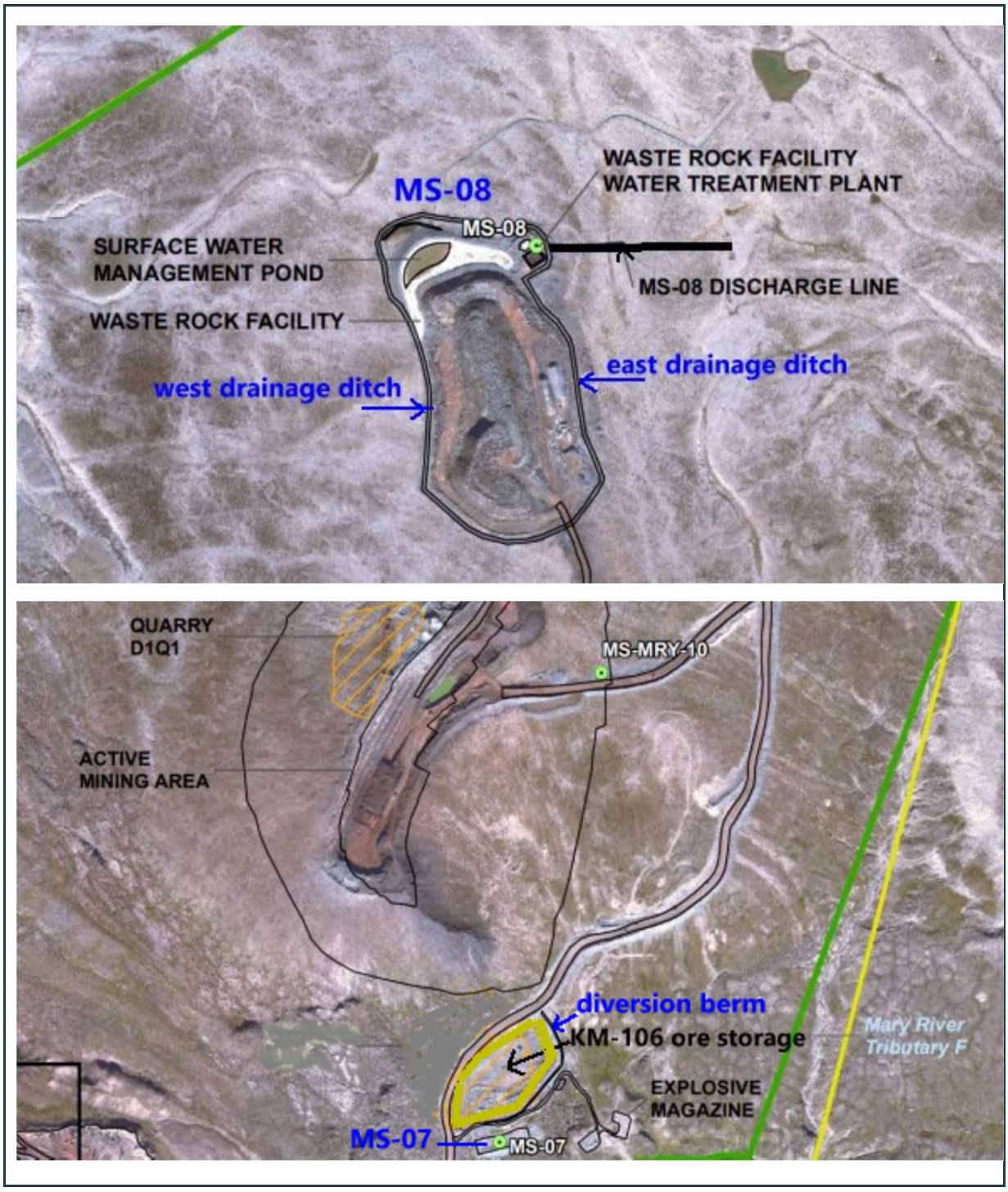

Figure 2: Mary River Site layout – Eastern Zone - Pit 1, D1Q1 rock quarry and KM106 ore stockpile areas, MS-07 and MS-08 settling ponds.

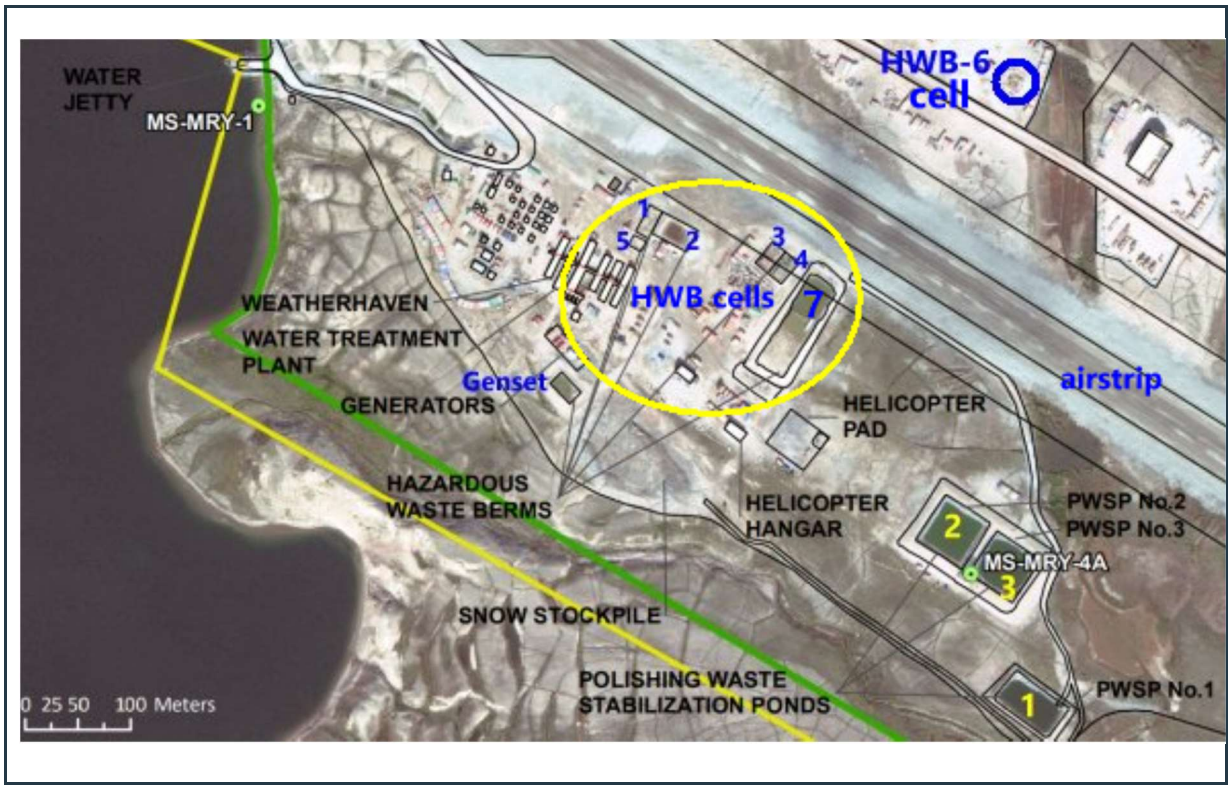

Figure 3: Site layout – Mary River Mine Site - Northern Zone - ponds and hazardous waste storage cells.

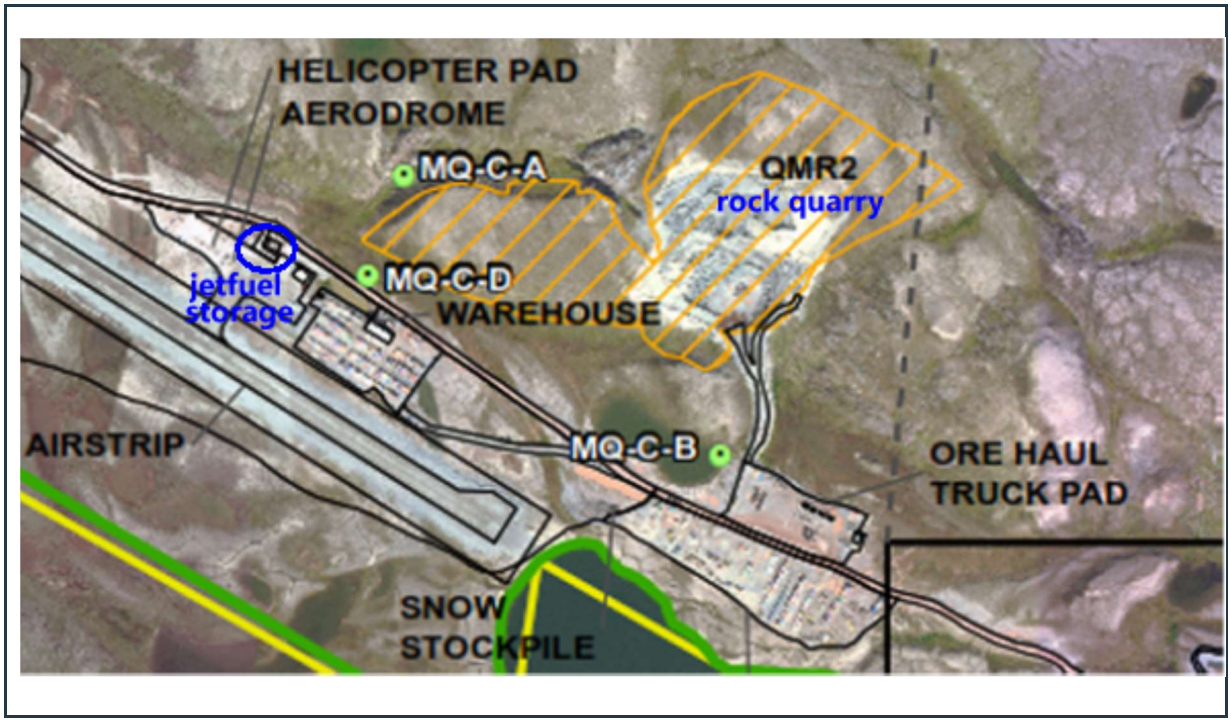

Figure 4: Site layout – Mary River Mine Site – QMR2 quarry area.

