Baffinland Iron Mines Corporation

TABLE 3.2

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

COMPREHENSIVE ENVIRONMENTAL MONITORING PLAN

MONITORING AND INSPECTION SUMMARY

Component	Monitoring Task	Status	
		Complete	Ongoing
METEOROLOGY	Continuous wind speed, direction, temperature, precipitation at Mary River Mine Site, Milne Port, Steensby Port		✓
AIR QUALITY	Emissions stack testing of camp waste incineration	✓	
	Air quality monitoring of bulk sample activities at Milne Port	✓	
	Air quality monitoring of bulk sample activities at Mary River Mine Site	✓	
	Air quality monitoring of bulk sample activities along Milne Inlet Tote Road	✓	
	Representative vegetation sampling in vicinity of bulk sample activities	✓	
NOISE	Noise monitoring of bulk sample activities at Milne Port	✓	
	Noise monitoring of bulk sample activities at Mary River Site	✓	
LANDFORMS			
Physical Stability	Inspection of bulk sample pit and residual stockpiles		✓
	Inspection of tote road, water crossings and borrow/quarry areas for physical stability and sediment and erosion control		✓
	Inspection of polishing waste stabilization ponds		✓
	Inspection of lined bulk fuel containment areas		✓
TERRESTRIAL WILDLIFE AND BIRDS			
General	Incidental wildlife logs		✓
	Pre-drilling and post-drilling checklists		✓
Caribou	Aerial surveys focused on environmental baseline data collection	✓	
	Provide support to Government of Nunavut regional collaring program		✓
Carnivores	Active wolf den inventory and monitoring during bulk sample program	✓	
Raptors	Raptor behaviour and breeding success in relation to project activities	✓	
Loons, Ducks and Geese	Behaviour and breeding success of loons in relation to disturbance from project activities	✓	
Songbirds and Shorebirds	Behaviour and breeding success in relation to disturbance from project activities	✓	
Seabirds	Monitor the effects of disturbance from the bulk sampling program	✓	
FISHERIES AND AQUATIC RESOURCES			
Fish Habitat	Full-time road construction supervision for overall QA/QC of the implementation of environmental protection measures and compliance with permit requirements.	✓	
	Inspect HADD crossings to confirm presence or absence of spawning sites within 20 m up and downstream.	✓	
	Monitor construction activities and turbidity at HADD crossings and compensation sites by an environmental inspector during and post construction.	✓	
	Maintain a photographic record of all HADD authorized crossings and fish habitat compensation works before, during and after construction.	✓	
	Monitor fish habitat compensation works to ensure that the works are functioning as intended.		✓
	Monitor construction of water intake and sewage outfalls at Camp Lake and Sheardown Lake.	✓	
	Monitor amount of ice build-up in front of the culverts and remove if necessary.		✓
Fish Migration	Measure flow depth at all 25 HADD authorized crossings during the low flow period to ensure fish passage in the embedded culvert.		✓
	Monitor water flow velocity at the four box culvert crossings to ensure crossing installation does not adversely affect upstream or downstream fish migration.		✓
MARINE WILDLIFE			
Polar Bears	Bear monitors will supervise work and camps at the coasts as well as isolated field work		✓
Whales	Behavioural responses of narwhal and bowhead whales to sealift traffic	✓	
Ringed Seals	Ringed seal responses to construction activity and noise in the Milne Inlet area	✓	
WATER QUALITY			
Water Supply	Sampling and testing (field and laboratory) of potable water supply sources	See Table 4.2	
Sewage Effluent	Sampling of final effluent from the Waste Water Treatment Facilities (WWTFs) and Polishing/Waste Stabilization Ponds (PWSPs)	See Table 4.2	
Site Runoff	Sampling water quality runoff from bulk fuel storage berms, bulk sample pits, and ore stockpiles	See Table 4.2	
	Sampling water quality runoff from Quarry Locations and Laydown Areas		
Drill Water Run-Off	Sampling of water quality in vicinity of exploration drilling		✓
Geotechnical Drilling	Pre-drilling and post-drilling water quality monitoring for on-ice drilling		✓
Baseline Water Quality	Regional water quality monitoring as part of baseline program; includes site runoff stations in addition to those prescribed by the water license in Table 4.2		✓
Kinetic Testing	On-site kinetic testing of ore and waste rock samples	✓	
HYDROLOGY	Baseline data collection - seasonal hydrology stations		✓
	Baseline data collection - all season hydrology stations established with Water Survey of Canada	✓	
WASTE MANAGEMENT			
Off-Site Waste Disposal	Non-hazardous solid wastes taken off-site for disposal (i.e., to Pond Inlet's landfill) to be logged; TDG waste manifests for hazardous wastes taken off-site to be provided to Environmental Superintendent.		✓
On-Site Waste Disposal	Regular visual inspection of temporary waste storage facilities		✓
	Landfill Monitoring form		✓
OPERATIONS MONITORING			
Drilling Operations	Regular inspection of drill operations		✓
Fuel Management	Regular inspection of fuel storage facilities and operations		✓
Environmental Issue Identification	General monitoring and inspection to identify any environmental issues of concern, such as non-conformance to the Environmental Protection Plan, or the requirement for a new environmental control.		✓
SOCIO-ECONOMICS			
Archaeological Resources	Archaeology surveys where ground disturbance activities are proposed, prior to work being conducted		✓
Human Resources	Employment duration, turn-over, etc.		✓
Skills Inventory of Staff	Education and skill sets of existing site personnel from local communities		✓
Training	Record all training conducted on- and off-site for the project		✓
REPORTING			
SNP Reports	Submit Monthly Water License (Surveillance Network Program) Reports		✓
Borrow Reports	Submit Monthly Borrow Reports (QIA and INAC Quarry Authorizations)		✓
NIRB Annual Reports	Prepare an annual report that meets the information requirements of the NIRB Screening Decisions		✓
Water License Annual Report	Prepare an annual report in accordance with Part B, Item 6 of the water license		✓
QIA Annual Report	Prepare an annual report in accordance with Commercial Lease Q10C3001		✓
Fisheries Authorization Annual Report	Prepare an annual report that meets the information requirements of the Fisheries Authorization		✓

