

APPENDIX D.7.3**FAD-LNC BIWEEKLY REPORTS AND COMPLETION REPORT**

**INITIAL BAFFINLAND RESPONSE REPORT
(ABBREVIATED)**



Report on Actions Taken:

**June 7th 2016, Fisheries Act Direction (File number: 4408-2016-05-10-001) and
Response to June 16, 2016, INAC Letter of Non-Compliance**

Report No. 1

June 24, 2016

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Spill Report 16-176 - Camp Lake Tributaries and Camp Lake.

Spill Report 16-181- Mine Haul Road to Mary River and Sheardown Lake Tributary.

Spill Report 16-198 - Camp Lake Tributary 1

Spill Report 16-202 - Milne Inlet Tote Road, Tributaries to Mary Lake, David Lake, and Muriel Lake.

Spill Report 16-202 – Update 1 - Milne Inlet Tote Road, Tributaries to Muriel Lake (BG-31) and David Lake (BG-28)

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- D.7 - Removal of Impacted Snow: Milne Beach and Tote Road Bridges

1. Preventative Measures Undertaken Prior to Freshet and May 2016 Regulatory Inspections

1.1. Mine Haul Road

A major program of culvert replacement and riprap installation was completed on the Mine Haul Road between km 105 and km 110 between April 15 and May 15, 2016. The work involved the installation of 525 linear metres of new culverts, and the installation of 4,400 m³ of rip rap in 3.5 km of ditches and on surface slopes located upstream and downstream of seven culvert crossings. The completed work reduces the potential for Mine Haul Road wash out and is designed to effectively and safely convey water from upstream to downstream locations along the Mine Haul Road. A drawing showing the design of the new drainage works as well as series of photos showing culvert installations and riprap installation are presented in Appendix A.1. The work was completed under the guidance of a Professional Engineer, retained by Baffinland, from Golder Associates, and the constructed drainage works are being monitored for operational performance during freshet. Deficiencies identified, if any, during this monitoring will be corrected later in the summer based on recommendations provided by from Golder Associates.

1.2. Other measures

Other measures completed prior to freshet and the May 2016 inspection included a comprehensive program of freshet preparation that included the following components:

- Periodic freshet preparation meetings were held at the Mine Site, coordinated by the Environment Department, from early February until the start of freshet in mid-May. The meetings were held bi-weekly from the April to May period as freshet neared. The meetings were attended by key site managers and superintendents. The meetings were well documented and action items were routinely distributed to all participants for advancement.
- Development of list of high priority stream crossings along the Tote Road that required early snow excavation and culvert clearing. The stream crossings were prioritized based on fisheries considerations and flows (high or low flow).
- The procurement of adequate supply of equipment and supplies to support freshet preparation and response activities. These included the purchase of adequate quantity and types of pumps, hoses, steam jetties, silt fences, silt curtains, and flocculent products.
- The assignment of adequate resources at site for the freshet preparation and management effort including production of rip rap using production crushers, haul trucks, excavators, loaders, and steamers.
- The procurement and assignment of contracted labour for the purpose of culvert clearing and snow removal activities.
- An early start to freshet preparation field activities was initiated during 2016 with the start of field activities in mid-April, well in advance of the start of freshet as follows:
 - o Monitoring of any runoff from the ore stockpile perimeters to ensure no discharge to the receiving environment. None has been observed.
 - o Clearing of snow from the road surface, embankment, and from areas adjacent to the road to minimize the impact of runoff from road contact water to downstream water bodies.
 - o Early excavation and clearing of snow from the inlets and outlets of the stream crossings. Clearing of culverts with steamers as required to ensure.
- The installation of silt fences, flocculent blocks, flocculent netting, and check dams at selected locations.

Frozen and hard packed ground conditions contributed to difficulties in the construction of a drainage system around the perimeter of the Milne Port Ore Stockpile and the Crusher Stockpile areas. Attempts were made but these locations were extremely difficult to excavate during the winter season

due to the frozen ground conditions that made penetration with standard excavator near- impossible using standard methods. The project at Milne Port was delayed until the later in May when ground thaw permitted excavation through the developing active layer.

After freshet is over, the results of the 2016 freshet preparation plan will be reviewed and a list of lessons learned will be compiled and corrective actions implemented prior to freshet in 2017.

During 2015, Baffinland retained the services of a flocculent expert, who visited site during August 2015. Based on recommendations made, a quantity of in stream flocculent and other products were purchased for deployment in the event of sediment releases to water bodies.

A monthly fugitive dust monitoring and analytical program was undertaken throughout the year, including the winter season, to track the levels of dust that are deposited at various distances from mining operations. These measurements are an objective means of understanding the levels of dust that are generated from source, transported across site that can become entrained in snow deposits. The dust that becomes entrained in snow can potentially be transported during freshet and this can potentially affect adjacent lakes and streams. The dust monitoring program provides the means to measure changes in potential dust deposition in snow pack.

An Aquatic Effects Monitoring Program and Metal Mining Effluent Regulations Monitoring Program are conducted annually to identify potential changes to water quality, benthos, and fish in downstream water bodies near the Mine Site. The results of the programs during 2016 will identify whether there are any changes to water quality that can be attributed to the specific sediment releases that were reported during the 2016 freshet.

