DWG. NO. H349000-4000-00-015-0003

CAMP INFRASTRUCTURE
- ACCOMMODATION COMPLEX
- EMERGENCY RESPONSE
- MEDICAL CENTRE
- SEWAGE TREATMENT PLANT & OFF-SPEC POND
- POTABLE WATER

CONSTRUCTION LAYDOWN AREA

SHEARDOWN NW LAKE

PROPOSED OPEN PIT OUTLINE

DEPOSIT NO. 1
MINING LEASE 2484

EXISTING ROAD

NEW HAUL ROAD

ORE CRUSHING AND LOADING

SITE SERVICE FACILITIES, INCLUDING:
POWER PLANT
MINE TANK FARM & DYKE
MAINTENANCE BUILDING
WAREHOUSE
TRUCK WASH FACILITY

EXISTING EXPLOSIVES MAGAZINES

UTILITY BERM

RAIL PHASE STOCKPILE AND INFRASTRUCTURE

EXISTING LAND FILL ROAD

EXISTING LANDFILL

EXPLOSIVES PADS
EXPLOSIVES MAGAZINE
EMULSION PLANT

TREATED EFFLUENT POND

0 50 100 150 200 250
SCALE IN METRES

MILNE PORT

MINE SITE

KEYPLAN

NOTES:

1. TOPOGRAPHY PROVIDED BY TERRAPOINT CANADA INC.
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
3. CONTOURS ARE IN METRES. CONTOUR INTERVAL IS 1.5 METRES.
4. AS-CONSTRUCTED INFORMATION PROVIDED BY GENIVAR IN 2008.
5. FOR RAIL PHASE OVERALL GA SEE DWG. H340960-4000-00-014-0001

LEGEND:

- WATER
- PROPOSED QUARRY
- LAYDOWN AREA (CONSTRUCTION PHASE)
- ADVANCED EXPLORATION UNDER EXISTING TYPE 'B' WATER LICENSE
- EARLY WORKS (MAY TO JULY 2013) UNDER NEW TYPE 'B' WATER LICENSE (IN PROCESS)
- CONSTRUCTION PHASE UNDER FUTURE TYPE 'A' WATER LICENSE (JULY TO DECEMBER 2013)
- EXISTING BORROW AREA (IOL COMMERCIAL LEASE)
- EXISTING ROCK QUARRY (IOL COMMERCIAL LEASE)
- RIVER/STREAM/DRAINAGE
- PROJECT DEVELOPMENT AREA
- BAFFINLAND'S COMMERCIAL LEASE ON INUIT OWNED LAND
- ROAD

Baffinland Iron Mines Corporation

MARY RIVER PROJECT

MINE SITE

ENHANCED LAYOUT

SCALE	DWG. NO.	REV.
1:5000 OR AS NOTED	H349000-4000-00-015-0003	A

Appendix B

QIA A&R Policy Concordance Table for 2013 Marginal Cost Estimate

Table 1: QIA A&R Policy Concordance Table

QIA Required Assumption	Compliance with 2013 Work Plan Marginal Closure Cost - RECLAIM Model
Use of RECLAIM	Recognized non-compliance
Incorporation of QIA's CLARC A&R objectives and criteria	The 2013 Work Plan Marginal Closure Cost estimate has been developed with adequate level of detail as to guide QIA through the review of the A&R plan. Supporting documentation will be provided as per request and as soon it becomes available for release.
A scenario where QIA assumes authority over project components on IOL	For the 2013 Work Plan Marginal Closure Cost, it is assumed all activity is on IOL. Land and water liability allocation has been determined.
Security costs should equal 100% of the cost for an independent third-party contractor to reclaim the site	The Marginal Closure for the 2013 Work Plan is based on activities scheduled to occur in 2013 that were not captured in the 2013 A&R Plan (AMEC, January 2013) and therefore the Remaining Type 'B' Cost or Type 'A' Carry Over Cost. The closure and reclamation costs were estimated using the RECLAIM excel model provided by Aboriginal Affairs and Northern Development Canada (AANDC). Unit costs used in the estimate are inclusive of fuel, labour and equipment required by a 3rd party to reclaim a functional unit of that component. An additional cost was applied for contingency and project management to ensure conservatism. It is in Hatch's opinion the allocated cost is sufficient to reach reclamation objectives.
Security costs are based on an independent third-party contractor and equipment, including mobilization and demobilization	The closure and reclamation costs were estimated using the RECLAIM Excel model provided by Aboriginal Affairs and Northern Development Canada (AANDC). Unit costs used in the estimate are inclusive of fuel, labour and equipment required by a 3rd party to reclaim a functional unit of that component. It has been assumed that the 3rd party contractors will utilize the equipment on site, brought up for the 2013 Work Plan for reclamation activities (recognized non-compliance). This equipment will then be de-mobilized off site at the end of site closure and brought back to the Canadian Consolidation Hub. This de-mobilization cost has been captured in the model.
An independent third-party contractor may be required to enter into a commercial lease with QIA and agree to standard terms and conditions (i.e., lease administration costs, tipping fees and water compensation)	Understood.
Transportation rates (including air travel, marine shipping and overland haul) must be supported by site-specific invoicing and or cost quotations	Supporting documentation used to develop the 2013 Work Plan Marginal Closure Cost estimate was based on the level information available at the time of development. Supporting documentation will be provided upon request and as soon it becomes available for release.

QIA Required Assumption	Compliance with 2013 Work Plan Marginal Closure Cost - RECLAIM Model
Camp operation costs must be supported by site-specific invoicing or cost quotations	Supporting documentation used to develop the 2013 Work Plan Marginal Closure Cost estimate was based on the level information available at the time of development. Supporting documentation will be provided upon request and as soon it become available to release.
Assumed use of on-site fuel for reclamation purposes is not acceptable	The 2013 Work Plan Marginal Closure Cost estimate considers the worst case scenario to include the cost allocation for fuel removal after fuel tanks are full after the 2013 sealift, i.e., highest quantity of fuel on site after commencement of 2013 Work Plan. Based on this scenario, 31.2 ML will be on site after commencement of 2013 Work Plan. However, AMEC model accounts for demobilization of 3.46ML, and therefore the 2013 Work Plan Marginal Closure Cost estimate includes a cost allocation for removal of 27.7 ML of Type 1 fuel from site, at a $0.10/L backhaul rate (same as AMEC Model).
Salvage values for on-site equipment and materials are not accepted as a security credit	No salvage value was considered in the 2013 Work Plan Marginal Closure Cost estimate.
Review and approval of all plans associated with infrastructure development, including stamped and signed as-constructed documentation (e.g., drawings, reports, etc.) by a qualified Engineer registered with Association of Professional Engineers, Geologists and Geophysicists of the NWT and Nunavut (NAPEGG)	Supporting documentation used to develop the 2013 Work Plan Marginal Closure Cost estimate was based on the level of information available at the time of development. Supporting documentation will be provided upon request and as soon it become available to release.
Security should be posted in a form that is readily available to QIA, retains its value throughout the land use activity, and is beyond the control of the land user or its creditors in the event of insolvency.	To be determined.
Progressive reclamation credits may be applied against a security amount once proven through QIA assessment and authorization	Understood. No progressive reclamation credits were applied in the development of the 2013 Work Plan Marginal Closure Cost estimate.

QIA Required Assumption	Compliance with 2013 Work Plan Marginal Closure Cost - RECLAIM Model
IOL aggregates are used in completing a reclamation program for any project element requiring aggregates	N/A
Potential transboundary impacts to IOL due to activities not on IOL will be considered	Understood.

Appendix C

2013 Marginal Closure Cost – Mining RECLAIM Closure Cost Model Screenshots

C.1 Summary of Closure 2013 Work Plan Marginal Cost Estimate

Area	Component	Activity	2013 Work Plan Cost (Total)	% Allocation for 2013	Cost Associated 2013	Water Liability	Land Liability
Mary River							
Open Pit	Inspection of Quarries	Carry out	$0	100%	$0		$0
	Berm at crest	Install					$0
	Signs	Place					$0
	Demolition scrap	Dump					$0
		Place overburden	$338,748	100%	$338,748		$338,748
	Spillway	Excavate					$0
	Quarries	Site contouring	$0	100%	$0		$0
		Place overburden	$0	100%	$0		$0
	Access roads	Scarify					
Rock Pile	Inspection	Carry out					
	Flat surface	Scarify					
Buildings	Fuel storage & foundations	Decommissioning	$503,681	50%	$251,840		$251,840
	Camp & foundations	Decommissioning	$940,474	50%	$470,237		$470,237
	Fuel and camp	Site contouring	$130,013	50%	$65,006		$65,006
	Other contaminated buildings	Remove	$6,000	50%	$3,000		$3,000
	Other non-contaminated buildings	Remove	$193,368	50%	$96,684		$96,684
	Break Basement Slabs	Remove	$129,587	50%	$64,794		$64,794
	All buildings	Site contouring	$46,861	50%	$23,430		$23,430
Road	Road	Remove Culverts	$0	50%	$0		$0
		Fill with cobble & grade	$41,550	50%	$20,775		$20,775
Landfill	Soil	Place cover	$0	100%	$0		$0
Specialize Items	Construction Materials	Sealift	$0	50%	$0		$0
Manpower							
Milne Inlet							
Stockpile	Cover Dump	Overburden cover	$0	100%	$0		$0
Buildings	Fuel storage & foundations	Decommissioning	$3,803,298	50%	$1,901,649		$1,901,649
	Camp & foundations	Decommissioning	$778,661	50%	$389,330		$389,330
	Fuel and camp	Site contouring	$252,008	50%	$126,004		$126,004
	Other contaminated buildings	Remove	$80,400	50%	$40,200		$40,200
	Other non-contaminated buildings	Remove	$187,039	50%	$93,519		$93,519
	Break Basement Slabs	Remove	$98,420	50%	$49,210		$49,210
	All buildings	Site contouring	$35,590	50%	$17,795		$17,795
Road	Road	Fill with cobble & grade	$8,090	50%	$4,045		$4,045
Landfill	Soil	Place cover			$0		$0
Specialize Items	Construction Materials	Credit for bladder farm	$0	100%	$0		$0
Manpower					$0		$0
50 km Road Camp							
Buildings	Fuel storage & foundations	Decommissioning					
	Camp & foundations	Decommissioning	$127,474	50%	$63,737		$63,737
	Fuel and camp	Site contouring	$0				
	Other contaminated buildings	Remove	$0	50%	$0		$0
	Other non-contaminated buildings	Remove	$0				$0
	Break Basement Slabs	Remove	$0	50%	$0		$0
	All buildings	Site contouring					
Road	Road	Fill with cobble & grade					
Landfill	Soil	Place cover					
Specialize Items	Construction Materials	Sealift					
Manpower							