Rev. 4 - Updated and Reissued

Baffinland Iron Mines Corporation

TABLE 4.1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

COMPREHENSIVE ENVIRONMENTAL MONITORING PLAN

SUMMARY OF AS-BUILT TOTE ROAD CULVERT INSTALLATIONS

Water Crossing No.	Culvert No.	Road Chainage (Design)[12] (m)	Road Chainage (Upgraded)[12] (m)	Water Crossing Size Classification	Culvert Invert Elevation		Length of CSP Culverts						Sea Containers	DFO regulated Water Crossing Modified	Comment from 2009 Tote Road Inspection
					Upstream (m)	Downstream (m)	Ø = 1.2 m (m)	Ø = 1.0 m (m)	Ø = 0.5 m (m)	Ø = 0.25 m (m)	Ø = 0.15 m (m)*	Ø = 0.10 m (m)*			
CV183		0+145	A1+023	Extra-Large										x	Old culvert removed from Water Crossing
CV182		0+480	NA	Extra-Small											Old culvert removed from Water Crossing
CV181		0+583	A1+028	Medium										x	Old culvert removed from Water Crossing
CV180		0+796	NA	Extra-Small											Old culvert removed from Water Crossing
CV179		1+507	A1+231	Extra-Small	9.254	9.106			9						
CV178		1+776	A1+497	Extra-Small	9.981	9.954		9							
CV177	A	2+427	A2+138	Extra-Small	50.929	50.413					20.9				US/DS ends damaged and partially buried
	B	2+427	A2+138		50.950	50.418					20.3				
CV176[2]		2+638	A2+349	Small	51.346	51.023		10.8							
CV175[7]		2+867	A2+578	Extra-Small											
CV174		3+734	A3+429	Extra-Small	55.682	55.397			9						
Additional[7]			A3+877	Additional	51.303	51.132					11.0				
Additional			A3+987	Additional	50.882	50.728					10.3				US/DS ends damaged and partially buried
CV173[3]		4+425	A4+181	Extra-Small	54.044	53.705			12.2						
CV172[6]		4+722	NA	Extra-Small											
CV171		4+867	A4+582	Extra-Small	52.543	52.031					11.0				
CV170		5+267	A4+984	Small	45.630	45.038		12							
CV169		5+427	A5+149	Extra-Small	46.834	46.541			9						
CV168[6]		5+882	NA	Extra-Small											
CV167[3]		5+960	A5+673	Extra-Small	48.592	47.364			15.1						
CV166[3]	A	6+056	A5+770	Small	44.239	43.910		15.3							
	B	6+056	A5+770		44.172	44.112			15.3						
CV165[4]		7+038	A6+746	Small	43.725	42.568	22.1								
CV164		7+299	A6+999	Extra-Small	56.994	56.135			18						
Additional			A7+249	Additional	52.511	52.357					10.8				
CV163[6]		7+832	NA	Extra-Small											
CV162[2]		7+922	A7+625	Extra-Small	43.897	43.569		9.5							US end damaged
CV161[2]		8+230	A7+928	Extra-Small	40.280	39.643			9.9						
CV159		8+407	A8+100	Extra-Small	25.564	25.293		12							
CV158	A	8+648	A8+345	Extra-Small	33.423	32.814			12						US end damaged
	B	8+648	A8+347		34.004	31.212			18						
CV157	A	8+960	A8+657	Small	37.359	37.018		12							
	B	8+960	A8+662		37.357	37.315			12						Partially buried
CV156[6]		9+223	A8+903	Extra-Small											
CV155	A	9+328	A8+997	Extra-Small	37.418	36.466				12					
	B	9+328	A9+003		37.821	37.214					13.7				
	C	9+328	A9+003		37.815	37.353					13.7				
Additional[7]			A9+145	Additional	33.294	32.947			12						
CV154	A	9+570	A9+241	Small	30.500	30.154			15						
	B	9+570	A9+249		30.662	30.154		15							
CV153	A	10+218	A9+892	Small	37.332	37.287			12						Some of US/DS ends damaged but functional
	B	10+218	A9+848		37.510	37.224			12						
	C	10+218	A9+849		37.518	37.400			12						
	D	10+218	A9+850		37.511	37.382			12						
	E[7]	10+218	NA						NA						Culvert ends buried and not functional
CV152	A	10+280	A9+950	Small	42.678	41.147			22						Some of US/DS ends damaged but functional
	B	10+280	A9+939		42.719	41.060			22						
	C	10+280	A9+940		42.753	41.032			22						
	D	10+280	A9+941		42.844	41.183			22						
	E	10+280	A9+943		42.807	41.164			22						
CV151	A	10+460	A10+127	Small	62.772	62.251			12						DS end buried
	B	10+460	A10+102		62.789	62.307			12						
CV150	A	10+507	A10+125	Extra-Small	63.131	62.515			12						
	B	10+507	A10+127		63.216	62.499			12						
Additional			A10+441	Additional	61.044	60.704			12						
Additional			A10+609	Additional	62.864	62.684				12					DS end close to road edge
CV149		10+954	A10+623	Extra-Small	62.633	61.896				12					DS end buried
CV148[7]	A	11+180	A10+846	Extra-Small	66.098	65.793				12					
	B	11+180	A10+847		66.004	65.828				12					
CV147[6]			A10+840												
CV146	A	11+348	A11+014	Small	66.383	66.259			12						
	B	11+348	A11+017		66.446	66.226			12						
	C	11+348	A11+019		66.487	66.059			12						

Baffinland Iron Mines Corporation

TABLE 4.1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

COMPREHENSIVE ENVIRONMENTAL MONITORING PLAN

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					Upstream (m)	Downstream (m)	Ø = 1.2 m (m)	Ø = 1.0 m (m)	Ø = 0.5 m (m)	Ø = 0.25 m (m)	Ø = 0.15 m (m)*	Ø = 0.10 m (m)*			
	D	11+348	A11+018		66.410	66.225			12						
	E	11+348	A11+017		66.437	66.205			12						
CV145[6]		11+208	NA	Extra-Small											
CV144		12+205	A11+856	Extra-Small	83.517	83.426			9						
CV143[6]		12+236	NA	Extra-Small											
CV142[6]		12+266	NA	Extra-Small											
CV141[6]		12+453	NA	Extra-Small											
CV140[6]		12+501	NA	Extra-Small											
CV139[6]		12+679	NA	Extra-Small											
CV138[6]		12+784	NA	Extra-Small											
CV137		13+042	A12+704	Extra-Small	95.660	95.099				12					
Additional			A12+848	Additional	97.386	96.482				9					Ends partially buried and damaged
CV136		13+425	A13+093	Extra-Small	91.811	91.227				18					Ends partially buried and damaged
CV135		13+675	A13+327	Extra-Small	90.799	90.455				12					
CV134[7]		14+014	A13+674	Extra-Small	81.258	80.464				12					
Additional			A13+749	Additional	79.198	78.542			12						
Additional			A13+851	Additional	79.064	78.526				12					
CV133		14+201	A13+859	Extra-Small	78.806	78.240				12					
Additional			A13+953	Additional	78.098	77.844				9					
Additional			A14+189	Additional	79.649	79.390			12						
Additional 09	A		A14+352	Additional	NA	NA				12*					
	B		A14+352		NA	NA				12*					
CV132[6]		14+625	NA	Extra-Small											
CV131[3]		14+709	A14+370	Extra-Small	NA	NA				18*					
CV195		15+008	A14+666	Extra-Small	79.587	79.506				18					
CV130		15+202	A14+871	Extra-Small	79.121	78.794				18					
CV129		15+650	A15+310	Large	78.11	77.92	18								
CV196[6]		15+839	NA	Extra-Small											
Extra-01		17+020	A16+807	2 Unclassified	75.869	75.613			12						
CV128		17+486	A17+117	Extra-Large									20		
CV127[6]		18+279	NA	Extra-Small											
CV126		19+243	A18+724	Extra-Small	76.968	76.740			12						DS end damaged
CV125	A	20+447	A19+945	Small	78.560	78.505			15						
	B[3]	20+447	A19+929		78.095	77.862		15							
CV124		20+626	A20+119	Extra-Small	80.254	80.242			9						
Additional			A20+509	Additional	83.248	83.165				9					US end damaged
CV123	A	21+399	A20+891	Extra-Small	82.803	82.440			12						
	B	21+399	A20+892		82.888	82.442			12						
Additional			A21+178	Additional	81.687	81.286		12							
CV122[6]		21+949	NA	Extra-Small											
Additional			A21+808	Additional	90.365	90.344			12						
Additional			A22+330	Additional	96.351	96.011			9						Small amount of backfill material on top of culvert, US/DS ends buried
CV121[6]		23+199	NA	Extra-Small											
Additional			A22+764	Additional	95.655	95.487				6					DS end buried
Additional			A22+900	Additional	91.824	91.377			9						
CV120	A	23+515	A23+002	Small	86.756	86.721			18						
	B	23+515	A23+012		86.803	86.793			18						
	C	23+515	A23+013		86.728	86.686			18						
	D	23+515	A23+018		86.547	86.505		18							
CV119		24+264	A23+756	Small	97.055	96.345		15							
Additional 09			A24+446	Additional	104.270	103.758					11.8				
Additional[7]			A24+470	Additional	104.389	104.070						7.6			
Additional			A25+060	Additional	105.052	104.740			9						
CV197[7]		25+633	A25+133	Extra-Small	105.959	105.830					7.5				
Additional	A		A25+257	Additional	106.198	105.926					7.4				US/DS ends buried
	B		A25+258		106.239	105.812					7.3				
CV118[6]		25+878	NA	Extra-Small											
Additional 09			A25+317	Additional	105.888	105.784				12.4					
Additional			A25+740	Additional	104.724	104.470				12.2					Water Crossing modified after October 2008
CV198[7]		26+444	A25+939	Extra-Small	105.597	105.525					9.3				
CV199[6]		26+658	NA	Extra-Small											
Additional	A		A26+248	Additional	107.397	107.074					10.3				