2. Unauthorized Releases and Contributing Factors

A number of unauthorized releases of sediment were reported to Environment Canada, Indigenous and Northern Affairs Canada, and the NT-NU Spill Line during the month of May and June. These included the Spill Report numbers 16-158, 16-176, 16-181, 16-198, 116-202, and 116-202 Update No. 1. A copy of the original Spill Reports are provided in Appendix B. The spill response to these events were resourced substantially at the highest levels within Baffinland management with direct support/involvement from the VP of Sustainability, COO, and CEO.

The major contributing factor to these unanticipated releases included the excessive snowfall, snow pack, and wind events that were observed during 2016. Based on visual observations and anecdotal evidence, the snow pack was much thicker and extensive in 2016 as compared to other years. In addition there were many major wind events during 2016, probably exceeding the number of events that have occurred in recent years' past. The available precipitation and wind data from weather stations will be reviewed for 2016 and compared to previous years to substantiate the visual and anecdotal evidence and included in the Completion Report due September 30, 2016. The thickness and frequency of snow drifting around the project site including the Tote Road, Mine Haul Road, and camp pad areas were extreme and required frequent snow clearing, pushing, and grading activities. This resulted in the removal of surface road materials that became entrained in snow piles adjacent and near the road which were released during the freshet melt. Despite diligent efforts in snow removal and transport, the snow melt that contained road and pad materials melted and were transported to nearby water bodies. The excessive snow pack near the road required the deepening and widening of some of the ditches along the road alignment in order to maintain a transportation link between the two camps for the purpose of safety and transport of provisions. With the commencement of freshet, some of these ditches contributed to limited sediment deposition into nearby water bodies.

A brief warm period in early May resulted in an early onset to freshet that resulted in the unauthorized release reported as 16-158. The quantification of an actual start date of Freshet in a given year can be problematic, as it is often a prolonged event with numerous starts and stalls, dependent on variability of sustained air

temperatures. This year there was a brief warm period during the first week of May, followed by fluctuating periods of freeze and thaw. As of the date of this report, freshet is still ongoing with snow pack still being released from the higher elevation areas.

3. Retention of Third Party Expertise

When sediment release events were first observed and reported, third party expertise was retained and these individuals were brought to site. The following expertise was retained:

- Golder Associates - A Senior Geotechnical Engineer was brought to site in late May to study the sedimentation issue with emphasis on best practice for drainage works along the Tote Road, as well as looking at drainage generally across the site. Based on input obtained, a list of action items and areas along the Tote Road was identified and prioritized for action by Baffinland's construction teams. This list of priority areas is provided as Table D.4.2 (Appendix D).
- OPC North – A Construction Manager was retained in late May to lead the actions identified and prioritized along the Tote Road.
- AMEC – A process engineering team was retained to study the effectiveness of various polymers in treating sediment laden waters that were observed along the Mine Haul Road. An intermediate level water treatment professional was brought to site in late May to study the problem and make field and polymer recommendations.
- Kemira Chemical – Samples were sent to Kemira for polymer testing in an effort to continue to identify best potential product to use to settle sediment from the water column. Selected chemical was transported to site to be used in a pilot study. A senior Kemira water quality specialist was brought to site in mid-June to conduct bench and pilot scale field testing on select polymer products for select areas along the Mine Haul Road.
- Le Group Desfor – Road maintenance experts were brought to site in mid-June to provide advice in regard to road maintenance issues.

The input provided will be utilized to develop more detailed action plans related to the Tote Road, Mine Haul Road, and general camp drainage.

4. Water Quality and Acute Toxicity Sampling Results for Areas of Concern

Spill Reports for sediment releases are provided in Appendix B. Potential receivers for the sediment releases include Sheardown Lake, Sheardown Lake Tributary, Camp Lake, Camp Lake Tributaries, Mary River and Mary River Tributaries, David Lake and David Lake Tributaries, Muriel Lake and Muriel Lake Tributaries.