Figure 5: Site layout – Mary River Mine Site – Southern Zone.

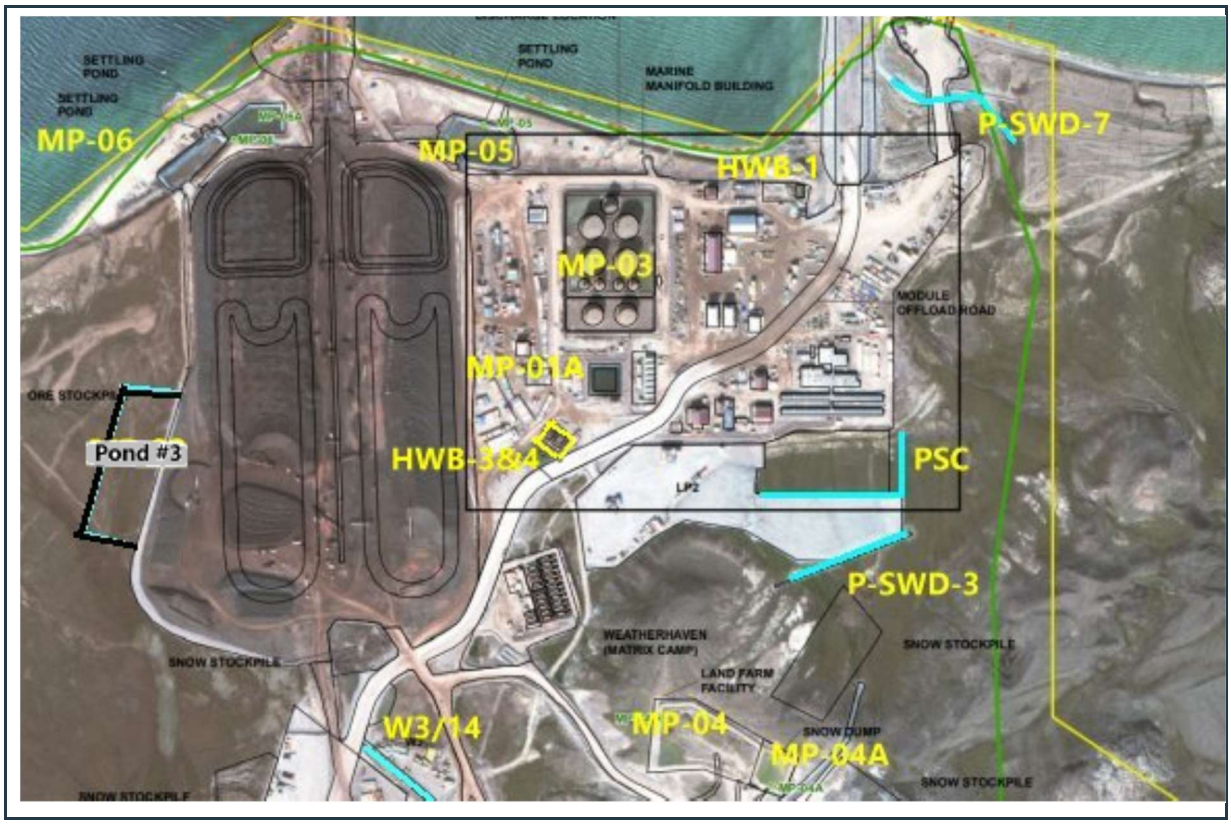

Figure 6: Site layout – Milne Inlet Port Site – Northern Zone.

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 KM17 is seen in the center.

Details of the recent condition survey of the individual structures, reviewed in September 2021, are summarized in the following sections of the report while the relevant 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 (3) polishing/waste stabilization ponds, located adjacent to the airstrip, as shown in Figure 3. Pond #1 is a single structure, while Ponds #2 and #3 were constructed as twin-cells, as shown in Figure 9. This photograph is a historic aerial image showing the robust and stable berms around the ponds. As pointed out in previous inspection reports, these ponds were associated with the exploration phase of the mine, and currently serve as emergency holding ponds in case problems should 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 in the cells or on the upstream face of the slopes (see Figures 10 to 12). All previous (minor) damages on the liners have been properly repaired, as visible in Figure 10.

The robust berms around the three (3) ponds appear to be stable, having wide crests and 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, these berms are structurally stable with no sign of seepage from any of the three (3) ponds.

A relatively common issue (although not a problem) in water storage ponds 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 small "whales" were visible during both of the June and September 2021 inspections at PWS ponds #2 and #3, as shown in Figures 11 and 12. Similar "whales" were noticed and recorded during previous inspections in the past; however, no damage to the liner or seepage from the ponds was visible, including during the latest inspection in September.

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

There are seven (7) lined hazardous waste cells with perimeter berm structures located at the Mary River mine site (HWB-1 to HWB-7). The HWB-6 cell is located at the north side of the airstrip near the incinerator, while the other six (6) cells are located opposite of HWB-6, at the south side of the adjacent airstrip, as shown in Figure 3. All HWB cells are lined with HDPE liner, and comprise shallow, stable, and

lined perimeter berms constructed from 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.

a) HWB-1

This cell is currently empty, as shown in Figure 13. As reported previously, concerns had been raised in the past to suspected potential liner damage within this cell, and consequently no material has been stored in this cell since this concern was identified.

b) HWB-2

As shown in Figure 14, this cell is currently holding some water and some soil have been placed into the cell recently. The perimeter berms around the cell appear to be stable and the presence of ponding water indicates good liner performance.

c) HWB-3 and HWB-4

These cells were constructed as "twin-cells" and were called "Fuel Containment" cells in historic inspection reports. As shown in Figures 15 and 16, cell 3 is generally full of fuel barrels stored on wooden pallets (jet-fuel and diesel), while a few similar barrels are also stored in cell 4. The berms and liner around and within the cells appear to be in good condition and no seepage from either of the cells was noted. There is some wooden debris left in cell 3 (see the yellow circles in Figure 15), which should be removed during regular maintenance.

d) HWB-5

As shown in Figure 17, this cell is currently empty. The shallow berms around this cell appear to be stable and there is no visible liner damage in the cell.

e) HWB-6

The berms around this cell and the internal "floor" have been regraded and stabilized recently using clean granular fill. The cell was almost empty at the time of the June 2021 inspection; however, it was completely full during the September inspection. As shown in Figure 18, some containers and wooden debris have been placed on the slopes and crest of the perimeter berm instead of inside the cell. Those items should be removed from the berm and stored inside the cell. This process should be followed by regrading the damaged slopes and crest by hand to prevent damage to the liner.

f) HWB-7

Only one (1) large fuel tank is stored in this cell, as shown in Figure 19 (white tank). The perimeter berms around the cell appear to be stable and the visible water within the cell is indicative of adequate liner performance. As shown in Figure 19, ice was already formed on the water's surface in September.

2.3 MS-06, MS-07 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 generally collects surface water from the area of the crusher pad site. The water is collected in side-ditches, excavated around the crusher pad, and conveyed into the settling pond. There is one culvert under the crusher pad entrance that connects one (1) of the side ditches with the north corner of the settling pond. It was noted during the September inspection that the inlet-end of that culvert is clogged with granular soil (see Figure 21), possibly pushed into the ditch during maintenance of the adjacent road. The location of the clogged end of the culvert is marked by a green dot in Figure 1 (within the yellow circle marking the MS-06 pond). The soil fill, blocking the flow of water through the culvert, must be removed to restore proper drainage through the side-ditch.

There are two (2) 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 appears to be intact (see Figure 20), and no wet downstream slopes or toe seepage from the pond were visible at the time of the inspection. However, seepage water within the relatively permeable, cobbly overburden adjacent to the toe of the south berm of the pond was noted within a temporary containment sump which was constructed to contain the seepage water and divert it to the settling pond, as shown in Figure 22. The visible water in the sump appears to be surface water, percolating down into the ground and flowing from higher elevations within the valley adjacent to the crusher pad toward the MS-06 pond. The excavated temporary containment sump could endanger the stability of the existing berm, and therefore must be backfilled with native soil prior to the next freshet (yellow circle in Figure 22). To maintain the structural integrity of the pond berm, no soil should be removed from the toe of the berm. Temporary containment sumps could be excavated at least 10 m away from the toe of the berm.

b) MS-07 – Surface Water Collection Pond Adjacent to the New Ore Storage

The MS-07 settling pond has been completed recently adjacent to the KM-106 ore stockpile area. The pond has robust perimeter berms and intact geomembrane liner, as shown in Figure 23. No stability or seepage related problems were observed at this pond during the site visit.

c) MS-08 – Surface Water Collection Pond Adjacent to the Waste Rock Facility (WRF)

Waste rock from the open pit mining operation is disposed in the WRF, which consists of a waste rock stockpile, the recently reconstructed MS-08 sedimentation pond, and continuously upgraded perimeter drainage ditches constructed around the facility. Surface runoff from around and seepage from the WRF is collected in the ditches and directed to the MS-08 pond. The MS-08 settling pond is surrounded by recently reconstructed robust and stable berm, as shown in Figure 24 in Appendix A. The pond is lined with exposed new HDPE liner that is secured in place in anchor trenches, extending down into the permafrost.

As pointed out earlier, contact water from the WRF is collected in perimeter ditches and the collected water flows to the settling pond from the east and west. As shown in Figure 25 and Figure 26, the drainage ditches are well maintained, and have stable slopes. Boulders previously noted in the ditches have been removed.