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Water Crossing No.	Culvert No.	Road Chainage (Design)[12] (m)	Road Chainage (Upgraded)[12] (m)	Water Crossing Size Classification	Culvert Invert Elevation		Length of CSP Culverts						Sea Containers	DFO regulated Water Crossing Modified	Comment from 2009 Tote Road Inspection
					Upstream (m)	Downstream (m)	Ø = 1.2 m (m)	Ø = 1.0 m (m)	Ø = 0.5 m (m)	Ø = 0.25 m (m)	Ø = 0.15 m (m)*	Ø = 0.10 m (m)*			
	B		A26+248		107.335	107.067					10.4				
CV117	A	27+073	A26+584	Small	104.178	103.921		12							
	B	27+073	A26+581		104.161	103.781			12						
CV116		27+388	A26+890	Extra-Small	102.865	102.834			12						
CV115	A	27+686	A27+193	Small	104.408	104.380			15						
	B	27+686	A27+200		104.004	103.973		15							
Additional			A28+244	Additional	108.049	107.639			12						
CV200[6]		28+938	NA	Extra-Small											
Additional 09			A28+325	Additional	107.642	107.403					11.6				
Additional			A28+573	Additional	110.846	110.412			9						
CV114		29+647	A29+151	Medium	106.904	106.247		15							
Additional			A29+223	Additional	109.075	108.752			9						
Additional			A29+447	Additional	111.172	110.546					10.4				DS end buried
Additional			A29+632	Additional	112.058	111.648			9						
CV201		30+483	A29+982	Extra-Small	112.606	112.265			9						
CV113	A	30+655	A30+157	Small	113.243	112.746			15						
	B	30+655	A30+153		113.573	112.878			15						
	C	30+655	A30+154		113.713	112.950			12						
	D	30+655	A30+155		113.765	112.911			15						
Additional 09			A30+565	Additional	110.318	110.086				12.4					
			A30+565		110.411	110.056				12.4					
Additional[7]			A30+587	Additional	110.397	109.926					10.3				
CV112	A	31+450	A30+947	Small	112.797	112.427	15								
	B	31+450	A30+951		113.029	112.580			15						
Additional			A31+410	Additional	118.084	117.551			12						
CV111		31+990	A31+489	Medium	115.851	115.017		18							
CV110		32+220	A31+726	Extra-Small	117.920	117.546			12						
Additional			A31+855	Additional	117.084	116.540			9						
CV109[6]		32+441	NA	Extra-Small											
CV108		32+513	A31+994	Extra-Small	115.167	114.964			9						Sign of bank erosion
Additional 09			A32+047	Additional	115.252	114.563					11.4				
Additional 09			A32+134	Additional	114.045	112.990					15.0				
Additional			A32+266	Additional	110.478	110.351			12						
CV202		32+825	A32+336	Small	109.116	108.708		15							
CV107		33+091	A32+601	Extra-Small	111.293	111.198			9						
CV106		33+170	A32+681	Small	112.791	112.460		15							
CV105		33+307	A32+818	Extra-Small	113.481	113.198					12.4				
CV104	A	33+794	A33+301	Medium	112.917	112.325	15								
	B	33+794	A33+307		112.713	112.152	15								
CV203	A	34+153	A33+665	Small	115.344	114.653		12							
	B		A33+781		109.860	109.599			12						
	C		A33+782		109.800	109.604			12						
Additional	A		A34+039	Additional	110.704	110.650					13.2				
	B		A34+040		110.746	110.668					13.6				
Additional			A34+277	Additional	112.677	112.192					14.0				
CV204		35+154	A34+650	Extra-Small	113.952	113.656					12.5				
Additional 09			A35+102	Additional	110.462	110.046				12.5					
Additional			A35+217	Additional	111.556	111.394			9						
Additional			A35+286	Additional	111.971	111.722					10.5				
CV103		35+885	A35+383	Extra-Small	110.650	110.301			8.2						
CV102	A	36+028	A35+540	Small	113.063	112.454		15							
	B	36+028	A35+543		113.065	112.759			15						
	C	36+028	A35+544		113.036	112.771			15						
	D	36+028	A35+545		113.026	112.734			15						
CV101		36+954	A36+469	Extra-Small	114.755	114.590			9						
CV100[6]		37+052	NA	Extra-Small											
CV099	A	37+840	A37+351	Large	119.76	119.31	18								
	B	37+840	A37+343		120.12	119.61	21								
	C	37+840	A37+346		120.14	119.77	21								
	D	37+840	A37+354		121.09	121.12			12						
	E	37+840	A37+355		121.11	121.06			12						
	F[3]	37+840	A37+360		NA	NA		18							
Additional			A37+987	Additional	138.993	138.879			12						

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					Upstream (m)	Downstream (m)	Ø = 1.2 m (m)	Ø = 1.0 m (m)	Ø = 0.5 m (m)	Ø = 0.25 m (m)	Ø = 0.15 m (m)*	Ø = 0.10 m (m)*			
CV098	A	38+525	A38+034	Medium	139.122	139.115		15							
	B[7]	38+525	NA						NA						Culvert ends buried and not functional
Additional			A38+188	Additional	140.867	140.783			9						
CV097		39+028	A38+542	Extra-Small	146.456	146.402			12						
Additional			A40+008	Additional	161.623	161.061					11.7				
CV096[6]		40+967	NA	Extra-Small											
Additional	A[7]		A40+522	Additional	146.216	145.394					11.1				
	B		A40+522		146.129	145.393					11.0				
CV095[6]		41+100	NA	Extra-Small											
Additional			A40+675	Additional	142.555	141.634					12.4				
CV094	A	41+613	A41+112	Large	140.464	139.437	18								
	B[3]	41+613	A41+112		141.756	140.986		15.2							
CV093	A	42+216	A41+711	Small	148.080	147.998		12							
	B[7]	42+216	A41+698		148.644	148.311			12						Culvert ends buried and not functional
Additional			A42+274	Additional	150.008	149.429					11.2				
CV092 & CV091	A	42+949	A42+445	Medium	147.337	147.048		12							
	B	42+949	A42+445		147.720	147.578		12							
	C	42+949	A42+445		147.728	147.631		12							
CV205[6]		43+871	NA	Extra-Small											
CV090	A	44+832	A44+351	Small	168.190	167.940		12							
	B	44+832	A44+366		168.500	168.314			12						
CV089[6]		45+016	NA	Extra-Small											
CV088		45+991	A45+506	Extra-Small	169.559	169.266		9							
CV087	A	46+223	A45+741	Medium	168.080	167.836	12								
	B	46+223	A45+737		168.085	167.832	12								
	C	46+223	A45+752		168.773	168.306			12						
CV086[3]		46+300	A45+805	Small	169.743	169.452		18							
CV085		46+422	A45+933	Small	165.472	164.747		15							
Additional 09			A46+443	Additional	150.791	150.778				12.2					
CV084		47+045	A46+563	Extra-Small	169.910	169.569			12						
CV083		47+643	A47+169	Small	175.054	174.776		12							
CV206[6]		49+031	NA	Extra-Small											
Additional			A49+014	Additional	174.820	174.817					11.2				
CV082	A	49+655	A49+167	Small	173.216	173.026	12								Culvert partially buried
	B	49+655	A49+173		173.120	173.068			12						
	C	49+655	A49+175		173.141	173.092			12						
CV081[6]		49+792	NA	Extra-Small											
CV080	A	49+929	A49+436	Extra-Small	178.179	177.841				12.3					Water Crossing installed after October 2008
	B		A49+436		178.178	177.714				12.3					
CV079[3]	A	50+600	A50+060	Large	148.954	148.864	15.2								
	B	50+600	A50+063		148.602	148.493	15.3								
	C		A50+225		165.903	165.783					14.7				
	D		A50+226		166.760	165.937					14.8				
	E		A50+112		149.067	148.332			18.4						
	F		A50+157		148.770	148.590			18.3						
	G		A50+231		147.936	148.631		18.2							
	H		A50+268		147.883	147.272		18.1							
	I		A50+270		147.814	147.441		18							
	J		A50+290		147.715	147.597		12.2							
	K		A50+306		147.880	147.506	17.8								
CV207[8]		50+762	NA	Extra-Small											
CV078	A	51+171	A50+680	Large	165.786	165.702	15								
	B[3]	51+171	A50+657		149.271	148.980		12.1							
	C[3]	51+171	A50+668		148.785	148.463		18.2							
	D[3]	51+171	A50+670		148.849	148.585		18.1							
Additional			A51+126	Additional	171.914	171.666					11.1				
CV077		52+091	A51+602	Extra-Small	165.55	165.23		15							
CV076		53+028	A52+536	Small	159.361	159.335		15							
CV075	A	53+337	A52+842	Small	160.575	160.301			12						
	B	53+337	A52+829		160.664	160.502			12						
	C	53+337	A52+830		160.698	160.542			12						
	D	53+337	A52+831		160.526	160.273			12						
	E	53+337	A52+832		160.806	160.670			12						
Additional			A52+937	Additional	159.873	159.334					11.2				