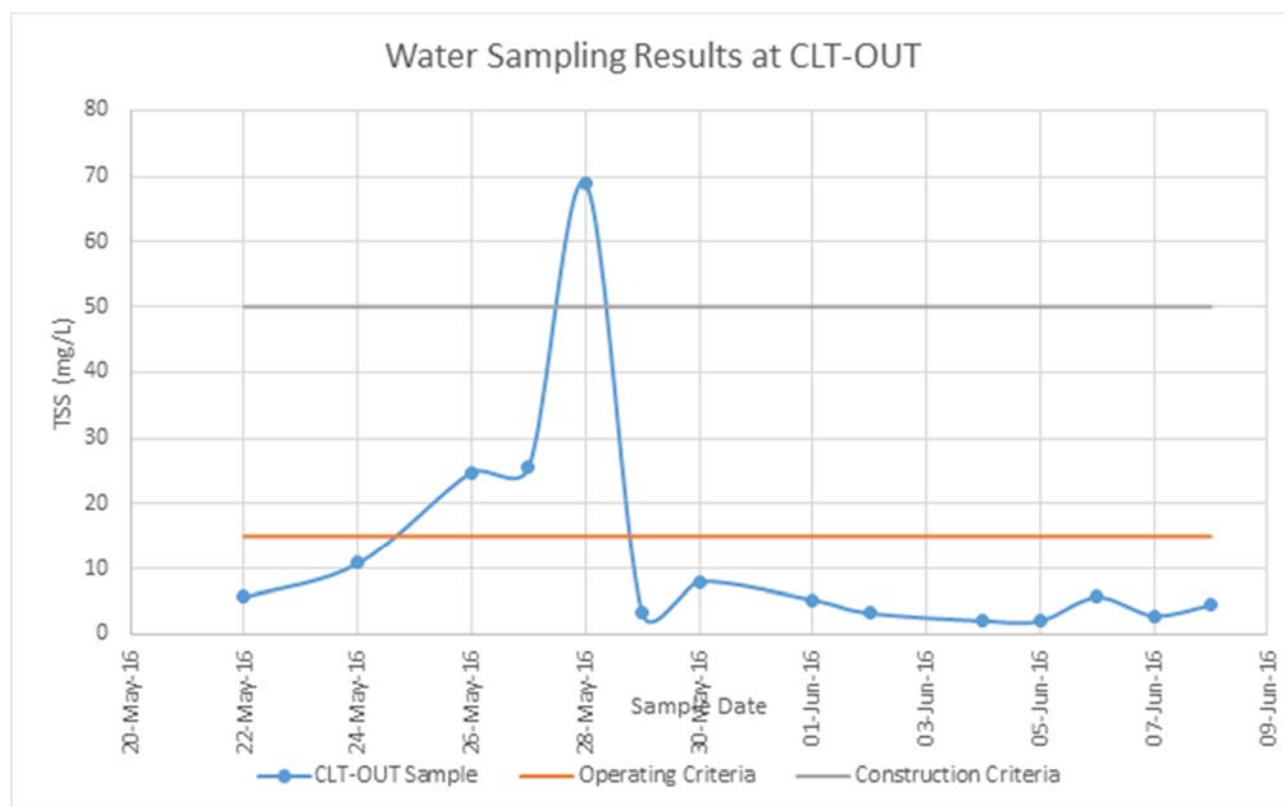
Available water quality and acute toxicity results for Sheardown Lake, Camp Lake, and Mary River systems are provided in Appendix C. GPS coordinates and maps are provided to show approximate sample locations as well as the location of structures that were installed to mitigate the sediment concerns. Water quality data has been compared to the Effluent Quality Discharge Limits for Contact Water (Table 11) provided in the Type "A" Water Licence No. 2AM-MRY1325 for the Mary River Project, which are summarized in the table below:

Parameter	Maximum Average Concentration (mg/L)	Maximum Concentration of any Grab Sample (mg/L)
Total Suspended Solids	15	30
Oil and Grease	No Visible Sheen	No Visible Sheen
pH	Between 6.0 and 9.5	Between 6.0 and 9.5

Note that in areas where there is or has been active construction, the following effluent discharge limits apply:

Parameter	Maximum Average Concentration (mg/L)	Maximum Concentration of any Grab Sample (mg/L)
Total Suspended Solids	50	100
Oil and Grease	No Visible Sheen	No Visible Sheen
pH	Between 6.0 and 9.5	Between 6.0 and 9.5

During the early stages of freshet, there were a number of instances where water samples exceeded the Discharge Criteria for Total Suspended Solids (TSS) but as the incident response measures were implemented, the majority of the discharge samples taken have met the discharge criteria. As an example, the graph below shows the TSS levels from samples at the Camp Lake Tributary #1 sampling point (CLT-OUT) where the levels of TSS were elevated for several sampling events and then decreased to below the Discharge Criteria as mitigation measures were implemented. A similar trend was observed for the other stream outflows sampled.



In addition, all samples collected for Acute Toxicity analysis have shown non-lethal results from the discharge water.

Water sampling will continue on a regular basis, where it is safe to collect samples, and additional data will be included in the bi-weekly update reports.

5. Corrective Measures for Reported Spills and Other Concerns

5.1. Immediate actions undertaken to address issues

A number of immediate actions were undertaken to address sediment releases to water bodies that were documented in the Spill Reports submitted to authorities. These actions were completed in accordance with the current Surface Water and Aquatic Systems Management Plan (dated March 2016) and are more fully detailed in Appendix D. In summary, the immediate actions undertaken included the following:

- Silt fence installation.
- Silt curtain installation.
- Flocculent installation and addition to the water flow.
- Check dam construction and operation.
- Gravity and flocculent assisted settling of solids from the water column.
- Redirection of sediment / turbid waters away from fish habitat by means of ditches, swales, and pumping.

In the case of the Milne Ore Pad drainage and collection system, construction of ditches commenced in late May. Ongoing sampling of the areas downstream of the Ore Pad stockpile indicated there was negligible impact from potential ore pad runoff. Prior to the construction of ditches around the ore pad, there were no visible flows discharging from the ore stockpile pad.

Impacted snow located along the Milne Port beach area, west of the ore loader area was excavated and stockpiled at a secure location away from fish habitat.

Attempts were made to clear snow under the bridges along the Tote Road, and the surface of the bridges were cleared of muddy material by means of manual methods.