Figure 1: Summary of 2013 Work Plan Marginal Closure Cost Estimate, 2013 Breakdown

Area	Component	Activity	2013 Work Plan Cost (Total)	% Allocation for 2013	Cost Associated 2013	Water Liability	Land Liability
Chemicals							
Haz. Mat.	Hazardous material audits	Phase 1	$0	100%	$0		$0
		Phase 2	$0	100%	$0		$0
Wastes	Waste oils	Remove	$51,282	100%	$51,282		$51,282
	Fuel - Type 1, e.g. diesel dregs	Remove	$2,771,220	100%	$2,771,220		$2,771,220
	Fuel - Type 1, e.g. gasoline dregs	Remove					
	waste batteries	Remove	$4,029	100%	$4,029		$4,029
	assay & environmental lab reagents	Remove	$23,136	100%	$23,136		$23,136
	machine shop, paints, solvents etc	Remove	$10,627	100%	$10,627		$10,627
Soils	Contaminated soils investigation	Technical	$0	100%	$0		$0
		Drilling & sampling	$0	100%	$0		$0
	HC contaminated soils	Remove	$0	100%	$0		$0
Explosives	Explosives	Reclaim Explosives	$2,185,920	100%	$2,185,920		$2,185,920
	Explosives	Salvage (Explosives)	$0	100%	$0		$0
Water							
Water & pipelines - Water Liability	Pipelines	Remove	$44,280	50%	$22,140	$22,140	
	Water Supply Embankment	Removal	$21,035	100%	$21,035	$21,035	
On-going water							
On-Going Water - Water Liability	Water	Supplies	$0	100%	$0	$0	
		Labour	$0	100%	$0	$0	
	Site	Access	$0	100%	$0	$0	
Mobilization							
Vehicles	Mary River vehicles	Move to MI	$173,688	100%	$173,688		$173,688
Crew	Crew	Transportation	$121,900	100%	$121,900		$121,900
		Accommodation	$0	100%	$0		$0
Fuel	Fuel	For Reclamation Activities	$0	100%	$0		$0
Sealift	Sealift	Activity	$3,000,000	100%	$3,000,000		$3,000,000
		Manpower	$0	100%	$0		$0
Site	Site	General Site Clean-up	$0	100%	$0		$0
Credit from 2013 A&R Plan (AMEC, January 2013)	Credit for Fuel		$0	100%	$0		$0
	Credit for Sealift		($1,954,715)	100%	($1,954,715)		($1,954,715)
Post-Closure							
Post closure monitoring - Land Liability	Site		$457,971	100%	$457,971		$457,971

Figure 2: Summary of 2013 Work Plan Marginal Closure Cost Estimate, 2013 Breakdown (Cont'd)

C.2 Open Pit

Open Pit Name: *Mary River Mine Pit* **Pit # *1***

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
OBJECTIVE: CONTROL ACCESS								
Fence	m		#N/A	0.00	$0		$0	$0
Signs	each		#N/A	0.00	$0		$0	$0
Berm at crest	m		#N/A	0.00	$0		$0	$0
Block roads	m3		#N/A	0.00	$0		$0	$0
Other			#N/A		$0		$0	$0
OBJECTIVE: STABILIZE SLOPES			#N/A					
Off-load crest, soil A	m3		#N/A	0	$0		$0	$0
Off-load crest, soil B	m3		#N/A	0	$0		$0	$0
Doze/trimoverburden at crest	m3		#N/A	0	$0		$0	$0
Drill & blast pit crest	m3		#N/A	0	$0		$0	$0
buttress slope	m3		#N/A	0	$0		$0	$0
Other			#N/A	0	$0		$0	$0
OBJECTIVE: COVER/CONTOUR SLOPES			#N/A					
Dump demolition materials (pit or landfill or qı	m3		#N/A	0	$0		$0	$0
Place overburden over demolition material	m3	33546	RB1L	10.098	$338,748	100%	$338,748	$0
Rip rap	m3		#N/A	0	$0		$0	$0
Vegetate slopes	ha		#N/A	0	$0		$0	$0
Vegetate pit floor	ha		#N/A	0	$0		$0	$0
Other			#N/A	0	$0		$0	$0
OBJECTIVE: SPILLWAY			#N/A					
Excavate channel, soil A	m3		#N/A	0	$0		$0	$0
Excavate channel, soil B	m3		#N/A	0	$0		$0	$0
Concrete	m3		#N/A	0	$0		$0	$0
Rip rap	m3		#N/A	0	$0		$0	$0
Other	each		#N/A	0	$0		$0	$0
OBJECTIVE: FLOOD PIT			#N/A					
remove stationary equipment (sump pump)	each		#N/A	0	$0		$0	$0
remove power lines	each		#N/A	0	$0		$0	$0
Embankment/dam - Soil A	m3		#N/A	0	$0		$0	$0
Embankment/dam - Soil B	m3		#N/A	0	$0		$0	$0
supply/install pump & piping system	each		#N/A	0	$0		$0	$0
operate pumps to flood pit	each		#N/A	0	$0		$0	$0
Llme addition, _____ kg/m3 of water	tonne		#N/A	0	$0		$0	$0
Lime, purchase and shipping	tonne		#N/A	0	$0		$0	$0
Other			#N/A	0	$0		$0	$0
RECLAIM QUARRIES			#N/A					
Contour slopes	m3		DSH	3.3588	$0	100%	$0	$0
Berm at crest	m3		#N/A	0	$0	100%	$0	$0
Place overburder	m3		SBCL	3	$0	100%	$0	$0
Vegetate	m3		#N/A	0	$0	100%	$0	$0
OTHER ITEMS			#N/A					
Stability inspection	each		sis	16667	$0	100%	$0	$0
Reclaim road to primary crusher (scarificatior	ha		scs	1000	$0	100%	$0	$0
			Subtotal		$338,748	100%	$338,748	$0
						Pct Land	Total Land	Total Water

Figure 3: 2013 Work Plan Closure Cost Estimate for Open Pit

C.3 Buildings and Equipment

Building / Equip Name: *Mary River* **Bldg / Equip #: *1***

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
OBJECTIVE: DISPOSE MOBILE EQUIPMENT								
Decontaminate and ship off-site	each		#N/A	0	$0	100%	$0	$0
Decontaminate, dispose on-site	each		#N/A	0	$0	100%	$0	$0
Other (sealift for equipmt)	each		#N/A	0	$0	100%	$0	$0
OBJECTIVE: REMOVE CONTAMINATED BUILDINGS			#N/A					
Decontaminate crushing plant	each		#N/A	0	$0	100%	$0	$0
Decontaminate tanks & plumbing	each		#N/A	0	$0	100%	$0	$0
Decontaminate thickeners	each		#N/A	0	$0	100%	$0	$0
Decontaminate water treatment plant	each		#N/A	0	$0	100%	$0	$0
Decontaminate maintenance shop	m2	1427	BRCDS	200	$0	100%	$0	$0
Decontaminate power plant	each	30	BRCDS	200	$6,000	100%	$6,000	$0
Decontaminate bulk fuel storage	m2	2221.5	BRCDS	200	$444,300	100%	$444,300	$0
Decontaminate ANFO plant	each	0	BRCDS	200	$0	100%	$0	$0
Deontaminate offices/warehouse/accom	each		#N/A	0	$0	100%	$0	$0
Removal of asbestos siding on buildings	each		#N/A	0	$0	100%	$0	$0
Removal of friable asbestos on equipment	each		#N/A	0	$0	100%	$0	$0
Other	m2		BRCDS	200	$0	100%	$0	$0
OBJECTIVE: REMOVE NON-CONTAMINATED BUILDINGS								
crushing plant	m2		#N/A	0	$0		$0	$0
conveyors & transfer towers	m2		#N/A	0	$0	100%	$0	$0
tanks & plumbing	m2		#N/A	0	$0	100%	$0	$0
thickeners	m2		#N/A	0	$0	100%	$0	$0
water treatment plant	m2	557	BRS1H	57.024	$31,762	0%	$0	$31,762
maintenance shop	m2		#N/A	0	$0	100%	$0	$0
power plant	m2		#N/A	0	$0	100%	$0	$0
bulk fuel storage	each	0	MBTS	44704	$0	100%	$0	$0
ANFO plant	m2		#N/A	0	$0	100%	$0	$0
offices/warehouse/accom	m2	11229	BRS1H	57.024	$640,322	100%	$640,322	$0
consolidate & dump boneyard debris	m3	334	BRS1H	57.024	$19,046	100%	$19,046	$0
other (Airstrip Extension)	m2	2500	BRS1H	57.024	$142,560	100%	$142,560	$0
OBJECTIVE: BREAK BASEMENT SLABS								
crushing plant	m2	0	#N/A	0	$0	100%	$0	$0
conveyors & transfer towers	m2	0	#N/A	0	$0	100%	$0	$0
tanks & plumbing	m2	0	#N/A	0	$0	100%	$0	$0
thickeners	m2	0	#N/A	0	$0	100%	$0	$0
water treatment plant	m2	557	BRCS	26.73	$14,889	0%	$0	$14,889
maintenance shop	m2	1427	BRCS	26.73	$38,144	100%	$38,144	$0
power plant	m2	30	BRCS	26.73	$802	100%	$802	$0
bulk fuel storage	m2	2221.5	BRCS	26.73	$59,381	100%	$59,381	$0
ANFO plant	m2	$0	#N/A	0	$0	100%	$0	$0
offices/warehouse/accom	m2	$11,229	BRCS	26.73	$300,151	100%	$300,151	$0
Other	m2	2834	BRCS	26.73	$75,753	100%	$75,753	$0
OBJECTIVE: LANDFILL FOR DEMOLITION WASTE								
Place soil cover	m3		SBTH	3.27	$0	100%	$0	$0
Vegetate	ha		#N/A	0	$0	100%	$0	$0
Landfill disposal fee	tonne		#N/A	0	$0	100%	$0	$0
OBJECTIVE: GRADE AND CONTOUR MILL & PLANT SITE			#N/A					
crushing plant	m2	0	#N/A	0	$0	100%	$0	$0
conveyors & transfer towers	m2	0	#N/A	0	$0	100%	$0	$0
tanks & plumbing	m2	0	#N/A	0	$0	100%	$0	$0
thickeners	m2	0	#N/A	0	$0	100%	$0	$0
water treatment plant	m2	557	SB4H	9.666	$5,384	100%	$5,384	$0
maintenance shop	m2	1427	SB4H	9.666	$13,793	100%	$13,793	$0
power plant	m2	30	SB4H	9.666	$290	100%	$290	$0
bulk fuel storage	m2	2221.5	SB4H	9.666	$21,473	100%	$21,473	$0
ANFO plant	m2	0	#N/A	0	$0	100%	$0	$0
offices/warehouse/accom	m2	$11,229	SB4H	9.666	$108,540	100%	$108,540	$0
other	m2	2834	SB4H	9.666	$27,393	100%	$27,393	$0
OBJECTIVE: RECLAIM ROADS								
Remove culverts	each	0	PPLH	194.4	$0	100%	$0	$0
Remove bridges	each		#N/A	0	$0	100%	$0	$0
Scarify and install water breaks (Laydown Area)	ha	35.48	scs	1000	$35,480	0%	$0	$35,480
remove/doze down berms	m3		#N/A	0	$0	100%	$0	$0
create wildilfe passage ramps	m3		#N/A	0	$0	100%	$0	$0
Vegetate	ha		#N/A	0	$0	100%	$0	$0
other (Laydown Area)	ha	6.07	SCS	1000	$6,070	100%	$6,070	$0
SPECIALIZED ITEMS								
Sealift for construction materials	m3	0	#N/A	0	$0	100%	$0	$0
Dispose of misc. debris and laydown area refuse	each		#N/A	0	$0	100%	$0	$0
				Subtotal	$1,991,533	96%	$1,909,402	$82,131
						Pct Land	Total Land	Total Water