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TABLE 4.1

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COMPREHENSIVE ENVIRONMENTAL MONITORING PLAN

SUMMARY OF AS-BUILT TOTE ROAD CULVERT INSTALLATIONS

Water Crossing No.	Culvert No.	Road Chainage (Design)[12] (m)	Road Chainage (Upgraded)[12] (m)	Water Crossing Size Classification	Culvert Invert Elevation		Length of CSP Culverts						Sea Containers	DFO regulated Water Crossing Modified	Comment from 2009 Tote Road Inspection
					Upstream (m)	Downstream (m)	Ø = 1.2 m (m)	Ø = 1.0 m (m)	Ø = 0.5 m (m)	Ø = 0.25 m (m)	Ø = 0.15 m (m)*	Ø = 0.10 m (m)*			
Additional 09			A53+155	Additional	143.726	143.436			12.3						
CV074	A	53+764	A53+266	Extra-Small	143.981	143.561			15.1						Water Crossing installed after October 2008
	B		A53+266		143.959	143.634			15.3						
CV073[6]		53+842	NA	Extra-Small											
CV072	A[3]	53+878	A53+343	Large	161.71	161.28	15								
	B	53+878	A53+345		161.69	161.45	15								
	C	53+878	A53+379		161.140	160.600	15								
Additional 09			A53+435	Additional	NA	NA					11*				
CV071		54+144	A53+646	Extra-Small	165.856	165.193					10.9				
CV070[6]		54+173	NA	Extra-Small											
CV069[6]		54+669	NA	Extra-Small											
CV068[6]		54+861	NA	Extra-Small											
CV067[6]		55+197	NA	Extra-Small											
CV066[6]		55+383	NA	Extra-Small											
CV065[6]		55+401	NA	Extra-Small											
CV064		55+469	A54+956	Extra-Small	175.192	175.014					11.1				
CV063[6]		55+524	NA	Extra-Small											
CV062[6]		55+692	NA	Extra-Small											
Additional[7]			A55+222	Additional	174.395	174.017					11.1				
Additional			A55+307	Additional	172.376	172.001					13.1				
Additional			A56+280	Additional	168.452	168.127			15.4						
Additional			A56+997	Additional	164.511	164.271			12.3						
CV061[6]		57+761	NA	Extra-Small											
Additional			A57+773	Additional	158.890	158.549					11.3				
Additional			A57+774	Additional	158.887	158.526					11.1				
Additional			A57+995	Additional	159.491	159.332					11.0				
CV060	A	58+856	A58+114	Medium	158.533	158.478		15							
	B	58+856	A58+114		158.669	158.739		15							
CV059	A	59+960	A59+217	Small	160.749	160.456			12						
	B	59+960	A59+216		160.688	160.301			12						
	C	59+960	A59+217		160.615	160.393			12						
	D	59+960	A59+218		160.763	160.485			12						
CV058	A	60+523	A59+779	Small	161.044	160.434			18						
	B	60+523	A59+773		160.840	160.335	18								
CV057	A	60+712	A59+970	Small	161.854	161.682			15						
	B	60+712	A59+966		161.975	161.884			15						
	C	60+712	A59+967		162.011	161.871			15						
Additional[7]			A61+052	Additional	165.415	165.075					11.0				
CV056		61+810	A61+050	Extra-Small	148.100	147.798				12.5					Water Crossing installed after October 2008
CV055		61+904	A61+155	Extra-Small	162.493	161.945				12.3					Water Crossing installed after October 2009
CV054		62+018	A61+262	Extra-Small	162.649	161.902				18.5					Water Crossing installed after October 2010
CV053[6]		62+117	NA	Extra-Small											
CV052[6]		62+332	NA	Extra-Small											
CV051[6]		62+390	NA	Extra-Small											
CV050[6]		62+495	NA	Extra-Small											
Additional[7]			A61+929	Additional	148.329	148.194					11.0				
BG50	A[3]	62+804	A62+079	Extra-Large	142.436	141.949	18								
	B	62+804	A62+081		142.365	141.757	18								
	C[3]	62+804	A62+054										13		
CV049	A	63+302	A62+550	Large	147.410	147.044	15							x	Water Crossing modified after October 2008
	B	63+302	A62+536		147.680	147.388	15								
	C		A62+530		NA	NA			12*						Culverts installed as overflow
	D		A62+530		NA	NA			12*						
	E		A62+530		NA	NA			12*						
	F		A62+530		NA	NA			12*						
CV048	A	64+312	A63+560	Large	185.224	185.177	15								
	B	64+312	A63+554		185.533	185.365	15								
CV208[6]		64+672	NA	Extra-Small											
CV209[6]		64+847	NA	Extra-Small											
Additional[7]			A65+378	Additional	229.495	229.119					10.8				
CV047	A	66+426	A65+681	Medium	231.882	230.989	15								
	B	66+426	A65+682		232.153	231.293	15								
CV046	A	66+490	A65+747	Small	233.200	232.542			15						

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TABLE 4.1

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SUMMARY OF AS-BUILT TOTE ROAD CULVERT INSTALLATIONS

Water Crossing No.	Culvert No.	Road Chainage (Design)[12] (m)	Road Chainage (Upgraded)[12] (m)	Water Crossing Size Classification	Culvert Invert Elevation		Length of CSP Culverts						Sea Containers	DFO regulated Water Crossing Modified	Comment from 2009 Tote Road Inspection
					Upstream (m)	Downstream (m)	Ø = 1.2 m (m)	Ø = 1.0 m (m)	Ø = 0.5 m (m)	Ø = 0.25 m (m)	Ø = 0.15 m (m)*	Ø = 0.10 m (m)*			
	B	66+490	A65+738		232.968	232.170			15						
	C	66+490	A65+739		233.052	232.057		15							
	D	66+490	A65+740		233.066	232.277			15						
	E	66+490	A65+741		233.187	232.442			15						
CV045[6]		66+873	NA	Extra-Small											
CV044		67+036	A66+279	Extra-Small	265.731	265.454			12.3						Water Crossing installed after October 2008
CV043	A	67+469	A66+729	Small	290.256	289.760		15							
	B	67+469	A66+736		290.437	289.793			15						
	C	67+469	A66+737		290.541	289.849			15						
CV042[6]		69+294	NA	Extra-Small											
CV041		69+369	A68+796	Extra-Small	325.612	325.414					11.1				
Additional 09			A69+866	Additional	311.048	310.649					11.6				
Additional			A70+613	Additional	289.327	289.096					9.5				
Additional 09	A		A71+090	Additional	276.201	276.023					15.1				
	B		A71+090		276.200	276.008					15.0				
Additional			A71+271	Additional	272.037	271.758					11.1				
Additional 09			A71+624	Additional	256.776	256.369				12.5					
CV210		71+871	A71+718	Extra-Small	254.154	254.030					9.1				
Additional 09			A71+778	Additional	NA	252.020				12.5*					
Additional 09			A71+921	Additional	247.845	247.538				12.3					
Additional			A71+926	Additional	247.623	246.682					15.8				
CV040	A	72+263	A72+062	Large	235.43	235.24	15								
	B	72+263	A72+051		235.45	235.03	15								
	C[3]	72+263	A72+090		236.306	235.960	12.2								
Additional[7]			A72+083	Additional	235.69	236.12					11.0				
Additional[7]			A72+084	Additional	236.14	235.71					11.1				
CV039		72+845	A72+637	Extra-Small	244.400	244.263					11.1				
CV038	B		A72+731	Extra-Small	243.296	242.877				12.4					Water Crossing modified after October 2008
	A	72+943	A72+734		243.210	243.111					11.0				
Additional			A72+815	Additional	243.409	243.113					11.0				
Additional			A72+858	Additional	243.301	243.102					11.8				
CV037		73+105	A72+896	Extra-Small	243.789	243.457					10.9				
CV036[6]		73+351	NA	Extra-Small											
Additional 09			A73+072	Additional	-	239.559					9.0*				
Additional 09			A73+144	Additional	239.809	239.472					15.3				
Additional			A73+414	Additional	223.873	223.726					15.1				
CV211[6]		73+779	NA	Extra-Small											
CV212	C[3]		A74+242	Extra-Small	NA	NA		12*							
	A	74+410	A74+249		209.924	209.598					11.1				
	B	74+410	A74+251		209.986	209.465					11.1				
Additional			A74+468	Additional	198.526	198.026					11.1				
Additional			A74+469	Additional	198.535	197.951					11.2				
Additional			A74+481	Additional	198.876	198.493					12.9				
Additional 09			A74+482	Additional	199.327	197.832		11.9							
Additional[7]			A74+484	Additional	198.689	198.106					12.4				
Additional[7]			A74+485	Additional	198.695	198.105					12.5				
CV033		75+783	A75+637	Extra-Small	212.488	212.218					14.1				
Additional			A76+360	Additional	168.469	168.064					11.2				
Additional			A76+361	Additional	168.437	167.864					11.1				
Additional			A76+508	Additional	156.076	155.671			12						
BG33		77+025	A76+996	Extra-Small	147.771	147.399			15						
CV031[6]		77+219	NA	Extra-Small											
CV032[6]		77+343	NA	Extra-Small											
CV030	A	77+506	A77+459	Small	143.855	143.698		15							
	B	77+506	A77+435		144.052	143.825			15						
BG32	A	78+161	A78+123	Large	140.983	140.918	15								
	B	78+161	A78+130		141.134	141.023	15								
CV213[6]		78+401	NA	Extra-Small											
Additional			A78+408	Additional	144.209	143.955				15					
CV214		78+877	A78+837	Extra-Small	142.954	142.410			12						
Additional			A79+073	Additional	144.147	144.016				12					
CV215	A	79+572	A79+523	Small	142.714	142.590			12						
	B	79+572	A79+534		142.799	142.612			12						

