APPENDIX E.10.1

2017 FRESHET MONITORING REPORT NO. 1

(Part 2)

APPENDIX C

Sequence of Events and Actions Taken by Spill Report and Other Concerns

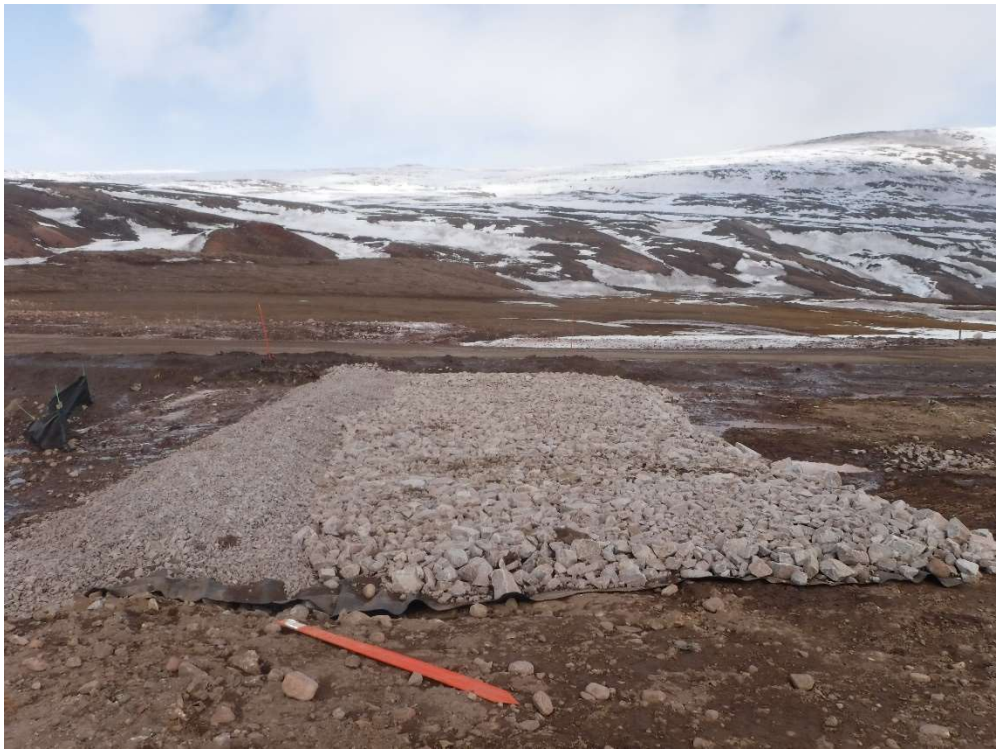
Appendix C.1 - Spill Report 17-161 - Sheardown Lake Tributary and Sheardown Lake

Table C.1 - Spill Report 17-161 - Sequence of Events and Actions Taken	
May 11, 12, 13	Snowmelt runoff containing sediments and turbid water were observed to flow into Sheardown Lake Tributary (SDLT) and Sheardown Lake. As outlined in Baffinland's Surface Water and Aquatic Ecosystems Management Plan (SWAEMP), sedimentation control measures (silt fences, spring berms) were installed to improve water quality and settle out sediments prior to discharge.
	Water quality monitoring locations established at Sheardown Lake Tributary (SDLT) and daily sampling program initiated. Monitoring is ongoing. Water samples are primarily being analyzed for total suspended solids (TSS), total dissolved solids (TDS), pH and turbidity. Additional sampling was conducted on May 16 for additional parameters, including acute toxicity, metals, nutrients, oil & grease and major ions.
May 14	Sediment release to Sheardown Lake Tributary (SDLT) and Sheardown Lake reported to the NT-NU Spill Line and regulators (**NT-NU Spill Report- 17-161**).
May 15	Road built up at SDLT culvert (CV-186) to prevent road runoff from pooling and directly discharging into tributary (SDLT).
May 16, 17	Sediment ladened snow removed near SDLT and placed in natural sumps away from water bodies to allow for sediment settling. Check dams constructed near culvert CV-186 to control surface runoff entering SDLT.
May 23, 2017	Road embankments near SDLT culvert (CV-186) armoured with aggregate (rip-rap).
	Daily water sampling initiated at Sheardown Lake Tributary (LDFG) following field observations of consistent flow at location.
May 29	Environment Canada and INAC inspectors arrive onsite.
May 30 - 31	Environment Canada and INAC inspectors inspect Mine Site, Milne Port and Tote Road.
May 18 - June 14	Daily sampling program of Sheardown Lake tributaries, SDLT and LDFG. Sedimentation control measures employed (silt fences, spring berms) as required.