Water from the MS-08 pond is pumped to the nearby designated facility for treatment, if required. There is a lined treatment cell in good condition located immediately next to the WRF water treatment plant with stable perimeter berm, shown in Figure 27. As shown in the image, the crest and slopes of the berm were already snow-covered during the September visit.

2.4 Historic Generator Fuel Bladder Berm

This berm has previously contained fuel bladders for the generators; however, the cell is currently empty. It is located immediately adjacent to the power generators, south-west of the hazardous waste cells (Figure 2). As shown in Figure 28 and Figure 29, the perimeter berm around the pond generally comprises granular materials and the cell is lined. Ponding water within the cell indicates good liner performance.

A large area of the adjacent road was flooded by melting snow at the time of the June inspection; however, that water had been drained from the area by the September site visit. As previously recommended in the June 2021 report, the drainage of the melting snow in the area must be rectified permanently to prevent further deterioration of the pond's berm. The surface water should be redirected away from the berms by excavating properly designed and constructed drainage ditches in the area, preferably around the adjacent snow stockpile.

2.5 Fuel Storage Berms (3)

There are three (3) fuel storage areas at the Mary River mine site. One (1) is located at the airfield and two (2) 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, constructed from crushed rock fill, provides additional protection at two (2) sides (Tote Road and airport parking sides) of the facility. The fuel farm is lined to the crest of the perimeter

berms, and the liner within the cell appears to be in good condition, indicated by the ponding water within the cell, as shown in Figure 30.

b) MS-03 Diesel Fuel Tank Farm

The stable berms around the "old" diesel fuel tank farm are in excellent condition (see Figure 31) and they are well maintained. The ponding rainwater within the cell 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 large capacity fuel tank farm is located adjacent to the Tote Road, as shown in Figure 32. This new tank farm was constructed as specified in the design drawings (subgrade, berms, bedding layer, liner, and protective cover). Based on site observations, the new liner is intact, and all berms are stable and well maintained.

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 and the site is surrounded by a chain-link fence and a lockable gate. As shown in Figure 33, the disposed waste is covered with soil, as per standard procedure at such a facility, and only small amount of ponding water (frozen) was visible at the site.

2.7 Camp Lake Silt-sedimentation Check Dams and Berms

The Camp Lake silt sedimentation control berms and check dams (all stable and well-maintained) 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. The image shows that the cells are working well as intended.

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 (2) 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, as shown in Figure 35. As shown in the image, some of the rock fill has been "washed down" from the crest to the toe of the slope in a small area. It is recommended that area marked by the yellow circle in Figure 35 be filled with rock fill to prevent the erosion of the underlying finer material down the slope.

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 visible at a few locations, as visible in Figure 36. 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). The rock slopes and benches along the pit wall appear to be stable with no sign of instability.

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

a) QMR2 Rock Quarry

There is no blasting and excavation activity currently carried out in the QMR2 rock quarry (Figure 37). The exposed slopes (rock face) in the quarry appeared to be in stable condition overall, with a few localized fall hazards (loose boulders) noted at the top level of the pit walls in some areas. As shown in Figure 37, boulders are placed near the crest and along the toe of the rock wall to prevent unauthorized access to the steep rock face.

As reported during the 2020 inspections and in the June 2021 report, the lowest plateau (main level) of the quarry still exhibits poor surface water control and therefore ponding rainwater still covers a section of the quarry's main level. The excess water can still flow uninterrupted along the side of the access road (Figure 38), further eroding the edge of the road, and initiating erosion and failure of the road embankment's slope. As pointed out earlier, the uncontrolled surface water presents not only potential slope stability issues in the area, but also traffic safety issues as well, particularly after freezing. To maintain traffic safety and stable side slopes when the operation in this facility resumes, the ponding water at the quarry's main level must be properly drained from the area down on the side-slope located immediately next to the plateau. It is recommended that consideration be given to the installation of a slope-drain pipe, chute, or flume drain, as an erosion protection measure, instead of letting the water flowing uncontrolled along the edge of the access road.

b) D1Q1 Rock Quarry

This quarry, located north of the "deposit-1" open pit, has been opened recently and some rocks have been excavated/removed from a relatively small area within the quarry. As shown in Figure 39, the exposed rock face visible in this facility appears to be stable.

c) KM 106 Ore Storage (former D1Q2 quarry area)

The area previously considered as the future D1Q2 rock quarry is now developed as a new ore stockpile site. As shown in Figure 2, the selected area is located south of the "deposit-1" open pit, along the east side of the ore haul road. It is also shown in Figure 2 that a surface water diversion berm was constructed along the east and south sides of the stockpile area. As shown in Figure 40, the "diversion" berm was constructed using granular fill that may not function well in diverting all surface runoff to the adjacent

MS-07 pond. Water that can seep through the berm at its bend (note the two yellow arrows in Figure 40) is collected in a temporary sump and subsequently pumped to the MS-07 pond. As suggested in the June 2021 report, consideration shall be given to add a fine-grained core into the granular berm at the critical location where seepage through the berm is noted (like the area near its bend).

3.0 Milne Inlet Port Site

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

There are four (4) hazardous waste disposal cells with stable perimeter 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; however, were constructed as twin-cells, located south/south-west of the MP-03 fuel storage area.

a) HWB-1

The HWB-1 is the largest cell of the four, bounded by stable perimeter berms, constructed of granular soils, as shown in Figure 41 and Figure 42, in Appendix B. As noted during the June inspection, the stored materials in this cell are placed close to the berms with the center of the cell generally open. A couple of steel shipping containers are now stored at the back of the cell, as shown in Figure 41. Large tire-tracks were visible on one of the berms during the September site visit (Figure 42), indicating that the trucks, delivering those containers into the cell, were apparently driving over the berm, which should be avoided. It is recommended that the affected crest and slopes of that berm be regraded without damaging the underlying liner (re-grading the surface by hand is preferred).

b) HWB-2

The HWB-2 is a relatively small cell that is no longer used to store hazardous waste. As shown in Figure 43, the cell has been filled with clean granular sand and gravel, and only empty plastic containers are stored across the raised interior of the cell. As shown in the photograph, there are no exterior berms around the small facility.

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 Figure 44 and Figure 45. These cells contained only shipping containers in the past; however, the cells have been recently emptied and "refurbished". Currently the cells contain fuel barrels on wooden pallets, with only two (2) shipping containers stored in HWB-4. The lined berms around the cells have been regraded and appear to be in stable condition with no indication of slope movements or seepage.

3.2 MP-01A Polishing Waste Stabilization Pond (PWSP)

The MP-01A polishing pond is located immediately south of the MP-03 fuel tank site. As shown in Figure 46, the berms around the well-maintained pond are in excellent condition and the liner within the cell appears to be intact. No sign of slope instability, settlement or seepage from the pond was noted during the field inspection. As shown in Figure 46; however, some sewage sludge accumulation was visible in one (1) corner of the pond, which should be removed from the cell. This should be removed carefully, so as not to damage the HDPE liner on the berm.

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. As shown in Figure 47, the facility is well maintained and all berms around the site are in excellent condition. The visible ponding rainwater within the facility is an indication of good liner performance. The site is fenced in, and no indication of instability or seepage was noted on and around the robust berms.

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

The MP-04 landfarm is located south of the Port complex at a higher elevation, adjacent to the rock quarry. It is a large cell that stores contaminated soils and a few empty shipping containers. The robust berms around the cell are in stable condition and the ponding water in one (1) corner of the cell indicates good liner performance, as shown in Figure 48. No wet downstream slopes or toe seepage were noted during the site visit.

MP-04A is a smaller cell constructed immediately adjacent to cell MP-04 and is used generally for the disposal of contaminated snow. This pond is also bounded by stable perimeter berms, as shown in Figure 49. No seepage from the cell was noted anywhere around the downstream toe of the berms, and ponding water within the cell indicates that the liner is in good condition.

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

The iron ore that is mined, crushed, and screened at the Mary River Mine site is transported to Milne Port, and stockpiled across a large area near the ship-loader. Contact water (rain and melted snow) 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) Pond #3

Settling Pond #3 was recently constructed west of the ore storage area, as shown in Figure 6. The pond is bounded along three (3) sides by lined stable berms (Figure 50) and contains two (2) sumps. The

geomembrane liner and protective geotextile on the internal slope of the berms were designed to extend 2.5 m below the surface and are anchored into the permafrost zone to prevent any seepage from the pond into the ground below and to the surrounding environment. Excess water from the pond is pumped into the nearby, large capacity MP-06 settling pond whenever necessary.

b) MP-05 Pond

The MP-05 settling pond is located adjacent to the north-east corner of the ore stockpile, while MP-06 was 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 51 to 55.

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 pond's perimeter berm. Minor liner damage was noted near the crest of the southern inlet channel to the pond, as shown in Figure 52. It appears that these damages are returning problems on the slopes of this short inlet channel, most likely caused by snow clearing equipment during winters. As suggested earlier, consideration should be given to place protective berms adjacent to the slope's crest near the channel to prevent such damages.

The surface water from around the ore stockpile is collected in well-maintained drainage ditches. The slopes of the drainage ditch leading to the MP-05 pond appeared to be in good condition, as shown in Figure 53.

c) MP-06 and MP-06A Ponds

The large settling pond adjacent to the north-west corner of the ore stockpile area is divided into two (2) cells by a liner-covered internal berm. The main (south) part of the pond is called MP-06 and is shown in Figure 54. The northern cell is called the "overflow pond" MP-06A, shown in Figure 55. The liner in the ponds and the stable, robust perimeter berms are in good condition, and no seepage was noted from the ponds indicating good liner performance.

3.6 Q01 Rock Quarry

No activity was noted in the upper levels of the Q01 quarry at the time of the inspection. The steep slopes (rock faces) in the quarry appear to be in stable condition with only minor weathering and bench erosion, as shown in Figure 56. Crushing of the previously quarried rock (cobbles and boulders) was still in progress at the lower level of the quarry.