5.2. Detailed work completed by area of concern

Refer to Appendix D for detailed list of actions taken during the reporting period, photos, and supplementary materials for each sediment release and area of concern:

- Appendix D.1: Spill Report 16-158 - Sheardown Lake Tributaries and Sheardown Lake.
- Appendix D.2: Spill Report 16-176 - Camp Lake Tributaries and Camp Lake.
- Appendix D.3: Spill Report 16-181- Mine Haul Road to Mary River and Sheardown Lake Tributary.
- Appendix D.4: Spill Report 16-198 - Camp Lake Tributary 1
- Appendix D.5: Spill Report 16-202 and Update No. 1 - Milne Inlet Tote Road, Tributaries to Mary Lake, David Lake, and Muriel Lake.
- Appendix D.6: Milne Port Ore Stockpile Drainage Collection System.
- Appendix D.7: Milne Port Beach
- Appendix D.8: Sediment on and under bridges along Tote Road.

6. Next Steps

6.1. Bi-weekly update reports

Bi-weekly update reports will be provided including any additional construction work completed and additional water sampling data. The next report will cover the period from June 18 to July 1, 2016.

6.2. Completed construction repairs

Construction repairs for the areas of concern including the Milne Port Ore Stockpile Drainage system and the Mine Site Crusher Stockpile Pad will be substantially completed by July 17, 2016.

6.3. Lessons-learned

Baffinland will conduct an extensive review and analyses of lessons- learned with regard to sedimentation issues along the roads and at the camps. Key conclusions and recommendations will be provided in the Completion Report which will be provided to regulators and inspectors. Baffinland will be open to any comments and recommendations received and will make revisions as is appropriate.

6.4. Long-term action plans

Longer term action plans related to dust mitigation and Tote Road work as related to drainage considerations will be provided by September 30, 2016.

6.5. Completion Report

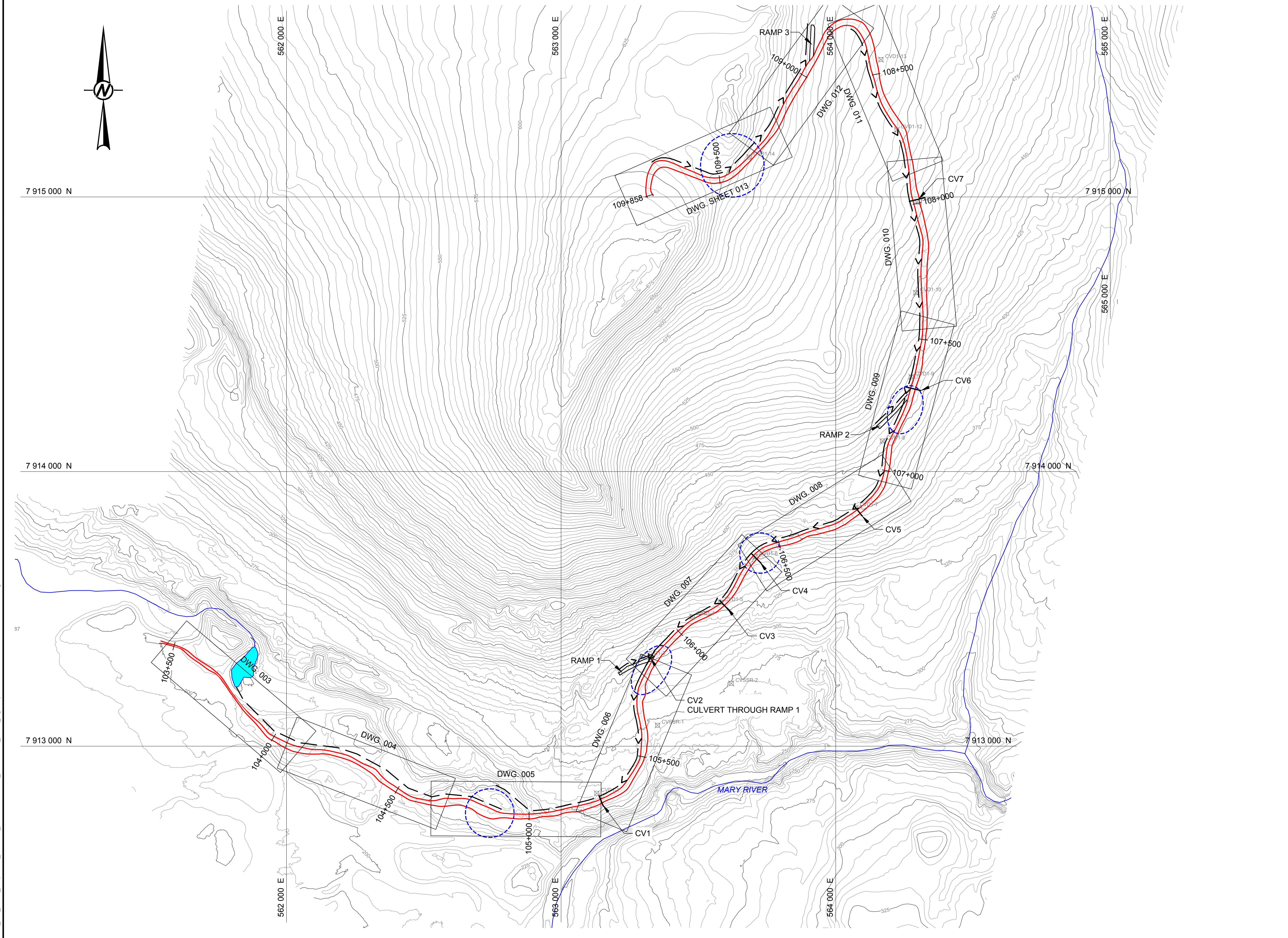
A completion report that summarizes the results of all work to date and is signed off by the CEO of the company will be provided by September 30, 2016.