Appendix C.1 - Photos

May 16, 2017 – Snow removal south of culvert CV-186 (Sheardown Lake Tributary)

May 16, 2017 - Construction of check dam north of culvert CV-186 (Sheardown Lake Tributary)



May 17, 2017 - Construction of check dam south of culvert CV-186 (Sheardown Lake Tributary)

May 23, 2017 – Armouring road embankment near culvert CV-186 (Sheardown Lake Tributary)

Appendix C.2 - Spill Report 17-162 - Camp Lake Tributaries and Camp Lake

Table C.2 - Spill Report 17-162 - Sequence of Events and Action Taken	
May 13	Snowmelt runoff containing sediments and turbid water were observed to flow into Camp Lake Tributary (CLT) and Camp Lake. As outlined in Baffinland's Surface Water and Aquatic Ecosystems Management Plan (SWAEMP) , sedimentation control measures (silt fences, spring berms) were installed to settle out sediments prior to discharge.
	Daily monitoring location established for Camp Lake Tributary (CLT). Monitoring is ongoing. Water samples are primarily being analyzed for total suspended solids (TSS), total dissolved solids (TDS), pH and turbidity. Additional sampling was conducted on May 16 for additional parameters, including acute toxicity, metals, nutrients, oil & grease and major ions.
May 14	Sediment release to Camp Lake Tributary (CLT) and Camp Lake reported to the NT-NU Spill Line and regulators (**NT-NU Spill Report- 17-162**).
May 14 - 21	Sediment ladened snow removed from ditches along Camp Lake Jetty Access Road (upstream of Camp Lake sedimentation ponds) and placed in natural sumps away from water bodies to allow for sediment settling.
May 17 - 21	Road embankments near culvert (BG-01) armoured with aggregate (rip-rap). Sediment ladened snow near culvert (BG-01) removed and placed in natural sumps away from water bodies to allow for sediment settling.
May 23	Ditches near the north end of the airstrip armoured with aggregate (rip-rap) to improve water quality of surface water runoff.
May 24	Turbid water observed discharging from Camp Lake sedimentation ponds (CLSP). Daily sampling initiated at monitoring location CLSP-OUT for TSS, TDS, pH and turbidity. Additional sedimentation controls measures implemented downstream of Camp Lake sedimentation ponds. Surface water upstream of ponds diverted to facilitate settling of sediments prior to discharge.
	Capacity of Camp Lake sedimentation ponds increased by building up berm walls.
May 29	Environment Canada and INAC inspectors arrive onsite.
May 30 - 31	Environment Canada and INAC inspectors inspect Mine Site, Milne Port and Tote Road.
June 11	Silt curtain and additional silt fences installed at the CLSP-OUT Camp Lake outfall to address intermittent elevated TSS levels flowing out of the Camp Lake sedimentation ponds.
May 18 - June 14	Daily sampling program of Sheardown Lake tributaries, SDLT and LDFG. Sedimentation control measures employed (silt fences, spring berms) as required.

Appendix C.2 - Photos

May 14, 2017 – Initial snow removal from ditch along Camp Lake Water Jetty Access Road (upstream of Camp Lake Sedimentation Ponds)

May 21, 2017 – Continued snow removal from ditch along Camp Lake Water Jetty Access Road (upstream of Camp Lake Sedimentation Ponds)

May 21, 2017 – Armouring of road embankments near culvert BG-01 (Camp Lake Tributary 1)

May 23, 2017 – Armouring of drainage ditch on north end of Mine Site airstrip near Km 100 (upstream of Camp Lake Tributary 1)

May 23, 2017 – Completion of drainage ditch armouring on the north end of Mine Site airstrip near Km 100 (upstream of Camp Lake Tributary 1)

June 11, 2017 – Installation of silt curtain and additional silt fences and spring berms at the outlet of Camp Lake Sedimentation Ponds

June 11, 2017 – Camp Lake Tributary 1 flowing clear at Camp Lake outfall

Appendix C.3 - Spill Report 17-178 - Milne Port Ore Pad East Sedimentation Pond

Table C.3 - Spill Report 17-178 - Sequence of Events and Action Taken	
May 25	Milne Port East Sedimentation Pond (MP-05) observed to be overflowing into Milne Inlet. A sudden rise in ambient temperature caused the snow around Milne Port to quickly melt and migrate to the ditches, causing a mass inflow of surface water to the sedimentation pond. Based upon the erosion/sedimentation concerns caused by the overflow and the significant volumes of water entering the sedimentation pond, a controlled emergency discharge was initiated using a pump.
	Monitoring and water sampling program of pond initiated to characterize the water quality of the discharge and mitigate additional overflows. Water samples are primarily being analyzed for total suspended solids (TSS), total dissolved solids (TDS), pH and turbidity.
May 26	Overflow and controlled emergency discharge of East Sedimentation Pond (MP-05) reported to the NT-NU Spill Line and regulators (**NT-NU Spill Report- 17-178**).
	Sedimentation control measures (i.e. armouring of bank with aggregate, silt fences) implemented to mitigate additional bank erosion and contain released sediments.
May 27	Water samples taken at both the Milne Port Ore Pad Sedimentation Ponds (East - MP-05 and West - MP-06) analysed for general chemistry (pH, TSS, etc.), acute toxicity, metals, nutrients, oil & grease and major ions.
May 29	Indigenous and Northern Affairs (INAC) inspectors arrive onsite.
May 30	Environment and Climate Change Canada inspector arrives onsite.
May 31 - June 1	Environment Canada and INAC inspectors inspect Mine Site, Milne Port and Tote Road.
May 25 - June 14	Controlled emergency discharges from the Milne Port Ore Pad East Sedimentation Pond (MP-05) continue to occur on an as required basis, with the last discharge occurring on June 7. The current estimated total volume discharged to Milne Inlet from MP-05 is 19,000 m^3.

Appendix C.3 - Photos

May 26, 2017 – Silt fences installed to contain sediment released from bank erosion as a result of Milne Port East Sedimentation Pond (MP-05) overflow on May 25, 2017

May 26, 2017 – Areas of bank erosion armoured with aggregate (rip-rap)

June 7, 2017 – Aerial view of controlled discharge set up from
Milne Port East Sedimentation Pond (MP-05)