Figure 4: 2013 Work Plan Closure Cost Estimate for Buildings and Equipment Mary River Mine Site

Building / Equip Name: *Milne* **Bldg / Equip #: *2***

1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
OBJECTIVE: DISPOSE MOBILE EQUIPMENT								
Decontaminate and ship off-site	each		#N/A	0	$0	100%	$0	$0
Decontaminate, dispose on-site	each		#N/A	0	$0	100%	$0	$0
Other (sealift for equipmt)	each		#N/A	0	$0	100%	$0	$0
OBJECTIVE: REMOVE CONTAMINATED BUILDINGS								
Decontaminate crushing plant	each		#N/A	0	$0	100%	$0	$0
Decontaminate tanks & plumbing	each		#N/A	0	$0	100%	$0	$0
Decontaminate thickeners	each		#N/A	0	$0	100%	$0	$0
Decontaminate water treatment plant	each		#N/A	0	$0	100%	$0	$0
Decontaminate maintenance shop	m2	268	BRCDS	200	$53,600	100%	$53,600	$0
Decontaminate power plant	each	134	BRCDS	200	$26,800	100%	$26,800	$0
Decontaminate bulk fuel storage	m2	16774.57031	BRCDS	200	$3,354,914	100%	$3,354,914	$0
Decontaminate ANFO plant	each	$0	BRCDS	200	$0	100%	$0	$0
Deontaminate offices/warehouse/accom	each		#N/A	0	$0	100%	$0	$0
Removal of asbestos siding on buildings	each		#N/A	0	$0	100%	$0	$0
Removal of friable asbestos on equipment	each		#N/A	0	$0	100%	$0	$0
Other	m2		BRCDS	200	$0	100%	$0	$0
OBJECTIVE: REMOVE NON-CONTAMINATED BUILDINGS								
crushing plant	m2		#N/A	0	$0		$0	$0
conveyors & transfer towers	m2		#N/A	0	$0	100%	$0	$0
tanks & plumbing	m2		#N/A	0	$0	100%	$0	$0
thickeners	m2		#N/A	0	$0	100%	$0	$0
water treatment plant	m2	446	BRS1H	57.024	$25,433	0%	$0	$25,433
maintenance shop	m2		BRS1H	57.024	$0	100%	$0	$0
power plant	m2		#N/A	0	$0	100%	$0	$0
bulk fuel storage	each	o	MBTS	44704	$0	100%	$0	$0
ANFO plant	m2		#N/A	0	0	1	0	0
offices/warehouse/accom	m2	9297	BRS1H	57.024	530152.128	1	530152.128	0
consolidate & dump boneyard debris	m3	334	BRS1H	57.024	19046.016	1	19046.016	0
other (Airstrip Extension)	m2	2500	BRS1H	57.024	142560	1	142560	0
OBJECTIVE: BREAK BASEMENT SLABS								
crushing plant	m2	0	#N/A	0	$0	100%	$0	$0
conveyors & transfer towers	m2	0	#N/A	0	$0	100%	$0	$0
tanks & plumbing	m2	0	#N/A	0	$0	100%	$0	$0
thickeners	m2	0	#N/A	0	$0	100%	$0	$0
water treatment plant	m2	446	BRCS	26.73	$11,922	0%	$0	$11,922
maintenance shop	m2	268	BRCS	26.73	$7,164	100%	$7,164	$0
power plant	m2	134	BRCS	26.73	$3,582	100%	$3,582	$0
bulk fuel storage	m2	16774.57031	BRCS	26.73	$448,384	100%	$448,384	$0
ANFO plant	m2	0	#N/A	0	$0	100%	$0	$0
offices/warehouse/accom	m2	9297	BRCS	26.73	$248,509	100%	$248,509	$0
Other	m2	2834	BRCS	26.73	$75,753	100%	$75,753	$0
OBJECTIVE: LANDFILL FOR DEMOLITION WASTE								
Place soil cover	m3		SBTH	3.27	$0	100%	$0	$0
Vegetate	ha		#N/A	0	$0	100%	$0	$0
Landfill disposal fee	tonne		#N/A	0	$0	100%	$0	$0
OBJECTIVE: GRADE AND CONTOUR MILL & PLANT SITE								
crushing plant	m2	0	#N/A	0	$0	100%	$0	$0
conveyors & transfer towers	m2	0	#N/A	0	$0	100%	$0	$0
tanks & plumbing	m2	0	#N/A	0	$0	100%	$0	$0
thickeners	m2	0	#N/A	0	$0	100%	$0	$0
water treatment plant	m2	446	SB4H	9.666	$4,311	100%	$4,311	$0
maintenance shop	m2	268	SB4H	9.666	$2,590	100%	$2,590	$0
power plant	m2	134	SB4H	9.666	$1,295	100%	$1,295	$0
bulk fuel storage	m2	16774.57031	SB4H	9.666	$162,143	100%	$162,143	$0
ANFO plant	m2	0	#N/A	0	$0	100%	$0	$0
offices/warehouse/accom	m2	$9,297	SB4H	9.666	$89,865	100%	$89,865	$0
other	m2	2834	SB4H	9.666	$27,393	100%	$27,393	$0
OBJECTIVE: RECLAIM ROADS								
Remove culverts	each	0	PPLH	194.4	$0	100%	$0	$0
Remove bridges	each		#N/A	0	$0	100%	$0	$0
Scarify and install water breaks (Laydown Area)	ha		SCS	1000	$0	0%	$0	$0
remove/doze down berms	m3		#N/A	0	$0	100%	$0	$0
create wildilfe passage ramps	m3		#N/A	0	$0	100%	$0	$0
Vegetate	ha		#N/A	0	$0	100%	$0	$0
other (Laydown Area)	ha	8.09	SCS	1000	$8,090	100%	$8,090	$0
SPECIALIZED ITEMS								
Credit for reclaiming bladder farm	$	0	TBUS	#N/A	$0	100%	$0	$0
Sealift for construction materials	m3		#N/A	0	$0	100%	$0	$0
Dispose of misc. debris and laydown area refuse	each		#N/A	0	$0	100%	$0	$0
				Subtotal	$5,243,506	99%	$5,206,152	$37,354
						Pct Land	Total Land	Total Water

Figure 5: 2013 Work Plan Closure Cost Estimate for Buildings and Equipment – Milne Inlet

Building / Equip Name: *50 km Road Camp* **Bldg / Equip #: *3***

1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
OBJECTIVE: DISPOSE MOBILE EQUIPMENT								
Decontaminate and ship off-site	each		#N/A	0	$0	100%	$0	$0
Decontaminate, dispose on-site	each		#N/A	0	$0	100%	$0	$0
Other (sealift for equipmt)	each		#N/A	0	$0	100%	$0	$0
OBJECTIVE: REMOVE CONTAMINATED BUILDINGS								
Decontaminate crushing plant	each		#N/A	0	$0	100%	$0	$0
Decontaminate tanks & plumbing	each		#N/A	0	$0	100%	$0	$0
Decontaminate thickeners	each		#N/A	0	$0	100%	$0	$0
Decontaminate water treatment plant	each		#N/A	0	$0	100%	$0	$0
Decontaminate maintenance shop	m2		BRCDS	200	$0	100%	$0	$0
Decontaminate power plant	m2		BRCDS	200	$0	100%	$0	$0
Decontaminate bulk fuel storage	m2		#N/A	0	$0	100%	$0	$0
Decontaminate ANFO plant	each		#N/A	0	$0	100%	$0	$0
Deontaminate offices/warehouse/accom	each		#N/A	0	$0	100%	$0	$0
Removal of asbestos siding on buildings	each		#N/A	0	$0	100%	$0	$0
Removal of friable asbestos on equipment	each		#N/A	0	$0	100%	$0	$0
Other (Waste Management Building)	m2		#N/A	0	$0	100%	$0	$0
OBJECTIVE: REMOVE NON-CONTAMINATED BUILDINGS								
crushing plant	m2		#N/A	0	$0		$0	$0
conveyors & transfer towers	m2		#N/A	0	$0	100%	$0	$0
tanks & plumbing	m2		#N/A	0	$0	100%	$0	$0
thickeners	m2		#N/A	0	$0	100%	$0	$0
water treatment plant	m2		#N/A	0	$0	100%	$0	$0
maintenance shop	m2		#N/A	0	$0	100%	$0	$0
power plant	m2		#N/A	0	$0	100%	$0	$0
bulk fuel storage	each		#N/A	0	$0	100%	$0	$0
ANFO plant	m2		#N/A	0	$0	100%	$0	$0
offices/warehouse/accom	m2	1522	BRS1H	57.024	$86,791	100%	$86,791	$0
consolidate & dump boneyard debris	m3		#N/A	0	$0	100%	$0	$0
other (Airstrip Extension)	m2		#N/A	0	$0	100%	$0	$0
OBJECTIVE: BREAK BASEMENT SLABS								
crushing plant	m2	0	#N/A	0	$0	100%	$0	$0
conveyors & transfer towers	m2	0	#N/A	0	$0	100%	$0	$0
tanks & plumbing	m2	0	#N/A	0	$0	100%	$0	$0
thickeners	m2	0	#N/A	0	$0	100%	$0	$0
water treatment plant	m2	0	#N/A	0	$0	100%	$0	$0
maintenance shop	m2	0	#N/A	0	$0	100%	$0	$0
power plant	m2	0	#N/A	0	$0	100%	$0	$0
bulk fuel storage	m2	0	#N/A	0	$0	100%	$0	$0
ANFO plant	m2	0	#N/A	0	$0	100%	$0	$0
offices/warehouse/accom	m2	1522	BRCS	26.73	$40,683	100%	$40,683	$0
Other	m2	0	BRCS	26.73	$0	100%	$0	$0
OBJECTIVE: LANDFILL FOR DEMOLITION WASTE								
Place soil cover	m3		SBTH	3.27	$0	100%	$0	$0
Vegetate	ha		#N/A	0	$0	100%	$0	$0
Landfill disposal fee	tonne		#N/A	0	$0	100%	$0	$0
OBJECTIVE: GRADE AND CONTOUR MILL & PLANT SITE								
crushing plant	m2		#N/A	0	$0	100%	$0	$0
conveyors & transfer towers	m2		#N/A	0	$0	100%	$0	$0
tanks & plumbing	m2		#N/A	0	$0	100%	$0	$0
thickeners	m2		#N/A	0	$0	100%	$0	$0
water treatment plant	m2		SB4H	9.666	$0	100%	$0	$0
maintenance shop	m2		SB4H	9.666	$0	100%	$0	$0
power plant	m2		SB4H	9.666	$0	100%	$0	$0
bulk fuel storage	m2		SB4H	9.666	$0	100%	$0	$0
ANFO plant	m2		#N/A	0	$0	100%	$0	$0
offices/warehouse/accom	m2		SB4H	9.666	$0	100%	$0	$0
other	m2		SB4H	9.666	$0	100%	$0	$0
OBJECTIVE: RECLAIM ROADS								
Remove culverts	each		#N/A	0	$0	100%	$0	$0
Remove bridges	each		#N/A	0	$0	100%	$0	$0
Scarify and install water breaks (Laydown Area)	ha		SCS	1000	$0	100%	$0	$0
remove/doze down berms	m3		#N/A	0	$0	100%	$0	$0
create wildilfe passage ramps	m3		#N/A	0	$0	100%	$0	$0
Vegetate	ha		#N/A	0	$0	100%	$0	$0
other			#N/A	0	$0	100%	$0	$0
SPECIALIZED ITEMS								
			#N/A			100%		
Dispose of misc. debris and laydown area refuse	each		#N/A	0	$0	100%	$0	$0
				Subtotal	$127,474	100%	$127,474	$0
						Pct Land	Total Land	Total Water