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SUMMARY OF AS-BUILT TOTE ROAD CULVERT INSTALLATIONS

Water Crossing No.	Culvert No.	Road Chainage (Design)[12] (m)	Road Chainage (Upgraded)[12] (m)	Water Crossing Size Classification	Culvert Invert Elevation		Length of CSP Culverts						Sea Containers	DFO regulated Water Crossing Modified	Comment from 2009 Tote Road Inspection
					Upstream (m)	Downstream (m)	Ø = 1.2 m (m)	Ø = 1.0 m (m)	Ø = 0.5 m (m)	Ø = 0.25 m (m)	Ø = 0.15 m (m)*	Ø = 0.10 m (m)*			
	C	79+572	A79+535		142.725	142.587			12						
	D	79+572	A79+536		142.716	142.436			12						
CV217	A	79+915	A79+854	Extra-Large	141.549	141.270	15							x	
	B	79+915	A79+831		141.452	141.147	15								
	C	79+915	A79+833		141.554	141.218	15								
	D	79+915	NA										14		Water Crossing modified in 2009
Additional			A80+460	Additional	145.785	145.570					11.2				
CV216	A	80+646	A80+591	Large	142.710	142.656	15								
	B	80+646	A80+580		143.048	142.947	15								
	C	80+646	A80+582		143.057	142.922	15								
Additional			A80+988	Additional	146.303	146.236					10.4				
Additional[7]			A81+375	Additional	147.018	146.809				9					
Additional 09			A81+379	Additional	146.467	146.086			12.2						
Additional			A81+513	Additional	148.032	147.833				9					
BG31		82+076	A82+014	Extra-Small	151.687	150.683			12						
Additional			A82+473	Additional	164.399	163.945				12.5					Water Crossing modified after October 2008
Additional 09			A82+848	Additional	184.330	183.920			12.3						
CV023		83+147	A83+094	Small	181.980	181.779		12							
Additional 09			A83+530	Additional	NA	NA					12*				
Additional			A84+005	Additional	163.422	163.311					8.4				
Additional			A84+128	Additional	161.884	161.739					9.0				
Additional			A84+166	Additional	161.681	161.458					9.1				
BG30		84+636	A84+537	Small	155.219	154.188		15							
BG29		84+805	A84+706	Small	151.334	151.288		15							
CV022[6]		85+062	NA	Extra-Small											
CV021		85+079	A84+982	Extra-Small	152.630	152.520			12						
CV020		85+614	A85+513	Extra-Small	163.246	163.183				9					
CV019[6]		85+763	NA	Extra-Small											
CV018[6]		85+813	NA	Extra-Small											
CV017		85+891	A85+778	Extra-Small	169.872	169.735				9					
BG28	B		A86+132	Extra-Small	159.543	158.815					11.8				Water Crossing modified after October 2008
	A	86+263	A86+135		159.345	158.928				9					
CV016		86+434	A86+327	Extra-Small	160.468	159.993				9					DS end damaged
BG27	A	86+609	A86+499	Small	159.311	158.534			18						
	B	86+609	A86+493		159.304	158.444			18						
	C	86+609	A86+494		159.159	158.411			18						
CV015		86+765	A86+652	Extra-Small	164.217	163.884					11.1				
CV014		86+834	A86+719	Extra-Small	166.637	166.597					8.5				Water Crossing installed after October 2008
CV013[6]		86+934	NA	Extra-Small											
BG26[6]		86+978	NA	Extra-Small											
BG25	C	87+054	A86+944	Extra-Small	157.831	157.788				12.3					Water Crossing modified after October 2008
	A[7]	87+054	A86+945		157.714	157.705					10.0				
	B[7]	87+054	A86+945		157.621	157.075					10.1				
CV218[6]		87+617	NA	Extra-Small											
BG24	A	87+710	A87+588	Medium	157.422	157.033	15								
	B	87+710	A87+610		157.384	156.742	15								
	C	87+710	A87+612		157.591	156.999	15								
	D[3]		A87+585		156.728	157.420	18.1								
BG23[6]		87+784	NA	Extra-Small											
Additional			A87+955	Additional	160.996	160.699					9.4				
CV012[6]		88+171	NA	Extra-Small											
CV011[6]		88+232	NA	Extra-Small											
CV010		88+316	A88+189	Extra-Small	162.231	161.935				9					
Additional[7]			A88+475	Additional	160.480	160.294					14.3				
Additional[7]			A88+475	Additional	160.630	160.269					13.6				
Additional			A88+570	Additional	160.605	160.473				9					
CV009[6]		88+896	NA	Extra-Small											
BG22		89+275	A89+151	Extra-Small	170.397	169.674				9					
BG21	B		A89+304	Extra-Small	163.581	162.847					15.3				Water Crossing modified after October 2008
	A[7]	89+415	A89+307		163.162	163.108				9					
BG20		89+512	A89+389	Extra-Small	163.023	162.460				9					
CV008		89+696	A89+557	Extra-Small	161.934	161.764				9					
BG19		89+815	A89+671	Extra-Small	162.338	162.162				12					