APPENDIX A

OTHER MEASURES COMPLETED PRIOR TO FRESHET

Appendix A.1
Mine Haul Road

Path: \\golder\gas\CAL\Mississauga\SIW\Clients\Baffinland_Iron_Mines_Corp\Baffin_Island\09_PROD\0001_Water_Mgmt\1 File Name: 1649295-0001-CA-0002.dwg



LEGEND

AS-BUILT CULVERT (KNIGHT PIESOLD, 2008)

APPROXIMATE AREA WITH WATER QUALITY CONCERNS IDENTIFIED BY BAFFINLAND OPERATIONS

108+000

EXISTING ROAD

BASE MAPPING CONTOUR

WATERCOURSE

CV3

DESIGN DITCH LOCATION

PROPOSED DRAINAGE SWALE (AS REQUIRED)

NOTE(S)
1. COORDINATE GRID IS UTM (NAD83) ZONE 17 AND IS IN METRES.

NOT FOR CONSTRUCTION

0250500

1:7,500METRES

A				2016-03-18				ISSUED FOR CLIENT REVIEW				FZG				MJT				MJT				PMB			
REV.				YYYY-MM-DD				DESCRIPTION				DESIGNED				PREPARED				REVIEWED				APPROVED			

CLIENT

CONSULTANT

MISSISSAUGA OFFICE
6925 CENTURY AVENUE, MISSISSAUGA
ONTARIO L5N 7K2
CANADA
[+1] (905) 567 6100
www.golder.com

PROJECT

MARY RIVER PROJECT
MINE HAUL ROAD
DRAINAGE IMPROVEMENT PROJECT

TITLE

GENERAL ARRANGEMENT PLAN

PROJECT NO.

1649295

PHASE

2000

REV.

A

of

DRAWING

002

25 mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

Culvert CV-1 Construction and Installation Photos – May 2016



Culvert CV-1 Construction and Installation Photos – May 2016



Culvert CV-2 Construction and Installation Photos – May 2016



Culvert CV-2 Construction and Installation Photos – May 2016



Mine Haul Road Ditching and Riprapping Photos – April 2016



Mine Haul Road Ditching and Riprapping Photos – April 2016





Mine Haul Road Ditching and Riprapping Photos – April 2016



Mine Haul Road Ditching and Riprapping Photos – April 2016





Mine Haul Road Ditching and Riprapping Photos – April 2016



Mine Haul Road Ditching and Riprapping Photos – April 2016

Appendix B

NT-NU Spill Reports

Spill Report 16-158 - Sheardown Lake Tributaries and Sheardown Lake.

Spill Report 16-176 - Camp Lake Tributaries and Camp Lake.

Spill Report 16-181 - Mine Haul Road to Mary River and Sheardown Lake Tributary.

Spill Report 16-198 - Camp Lake Tributary 1

Spill Report 16-202 - Milne Inlet Tote Road, Tributaries to Mary Lake, David Lake, and Muriel Lake.

Spill Report 16-202 – Update 1 - Milne Inlet Tote Road, Tributaries to Muriel Lake (BG-31) and David Lake (BG-28)



Canada

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR 05-10-2016		REPORT TIME 14:30 HRS		☒ ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER 16 - 158
	OCCURRENCE DATE: MONTH – DAY – YEAR 05-07-2016		OCCURRENCE TIME 19:00 HRS			
C	LAND USE PERMIT NUMBER (IF APPLICABLE) IOL - Commercial Lease No.: Q13C301			WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MRY1325 Type "A"		
	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Mary River Project Mine Site, Baffin Island, NU				REGION ☐ NWT ☒ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN	
E	LATITUDE DEGREES MINUTES SECONDS			LONGITUDE DEGREES MINUTES SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME Baffinland Iron Mines Corp.		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION 2275 Middle Road East, Suite 300, Oakville, ON L6H 0C3			
G	ANY CONTRACTOR INVOLVED N/A		CONTRACTOR ADDRESS OR OFFICE LOCATION N/A			
H	PRODUCT SPILLED sediment / discoloured water		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Unquantified at present time		U.N. NUMBER N/A	
	SECOND PRODUCT SPILLED (IF APPLICABLE) N/A		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES N/A		U.N. NUMBER N/A	
I	SPILL SOURCE Melting snow		SPILL CAUSE suspected entrained dust		AREA OF CONTAMINATION IN SQUARE METRES N/A	
J	FACTORS AFFECTING SPILL OR RECOVERY Snow covered area, poor access		DESCRIBE ANY ASSISTANCE REQUIRED N/A		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT N/A	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS					
	On Saturday, May 7, 2016, a snowmelt event occurred at the Mine Site. Runoff containing sediments and discoloured water were observed to flow into Sheardown Tributary and Sheardown Lake at around 1900 HRS. The source of the suspected off-spec drainage was dirty snow located downwind of the Crusher Pad. The event resulted in some siltation/discoloured water in two streams flowing from adjacent areas onto and under the ice of Sheardown Lake. In accordance with the Surface Water Management Plan, controls were implemented that included installation of silt fences and the deployment of flocculent and treated jute to settle sediments prior to discharge. Further actions are planned that will reduce the potential impact from the dirty snow source area. Dirty snow removal, check dam/sump construction, and additional flocculation are being considered. Daily monitoring of the water quality and flow is ongoing. Spill report updates will be provided as warranted. A follow-up report documenting the occurrence and providing recommendations will be submitted within 30 days					
L	REPORTED TO SPILL LINE BY Jim Millard		POSITION Env Manager	EMPLOYER Baffinland	LOCATION CALLING FROM Mary River	TELEPHONE 902-403-1337
M	ANY ALTERNATE CONTACT Allan Knight		POSITION Env Superintendent	EMPLOYER Baffinland	ALTERNATE CONTACT LOCATION 647-253-0596	ALTERNATE TELEPHONE Ext 6016
REPORT LINE USE ONLY						
N	RECEIVED AT SPILL LINE BY		POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130
LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC				SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN		FILE STATUS ☐ OPEN ☐ CLOSED
AGENCY		CONTACT NAME		CONTACT TIME	REMARKS	
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						