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) at Milne Port, some of which are still under construction or improvement, as shown in figures 57 to 66. These open ditches are excavated somewhat into the native soils and then their sides and inverts are protected by erosion protection layers

comprising fine to coarse crushed rock aggregate or in many cases geotextile. Geotextile fabric has been used wherever the native subgrade along sections of the ditches is composed of fine-grained material, to prevent migration of fines into the rock fill and eventually into the ditches. The issues that were identified at these ditches during the September 2021 inspection are summarized below:

- As noted during the latest two inspections and visible even more distinctively this year, sloughing of the sides of the P-SWD-3 ditch, adjacent to the LP2 laydown area, has occurred at several locations, as shown in Figures 57 and 58. It is evident that the sloughing of the ditch's slopes is a direct result of uncontrolled sheet-flow of surface water (melting snow from the adjacent snow-stockpile), continuously flowing into the ditch that is not able to convey the collected water to a discharge location. As pointed out in the June 2021 report, the native ground adjacent to the ditch slopes toward south-west, while the ditch was designed to drain the water toward north-east. As previously recommended, the ditch should be redesigned and reconstructed to drain the large amount of surface water from the snow-dump to the north-east. Some debris, dumped into the northern part of the ditch should also be removed (yellow circles in Figure 58).
- A relatively short section of the P-SWD-5 ditch was noted with missing riprap, as shown in Figure 59. It was noted during the September visit that the slopes of the ditch were just recently regraded; however, rock fill riprap should also be placed there to prevent unwanted erosion of the fine-grained soil present at the base and slopes of the ditch.
- A long section of the W3/14 drainage ditch is still under construction. As noted in Figure 63, the base and side-slopes of the ditch generally comprise fine-grained soils that will require the installation of geotextile and the placement of riprap to prevent erosion within the ditch.
- The PSC drainage ditch is still under construction. Localized minor slope movements at the west end of the ditch have resulted in unwanted displacement of sections of the riprap, as shown by the yellow circles in Figure 66. These areas should be repaired, regraded and the riprap rock fill cover reinstated.

3.8 Tote Road Ditches and Culverts

As noted above, surface water from the drainage ditch P-SWD-6 is 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 67 and 68). The water in the ditches is conveyed through the culverts to small natural ponds, located along the west side of the Tote Road. Minor siltation is visible at the inlet of the culverts; however, all culverts appear to be clean, and the seasonal flow would be uninterrupted.

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

Four (4) bridges and five (5) 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 Port)

As shown in Figure 69 and Figure 70, 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 visible differential settlement or any structural discrepancy like deterioration of the steel bolt-a-bin abutments or sloughing of the riprap rock fill. There are two (2) historic abutments located immediately adjacent to the "new" ones, one (1) of which is visible in Figure 70. As reported earlier and noted during the most recent visit, the metal bin structures of both "old" abutments have suffered some damages in the past, most likely during the construction of the new abutments. As recommended before, the two (2) old abutments should be kept in place since they provide additional support to the adjacent "new" abutments and approach embankments.

b) **Bridge 63** (located approximately 63 km from Milne Port)

As shown in Figure 71 and Figure 72, the abutments of this bridge are stable and no scour around the abutments was noted during the site visit. The abutments show no visible differential settlement or any structural discrepancy like damages to the bolt-a-bin foundation cribs. Similar to bridge 17, there are the "remnants" of two (2) historic abutments (visible in Figure 72), located immediately adjacent to the "new" ones and damage to the metal bins of both old abutments are visible. In order to maintain the stability of the currently used bridge abutments and approach embankments, the two (2) old abutments should be kept in place since they provide support to the adjacent new structures.

c) **Bridge 80** (located approximately 80 km from Milne Port)

As shown in Figure 73 and Figure 74, the abutments of this bridge are stable and no scour in the riverbed and around the abutments was noted. The abutments show no differential settlement or any structural discrepancy like deterioration of the metal bolt-a-bin structures supporting the bridge. This is the bridge where the "old" bolt-a-bin abutments are still in relatively good condition, as shown in Figure 73.

Bridge 97 (located approximately 97 km from Milne Port)

As shown in Figure 75 and Figure 76, the abutments of this bridge appear to be stable and no scour in the riverbed and around the approach embankments was noted during the site visit. The abutments show no differential settlement or any structural discrepancy like deterioration of the foundation bins. There are two (2) 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). The outlet end of the culvert and the following water channel is shown in the cover image of Appendix "C", left of the bridge.

4.2 Culverts (5) and Selected Check-Dams

Five (5) culverts (CV-098, CV-093, CV-064, CV-030A&B, BG-03A), and a set of check dams at KM 33 along the Tote Road between Mary River and Milne Port were inspected during the recent site visit in September, to assess construction work completed since the 2020 geotechnical inspections. Most of the culverts were in good condition, and they facilitated uninterrupted flow of water from their upstream to their downstream sides. Photographs of the inlet and outlet ends of all (6) inspected culverts are shown in figures 77 to 89, in Appendix C.

Lake access road check dams at KM33 - (figures 77 to 79): As shown in Figure 77, there is a small diameter culvert at KM33 of the tote road, which currently appears to be almost fully clogged with silt. There are three (3) check-berms located downstream of the culvert's outlet (Figure 78) which were installed in 2020 adjacent to the lake access road. These berms work well and have collected a significant amount of silt since their construction. Two (2) additional check-berms were also installed upstream of the culvert's inlet in 2020, as shown in Figure 79, to prevent silt from entering the culvert. One of these berms has started to wash away (see the yellow circle in the associated figure) and should be reinstated. In addition, silt should be removed from the clogged culvert, and periodically from the upstream ditch, to restore and maintain proper drainage.

Culvert CV-098 (KM38+300) - (Figure 80 and Figure 81): A set of culverts was installed in 2020 near KM38.3 for roadway drainage to the tundra. The two (2) (twin) culverts at this location appear to be in good condition. It is suggested; however, that more rock fill be placed upstream of the culverts' inlet, in accordance with the approved Civil Design Criteria to minimize siltation within the culverts.

Culvert CV-093 (KM42+100) - (Figure 82 and Figure 83): These two (2) (twin) culverts were extended on both the upstream and downstream sides in 2021 as per the approved Hatch Tote Road Plan. Both culverts at this location appear to be in good condition. The end of one of the culverts is partially blocked by rock fill that should be removed from the front of the culvert pipe and spread around the outlet (yellow circle in Figure 83).

Culvert CV-064 (KM42+100) - (Figure 84 and Figure 85): There are three (3) culverts at this location; one (1) set of twin culverts and one (1) single culvert as shown in the relevant images. All three (3) culverts appear to be in good condition.

Culverts CV-030 A&B (KM 77+500) - (Figure 86 and Figure 87): Both CV-030 A&B culverts were extended in 2020 as per the approved Hatch Tote Road Plan. As shown in the images, one (1) of these two (2) culvert pipes is completely clogged with silt. As previously suggested in the June 2021 report, the clogged pipe should be replaced, and both ends of the pipes should be protected from siltation by placing riprap around them as per the approved Civil Design Criteria.

Culvert BG-03A (KM 95+500) - (Figure 88 and Figure 89): The BG-03A culvert pipe was replaced in 2020 as per the approved Hatch Tote Road Plan. The inlet-end of this culvert appears to be short, and no rock fill riprap is protecting the vicinity of the inlet from erosion/siltation. Furthermore, the diameter of the culvert may potentially be too small for this location, which could result in flooding of the area upstream of the inlet during spring freshet. It is suggested that the efficiency of the culvert be monitored in the spring/early summer of 2022.

The culvert repair work outlined above should be carried out in accordance with the approved Civil Design Criteria document for the Project. Note that to be effective in surface water drainage, culverts must be laid in the correct position and the surrounding slopes and drainage areas may have to be graded and reinforced (geotextile and riprap). Also note that positioning a culvert too low will make it prone to accumulating soil and subsequently becoming blocked, while positioning a culvert's discharge end too high may cause unwanted erosion.

5.0 Conclusion

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood), has completed the second of the two (2) required geotechnical field inspections of 2021 at the Mary River Project in Nunavut. Based on field observations, the condition of the inspected infrastructure components can be summarized as follows:

- All settling ponds and waste disposal 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. 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 traffic on the berms (crest and slopes) must be minimized, while truck traffic on them must be avoided at all times.
- The water and waste storage settling ponds and cells comprised of HDPE/LLDPE liners are in good condition. No seepage from the currently operating ponds and cells was noted. Minor

damages to the liner were noted at a few locations above the water lines, as detailed in the report and shown in some of the images. As specified, these minor damages to the liners should be repaired as soon as practically possible, preferably prior to next year's inspection.

- Open drainage ditches across the Mary River and Milne Port sites are generally in good condition with some erosion and slope sloughing visible at a few locations, particularly where riprap slope protection is missing. As part of a more frequent maintenance program, the eroded sides of the ditches should be repaired/regraded, and the missing rock fill riprap replaced. One (1) of the drainage ditches in the Port (P-SWD-3) still requires special attention. Currently the floor of this drainage ditch slopes away from the designed and constructed discharge point, which resulted in a situation where the ditch is almost always full of seepage water (particularly during snowmelt) and the side-slopes of the ditch have failed along a lengthy portion of the ditch. It is recommended that this ditch be redesigned and reconstructed to facilitate efficient drainage of all surface water from the area. The design must consider the fact that a large amount of snow is stockpiled adjacent to this ditch every winter that generates an increased amount of run-off water in the spring/summer that must be drained more efficiently toward the north-east.
- The condition of the diversion berm constructed east and south of the new ore stockpile area (KM-106 near the open pit in Mary River), shown in Figure 2, should also be reviewed. Currently, some of the run-off water can seep through the generally granular berm (practically uninterrupted) into a temporary downstream sump. To eliminate the need for pumping the collected water into the nearby MS-07 pond, consideration shall be given to provide a seal on the upstream side of the berm along the critical sections, by placing either a clay core or a synthetic liner to prevent seepage through the berm.
- The abutments at the four (4) inspected bridges appear to be in good condition and no scour in the riverbed and around the abutments was noted at the time of the site visit.
- Water crossings by culverts along the Tote Road at the inspected locations are generally in good condition. At a few locations, some repair work has been suggested; generally related to the placement of additional rock fill around the ends of the pipes. The Project's Civil Design Criteria must be followed during culvert maintenance activities.