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TABLE 4.1

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SUMMARY OF AS-BUILT TOTE ROAD CULVERT INSTALLATIONS

Water Crossing No.	Culvert No.	Road Chainage (Design)[12] (m)	Road Chainage (Upgraded)[12] (m)	Water Crossing Size Classification	Culvert Invert Elevation		Length of CSP Culverts						Sea Containers	DFO regulated Water Crossing Modified	Comment from 2009 Tote Road Inspection
					Upstream (m)	Downstream (m)	Ø = 1.2 m (m)	Ø = 1.0 m (m)	Ø = 0.5 m (m)	Ø = 0.25 m (m)	Ø = 0.15 m (m)*	Ø = 0.10 m (m)*			
Additional 09			A89+780	Additional	161.057	160.711		12.3							
Additional 09			A89+905	Additional	161.409	160.922				15.3					
BG18[5][7]		90+092	NA	Extra-Small						12					
BG17	A	90+167	A90+016	Large	158.11	157.80	15							x	Water Crossing modified after October 2008
	C		A90+017		159.756	159.525			12.3						Culvert installed as overflow
	B	90+167	A90+019		158.00	157.73	15								
BG16[7]		90+218	A90+068	Extra-Small	NA	NA			NA						Culvert buried and not functional
BG15		90+331	A90+185	Extra-Small	161.533	160.772				12					
BG14	A	90+389	A90+246	Extra-Small	161.34	160.85				12					Water Crossing modified after October 2008
	B		A90+247		161.252	161.112				15.3					
Additional			A90+338	Additional	162.939	162.458				12					
CV007		90+670	A90+510	Extra-Small	161.368	161.260				12					
BG13		90+995	A90+846	Extra-Small	161.993	161.598				12					
Additional 09			A90+936	Additional	162.939	NA				10.2*					
CV006[6]		91+092	NA	Extra-Small											
BG12[6]		91+394	NA	Extra-Small											
CV005[6]		91+513	NA	Extra-Small											
BG11		91+601	A91+430	Extra-Small	172.201	171.593				12					
BG10[6]		91+705	NA	Extra-Small											
BG09[6]		91+890	NA	Extra-Small											
CV219		92+093	A91+949	Extra-Small	162.986	162.832					9.9				
CV220[6]		92+207	NA	Extra-Small											
CV221[6]		92+288	NA	Extra-Small											
BG08		92+514	A92+335	Extra-Small	160.767	160.308				18.3					Water Crossing installed after October 2008
CV004	A	92+660	A92+477	Extra-Small	162.725	162.425					9.9				Water Crossing modified after October 2008
	B		A92+486		161.265	160.968				18.3					
CV003[6]		92+908	NA	Extra-Small											
BG07		93+123	A92+955	Extra-Small	162.453	161.705			12.3						Water Crossing modified after October 2008
CV002		93+199	A93+022	Extra-Small	165.485	165.298					9.6				
Additional 09			A93+439	Additional	163.447	163.217					11.6				
Additional[7]			A93+492	Additional	164.790	164.714					11.2				
Additional			A93+782	Additional	167.495	164.429					9.7				
BG04	A	94+148	A93+992	Medium	163.785	163.648	15								
	B	94+148	A93+993		163.570	163.463	15								
CV001[3]	A	94+728	A94+347	Small	165.199	164.878			15.2						
	B	94+728	A94+349		165.010	164.771		15.3							
	C	94+728	A94+350		165.262	164.887			15.3						
CV222		95+216	A95+073	Extra-Small	166.006	165.736					14.7				Water Crossing installed after October 2008
BG03		95+735	A95+585	Extra-Small	164.307	163.840				18					
BG02[6]		96+041	NA	Extra-Small											
Additional			A96+817	Additional	153.743	153.309					13.9				
CV223	A	97+155	A97+007	Extra-Large									16		
	B	97+155	A96+981		151.827	151.314	15								
	C	97+155	A96+983		151.792	151.337	15								
	D	97+155	A96+985		151.859	151.313	15								
	E	97+155	A97+072		152.629	152.615	15								
	F	97+155	A97+074		152.784	152.669	15								
Additional			A97+298	Additional	157.989	157.819					8.8				
CV224	A	97+758	A97+576	Medium	153.289	153.131		15							
	B	97+758	A98+568		153.466	153.317		15							
CV225	A	98+989	A98+845	Large	NA	NA		15							
	B	98+989	A98+804		151.682	151.505	18								
BG01[3]	A	99+672	A99+479	Medium	158.277	157.905	18.2								
	B	99+672	A99+481		157.426	157.007	18.1								
	C	99+672	A99+483		157.855	157.625	18.2								
Additional 09			A100+126	Additional	172.306	172.114			12.2						
Additional 09			A100+395	Additional	172.646	172.548			12.3						
Additional 09			A100+652	Additional	172.791	172.785			18.3						
CV184[5]		101+557	NA	Extra-Small											
CV185[5]		101+764	NA	Extra-Small											
CV186[3]	A	102+812	A102+584	Small	177.712	177.037			15.4						
	B	102+812	A102+585		177.447	176.477		15.1							
	C	102+812	A102+586	Small	177.764	176.995			15.2						

Baffinland Iron Mines Corporation

TABLE 4.1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

COMPREHENSIVE ENVIRONMENTAL MONITORING PLAN

SUMMARY OF AS-BUILT TOTE ROAD CULVERT INSTALLATIONS

Water Crossing No.	Culvert No.	Road Chainage (Design)[12] (m)	Road Chainage (Upgraded)[12] (m)	Water Crossing Size Classification	Culvert Invert Elevation		Length of CSP Culverts						Sea Containers	DFO regulated Water Crossing Modified	Comment from 2009 Tote Road Inspection
					Upstream (m)	Downstream (m)	Ø = 1.2 m (m)	Ø = 1.0 m (m)	Ø = 0.5 m (m)	Ø = 0.25 m (m)	Ø = 0.15 m (m)*	Ø = 0.10 m (m)*			
CV187[3]	A	103+078	A102+857	Small	180.25	180.002			21.1						
	B	103+078	A102+858		180.063	179.829		20.5							
CV188[9]		104+701	A104+485	Extra-Small	NA	NA									
CV189[9]		105+342	NA	Extra-Small											
CV190[9]		105+454	A105+230	Extra-Small	NA	NA									
CV191[9]		106+047	A105+845	Extra-Small	NA	NA									
CV192[9]		106+189	NA	Extra-Small											
CV193[9]		106+216	NA	Extra-Small											
CV194[9]		106+430	NA	Extra-Small											
CVD1-1[10]		NA	A105+575	NA				24							
CVD1-2[6]		NA	NA	NA											
CVD1-3[10]		NA	A106+173	NA				24							
CVD1-4[10]		NA	A106+399	NA				18							
CVD1-5[10]		NA	A106+515	NA				18							
CVD1-5B[10]		NA	NA	NA				18							
CVD1-6[10]		NA	A106+731	NA				18							
CVD1-7[10]		NA	A107+149	NA				18							
CVD1-8[10]		NA	A107+430	NA				18							
CVD1-9[10]		NA	A107+689	NA				18							
CVD1-10[10]		NA	A108+004	NA				18							
CVD1-11[10]		NA	A108+334	NA				18							
CVD1-12[10]		NA	A108+618	NA				18							
CVD1-13[10]		NA	A108+886	NA				18							
CVD1-14[10]		NA	A109+677	NA				18							
CVSSR-1[10]		NA	A105+916	NA					NA						
CVSSR-2[10]		NA	A106+389	NA					NA						

C:\Users\Trevor\Desktop\CEMP Tables\[07. Table 4.1- Summary of Culvert Design Modifications - 13 03 25.xls]Table 4.1

Notes:
1. Culvert length surveyed by genial. Lengths followed by "*" were estimated by hand measurement.
2. Existing culvert lengthened by adding extension.
3. Culvert with survey information updated in 2009 by Genivar.
4. Existing culvert crossing unchanged.
5. Culvert location not surveyed by Genivar.
6. Culvert not installed.
7. Culvert not observed during 2009 tote road inspection.
8. Crossing cv-207 and cv-079 are located in the same water body (a braided stream).
9. Crossings superseded by cvd1 culvert series installed as and where required.
10. Culverts not inspected during 2009 tote road inspection because of inaccessibility.
11. Information for extra-small crossings obtained from genial survey and/or Knight Piésold construction records.
12. The road chainage (design) is the chainage that was included with the design report based on the original tote road alignment. The road chainage (upgraded) reflects the chainage of the upgraded tote road.
13. "NA" Indicates no data available.
14. "Additional" refers to extra culverts installed in 2007 to October 2008 beyond those identified in the initial design. "additional 09" refers to extra culverts installed after October 2008 beyond those identified in the initial design, and documented during the 2009 Tote Road inspection.
15. "DFO regulated water crossing modified" refers to do regulated water crossings that were modified after October 2008, as documented during the 2009 Tote Road inspection.
16. "Comment from 2009 tote road inspection" refers to observations made during 2009 Tote Road inspection.