Canada

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR 05-17-2016	REPORT TIME 19:00 hrs	☒ ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT		REPORT NUMBER 16 - 176
B	OCCURRENCE DATE: MONTH – DAY – YEAR 05-17-2016	OCCURRENCE TIME 09:00 hrs			
C	LAND USE PERMIT NUMBER (IF APPLICABLE) IOL - Commercial Lease: Q13C301		WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MRY1325 Type "A"		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Mary River Mine Site, Baffin Island, NU		REGION ☐ NWT ☒ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES 71 MINUTES 16 SECONDS 46		LONGITUDE DEGREES 79 MINUTES 22 SECONDS 36		
F	RESPONSIBLE PARTY OR VESSEL NAME Baffinland Iron Mines Corp.	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION 2275 Middle Road East, Sutie 300, Oakville, ON L6H 0C3			
G	ANY CONTRACTOR INVOLVED N/A	CONTRACTOR ADDRESS OR OFFICE LOCATION N/A			
H	PRODUCT SPILLED Sediment	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Unquantified at present time	U.N. NUMBER N/A		
	SECOND PRODUCT SPILLED (IF APPLICABLE) N/A	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES N/A	U.N. NUMBER N/A		
I	SPILL SOURCE Melt Water	SPILL CAUSE Warming Temps/Rain	AREA OF CONTAMINATION IN SQUARE METRES N/A		
J	FACTORS AFFECTING SPILL OR RECOVERY Snow covered area, poor access	DESCRIBE ANY ASSISTANCE REQUIRED N/A	HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT N/A		
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS On Tuesday, May 17, 2016, runoff containing sediments was observed to be flowing into Camp Lake Tributary # 1 and into Camp Lake around 0900 HRS. The source of the off-spec drainage was from an area adjacent to the airstrip. The event resulted in some siltation to the stream flowing into Camp Lake. In accordance with the Surface Water Management Plan, controls were implemented that included installation rip rap (6" aggregate) and the deployment of flocculent and treated jute to settle sediments prior to discharge. Further actions are planned that will reduce the potential impact from the source area. Spill report updates will be provided as warranted. A follow-up report documenting the occurrence and providing recommendations will be submitted within 30 days				
L	REPORTED TO SPILL LINE BY Allan Knight	POSITION Env. Superintendent	EMPLOYER Baffinland	LOCATION CALLING FROM Mary River	TELEPHONE 647-253-0596
M	ANY ALTERNATE CONTACT Jim Millard	POSITION Env. Manager	EMPLOYER Baffinland	ALTERNATE CONTACT LOCATION 902-403-1337	ALTERNATE TELEPHONE 6016
REPORT LINE USE ONLY					
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130
LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC			SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN		FILE STATUS ☐ OPEN ☐ CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					