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

Sincerely,

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Baffinland Iron Mines Corporation

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Annual Geotechnical Inspections – 2021 Report 2.

APPENDIX "A" - Mary River Mine Complex - Photographs

Figure 9 to Figure 40

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Page

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. (Historic image to present the layout of the three ponds and to show the robust berms around the facilities).

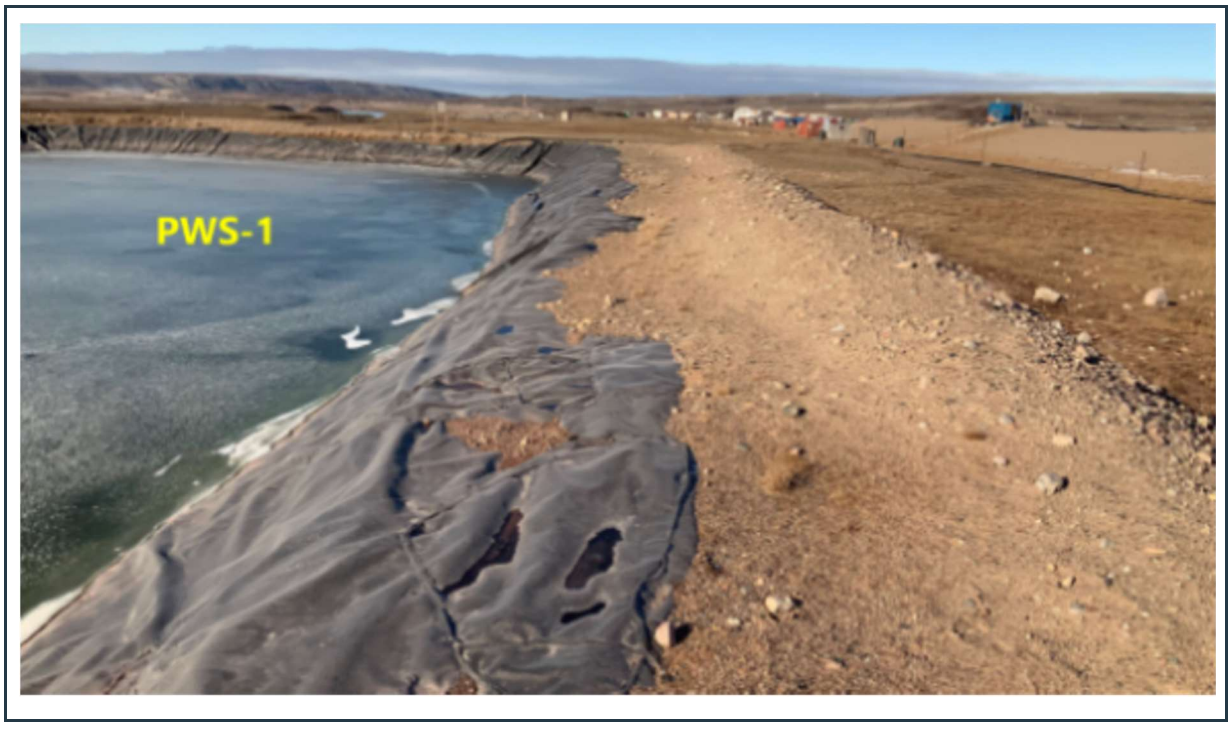

Figure 10: PWS pond #1. Well-maintained, stable perimeter berm and liner.

Figure 11: PWS pond #2 – Stable, well-maintained berm and liner. – A small section of the liner is visible in the center of the pond (yellow circle). Note the ice formation in the pond in September.

Figure 12: Stable perimeter berms around PWS pond #3 – A small section of the liner is visible in the shallow water of 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 – As earlier this year, the cell is still empty.

b) HWB-2

Figure 14: View of stable berms around HWB-2, and a pile of disposed soil that was dumped into the cell recently. The presence of water in the cell indicates good liner performance.

c) HWB-3 and HWB-4

Figure 15: View of stable berms and stored fuel barrels in HWB-3. Wooden debris should be removed.

Figure 16: View of stable berms at HWB-4, with a few jet-fuel barrels stored on wooden pallets. Most of the barrels that were visible in June in this cell have been removed.

d) HWB-5

Figure 17: View of the berms around the currently empty HWB-5 cell, adjacent to the HWB-1 cell.

e) HWB-6

Figure 18: View of the now full HWB-6 cell. Note a container and some wooden debris placed on the berm instead of inside the cell. Those items should be placed inside the cell and the berm shall be regraded.

f) HWB-7

Figure 19: View of the large, flooded (now ice covered) HWB-7 cell, with only one old fuel tank stored.

1.3 MS-06, MS-07 and MS-08 Surface Water Collection Ponds and Ditches

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

Figure 20: MS-06 settling pond with robust, stable berms and intact liner.

Figure 21: Drainage ditch next to the crusher plant leading to the MS-06 pond. The yellow circle indicates that the entry to the culvert that should drain the collected surface water from the ditch to the MS-06 pond is clogged, and it should be cleaned.

Figure 22: Seepage water within the relatively permeable, cobbly overburden adjacent to the area of the crusher pad and MS-06 pond. It appears to be surface water, percolating down into the ground and flowing from higher elevations within the valley adjacent to the crusher pad. The excavated hole (temporary sump) at the toe of the MS-06 berm must be filled (yellow circle).

b) MS-07 – Surface Water Collection Pond Adjacent to the new KM106 ore storage

Figure 23: View of the recently completed MS-07 surface-water collection pond with robust, stable berms and intact liner. The pond was almost empty at the time of the September visit.

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

Figure 24: View of stable berm and intact liner at the MS-08 pond. Ice and snow were already present in the area in September.

Figure 25: Drainage ditch around the west side of the waste rock facility.

Figure 26: Snow visible in the drainage ditch around the east side of the waste rock facility, leading to the MS-08 pond. Note the water treatment plant at the site.

Figure 27: Stable berm and intact liner at the water treatment pond, adjacent to the waste rock facility.

1.4 Generator Fuel Berm

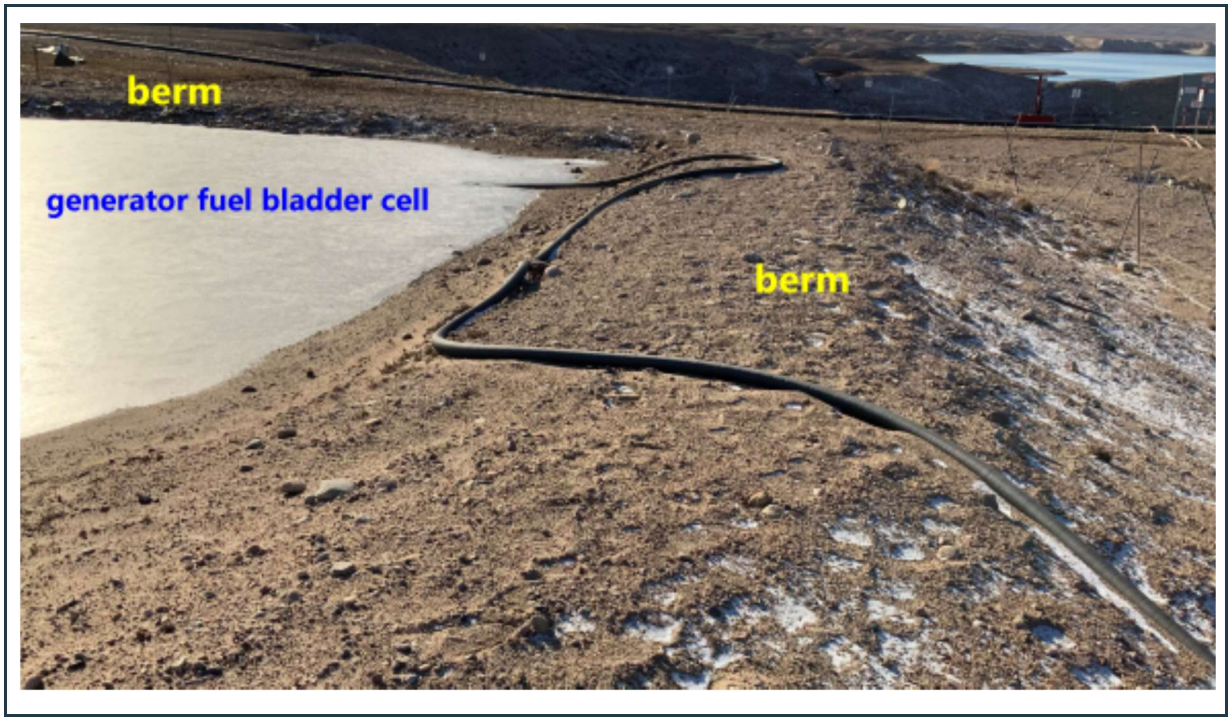

Figure 28: View of the robust, stable berm around the "generator fuel bladder" cell. The cell is currently empty. The ponding water within the cell indicates good liner performance.

Figure 29: View of the snow stockpile adjacent to the "fuel bladder" cell. The melting snow has flooded the adjacent road next to the berm during the summer. It is recommended to excavate perimeter drainage ditches around the stockpile and prevent flooding of the road and berm.