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Baffinland Iron Mines Corporation

TABLE 4.2

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

COMPREHENSIVE ENVIRONMENTAL MONITORING PLAN

WATER QUALITY AND QUANTITY MONITORING LOCATIONS

Monitoring Location ID	Description	UTM Coordinates (NAD83) Easting (m)	Northing (m)	Parameters	Maximum Amount/Average Concentration	Maximum Grab Concentration	Sampling Frequency	Monitoring and Reporting Requirement	Reporting Frequency
MRY-1	Water Supply for the Mary River Mine Site at Camp Lake	557,682	7,914,693	Daily Volume	< 60 m^3/d (combined total for all camp usage)	N/A	Daily	Water License Part B, Item 6 Part I, Items 9, 19 and 20	Daily Volume Requirement for monthly reporting
MRY-2	Summer Water Supply for the Milne Port at Phillips Creek	514,503	7,964,579	Daily Volume	< 60 m^3/d (combined total for all camp usage)	N/A	Daily	Water License Part B, Item 6 Part I, Items 9, 19 and 20	Daily Volume Requirement for monthly reporting
MRY-3	Winter water supply for Milne Port at Km 32 Lake[1]	521,714	7,951,862	Daily Volume	< 60 m^3/d (combined total for all camp usage)	N/A	Daily	Water License Part B, Item 6 Part I, Items 9, 19 and 20	Daily Volume Requirement for monthly reporting
Unnamed	Water Supply for the Rail Camp at Unnamed Lake Adjacent to Camp	595,547	7,876,328	Daily Volume	< 60 m^3/d (combined total for all camp usage)	N/A	Daily	Water License Part B, Item 6 Part I, Items 9, 19 and 20	Daily Volume Requirement for monthly reporting
Unnamed	Water Supply for the Steensby Port at 3km Lake, 10 km Lake or Ocean	596,585	7,800,231	Daily Volume	< 60 m^3/d (combined total for all camp usage)	N/A	Daily	Water License Part B, Item 6 Part I, Items 9, 19 and 20	Daily Volume Requirement for monthly reporting
Various	Water Supply for Exploration and Geotechnical Drilling at Various Named and Unnamed Sources Throughout the Project Area	Various locations upstream, downstream, and near-field.		Daily Volume	< 325 m^3/d (combined total for all drilling usage)	N/A	Daily	Water License Part B, Item 6 Part I, Items 9, 19 and 20	Daily Volume Requirement for monthly reporting
MRY-5-INF	Sewage Influent - WWTF at Milne Port	Primary Chamber		BOD5 Total suspended solids (TSS) Faecal coliforms pH Total Kjeldahl Nitrogen (TKN) Ammonia-nitrogen Total phosphorus	N/A	N/A	Every 4 weeks during discharge	Baffinland Requirement	For information only; not reported
MILNE-RC1	Receiving waters of Milne Port, adjacent drainage ditch	TBD	TBD	BOD_5 Total suspended solids (TSS) Faecal coliforms pH Total Kjeldahl Nitrogen (TKN) Ammonia-nitrogen Total phosphorus	N/A	N/A	Every 4 weeks during discharge	Baffinland Requirement	For information only; not reported
MRY-4-INF	Sewage Influent - WWTF at Mary River Mine Site	Primary Chamber		BOD_5 Total suspended solids (TSS) Faecal coliforms pH Total Kjeldahl Nitrogen (TKN) Ammonia-nitrogen Total phosphorus	N/A	N/A	Every 4 weeks during discharge	Baffinland Requirement	For information only; not reported
Shear-RC1	Sheardown Lake in the vicinity of the sewage outfall	TBD	TBD	BOD_5 Total suspended solids (TSS) Faecal coliforms pH Total Kjeldahl Nitrogen (TKN) Ammonia-nitrogen Total phosphorus Dissolved oxygen	N/A	N/A	Every 4 weeks during discharge	Baffinland Requirement	For information only; not reported
MRY-4	Mary River Mine Site sewage discharge at the WWTF	557,920	7,914,372	BOD_5 TSS pH Faecel Coliforms Oil and Grease Volume	30 mg/L 35 mg/L 6.0 to 9.5 1,000 CFU/100 mL No visible sheen	N/A	Every 4 weeks during discharge; daily for volumes	Water License Part B, Item 6 Part D, Item 13 Part I, Items 4, 19 and 20	Daily Volume Requirement for monthly reporting
				Total Kjeldahl Nitrogen (TKN) Ammonia-nitrogen Total phosphorus		N/A	Every 4 weeks during discharge	Baffinland Requirement	For information only; not reported
				Acute lethality to Rainbow Trout and Daphnia magna (Biological Test Methods EPS/1/RM/13 and EPS/1/RM/14)	Non-toxic	N/A	Once annually during open water	Water License Part B, Item 6 Part D, Item 15 Part I, Items 5, 19 and 20	Monthly report following testing; annual report
MRY-4a	Mary River Mine Site sewage discharge from the PWSPs	558,706	7,913,930	BOD_5 TSS pH Faecel Coliforms Oil and Grease Volume	30 mg/L 35 mg/L 6.0 to 9.5 1,000 CFU/100 mL No visible sheen	N/A	Once prior to discharge and every 4 weeks thereafter; daily for volumes	Water License Part B, Item 6 Part D, Item 13 Part I, Items 4, 19 and 20	Daily Volume Requirement for monthly reporting
				Total Kjeldahl Nitrogen (TKN) Ammonia-nitrogen Total phosphorus		N/A	Every 4 weeks during discharge	Baffinland Requirement	For information only; not reported
				Acute lethality to Rainbow Trout and Daphnia magna (Biological Test Methods EPS/1/RM/13 & EPS/1/RM/14)	Non-toxic	N/A	Once annually during open water	Water License Part B, Item 6 Part D, Item 15 Part I, Items 5, 19 and 20	Monthly report following testing; annual report