Figure 6: 2013 Work Plan Closure Cost Estimate for Buildings and Equipment – Tote Road Camp

C.4 Chemicals

Chemicals and Soil Contamination:

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
Note: The procedures, equipment and packaging for clean up and removal of chemicals or contaminated soils are highly dependent on the nature of the chemicals and their existing state of containment. Government guidelines should be consulted on an individual chemical basis. Any estimate made here should be considered very rough unless specific evaluations have been conducted.								
HAZARDOUS MATERIALS AUDIT								
Phase 1 audit	each		P1AS	1200	$0	100%	$0	$0
Phase 2 audit	each		#N/A	100000	$0	100%	$0	$0
HAZARDOUS MATERIALS TO BE CONSOLIDATED FOR REMOVAL								
Waste oils	litre	23162.5	PCRH	2.214	$51,282	100%	$51,282	$0
Fuel - Type 1, eg diesel dregs	litre	27,712,201	FRs	0.1	$2,771,220	100%	$2,771,220	$0
Fuel - Type 1, eg gasoline dregs	litre		#N/A	0	$0	100%	$0	$0
waste batteries	kg	1820	PCRH	2.214	$4,029	100%	$4,029	$0
assay & environmental lab reagents	kg	10450	PCRH	2.214	$23,136	100%	$23,136	$0
machine shop, paints, solvents etc	kg	4800	PCRH	2.214	$10,627	100%	$10,627	$0
contaminated soils - hydrocarbon	m3		#N/A	0	$0	100%	$0	$0
metal contam. soil at conc. load-out	m3		#N/A	0	$0	100%	$0	$0
HAZARDOUS MATERIALS								
Transportation to disposal facility	T		#N/A	0	$0		$0	$0
Disposal fees	allow		#N/A		$0		$0	$0
other			#N/A	0	$0		$0	$0
CONTAMINATED SOILS								
Contam. soil investigation - technical	each	0	#N/A	34957	$0	100%	$0	$0
Contam. soil investigation - drilling & sampling	each	0	#N/A	34957	$0	100%	$0	$0
CONTAMINATED SOIL REMOVAL	m3				$0		$0	$0
contaminated soils - hydrocarbon	m3	0	remss	100	$0	100%	$0	$0
metal contam. soil at conc. load-out	m3		#N/A	0	$0		$0	$0
Load, haul, dump or doze	m3		#N/A	0	$0		$0	$0
Reagents/stabilizing agent	m2		#N/A	0	$0		$0	$0
Contour reclaimed area	m3		#N/A	0	$0		$0	$0
other	m2		#N/A	0	$0		$0	$0
CONTAMIANTED SOIL VERY LOW PERMEABILITY COVER								
supply geomembrame, HDPE, ES3, GCL	m2		#N/A	0	$0		$0	$0
upper and lower bedding layers	m3		#N/A	0	$0		$0	$0
install geomembrane, HDPE, ES3, GCL	m2		#N/A	0	$0		$0	$0
erosion protection layer	m3		#N/A	0	$0		$0	$0
vegetate	m2		#N/A	0	$0		$0	$0
install infiltration/seepage instrumentation	allow		#N/A	0	$0		$0	$0
other			#N/A	0	$0		$0	$0
OTHER			#N/A					
Reclaim Explosives	kg	920,000	ERH	2.376	$2,185,920	100%	$2,185,920	$0
Salvage (Explosives)	kg	0	#N/A	170160	$0	100%	$0	$0
			Subtotal		$5,046,215	100%	$5,046,215	$0
						Pct Land	Total Land	Total Water

Figure 7: 2013 Work Plan Closure Cost Estimate for Chemicals

C.5 Water Management

Water Management :

	ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
A	OBJECTIVE: WATER SUPPLY EMBANKMENT								
	Toe buttress, drain mat'l	m3		#N/A	0	$0		$0	$0
	, fill mat'l A	m3		#N/A	0	$0		$0	$0
	, fill mat'l B	m3		#N/A	0	$0		$0	$0
	Rip rap	m3		#N/A	0	$0		$0	$0
	Vegetate	ha		#N/A	0	$0		$0	$0
	Breach dam	m3		#N/A	0	$0		$0	$0
	Other (Pond)	m3	70	RPS	300.5	$21,035		$0	$21,035
B	OBJECTIVE: UPGRADE SPILLWAY			#N/A					
	Excavate channel, mat'l A	m3		#N/A	0	$0		$0	$0
	, mat'l B	m3		#N/A	0	$0		$0	$0
	Concrete	m3		#N/A	0	$0		$0	$0
	Rip rap	m3		#N/A	0	$0		$0	$0
	Other			#N/A	0	$0		$0	$0
E	OBJECTIVE: STABILIZE &/OR UPGRADE DIVERSION DITCHES								
	Excavate channel	m3		#N/A	0	$0		$0	$0
	doze & spread excavated material	m3		#N/A	0	$0		$0	$0
	Vegetate, spread material	ha		#N/A	0	$0		$0	$0
	Rip rap in channel base	each		#N/A		$0		$0	$0
F	OBJECTIVE: BREACH DITCHES								
	Excavate breaches	m3		#N/A	0	$0		$0	$0
	install rip rap	m3		#N/A	0	$0		$0	$0
	install flow dissipation	m3		#N/A	0	$0		$0	$0
	vegetate remainder of ditch	m2		#N/A	0	$0		$0	$0
G	OBJECTIVE: REMOVE PIPELINES								
	Remove pipes	m	8200	PPSH	5.4	$44,280		$0	$44,280
	Concrete plug deep pipes	m3		#N/A	0	$0		$0	$0
	Other			#N/A	0	$0		$0	$0
H	Groundwater Collection - Long-term Collection System								
	excavate/install sumps	m2		#N/A	0	$0		$0	$0
	install pumping wells	m3		#N/A	0	$0		$0	$0
	install pumps/pipelines/power supply			#N/A	0	$0		$0	$0
I	OBJECTIVE: COLLECT DRAINAGE FOR TREATMENT								
	Excavate channel	m3		#N/A	0	$0		$0	$0
	doze & spread excavated material	m3		#N/A	0	$0		$0	$0
	Vegetate, spread material	ha		#N/A	0	$0		$0	$0
	Rip rap in channel base	each		#N/A	0	$0		$0	$0
	Construct contaminated water storage pond			#N/A					
	Excavation	m3		#N/A	0	$0		$0	$0
	supply geomembrame, HDPE, ES3, GCL	m2		#N/A	0	$0		$0	$0
	upper and lower bedding layers	m3		#N/A	0	$0		$0	$0
	install geomembrane, HDPE, ES3, GCL	m2		#N/A	0	$0		$0	$0
	erosion protection layer	m3		#N/A	0	$0		$0	$0
J	OBJECTIVE: TREAT DRAINAGE (see "ONGOING TREATMENT" for operating costs)								
	Build treatment plant	LS		#N/A	0	$0		$0	$0
	build sludge containment facility	LS		#N/A	0	$0		$0	$0
					Subtotal	$65,315	0%	$0	$65,315
							Pct Land	Total Land	Total Water

Figure 8: 2013 Work Plan Closure Cost Estimate for Water Management

C.6 Mobilization

Mobilization:

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
MOBILIZE HEAVY EQUIPMENT								
Equipment to regional centre								
Excavators	km	500	MHERH	9.0936	$4,547	100%	$4,547	$0
Dump trucks	km	200	MHERH	9.0936	$1,819	100%	$1,819	$0
Dozers	km	500	MHERH	9.0936	$4,547	100%	$4,547	$0
Demolition shears	km		#N/A	0	$0		$0	$0
Crane	km	300	MHERH	9.0936	$2,728	100%	$2,728	$0
Light duty vehicles	km	5100	MHERH	9.0936	$46,377	100%	$46,377	$0
Other (loaders)	km	1800	MHERH	9.0936	$16,368	100%	$16,368	$0
Other	km	10700	MHERH	9.0936	$97,302	100%	$97,302	$0
Equipment, regional centre to site			#N/A					
Excavators	km		#N/A	0	$0		$0	$0
Dump trucks	km		#N/A	0	$0		$0	$0
Dozers	km		#N/A	0	$0		$0	$0
Demolition shears	km		#N/A	0	$0		$0	$0
Crane	km		#N/A	0	$0		$0	$0
Light duty vehicles	km		#N/A	0	$0		$0	$0
Other	km		#N/A	0	$0		$0	$0
Other	km		#N/A	0	$0		$0	$0
MOBILIZE CAMP								
	allow		#N/A		$0		$0	$0
MOBILIZE WORKERS								
crew travel time	manday		#N/A	0	$0		$0	$0
crew transportation	each	53	flightS	2300	$121,900	100%	$121,900	$0
MOBILIZE MISC. SUPPLIES			#N/A					
Fuel	litre	0	fss	0.95	$0	100%	$0	$0
Sealift per season	allow	1	SLcS	3000000	$3,000,000	100%	$3,000,000	$0
Sealift manpower per season	allow	0	#N/A	0	$0	100%	$0	$0
Manpower for the season w/o sealift	h	0	MPSSS	808.9	$0	100%	$0	$0
WORKER ACCOMODATIONS			#N/A					
	$	0	cos	250	$0	100%	$0	$0
WINTER ROAD							$0	$0
Full winter use	km		#N/A	0	$0		$0	$0
Limited winter use	km		#N/A	0	$0		$0	$0
other			#N/A	0	$0		$0	$0
INTERIM CARE & MAINTENANCE								
on-site caretaker	annual		#N/A	0	$0			
fuel and misc. supplies	annual		#N/A	0	$0			
electrician	days		#N/A	0	$0			
mechnaic	days		#N/A	0	$0			
pick-up truck	yr		#N/A	0	$0			
small dozer	allow		#N/A	0	$0			
small excavator	allow		#N/A	0	$0			
snow machine	allow		#N/A	0	$0			
communications	allow		#N/A	0	$0			
Water licence sampling & reporting	each		#N/A	0	$0			
Geotechnical assessment	each		#N/A	0	$0			
Other	each	1	#N/A	20000	$20,000			
			#N/A	C&M cost	$20,000			
Total C&M cost	years	0	#N/A	20000	$0	100%	$0	$0
Dredit for Fuel								
Credit for Sealift					($1,954,715)			
				Subtotal	$1,340,873	246%	$3,295,588	$0
						Pct Land	Total Land	Total Water

Figure 9: 2013 Work Plan Closure Cost Estimate for Mobilization

C.7 Post Closure

Post-Closure Monitoring & Maintenance:

	ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
A	OBJECTIVE: MONITORING & INSPECTIONS								
	Annual geotechnical insp.	each		#N/A	$0	$0		$0	$0
.	Survey inspection	each		#N/A	$0	$0		$0	$0
.	Surface water sampling	each		#N/A	$0	$0		$0	$0
	Groundwater Sampling	each		#N/A	$0	$0		$0	$0
	Receiving/downstream water sampling	each		#N/A	$0	$0		$0	$0
	Reporting	each		#N/A	$0	$0		$0	$0
.	on-site transportation	each		#N/A	$0	$0		$0	$0
	transporation to site	each		#N/A	$4,918	$0		$0	$0
.	Other (sea lift at the end of post closure)			#N/A	$0	$0		$0	$0
B	OBJECTIVE: COVER MAINTENANCE								
.	Repair erosion - infill gullies	allow		#N/A	$0	$0		$0	$0
.	Repair erosion - upgrade diversion ditches	allow		#N/A	$0	$0		$0	$0
.	Remove problem vegetation	allow		#N/A	$0	$0		$0	$0
.	Repair animal damage	allow		#N/A	$0	$0		$0	$0
.	Repair/upgrade access controls	allow		#N/A	$0	$0		$0	$0
	Other		1	#N/A	$100,000	$100,000	100%	$100,000	$0
C	SPILLWAY MAINTENANCE								
	Repair erosion	m3		#N/A	$0	$0		$0	$0
	Clear spillway	each	0	CSWH	$5,702	$0	100%	$0	$0
	Other			#N/A	$0	$0		$0	$0
D	POST-CLOSURE WATER TREATMENT								
	Annual water treatment cost, from Ongoing water			#N/A	$0	$0		$0	$0
	Subtotal, Annual post-closure costs					$100,000		$100,000	$0
	Discount rate for calculation of net present value of post-closure			3.00%					
	Number of years of post-closure activity			5	years				
	Present Value of payment stream					$457,971	$1	$457,971	$0
							Pct Land	Total Land	Total Water

Figure 10: 2013 Work Plan Closure Cost Estimate for Post Closure Monitoring

Appendix D

2013 Marginal Closure Cost – Mining RECLAIM Closure Cost Model Assumptions

D.1 Introduction

The Marginal Closure for the 2013 Work Plan is based on activities scheduled to occur in 2013 that were not captured in the 2013 A&R Plan (AMEC, January 2013) and therefore the Remaining Type 'B' Cost or Type 'A' Carry Over Cost. As shown by the closure cost allocation, the majority of required capital costs for reclamation activities and their associated indirect costs are captured in the 2013 A&R Plan (AMEC, January 2013) and therefore the Remaining Type 'B' Cost or Type 'A' Carry Over Cost. The 2013 Work Plan Marginal Closure Cost accounts for only the additional reclamation activities, required to meet reclamation objectives, not covered in the 2013 A&R Plan (AMEC, January 2013). This was done to avoid double counting and to ensure 2013 activities that were not considered in the development 2013 A&R Plan (AMEC, January 2013) were accounted for.

The marginal financial cost of the Mary River Project 2013 Work Plan closure and reclamation has been estimated using The Mining RECLAIM spreadsheet. The cost is derived based on the model methodology of identifying reclamation components, required in addition to those already addressed in the 2013 A&R Plan (AMEC, January 2013), and assigning a reclamation cost based on a quantity of functional units of that component. Each functional unit has a pre-defined or specified unit cost required to meet reclamation objectives. Unit costs in The Mining RECLAIM spreadsheet are inclusive of fuel, labour and equipment (J. Brodie, Brodie Consulting Ltd, March 2013). Components addressed include:

- Open pit
- Waste Rock pile
- Buildings and Equipments
- Chemicals
- Water
- Mobilization
- Post Closure
- Ongoing water monitoring

Several reclamation strategies ("Objectives") are listed for each component, and broken down into lists of actions that can be priced separately. A unit cost spreadsheet (part of the generic RECLAIM model) provides a range of prices for most actions; it has been completed where possible with the most accurate available or Project specific costs.

It should be noted that all work described in the 2013 Work Plan will not be completed in 2013. The cost presented in this document only covers the cost of reclamation of activities scheduled to occur in 2013. Although a total cost for all the 2013 Work Plan activities was considered, activities that extend into 2014 are not considered to apply for 2013.

To best estimate the total reclamation cost, some actions were modified or adapted to the strategies defined in the Preliminary Mine Closure and Reclamation Plan (February, 2012).

The financial cost obtained is based on the information available at the time of publishing.

Several assumptions and estimations have been made and are described in the following sections.

The spreadsheet will require to be updated annually as the Project progresses. To make up for uncertainties, the highest prices of the range provided by the unit costs spreadsheet were systematically chosen when possible.

Mary River Project 2013 Marginal closure and reclamation for the activities expected to occur in 2013 as part of the 2013 Work Plan is estimated to cost $12,343,342

The breakdown of cost for 2013 activities is summarized up in Table 3.

Table 3: Marginal Cost for 2013 Work Plan, Mary River Project Closure and Reclamation

		Marginal Cost for 2013 Work Plan	Water Liability	Land Liability
Capital Cost for Infrastructure		$9,567,364	$43,175	$9,524,189
Mobilization		$1,340,873	$0	$1,340,873
INDIRECT COSTS	**Percentages**	**Marginal Cost for 2013 Work Plan**	**Water Liability**	**Land Liability**
Project Management	5%	$478,368	$2,159	$476,209
Bonding	0%	$0	$0	$0
Insurance	0%	$0	$0	$0
Engineering's	0%	$0	$0	$0
Contingency	10%	$956,736	$4,318	$952,419
Sub-total of Indirects		$1,435,105	$6,476	$1,428,628
	TOTALS	**$12,343,342**	**$49,651**	**$12,293,691**

D.2 Assumptions

D.2.1 General Assumptions

The following is a list of general assumptions that were made during the estimate of the total cost of reclamation to meet reclamation objectives stated in Section 5 of this document, the 2012 Preliminary Mine Closure and Reclamation Plan (February 2012) submitted in the Type 'A' Water License Application in support of the Mary River Project:

- The annual allocation of the security needing to be deposited each year is based on activities expected to occur in that year. (I.e. if activities occur in 2013, cost for reclamation would have to be given prior to the commencement of that activity). The cost of reclamation of that item is based on RECLAIM methodology. It amounts to the cost of reclaiming a defined functional unit of a project component
- Due to use of the RECLAIM software, closure costs are based on pre-determined RECLAIM 'unit' costs associated to reclaim the site when specified costs are unknown. Unit costs are always selected at the maximum level when possible in RECLAIM due to project characteristics (mainly climate and remoteness)
- 2013 Marginal Closure Cost does not include additional cost allocation for Bonding, Insurance, Engineering of 2013 Marginal Closure activities. This was deemed included in the 2013 A&R Plan (AMEC, January 2013). Specifically, the 2013 A&R Plan (AMEC, January 2013) included $800,000 for "Engineering Design & Execution Planning" to cover 'miscellaneous tasks not specifically estimated in direct costs'
- As per RECLAIM methodology, a 10 % multiplier was added to the sub-totals of 'Reclamation Cost for Infrastructure' and 'Mobilization' (see Appendix D-Table 3) to account for funds for contingency ($956,736). This is deemed sufficient based on Hatch's confidence that the cost assigned for the activities required to meet reclamation objectives is adequate and 10% would be sufficient to allow for unknowns or unaccounted for costs.
- As per RECLAIM methodology, a 5 % multiplier was added to the sub-totals of 'Reclamation Cost for Infrastructure' and 'Mobilization' (see Appendix D -Table 3) to account for funds for Project Management ($478,368). Where RECLAIM does not have costs for a particular activity or it is not practical to break the activity down into the sub-tasks, a "specified" lump sum estimate of cost has been used
- There has been no consideration of difference of reclamation techniques that would occur at the end of construction vs. the end of operation as RECLAIM does not allow for it
- If an activity spans multiple years of construction, the cost for its reclamation is evenly distributed across all years that it is scheduled to take place
- Annual costs are all deposited in Year 1. (i.e. the cost for removing hazardous waste from site would be deposited in Year 1 because it is the current project strategy that there will be annual shipments off-site of all hazardous waste generated that year)
- The closure activities for the marginal 2013 activities can be completed in two years and would be conducted concurrently to the timeframe presented in 2013 A&R Plan (AMEC, January 2013).
- Security deposited for each year is aggregated with previous years

- As a default, RECLAIM assumes the discount rate for calculation of net present value of post-closure cost as 3%
- Assume the number of years of post-closure monitoring as five years (concurrent with post-closure monitoring presented in the 2013 A&R Plan (AMEC, January 2013))

D.2.2 Open Pit

D.2.2.1 Objective: Control Access

Assume no berm and fence will be needed at end of 2013 as no open pit will be present

D.2.2.2 Objective: Cover/Contour Slopes (chosen for the price of placing inert materials in the pit)

Scrap materials will be produced by the demolition of buildings. Although these materials will not be placed in the open-pit, the price of loading and dumping has been included in the open pit spreadsheet.