1.5 Fuel Farm Berms

a) Jet-fuel Tank Farm

Figure 30: View of the well-maintained sand and gravel berm at the lined jet-fuel storage facility. The ponding water within the cell indicates good liner performance.

b) MS-03 Diesel Fuel Tank Farm

Figure 31: Well-maintained, stable berm around the MS-03 diesel fuel farm, with some ponding water.

c) MS-03B New Fuel Tank Farm

Figure 32: View of the well-maintained new fuel tank farm. The location of additional tank is already prepared within the facility.

1.6 Solid Waste Landfill Facility

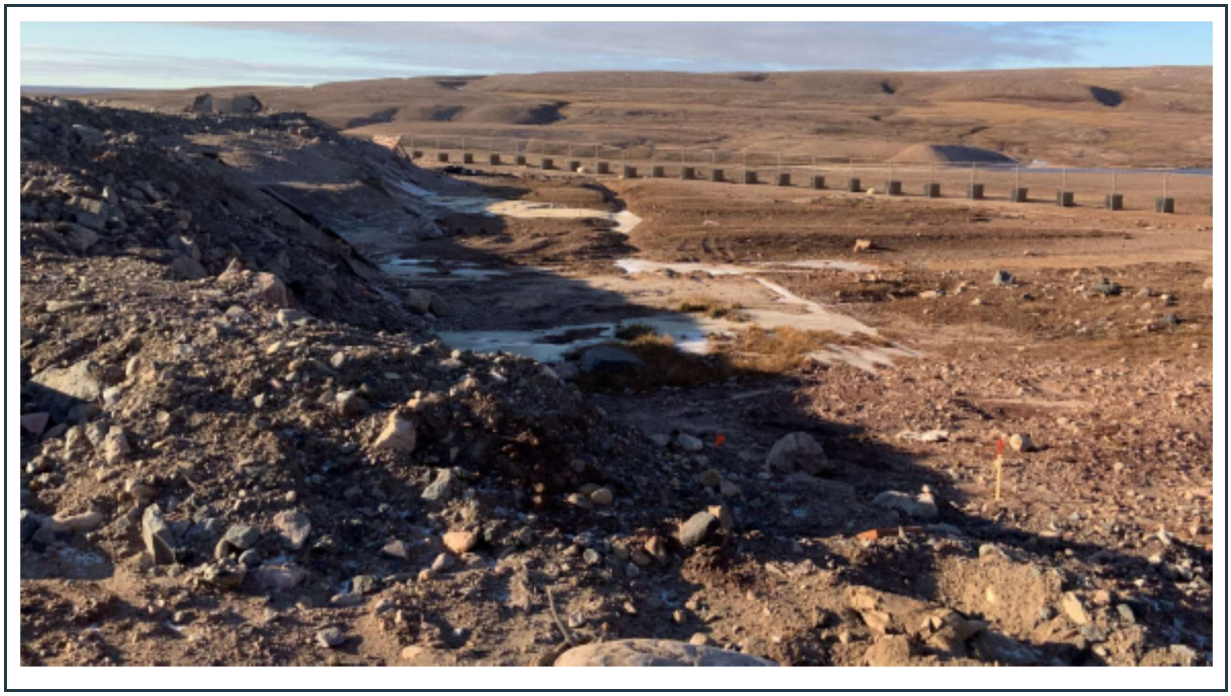

Figure 33: Solid waste landfill facility with some ponding water adjacent to the soil-covered waste.

1.7 Camp Lake Silt-Sedimentation Check Dams and Berms

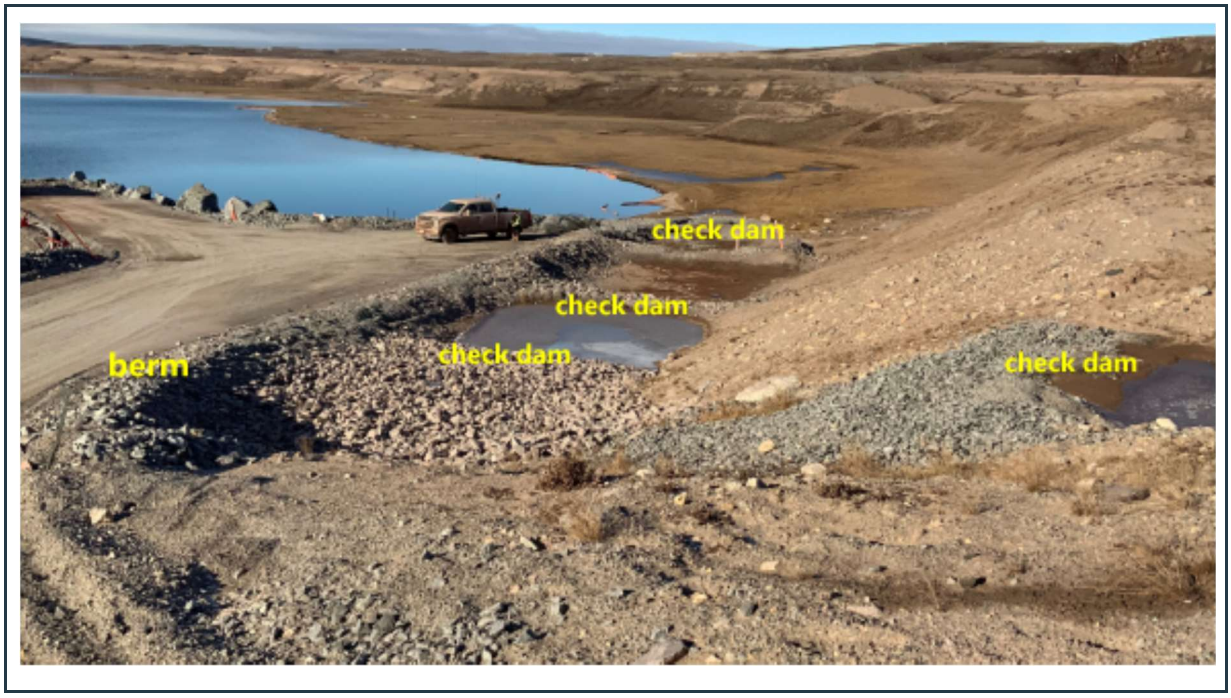

Figure 34: Camp Lake berm and check dams, constructed to form silt sedimentation cells.

1.8 Rock Fill Slope at the Water Discharge Area

Figure 35: Rock fill riprap slope protection at the water discharge area. Note that some of the rock fill had "moved" to the toe of the slope. It is recommended to place new rock fill in the area marked with the yellow circle.

1.9 Deposit-1 Pit Walls

Figure 36: Stable pit-walls with minor rock weathering and pit-wall erosion.

1.10 Rock Quarries and KM106 Ore Stockpile Area

a) QMR2 Rock Quarry

Figure 37: View of the rock face at the upper quarry level with some potential rolling rock hazard. Note the row of boulders placed on the crest and toe of the rock face to prevent unauthorized access to the wall. No activity is currently carried out in this quarry.

Figure 38: Erosion and stability problem along the access road to the quarry.

b) D1Q1 Rock Quarry

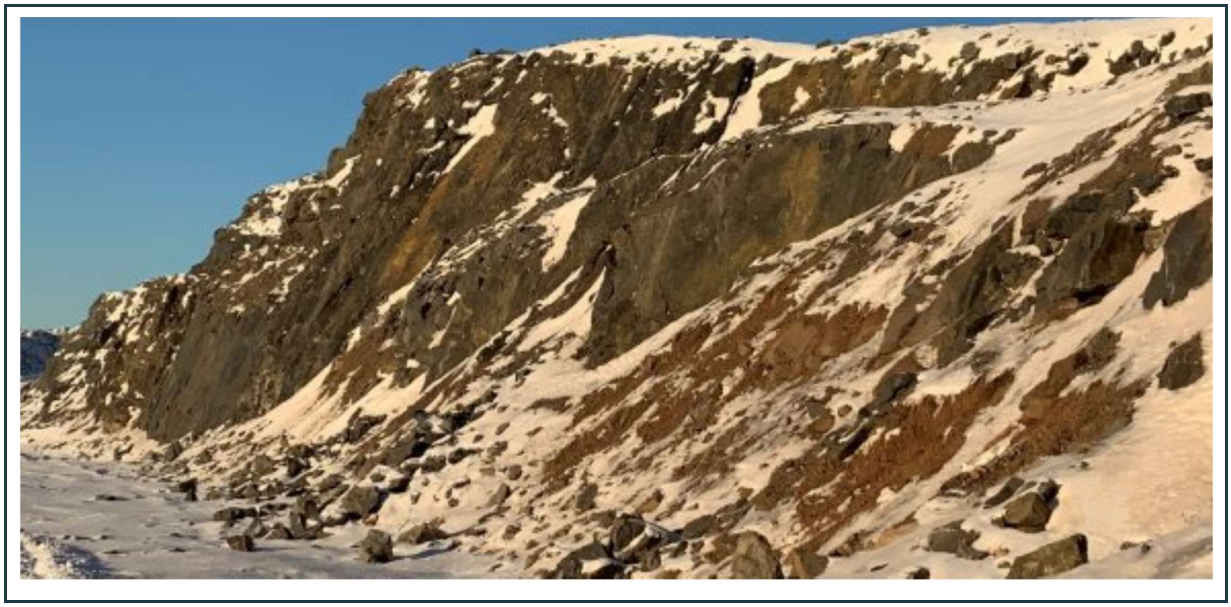

Figure 39: View of the early stage of rock excavation in the D1Q1 rock quarry.

c) KM106 Ore Stockpile area

Figure 40: View of the surface water diversion berm at the new KM-106 ore stockpile area. Note the water seepage through the berm into a temporary sump, downstream from the diversion berm. The water from the sump is periodically pumped into the new nearby MS-07 pond.