Canada

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR 05-21-2016		REPORT TIME 21:00 hrs		☒ ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER 16 - 181
	OCCURRENCE DATE: MONTH – DAY – YEAR 05-20-2016		OCCURRENCE TIME 19:00 hrs			
C	LAND USE PERMIT NUMBER (IF APPLICABLE) IOL - Commercial Lease: Q13C301			WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MRY1325 Type "A"		
	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Mary River Mine Site, Baffin Island, NU				REGION ☐ NWT ☒ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN	
E	LATITUDE DEGREES MINUTES SECONDS			LONGITUDE DEGREES MINUTES SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME Baffinland Iron Mines Corp.		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION 2275 Middle Road East, Sutie 300, Oakville, ON L6H 0C3			
G	ANY CONTRACTOR INVOLVED N/A		CONTRACTOR ADDRESS OR OFFICE LOCATION N/A			
H	PRODUCT SPILLED Sediment		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Unquantified at present time		U.N. NUMBER N/A	
	SECOND PRODUCT SPILLED (IF APPLICABLE) N/A		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES N/A		U.N. NUMBER N/A	
I	SPILL SOURCE Melt Water		SPILL CAUSE Melting of snow on road base		AREA OF CONTAMINATION IN SQUARE METRES N/A	
J	FACTORS AFFECTING SPILL OR RECOVERY Snow covered area, poor access		DESCRIBE ANY ASSISTANCE REQUIRED N/A		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT N/A	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS					
	On May 20 and 21, 2016, runoff containing sediment was observed to be flowing from the surface of the Mine Haul Road through several breaks (punch outs) on the outer edge of the road. The punch outs were installed to allow contact water on the road surface to be efficiently discharged from the road surface. On the afternoon of May 19, discharges of contact water increased and it became apparent that there was risk to Mary River and Sheardown tributary/Lake. The berm punch outs were sealed and road contact water has been diverted to three selected locations that will minimize potential flows to downstream fish habitat and water bodies. Check dams, silt fences/curtains, flocculants are being utilized to assist with this initial effort. It is expected that the sediment will settle and will be discharged back to the receiving environment. Report updates will be provided with further information in the near future. This incident is being reported as required by the conditions of Water Licence No. 2AM-MRY1325 and as required by subsection 38(4) of the Fisheries Act.					
L	REPORTED TO SPILL LINE BY Jim Millard		POSITION Env. Manager	EMPLOYER Baffinland	LOCATION CALLING FROM Mary River	TELEPHONE 647-253-0596
M	ANY ALTERNATE CONTACT Allan Knight		POSITION Env. Superintendent	EMPLOYER Baffinland	ALTERNATE CONTACT LOCATION 902-403-1337	ALTERNATE TELEPHONE 6016
REPORT LINE USE ONLY						
N	RECEIVED AT SPILL LINE BY		POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130
LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC				SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN		FILE STATUS ☐ OPEN ☐ CLOSED
AGENCY		CONTACT NAME		CONTACT TIME		REMARKS
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						



Canada

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR 05-31-2016	REPORT TIME 11:00 hrs	☒ ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT		REPORT NUMBER 16 - 198
B	OCCURRENCE DATE: MONTH – DAY – YEAR unknown - within last several days	OCCURRENCE TIME unknown			
C	LAND USE PERMIT NUMBER (IF APPLICABLE) IOL - Commercial Lease: Q13C301	WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MRY1325 Type "A"			
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Mary River Mine Site, Baffin Island, NU	REGION ☐ NWT ☒ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN			
E	LATITUDE DEGREES 71 MINUTES 19 SECONDS 46	LONGITUDE DEGREES 79 MINUTES 22 SECONDS 41			
F	RESPONSIBLE PARTY OR VESSEL NAME Baffinland Iron Mines Corp.	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION 2275 Middle Road East, Sutie 300, Oakville, ON L6H 0C3			
G	ANY CONTRACTOR INVOLVED N/A	CONTRACTOR ADDRESS OR OFFICE LOCATION N/A			
H	PRODUCT SPILLED Sediment	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Unquantified at present time	U.N. NUMBER N/A		
	SECOND PRODUCT SPILLED (IF APPLICABLE) N/A	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES 44m3	U.N. NUMBER N/A		
I	SPILL SOURCE steep sandy stream bank	SPILL CAUSE warming temperatures	AREA OF CONTAMINATION IN SQUARE METRES 110m2		
J	FACTORS AFFECTING SPILL OR RECOVERY poor access	DESCRIBE ANY ASSISTANCE REQUIRED N/A	HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT N/A		
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS On Sunday, May 29, 2016, during an environmental inspection of Mine Site drainages a deposit of sediments was discovered in Camp Lake Tributary #1 (CLT1), south of the Tote Road. Upon initial investigation, the source of the sediment was from a stream bank failure. The embankment failure may have been caused by water draining from the airstrip. The event resulted in sandy deposit of material that partially encroached on the stream. Once discovered, silt fences were erected around the sediment deposit. A schedule is being developed for the removal of the sediment and stabilization of the stream embankment at that location. The water will be rerouted from this location and redirected to an area that is more stable. The material is coarse sand and does not appear to be mobile in water. A follow-up report documenting the occurrence and providing recommendations will be submitted within 30 days.				
L	REPORTED TO SPILL LINE BY Jim Millard	POSITION Env. Manager	EMPLOYER Baffinland	LOCATION CALLING FROM Mary River	TELEPHONE 647-253-0596
M	ANY ALTERNATE CONTACT Allan Knight	POSITION Env. Superintendent	EMPLOYER Baffinland	ALTERNATE CONTACT LOCATION 902-403-1337	ALTERNATE TELEPHONE 6016
REPORT LINE USE ONLY					
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130
LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC			SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN		FILE STATUS ☐ OPEN ☐ CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					