Cost allocated covers cost of placing overburden over all buildings brought on site as part of the 2013 Work Plan and as listed on Master Building Matrix (H349000-1000-00-144-0001)

Assume that 1.5 m of overburden will be placed over the materials from buildings.

D.2.2.3 Objective: Spillway

Assume no spillway needed at open pit.

D.2.2.4 Objective: Reclaim Quarries

2013 Marginal Closure Cost does not include a cost associated with quarries as it is covered in the 2013 A&R Plan (AMEC, January 2013) closure cost estimate. AMEC has considered 2 quarries at Milne and Mine Site (See appendix G3 Borrow & Quarry Areas tab). The estimate considers the following remedial items:

- Grade and contour primary borrow sites at Milne Inlet, Mary River, Midway and quarry, with a total of $159,120, and a contingency of $23,868
- Grade and contour road side borrow areas within alignment, with a total of $220,116, and a contingency of $66,035
- Borrow materials from permitted borrow areas, with a total of $47,350, and a contingency of $9,470

Note that Quarries will be expanded during 2013. The 2013 Marginal Closure Cost assumes that AMEC model allows for cost of all required reclamation at Quarries needed for 2013. At this point, no treatment for ARG/ML is anticipated (AMEC, 2010). If future investigations prove to the contrary, batch treatments will be added to the open pit cost.

D.2.2.5 Objective: Stability Inspection

2013 Marginal Closure Cost does not include a stability inspection at project quarries as it is covered in the 2013 A&R Plan (AMEC, January 2013) closure cost estimate. Specifically, the cost is listed as $55,000, with $5,500 as contingency. The stability inspection is described as geotechnical monitoring of permitted & road side borrow area reclamation, and it assumes a geotechnical inspection in Year 2 to further develop 'post completion of EBA recommendations' and in subsequent year to confirm feature stability.

D.2.3 Underground Mine

D.2.3.1 Underground Mine Assumptions

There will be no underground mining at the Mary River Project and therefore this component of RECLAIM was not considered.

D.2.4 Tailings

D.2.4.1 Tailings Assumptions

There will be no tailings produced at the Mary River Project and therefore this component of RECLAIM was not considered.

D.2.5 Stockpile

D.2.5.1 Rock Pile Assumptions

There will be no waste rock pile in 2013.

2013 Marginal Closure Cost does not include the cost of covering the Milne Inlet or Mary River stockpiles as this cost is allocated in the 2013 A&R Plan (AMEC, January 2013) closure cost estimate. Specifically, the cost is listed as $182,256, with $18,253 as contingency at Milne Inlet and a total cost $95,569 for the Mary River Stockpile.

The reclamation of the Milne Inlet Stockpile has been described as ‘Grade residual ore stockpiles at Milne Inlet (Lump stockpile is 2900 cubic meters and fines 1060 cubic meters. Dozing the stockpiles across pad area will increase pad height by 0.44 m and the maximum height of pad will be 2.44 meters), and haul and place cover on ore pad area at Milne Inlet (Specify Cover thickness of 0.5 m, and the approximate footprint of Milne Inlet Stockpile 68,500 m^2, with 2H:1V slopes and an approximate surface area of 76,500 m^2)’

D.2.6 Buildings and Equipment Assumptions

Scrap material will be produced by the demolition of buildings. Assume area of all buildings on-site needs to be covered with 1.5 m of cover at closure (disposal site to be determined).

2013 Marginal Closure Cost includes cost allocated with the site contouring of the footprint of buildings listed in the Master Building Matrix (H349000-1000-00-144-0001) that only covers all buildings new for 2013 Work Plan.

Assume yield of 50 m^3 per 1000 m^2 of buildings footprint.

Assume that the unit cost for removal of contaminated building includes the cost to decontaminate the buildings. Persistent contamination is not expected due to primarily hydrocarbon based contamination.

Assume 1 revenue ton per 1 cubic meter of building material.

The list of buildings was extracted from document H349000-1000-00-144-0001: Mary River Project Master Building Matrix.

An update of this section will be necessary as this document is revised.

D.2.6.1 Objective: Reclaim Project Roads and Laydowns

2013 Marginal Closure Cost does not include any cost associated with reclamation of roads (such as remove culverts and Fill with cobble & grade) as it is covered in the 2013 A&R Plan (AMEC, January 2013) closure cost estimate. Specifically, the cost is listed as $2,086,590 with $389,217 as contingency, including the following roads and associated activities:

- #1 Deposit Haul Roads - Inspect and repair any erosion and/or permafrost damage, stabilize inside ditches with cobble, Remove round culverts, install water bars and stabilize water crossings, Install safety berms, and Re-grade pad & repair any erosion
- Milne Inlet Tote Road - Inspect and repair any erosion and/or permafrost damage, Remove all box culverts crossing and stabilize slopes, install water bars, and Remove round culverts
- General access Roads - Grade and contour road surfaces and remove culverts

No additional cost for reclamation has been included for culverts in 2013 Marginal Closure Cost. NOTE: In some circumstances, culverts may be replaced with larger culverts. It has been assumed that cost of reclamation would be the same and is covered in the 2013 A&R Plan (AMEC, January 2013).

2013 Marginal Closure Cost includes cost allocation for the reclamation of parking laydown areas by scarifying and installing water breaks. Assume required parking and laydown area at Mine Site = 60702.8 m^2. Assumption based on conservative estimate of 15 acres (6.07 hectares) needed at Mine Site (estimated value based volume of required equipment and materials).

2013 Marginal Closure Cost includes cost allocation for the reclamation of parking laydown areas by scarifying and installing water breaks. Assume required parking and laydown area at Milne Inlet = 8.09 ha. Assumption based on conservative estimate of 20 acres (8.09 hectares) needed at Milne based volume of required equipment and materials.

Assume all laydown areas and parking areas have the same unit cost as road reclamation.

D.2.6.2 Objective: Reclaim Fuel Storage at Mine Site

2013 A&R Plan (AMEC, January 2013) closure cost estimate considers fuel storage at the Mine Site. The Mine Site Fuel Farm includes 1.5 million L (11x114, 000 L bladders in lined containment; a double walled 75,000 L in lined containment) (See appendix G3 Fuel Storage Facilities, cells 1-7). Specifically, the cost is listed as $256,648 with $46,234 as contingency.

AMEC Closure estimate consider the following remedial activities:

- Return excess fuel at Mine Site to Milne Inlet (total cost of $88,524, with $8,852 as contingency)
- Drain, fold, and containerize Mine Site bladder tanks (total cost of $38,376, with $3,838 as contingency)
- Execute civil works to transport potential hydrocarbon contaminated soil form the Mine Site bulk fuel farm to the Milne Inlet land farm (total cost of $15,340, with $1,534 as contingency)
- Execute civil works to transport potential hydrocarbon contaminated soil from Mine Site non-bulk fuel farm lined containment areas to the Milne Inlet land farm (total cost of $88,524, with $8,852 as contingency)
- Re-contour surface (total cost of $6,564, with $656 as contingency)

2013 Marginal Closure Cost includes a cost for decommissioning the additional 4 x 500,000 L diesel tank at the Mine Site. Based on preliminary fuel farm design, the footprint for the Mine Site dike is 2,962 m2.

2013 Marginal Closure Cost includes a cost for site contouring of the additional 4 x 500,000 L diesel tanks located at the Mine Site. Based on preliminary fuel farm design, the footprint for the Mine Site dike is 2,962 m2.

It is assumed that strictly the footprints of the aboveground fuel tanks would be reclaimed and not the entire fuel storage site. Therefore it is estimated that this is 75% of the fuel storage site area will need to be reclaimed.

D.2.6.3 Objective: Reclaim Mine Site Mine Site Buildings

2013 Marginal Closure Cost includes an allowance for decommissioning and preparing for disposal all buildings (offices/warehouse/accommodation complex) included in the Master Building Matrix (H349000-1000-00-144-0001) for the Mine Site that are not classified as contaminated. Master Building Matrix only covers buildings new for 2013 Work Plan.

Accommodation complex sizing is based on the most conservative (largest footprint) proposal based on camp supplier bid documentation.

The unit cost applied in the RECLAIM Model considers the teardown of steel buildings, with an associated cost of 57.02$/$m^2$.

2013 Marginal Closure Cost includes cost allocation for decontaminating and reclaiming contaminated buildings at the Mine Site:

- Power Plant
- Maintenance Shop

Footprint based on Master Building Matrix (H349000-1000-00-144-0001) that only covers buildings new for 2013 Work Plan.

2013 Marginal Closure Cost includes cost allocation for removal of other non-contaminated buildings:

- Water treatment Plant
- Additional bulk fuel storage (after decommissioning)
- Consolidate and dump boneyard debris
- Airstrip Extension

The area footprint has been based on the Master Building Matrix, which considers only new facilities during 2013. However, current bulk fuel storage has been accounted in 2013 A&R Plan (AMEC, January 2013) closure cost estimate. Specifically, the cost is listed as $38,376, with $3,838 as contingency. Therefore only additional bulk fuel storage installed in 2013 is considered in the 2013 Marginal Closure Cost.

2013 Marginal Closure Cost includes cost allocation for reclaiming the following infrastructure by breaking of basement of slabs:

- Water treatment Plant
- Maintenance Shop
- Power Plant
- Additional bulk fuel storage (after decommissioning)
- Consolidate and dump boneyard debris
- Airstrip/Apron Extension

The area footprint has been estimated based on Master Building Matrix (H349000-1000-00-144-0001) that only covers buildings new for 2013 Work Plan.

D.2.6.4 Objective: Decommission Mine Site Landfill

2013 Marginal Closure Cost does not include applying a cover of the Mine Site Landfill as this is covered in the 2013 A&R Plan (AMEC, January 2013) closure cost estimate. Specifically, the cost is listed as $140,556, with another $21,083 as contingency. The landfill cover is described as 1.5 m thick of sand and gravel to keep the landfill in permafrost (assumes the upper 1 m will be an active freeze/thaw area). The plan and cost estimate also assume $84,864 (+$25,459 contingency) to expand the berm system around the landfill. The cost of landfill operation during closure is $71,604 (+$10,741 contingency).