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APPENDIX "B" – Milne Port Site - Photographs

Figure 41 to Figure 68

Milne Inlet Port - Shiploader

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Milne Inlet Port Site

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

a) HWB-1

Figure 41: View of the practically empty HWB-1 cell with upgraded (regraded) cell floor.

Figure 42: View of one of the berms with tire-tracks. Driving trucks on the berms should be avoided.

b) HWB-2

Figure 43: View of the former HWB-2 cell, with only a few empty containers stored on the top of clean sand and gravel fill pad. No hazardeous waste is stored in this cell.

c) HWB-3 and HWB-4 Twin Cells

Figure 44: View of the HWB-3 cell with stable berms, containing fuel barrels.

Figure 45: Stable berms around and ponding water within the HWB-4 cell, storing jetfuel and containers.

1.2 MP-01A Pond

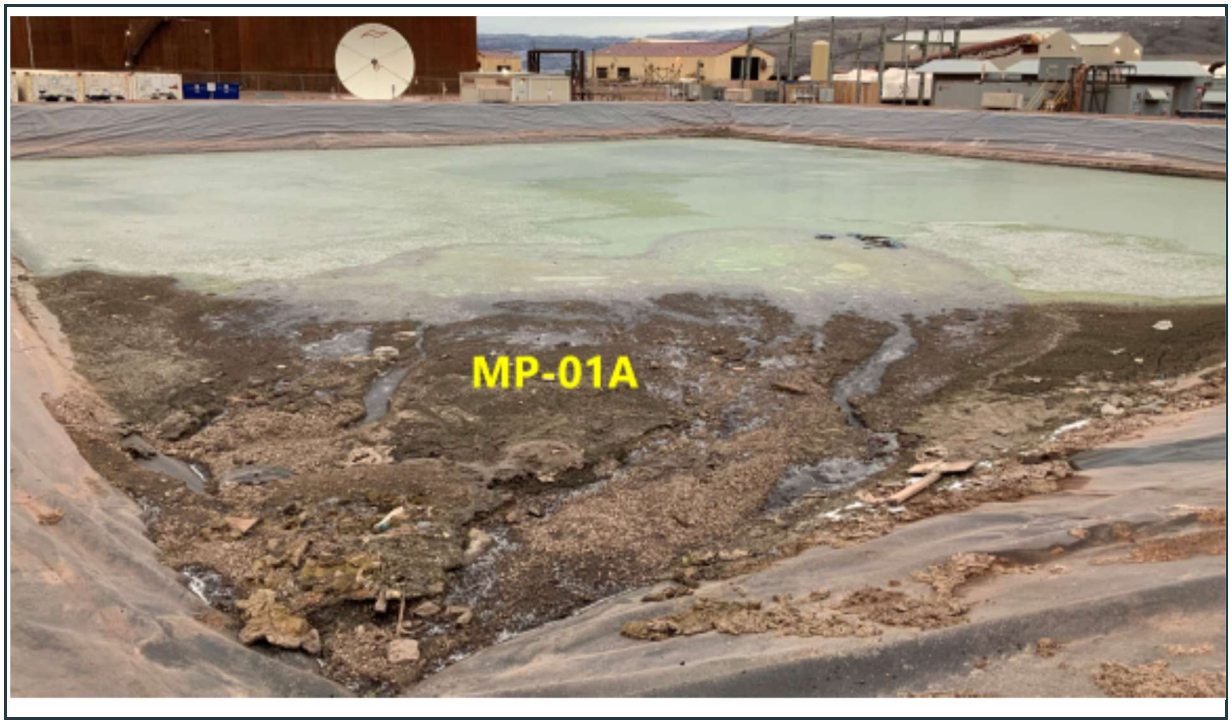

Figure 46: Stable berms and intact liner in the MP-01A pond. The waste (soil and wood), shown in part of the pond, should be removed without damaging the liner.

1.3 MP-03 Fuel Tank Farm

Figure 47: View of the well maintained MP-03 fuel tank farm. The ponding water indicates good liner performance.

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

Figure 48: View of stable berm around the MP-04 landfarm, with soil covered waste and a few empty shipping containers within the cell.

Figure 49: View of the MP-04A cell with stable berms. The ponding water indicates good liner performance.

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

a) Settling Pond #3

Figure 50: View of settling pond #3, with lined, stable berms along three sides of the pond.

b) MP-05 Settling Pond

Figure 51: View of the stable berms and intact liner at the MP-05 settling pond.

Figure 52: Damages to the liner still visible on the west slope of the southern inlet channel to MP-05.

Figure 53: Surface water collection ditch adjacent (east) to the ore storage, draining to the MP-05 pond.

c) MP-06 Settling Pond

Figure 54: View of the lined MP-06 pond with robust, stable berms.

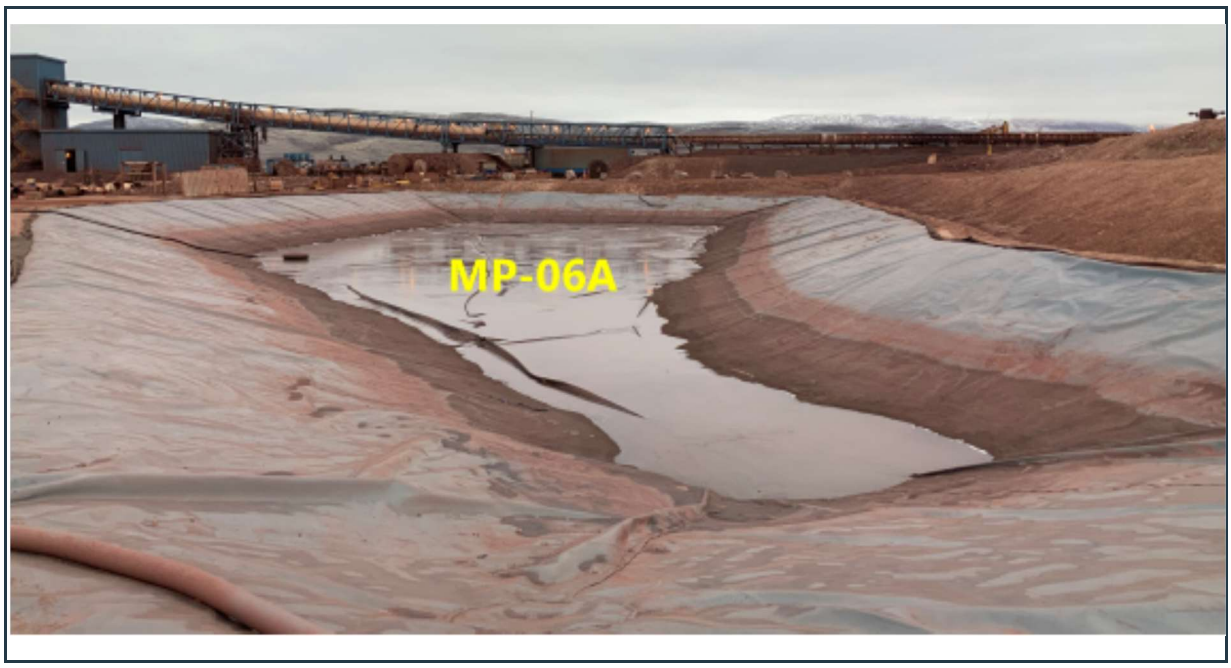

Figure 55: View of the lined MP-06A overflow pond, with stable berms.

1.6 Q01 rock quarry

Figure 56: 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 Ditches)

a) P-SWD-3 (south side of the LP2 laydown area)

Figure 57: View of a section of the P-SWD-3 surface water collection ditch with failed side slope. The failure of the ditch was caused by the uncontrolled water flow from the adjacent snow pile.

Figure 58: View of the north end of the P-SWD-3 surface water collection ditch. All debris should be removed from the ditch (yellow circles).

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

Figure 59: P-SWD-5 – "Q01-North" surface water collection ditch with missing riprap at a short section.

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

Figure 60: View of the rock fill lined P-SWD-6 surface water collection ditch.

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

Figure 61: View of the P-SWD-7 surface water collection ditch and culverts (inlet).

Figure 62: View of the well-maintained P-SWD-7 surface water collection ditch and culverts (outlet).

e) W3/W14 (surface water collection ditch)

Figure 63: View of the W3/W14 uncompleted surface water collection ditch with some erosion.

f) 380M (surface water collection ditch)

Figure 64: View of the south section of the 380 M surface water collection ditch.

Figure 65: View of the east section of the 380 M surface water collection ditch in good condition.

g) PSC (new surface water collection ditch)

Figure 66: View of the PSC surface water collection ditch and culvert (still under construction). Note the localized slope failures (yellow circles), which sections will require slope rehabilitation with riprap placement.

1.8 Tote Road Ditch and Culverts

Figure 67: View of twin culverts, draining surface water from the quarry area under the tote road (inlet).

Figure 68: View of twin culverts, draining surface water from the quarry area (outlet).

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APPENDIX "C" – Tote/Haul Road - Photographs

Figures 69 to 89

Tote Road (105 km) between Mary River Mine and Milne Inlet Port, with the wiew of bridge at KM-63

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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 69: View of the north side of "bridge 17", with stable rip-rap scour protection at the abutments.

Figure 70: View of the south side of "bridge 17", with stable abutments.

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

Figure 71: View of the west side of bridge 63, with stable abutments.

Figure 72: View of the east side of bridge 63, and the "old" abutments with low flow, looking south.

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

Figure 73: View of the west side of bridge 80, with the "old" abutment providing additional support.

Figure 74: View of stable abutments at bridge 80. Note the low flow in September.

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

Figure 75: View of the west side of bridge 97, with ice already developing in the river.

Figure 76: View of the two stable abutments and the east side of bridge 97, with ice in the river.