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REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR 06-02-2016		REPORT TIME 0700 HRS		☒ ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT		REPORT NUMBER 16 - 202
B	OCCURRENCE DATE: MONTH – DAY – YEAR 05-31-2016		OCCURRENCE TIME 2100 HRS				
C	LAND USE PERMIT NUMBER (IF APPLICABLE) IOL - Commercial Lease: Q13C301			WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MRY1325 Type "A"			
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Mary River Mine Site, Baffin Island, NU				REGION ☐ NWT ☒ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES MINUTES SECONDS			LONGITUDE DEGREES MINUTES SECONDS			
F	RESPONSIBLE PARTY OR VESSEL NAME Baffinland Iron Mines Corp.		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION 2275 Middle Road East, Sutie 300, Oakville, ON L6H 0C3				
G	ANY CONTRACTOR INVOLVED N/A		CONTRACTOR ADDRESS OR OFFICE LOCATION N/A				
H	PRODUCT SPILLED Sediment		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Unquantified at present time		U.N. NUMBER N/A		
	SECOND PRODUCT SPILLED (IF APPLICABLE) N/A		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES N/A		U.N. NUMBER N/A		
I	SPILL SOURCE Freshet erosion		SPILL CAUSE warming temperatures		AREA OF CONTAMINATION IN SQUARE METRES N/A		
J	FACTORS AFFECTING SPILL OR RECOVERY N/A		DESCRIBE ANY ASSISTANCE REQUIRED N/A		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT N/A		
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS During an environmental inspection of the Milne Tote Road on May 31, three locations were observed where there was turbid water and sediment present in culvert outlet locations. These locations were stream crossings CV-223 at km 97, BG-17 at km 90, and BG-29 at km 85. The source of the sediment is erosion from spring freshet. There are no fish present at these locations because flows are very low and fish have not yet started to move into the stream. In the meantime silt fences and in-ditch flocculant have been deployed as appropriate. Sediments in culvert outlet basins will be carefully excavated and removed under the supervision of Environment staff within the next several days. In addition, the embankment areas of these streams are scheduled to receive riprap/geotextile shortly.						
L	REPORTED TO SPILL LINE BY Jim Millard	POSITION Env. Manager	EMPLOYER Baffinland	LOCATION CALLING FROM Mary River	TELEPHONE 647-253-0596		
M	ANY ALTERNATE CONTACT Allan Knight	POSITION Env. Superintendent	EMPLOYER Baffinland	ALTERNATE CONTACT 902-403-1337 LOCATION	ALTERNATE TELEPHONE 6016		
REPORT LINE USE ONLY							
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130		
LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC			SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN		FILE STATUS ☐ OPEN ☐ CLOSED		
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS			
LEAD AGENCY							
FIRST SUPPORT AGENCY							
SECOND SUPPORT AGENCY							
THIRD SUPPORT AGENCY							



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NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR 06-19-2016		REPORT TIME 2200 HRS		☐ ORIGINAL SPILL REPORT, OR ☒ UPDATE # 1 TO THE ORIGINAL SPILL REPORT	REPORT NUMBER 16 - 202
	OCCURRENCE DATE: MONTH – DAY – YEAR 06-18-2016		OCCURRENCE TIME Unknown			
C	LAND USE PERMIT NUMBER (IF APPLICABLE) IOL - Commercial Lease: Q13C301			WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MRY1325 Type "A"		
	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Mary River Mine Site, Baffin Island, NU				REGION ☐ NWT ☒ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN	
E	LATITUDE DEGREES MINUTES SECONDS			LONGITUDE DEGREES MINUTES SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME Baffinland Iron Mines Corp.		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION 2275 Middle Road East, Sutie 300, Oakville, ON L6H 0C3			
G	ANY CONTRACTOR INVOLVED N/A		CONTRACTOR ADDRESS OR OFFICE LOCATION N/A			
H	PRODUCT SPILLED Sediment		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Unquantified at present time		U.N. NUMBER N/A	
	SECOND PRODUCT SPILLED (IF APPLICABLE) N/A		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES N/A		U.N. NUMBER N/A	
I	SPILL SOURCE Freshet melting snowpack		SPILL CAUSE warming temperatures		AREA OF CONTAMINATION IN SQUARE METRES N/A	
J	FACTORS AFFECTING SPILL OR RECOVERY N/A		DESCRIBE ANY ASSISTANCE REQUIRED N/A		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT N/A	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS During an environmental inspection of the Milne Tote Road on June 18, two locations were observed where there was turbid water and sediment present near stream crossings, downstream of Tote Road. These locations were BG-31 at km 82 and BG-28 at km 86.3. The sediment appears to be generated by the melting snow pack adjacent to the road. The streams are not expected to be fish habitat, although flow from these locations is to Muriel Lake (BG-31) and David Lake (BG-28). The sediment is being controlled from entering the lakes at these locations by the construction of check dams and silt curtain for stream BG-31 and by silt fence and silt curtain at BG-28. Previous locations where there was sediment and turbid water at stream crossings CV-223 at km 97, BG-17 at km 90, and BG-29 at km 85, are now running clear and sediment at culvert outlets was removed.					
L	REPORTED TO SPILL LINE BY Jim Millard	POSITION Env. Manager	EMPLOYER Baffinland	LOCATION CALLING FROM Mary River	TELEPHONE 647-253-0596	
M	ANY ALTERNATE CONTACT Allan Knight	POSITION Env. Superintendent	EMPLOYER Baffinland	ALTERNATE CONTACT 902-403-1337	ALTERNATE TELEPHONE 6016	
REPORT LINE USE ONLY						
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130	
LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC			SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN		FILE STATUS ☐ OPEN ☐ CLOSED	
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS		
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						

Appendix C

Surface Water Quality and Acute Toxicity Results for Affected Areas

(Refer to Biweekly Report No. 6)