D.2.6.5 Objective: Reclaim Fuel Storage at Milne Inlet

2013 A&R Plan (AMEC, January 2013) closure cost estimate considers fuel storage at Milne. The Milne Inlet Fuel Farm includes 5 ML fuel tank in a lined containment facility, and 8.25 ML (73x114, 000 L bladders in lined containment facility). Specifically, the cost is listed as $26,283 with $104,595 as contingency.

2013 A&R Plan (AMEC, January 2013) estimate consider the following remedial activities:

- Milne Inlet fuel farm Oil Water Separation Operation (total cost of $199,280, with $59,784 as contingency)
- Drain, flush and dismantle and remove 5 ML fuel storage tank (total cost of $130,141, with $6,028 as contingency)
- Re-contour surface impacted by 5 ML fuel storage tank (total cost of $5,568, with $835 as contingency)
- Drain, fold, and containerize Milne bladder tanks (total cost of $44,704, with $4,470 as contingency)
- Remove Piping associated with fuel farm and 5 ML fuel tank (total cost of $9,636, with $964 as contingency)
- Remove Piping from 5 ML Fuel Storage Tank (total cost of $4,818 with $964 as contingency)
- Re-grading pipeline area (total cost of $5,020 with $1,004 as contingency)
- Remove all hazardous material/fuel storage geomembrane fuel liners and package for sea (total cost of $11,424 with $1,142 as contingency)
- Execute civil works to convert the fuel farm to hydrocarbon impacted soil land farm (total cost of $54,432 with $16,330 as contingency)
- Execute civil works to transport potential hydrocarbon contaminated soil from Milne Inlet non - bulk fuel farm lined containment areas to landfarm (total cost of $34,740 with $10,422 as contingency)
- Re-contour surface (total cost of $26,520 with $2,562 as contingency)

2013 Marginal Closure Cost includes a cost for decommissioning the additional 1 x 5 ML tank, and 3 x 10 ML and 1 x 0.75 ML tank. Based on preliminary fuel farm design, the footprint for the Milne dike was scaled resulting in an area of 22,366 m^2.

2013 Marginal Closure Cost includes a cost for site contouring of the additional 1x5 ML tank, and 3 x 10 ML and 1 x 0.75 ML tank area. Based on preliminary fuel farm design, footprint for the Milne dike was scaled resulting in an area of 22,366 m^2.

It is assumed that strictly the footprints of the aboveground fuel tanks would be reclaimed and not the entire fuel storage site. Therefore it is estimated that this is 75% of the fuel storage site area will need to be reclaimed.

D.2.6.6 Objective: Reclaim Buildings at Milne Inlet

2013 Marginal Closure Cost includes an allowance for decommissioning and preparing for disposal all buildings (offices/warehouse/accommodation complex) included in the Master Building Matrix (H349000-1000-00-144-0001) for the Milne Inlet that are not classified as contaminated. Master Building Matrix only covers buildings new for 2013 Work Plan. Accommodation complex sizing is based on the most conservative (largest footprint) proposal based on camp supplier bid documentation.

The unit cost applied in the RECLAIM Model considers the teardown of steel buildings, with an associated cost of 57.02$/m2

2013 Marginal Closure Cost includes cost allocated with reclaiming the footprint of other contaminated buildings, such as:

- Maintenance Shop (footprint includes the footprint in 50 km Road camp)
- Power Plant
- Additional bulk fuel storage (after decommissioning)

The area footprint has been estimated based on Master Building Matrix (H349000-1000-00-144-0001) that only covers buildings new for 2013 Work Plan. However, current bulk fuel storage at Milne Inlet has been accounted in 2013 A&R Plan (AMEC, January 2013) closure cost estimate. Specifically, the cost is listed as $44,704, with $4,470 as contingency. Therefore only additional bulk fuel storage installed in 2013 is considered in the 2013 Marginal Closure Cost.

2013 Marginal Closure Cost includes an allocation for reclaiming the following infrastructure of other non-contaminated buildings:

- Water treatment Plant
- Consolidate and dump boneyard debris
- Airstrip Extension

The area footprint have been based on the Master Building Matrix (H349000-1000-00-144-0001

2013 Marginal Closure Cost includes cost allocated with breaking of basement slabs for the following buildings:

- Water treatment Plant
- Maintenance Shop (footprint includes the footprint in 50 km Road camp)
- Power Plant
- Bulk fuel storage
- Consolidate and dump boneyard debris
- Airstrip Extension

The area footprint has been estimated based on Master Building Matrix (H349000-1000-00-144-0001) that only covers buildings new for 2013 Work Plan.

D.2.6.7 Objective: Reclaim Buildings at Tote Road Camp

2013 Marginal Closure Cost includes the area foot print of accommodation complex at Tote Road Camp based on Temporary Structure List developed by Hatch Construction Management Team.

The unit cost selected in the RECLAIM Model considers the teardown of steel buildings, with an associated cost of 57.02$/$m^{2.}$

D.2.6.8 Objective: Dispose Mobile Equipment

It has been assumed that all the mobile equipment will be disposed of offsite. The total cost of sealift is included in the mobilization estimate.

The return on salvaged scrap material from the demolition of buildings and equipment was not taken into account in this estimate.

2013 Marginal Closure Cost includes a cost allocation for moving all mobile equipment located at the Mine Site from the Mine Site to the Milne Inlet for sealift.

Assume all temporary and foldaway structures will be disposed of off-site.

PLEASE NOTE: Options for any remaining infrastructure at final closure to be donated to local communities will be examined and encouraged, however the cost of demolition and disposal of all buildings was the cost captured in this estimate.

D.2.7 Chemicals

D.2.7.1 Objective: Project Environmental Site Assessment

2013 Marginal Closure Cost does not include a Phase I, II or II Phase II Environmental Site Assessment as it is covered in the 2013 A&R Plan (AMEC, January 2013) closure cost estimate. Specifically, the cost is listed as $90,000, with $27,000 as contingency. Phase I and phase II hazardous material audit is describe as a complete phase 1 to phase 3 environmental assessments to identify hydrocarbon contaminated soil and to develop soil remediation criteria and land farm design. It has been assumed that the Phase I to III will cover the scope of a left-on-site hazardous material or contaminated soil audit.

D.2.7.2 Objective: Hazardous Materials to be Consolidated for Removal

2013 Marginal Closure Cost includes a cost allocation for removing waste oil on site based on annual generation rates established in the Waste Management Plan for Construction, Operation, and Closure (H349000-1000-07-126-0007).

2013 Marginal Closure Cost includes a cost allocation for removal of 2 ML of Type 1 fuel from site. This is based on the assumption that 10 ML of fuel will be on-site at time of closure and 2ML/year will be needed for closure (over four years).

2013 Marginal Closure Cost includes a cost allocation for removing waste batteries on site based on annual generation rates established in the Waste Management Plan for Construction, Operation, and Closure (H349000-1000-07-126-0007).

2013 Marginal Closure Cost includes a cost allocation for removing environmental lab reagents on site based on annual generation rates established in the Waste Management Plan for Construction, Operation, and Closure (H349000-1000-07-126-0007).

2013 Marginal Closure Cost includes a cost allocation for removing solvents, paints etc on site based on annual generation rates established in the Waste Management Plan for Construction, Operation, and Closure (H349000-1000-07-126-0007).

D.2.7.3 Objective: Contaminated Soil Removal

2013 Marginal Closure Cost does not include a cost for the removal of contaminated soils as it is covered in the 2013 A&R Plan (AMEC, January 2013) closure cost estimate. Specifically, the cost is listed as $626,080, with $93,912 as contingency. The removal of contaminated soils is described as: till hydrocarbon impacted soil - Land farm operation, and assumes mechanic and operator execute the work required to till the hydrocarbon impacted soil work.

D.2.7.4 Objective: Reclamation of Explosives

2013 Marginal Closure Cost includes a cost allocation for removing off-site 20% of the explosives brought on-site for the 2013 Work Plan in 2013. Assume 200,000 kg of pre-packaged explosives will be needed and 4,400,000 kg of Ammonium Nitrate will be needed (estimated based on Hatch Logistical allowances).

D.2.8 Water Management

D.2.8.1 Objective: Remove Pipelines

All pipes will be removed. The total length of pipes is 8,200 m according to Hatch YX001 Site Service Basis for Estimate.

Sewage and sludge will be incinerated whenever possible. If incineration is not available it will be sent to the existing waste water settling pond for decantation. Solids will be left to dry and sent to the landfills.

D.2.8.2 Objective: Infill Partially Constructed Settling Pond

2013 Marginal Closure Cost includes a cost allocation for removing 50% of the volume of the settling ponds presented in the Stormwater Management and Drainage System Design, H337697-0000-10-122-0001, Rev. B (Annex 1, Waste Rock Management Plan).

Size estimates are as follows:

- Pond 1: Approx. 0.7 million of cubic meters (Page 9)
- Pond 2: Approx. 0.5 million cubic meters (Page 10)
- Pond 3: Approx. 0.15 million cubic meters (Page 10)
- TOTAL: 1.35 million cubic meters

Therefore: 675,000 m3 will be constructed potentially in 2013.

Assume the cost per hour of a CAT D8T Dozer is $176 and the cost per hour of an equipment operator is $124.50, same as 2013 A&R Plan (AMEC, January 2013).

Assume it would take 70 hours to infill the partially constructed pond.

Therefore it the cost of equipment and labour to reclaim the pond would be $21,035.

D.2.9 Mobilization

D.2.9.1 Objective: Mobilize Heavy Equipment

At the end of reclamation, all heavy equipment at Mine Site mine will be transported to Milne Inlet for shipment or final disposal. It is thus estimated that each piece of equipment will travel once the length of Tote Road.

Assume at the end of reclamation all mobile equipment will be disposed of off-site. The cost of this is captured in the sealift costs.

Based on current contractual agreements, equipment will be picked up from distribution hub by owners (equipment is rented for 2013 Work Plan activities) and therefore land freight was not included.

D.2.9.2 Objective: Fuel Required for Reclamation

2013 Marginal Closure Cost does not include a cost allocation for additional fuel. RECLAIM unit costs are inclusive of fuel, equipment and labour.

D.2.9.3 Objective: Mobilize Camps

Existing camps will be used and dismantled at the end of reclamation. The price associated with camp operations is taken into account in the objective: Worker Accommodation.

D.2.9.4 Sealift per Season

2013 A&R Plan (AMEC, January 2013) considers sealift for existing materials on site. However, 2013 Marginal Closure Cost does include a cost allocation for sealift of new mobile equipment and construction support equipment brought on-site in 2013. This is in addition to the cost allocated in the 2013 A&R Plan (AMEC, January 2013). The cost associated with sealift has been assumed based on need of three ships @ 12,000 rev ton/ship to transport equipment off-site (based on Hatch Logistical Estimates). It has been assumed a cost per ship of $1,000,000/ship or $83.30/rev ton.