Baffinland Iron Mines Corporation

TABLE 4.2

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

COMPREHENSIVE ENVIRONMENTAL MONITORING PLAN

WATER QUALITY AND QUANTITY MONITORING LOCATIONS

Monitoring Location ID	Description	UTM Coordinates (NAD83) Easting (m)	Northing (m)	Parameters	Maximum Amount/Average Concentration	Maximum Grab Concentration	Sampling Frequency	Monitoring and Reporting Requirement	Reporting Frequency
MRY-5	Milne Port sewage discharge at the WWTF	503,462	7,975,764	BOD_5 TSS pH Faecel Coliforms Oil and Grease Volume	100 mg/L 120 mg/L 6.0 to 9.5 10,000 CFU/100 mL No visible sheen	N/A	Every 4 weeks during discharge; daily for volumes	Water License Part B, Item 6 Part D, Item 14 Part I, Items 4, 19 and 20	Daily Volume Requirement for monthly reporting
				Total Kjeldahl Nitrogen (TKN) Ammonia-nitrogen Total phosphorus		N/A	Every 4 weeks during discharge	Baffinland Requirement	For information only; not reported
				Acute lethality to Rainbow Trout and Daphnia magna (Biological Test Methods EPS/1/RM/13 and EPS/1/RM/14)	Non-toxic	N/A	Once annually during open water	Water License Part B, Item 6 Part D, Item 15 Part I, Items 5, 19 and 20	Monthly report following testing; annual report
MRY-5a	Milne Port sewage discharge from the PWSP	503,344	7,976,118	BOD_5 TSS pH Faecel Coliforms Oil and Grease Volume	100 mg/L 120 mg/L 6.0 to 9.5 10,000 CFU/100 mL No visible sheen	N/A	Once prior to discharge and every 4 weeks thereafter; daily for volumes	Water License Part B, Item 6 Part D, Item 14 Part I, Items 4, 19 and 20	Daily Volume Requirement for monthly reporting
				Total Kjeldahl Nitrogen (TKN) Ammonia-nitrogen Total phosphorus		N/A	Every 4 weeks during discharge	Baffinland Requirement	For information only; not reported
				Acute lethality to Rainbow Trout and Daphnia magna (Biological Test Methods EPS/1/RM/13 and EPS/1/RM/14)	Non-toxic	N/A	Once annually during open water	Water License Part B, Item 6 Part D, Item 15 Part I, Items 5, 19 and 20	Monthly report following testing; annual report
MRY-6	Water collected within the Bulk Fuel Storage Facility at Mary River Mine Site prior to release	558,186	7,914,780	Benzene Toluene Ethylbenzene Lead Oil and Grease	370 µg/L 2 µg/L 90 µg/L 1 µg/L 15,000 µg/L and no visible sheen	N/A	Monthly during removal of water	Water License Part B, Item 6 Part D, Item 20 Part I, Items 6, 19 and 20	Monthly report following testing; annual report
MRY-7	Water collected within the Bulk Fuel Storage Facility at Milne Port prior to release	503,309	7,976,097	Benzene Toluene Ethylbenzene Lead Oil and Grease	370 µg/L 2 µg/L 90 µg/L 1 µg/L 15,000 µg/L and no visible sheen	N/A	Monthly during removal of water	Water License Part B, Item 6 Part D, Item 20 Part I, Items 6, 19 and 20	Monthly report following testing; annual report
MRY-7a	Water collected within the Steel Tank Storage Facility at Milne Port prior to release	503,630	7,976,149	Benzene Toluene Ethylbenzene Lead Oil and Grease	370 µg/L 2 µg/L 90 µg/L 1 µg/L 15,000 µg/L and no visible sheen	N/A	Monthly during removal of water	Water License Part B, Item 6 Part D, Item 20 Part I, Items 6, 19 and 20	Monthly report following testing; annual report
MRY-8	Minewater and surface drainage either pumped or released from the Hematite Open Pit	NO LONGER REQUIRED[2]							
MRY-9	Minewater and surface drainage either pumped or released from the Magnetite Open Pit[2]	563,239	7,914,596	Total Arsenic Total Copper Total Lead Total Nickel Total Zinc TSS Oil and Grease pH (of waste discharged)	As 0.5 mg/L Cu 0.30 mg/L Pb 0.20 mg/L Ni 0.50 mg/L Zn 0.50 mg/L TSS 15 mg/L O&G No visible sheen pH Between 6.0 and 9.5	As 1.00 mg/L Cu 0.60 mg/L Pb 0.40 mg/L Ni 1.00 mg/L Zn 1.00 mg/L TSS 50.0 mg/L	Monthly during periods of flow	Water License Part B, Item 6 Part D, Item 12 Part I, Items 6, 19 and 20	Monthly report following testing; annual report
MRY-10	Surface discharge from the weathered ore stockpile	563,349	7,915,262	Total Arsenic Total Copper Total Lead Total Nickel Total Zinc TSS Oil and Grease pH (of waste discharged)	As 0.5 mg/L Cu 0.30 mg/L Pb 0.20 mg/L Ni 0.50 mg/L Zn 0.50 mg/L TSS 15 mg/L O&G No visible sheen pH Between 6.0 and 9.5	As 1.00 mg/L Cu 0.60 mg/L Pb 0.40 mg/L Ni 1.00 mg/L Zn 1.00 mg/L TSS 50.0 mg/L	Seepage / surface run off - monthly during periods of flow	Water License Part B, Item 6 Part D, Item 12 Part I, Items 6, 19 and 20	Monthly report following testing; annual report
MRY-11	Surface discharge from the lump ore and fine ore stockpiles at the processing area (Mine Site)	560,987	7,913,364	Total Arsenic Total Copper Total Lead Total Nickel Total Zinc TSS Oil and Grease pH (of waste discharged)	As 0.5 mg/L Cu 0.30 mg/L Pb 0.20 mg/L Ni 0.50 mg/L Zn 0.50 mg/L TSS 15 mg/L O&G No visible sheen pH Between 6.0 and 9.5	As 1.00 mg/L Cu 0.60 mg/L Pb 0.40 mg/L Ni 1.00 mg/L Zn 1.00 mg/L TSS 50.0 mg/L	Seepage / surface run off - monthly during periods of flow	Water License Part B, Item 6 Part D, Item 12 Part I, Items 6, 19 and 20	Monthly report following testing; annual report
MRY-12	Surface discharge from the lump ore and fine ore stockpiles at Milne Port	12a - 503,356	7,976,452	Total Arsenic Total Copper Total Lead Total Nickel Total Zinc TSS Oil and Grease pH (of waste discharged)	As 0.5 mg/L Cu 0.30 mg/L Pb 0.20 mg/L Ni 0.50 mg/L Zn 0.50 mg/L TSS 15 mg/L O&G No visible sheen pH Between 6.0 and 9.5	As 1.00 mg/L Cu 0.60 mg/L Pb 0.40 mg/L Ni 1.00 mg/L Zn 1.00 mg/L TSS 50.0 mg/L	Seepage / surface run off - monthly during periods of flow	Water License Part B, Item 6 Part D, Item 12 Part I, Items 6, 19 and 20	Monthly report following testing; annual report
		12b - 503,522	7,976,399						
MRY-13	Surface discharge downstream of non-hazardous landfill at Mine Site	560,756	7,912,496	pH Alkalinity Conductivity Total Dissolved Solids (TDS) Total Suspended Solids (TSS) Oil and Grease Phenols Total Organic Carbon (TOC) Dissolved Organic Carbon (DOC) Total Trace metals as determined by a standard ICP Scan (to include at a minimum, the following elements: Al, Sb, Ba, Cd, Cr, Co, Cu, Fe, Pb, Li, Mn, Mo, Ni, Se, Sn, Sr, Tl, Ti, U, V, Zn); and Trace Arsenic and Mercury			Seepage / surface run off - monthly during periods of flow	Water License Part B, Item 6 Part D, Item 12 Part I, Items 7, 19 and 20	Monthly report following testing; annual report
MS-C-A **MS-C-B** **MS-C-C** **MS-C-D** **MS-C-E** **MS-C-F**	Surface discharge downstream of construction areas at Mine Site	561,027 560,961 560,326 561,162 561,750 562,314	7,913,277 7,913,436 7,913,469 7,912,031 7,911,791 7,911,805	TSS/Turbidity Oil and Grease	TSS - 50 mg/L Avg. and Max Grab 100 mg No Visible Sheen	N/A	Seepage / surface run off - monthly during periods of flow	Future Requirement to Support Site Preparation Work Prior to 2013 Sea Lift (2013 Work Plan submitted to QIA and Application for new Type B Water Licence submitted in March 2013)	Annual Water Licence Report.
MP-C-A **MP-C-B*** **MP-C-C** **MP-C-D** **MP-C-E** **MP-C-F** **MP-C-G** **MP-C-H**	Surface discharge downstream of construction areas at Milne Port	503,201 503,031 503,436 503,660 503,736 503,881 503,006 504,113	7,976,478 7,975,629 7,975,427 7,976,377 7,976,346 7,976,365 7,976,484 7,976,509	TSS/Turbidity Oil and Grease	TSS - 50 mg/L Avg. and Max Grab 100 mg No Visible Sheen	N/A	Seepage / surface run off - monthly during periods of flow	Future Requirement to Support Site Preparation Work Prior to 2013 Sea Lift (2013 Work Plan submitted to QIA and Application for new Type B Water Licence submitted in March 2013)	Annual Water Licence Report.
Exploration Drill Monitoring		Various locations upstream, downstream, and near-field.		Major ions, total metals, general parameters, flow.	N/A	N/A		Annual NIRB Report	Once per year.

TABLE 4.2

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

COMPREHENSIVE ENVIRONMENTAL MONITORING PLAN

WATER QUALITY AND QUANTITY MONITORING LOCATIONS

Monitoring Location ID	Description	UTM Coordinates (NAD83)		Parameters	Maximum Amount/Average Concentration	Maximum Grab Concentration	Sampling Frequency	Monitoring and Reporting Requirement	Reporting Frequency
		Easting (m)	Northing (m)						

Notes:
1. Shaded monitoring location ID cells denote Water Licence Monitoring Locations.
2. Shaded parameters cells denote required parameters to be reported under the Water Licence.
3. This location is referenced as Km 99 Lake in the Water Licence. This is in error.
4. There is actually only one bulk sample pit now.
5. More frequent sampling of MRY-4, 4a, 5, 5a, Milne-INFL, and MRY-INFL may be undertaken for the purpose of internal process management and early detection of potential upset conditions.
6. MRY-11 and MRY-13 are referenced in reverse in the Water Licence.
7. MP-C-B - will also test for nitrates, nitrites, aAmmonia-nitrogen and total phosphorus as it is potential runnoff location from Quarry Q1)

The designations for the camps have been modified from previous years so as to be in alignment with the terminologies used in the documentation for the approved Project. The following changes have been made from previous annual reports:
* Milne Inlet Camp site is now termed Milne Port;
* Mary River Camp site is now termed Mine Site; and,
* Steensby Inlet Campsite is now termed Steensby Port.

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