1.2 Culverts (5) and Selected Check Dams

a) Lake access road check dams at KM 33+000

Figure 77: View of the outlet of a culvert at KM33 near the lake access check-dams. Note that the ditch and culvert are full with silt, they should be cleaned.

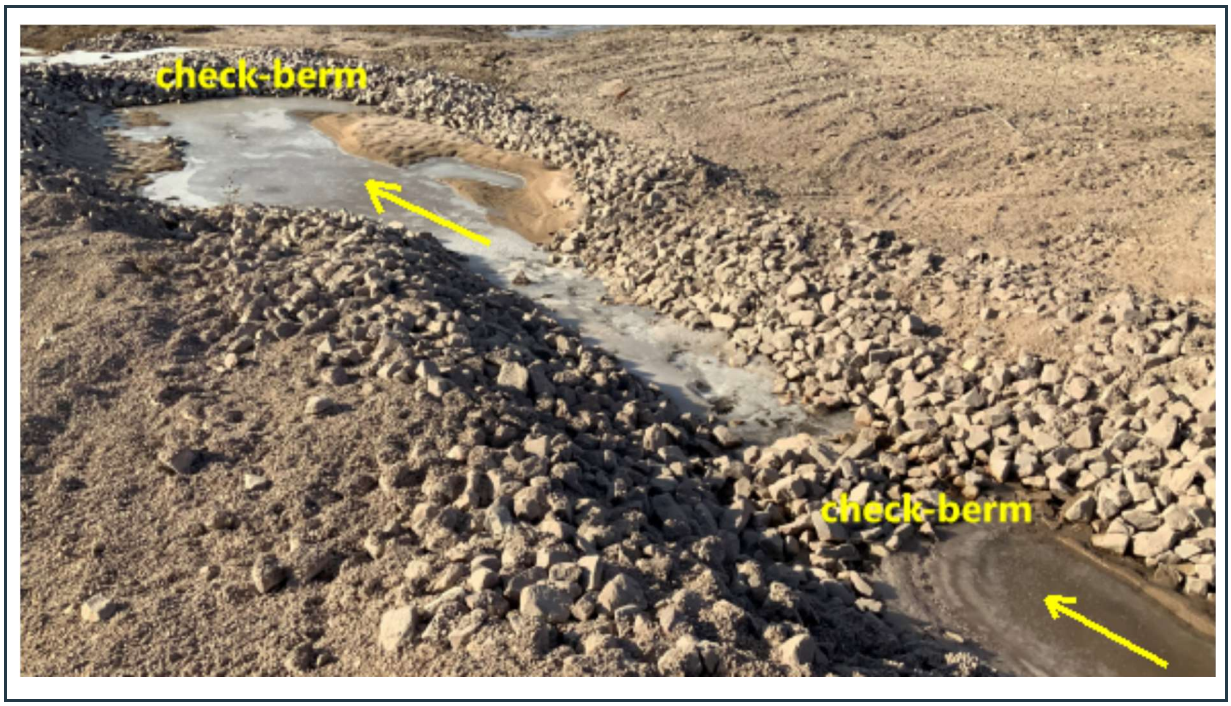

Figure 78: View of the check-dams downstream of the culvert at KM33, shown above.

Figure 79: View of check-berms upstream of the culvert's inlet.

b) Culverts at the approximate station of KM 38+300 – (CV-098)

Figure 80: View of the inlet of the two culverts.

Figure 81: View of the outlet of the two culverts.

c) Culverts at the approximate station of KM 42+100 – (CV-093)

Figure 82: View of the inlet of the two culverts.

Figure 83: View of the outlet of the culverts. The end of one of the culverts is partially blocked by rock fill that should be removed from the front of the pipe and spread around the outlet (yellow circle).

d) Culverts (3) at the approximate station of KM 58+500 – (CV-064)

Figure 84: View of the inlet of the three culverts.

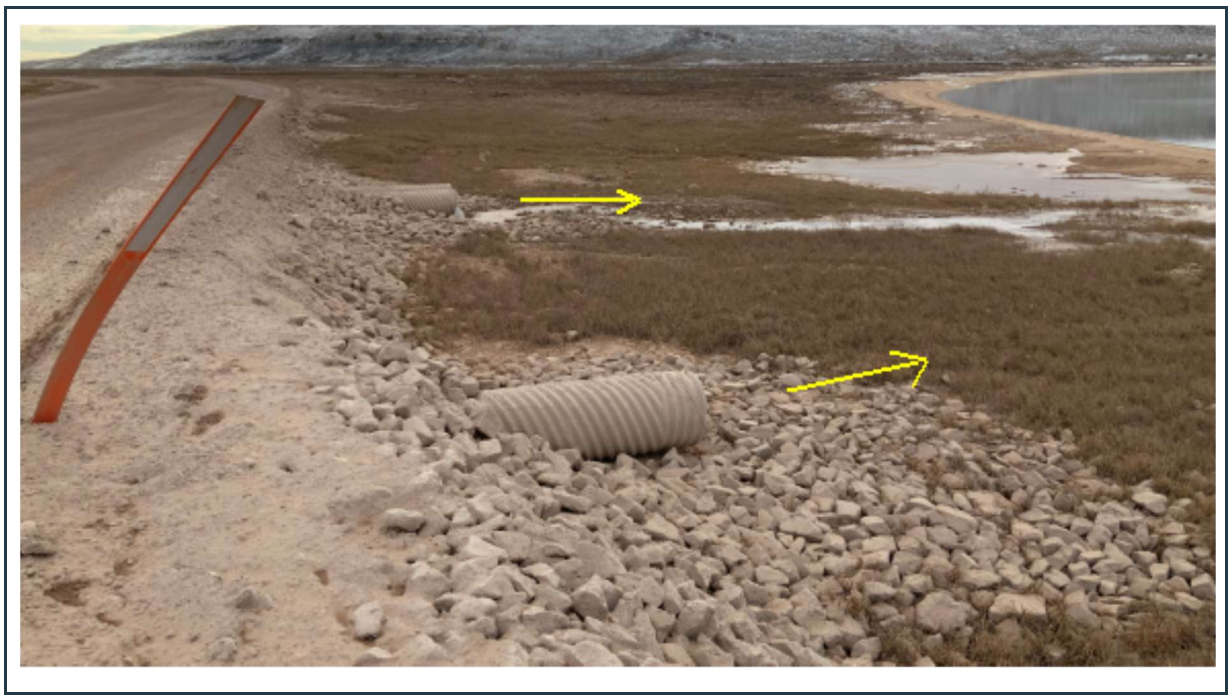

Figure 85: View of the outlet of the three culverts.

e) Culverts at the approximate station of KM 77+500 – (CV-030 A and B)

Figure 86: View of the inlet to culverts 030A and B. Note that one of the pipes is clogged (yellow circle).

Figure 87: View of the outlet end of culverts 030A and B. Note that one of the pipes is clogged with soil.

f) Culvert at the approximate station of KM 95+500 – (BG-03A)

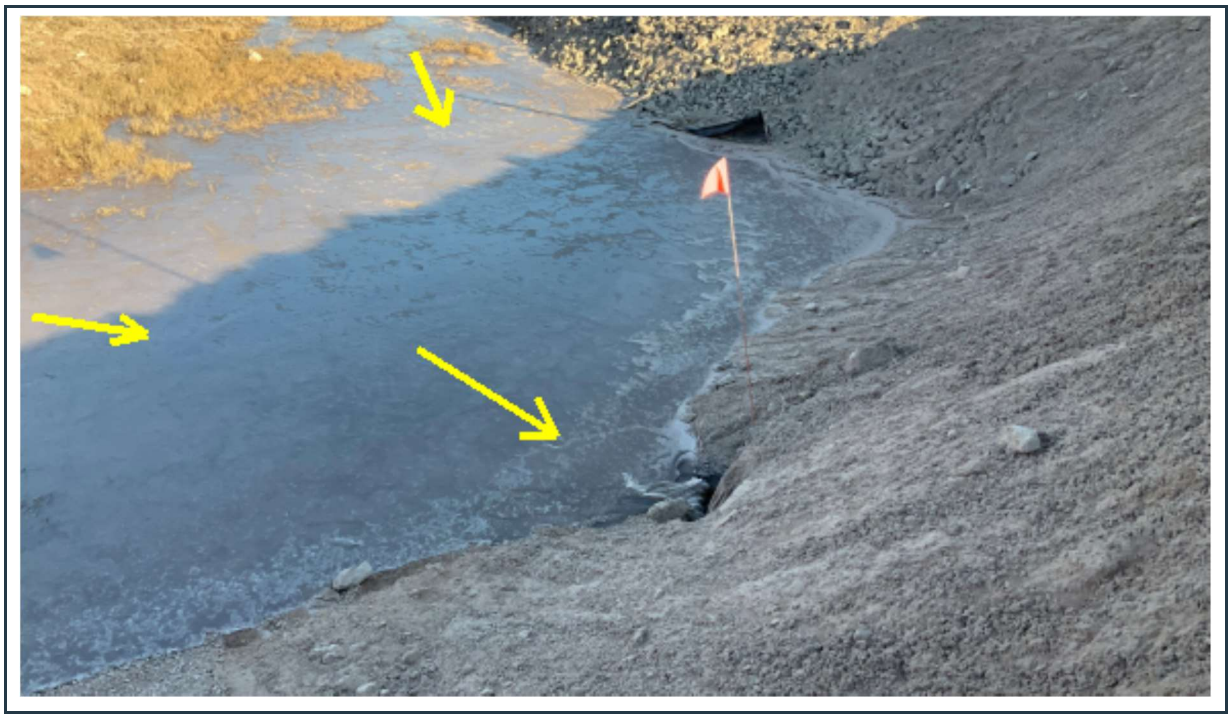

Figure 88: View of the inlet of culvert BG-03A.

Figure 89: View of the outlet of culvert BG-03A.