D.2.9.5 Objective: Mobilize Workers

2013 A&R Plan (AMEC, January 2013) considers commercial flights for 25 person camp (MR & MI) during reclamation (See appendix G3 Camp Operations, cells 7, 14 & 35). 2013 Marginal Closure Cost includes a cost allocation for this by doubling this value to account for additional personnel.

2013 Marginal Closure Cost does not include a cost associated with manpower as the Unit Cost in RECLAIM is inclusive of fuel, labour and equipment.

D.2.9.6 Objective: Worker Accommodation

2013 Marginal Closure Cost does not include a cost associated with camp operation as it is covered in the 2013 A&R Plan (AMEC, January 2013) closure cost estimate. Specifically, the cost is listed as $2,007,017, with $221,931 as contingency. The following activities are included under camp operation in the 2013 A&R Plan:

- Mine Site Camp Operation Year 2 (21 person camp operation, camp operating overhead and food)
- Mine Site Camp Operation Year 3 (29 person camp operation, camp operating overhead and food)
- Milne Inlet Year 2 - Operate average five - person camp (16 person peak for two weeks) (Camp operating overhead and food)
- Milne Inlet Year 3 - Operate average five (six person camp operation, camp operating overhead and food)
- Milne Inlet Year 4 (14 person camp operation, camp operating overhead and food)

D.2.9.7 Objective: General Site Clean-up

2013 Marginal Closure Cost does not include a general site clean up as it is covered in the 2013 A&R Plan (AMEC, January 2013) closure cost estimate. Specifically, the cost is listed

as $70,543, with $10,581 as contingency. The general site cleanup is described as loader use for redirecting coarse clean up of streams and clean up residual fine waste on ground.

D.2.10 Mobilization Adjustments from 2013 A&R Plan (AMEC, January 2013)

D.2.10.1 Fuel

The 2013 Work Plan Marginal Closure Cost estimate considers the worst case scenario to include the cost allocation for fuel removal, i.e., highest quantity of fuel on site after commencement of 2013 Work Plan.

Based on this scenario, 31.2 ML will be on site after commencement of 2013 Work Plan. However, AMEC model accounts for 3.46ML, and therefore the 2013 Work Plan Marginal Closure Cost estimate includes a cost allocation for removal of 27.7 ML of Type 1 fuel from site, at a $0.10/L backhaul rate (same as AMEC Model, January 2013)).

D.2.10.2 Sealift

2013 A&R Plan (AMEC, January 2013) closure cost estimate considers 305 $/rev. ton for a Dedicated Charter Freight Sealift, and 198 $/rev. ton for Freight Sealift. 2013 Marginal Closure Cost assume a rate of 83.3 $/rev ton. The difference has been applied as credit. Quantities of sealift material in 2013 A&R Plan (AMEC, January 2013) remain the same.

Credit calculation is as follows:

Table 4: AMEC Sealift Cost Estimate (January 2013)

	Rev Ton, $	Rev. Ton	Total, $	Contingency, %	Contingency, $	Total, $
Freight Sealift Milne Inlet to Valleyfield Year 2						
Dedicated Charter Freight Sealift of 3rd party contractor equipment and supplies to Milne Inlet, and to demobilize contractor equipment currently located at MR and MI,	$305	2492	760,060	10%	76006	836,066
Demobilize by sealift site contractor and specified BIM equipment currently located at MR and MI,	$198	6455	1,278,090	10%	127809	1,405,899

	Rev Ton, $	Rev. Ton	Total, $	Contingency, %	Contingency, $	Total, $
Freight Sealift Milne Inlet to Valleyfield Year 4						
Demobilize decommissioned material and 3rd party contractor equipment from MI	$198	2028	401,544	10%	40154.4	441,698
Demobilize Freight Sealift Steensby Port to Port of Valleyfield - Year 3						
Vessel Costs Steensby - 1 freight backhaul sealift in Year 3	$198	1965	389,070	10%	38907	427,977
Freight Sealift Milne Inlet to Port of Valleyfield Year 6						
Vessel & stevedoring costs for backhaul of land farm timer, tilling equipment (i.e. loader with tiller drag), accommodation trailer and residual Milne Inlet camp & support supplies and equipment. Milne Inlet to Port of Valleyfield	$198	228	45,144	10%	4514.4	49,658
TOTAL						$3,161,298
AMEC Sealift Cost Estimate (January 2013) at $83.30/rev tone						

	Rev Ton, $	Rev. Ton	Total, $	Contingency, %	Contingency, $	Total, $
Freight Sealift Milne Inlet to Valleyfield Year 2						
Dedicated Charter Freight Sealift of 3rd party contractor equipment and supplies to Milne Inlet, and to demobilize contractor equipment currently located at MR and MI,	83.30	2492	207,584	10%	20758	228,341
Demobilize by sealift site contractor and specified BIM equipment currently located at MR and MI,	83.30	6455	537,702	10%	53770	591,471
Freight Sealift Milne Inlet to Valleyfield Year 4						
Demobilize decommissioned material and 3rd party contractor equipment from MI	83.30	2028	168,932	10%	16893	185,825
Demobilize Freight Sealift Steensby Port to Port of Valleyfield - Year 3						
Vessel Costs Steensby - 1 freight backhaul sealift in Year 3	83.30	1965	163,685	10%	16368	180,052

	Rev Ton, $	Rev. Ton	Total, $	Contingency, %	Contingency, $	Total, $
Freight Sealift Milne Inlet to Port of Valleyfield Year 6						
Vessel & stevedoring costs for backhaul of land farm timer, tilling equipment (i.e. loader with tiller drag), accommodation trailer and residual Milne Inlet camp & support supplies and equipment. Milne Inlet to Port of Valleyfield	83.30	228	18,992	10%	1899	20,891
TOTAL						$1,206,583
Difference - Applied as Credit					$1,954,714.96	

D.2.11 Post Closure

D.2.11.1 Objective: Monitoring and Inspections

2013 Marginal Closure Cost does not include any cost associated with post closure monitoring. It has been assumed that the marginal activities considered in 2013 Marginal Closure Cost will not require any monitoring additional to the 2013 A&R Plan (AMEC, January 2013). Specifically, the 2013 A&R Plan (AMEC, January 2013) closure cost estimate includes $21,100/year + $4,790 contingency/year for five years of post -closure environmental monitoring (including water sampling).

D.2.11.2 Objective: Cover Maintenance

An allowance for cover maintenance during five years of post-closure of building debris disposal area cover equals $100,000 (same as PDW Closure Plan) was included in the 2013 Marginal Closure Cost. This allowance includes:

- Repair erosion - infill gullies
- Repair erosion - upgrade diversion ditches
- Repair animal damage
- Repair/upgrade access controls

Note: Total includes a Net Present Value Calculation

Appendix E

Remaining Type 'B' Closure Cost – Mining RECLAIM Closure Cost Model Screenshots

E.1 Summary of Revised Type B Closure Cost Estimate

SUMMARY OF COSTS

CAPITAL COSTS

COMPONENT TYPE	COMPONENT NAME		TOTAL COST	LAND LIABILITY	WATER LIABILITY
OPEN PIT	Mary River Mine Pit		$0	$0	$0
	Bulk Sample Pit		$0	$0	$0
	Mineral Exploration Areas		$59,589	$59,589	$0
UNDERGROUND MINE	-		$0	$0	$0
TAILINGS	-		$0	$0	$0
ROCK PILE	Mary River Stockpile		$0	$0	$0
BUILDINGS AND EQUIPMENT	Milne Site		$0	$0	$0
	Tote Road		$0	$0	$0
	Mary River Mine		$0	$0	$0
	Railway		$0	$0	$0
	Steensby Port		$0	$0	$0
	Mineral Exploration Areas		$9,326	$9,326	$0
	Remote Sites		$102,792	$102,792	$0
	Mid-Rail Camp		$136,168	$136,168	$0
	Steensby Inlet Camp		$699,141	$699,141	$0
CHEMICALS AND SOIL MANAGEMENT			$0	$0	$0
WATER MANAGEMENT			$14,808	$0	$14,808
POST-CLOSUREMONITORING AND MAINTENANCE			$0	$0	$0
	SUBTOTAL		**$1,021,824**	**$1,007,016**	**$14,808**
		PERCENTAGES		**99%**	**1%**
MOBILIZATION/DEMOBILIZATION			$0	0	0
PROJECT MANAGEMENT		5%	$51,091	$50,351	$740
Bonding		1%	$10,218	$10,070	$148
Taxes (GST on supplies) - est.		allowance	$0	$0	$0
Insurance		1%	$10,218	$10,070	$148
ENGINEERING		5%	$51,091	$50,351	$740
CONTINGENCY		10%	$102,182	$100,702	$1,481
Market Price Factor Adjustment		0%	$0	$0	$0
GRAND TOTAL - CAPITAL COSTS			**$1,246,625**	**$1,228,560**	**$18,066**

Figure 11: Summary of Revised Type B Closure Cost Estimate

E.2 Open Pit

Open Pit Name: *Mineral Exploration Areas* **Pit #** *3*

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost	Refer in Appendix G3
OBJECTIVE: CONTROL ACCESS									
Fence	m		#N/A	0.00	$0		$0	$0	
Signs	each		#N/A	0.00	$0		$0	$0	
Berm at crest	m		#N/A	0.00	$0		$0	$0	
Block roads	m3		#N/A	0.00	$0		$0	$0	
Other			#N/A		$0		$0	$0	
OBJECTIVE: STABILIZE SLOPES									
Off-load crest, soil A	m3		#N/A	0	$0		$0	$0	
Off-load crest, soil B	m3		#N/A	0	$0		$0	$0	
Doze/trimoverburden at crest	m3		#N/A	0	$0		$0	$0	
Drill & blast pit crest	m3		#N/A	0	$0		$0	$0	
buttress slope	m3		#N/A	0	$0		$0	$0	
Other			#N/A	0	$0		$0	$0	
OBJECTIVE: COVER/CONTOUR SLOPES									
Dump demolition materials (pit or landfill or qua	m3		#N/A	0	$0		$0	$0	
Place overburden over demolition material	m3		#N/A	0	$0		$0	$0	
Rip rap	m3		#N/A	0	$0		$0	$0	
Vegetate slopes	ha		#N/A	0	$0		$0	$0	
Vegetate pit floor	ha		#N/A	0	$0		$0	$0	
Level Pads, backfill sumps and grade to natur	$	18000	TBUS	1	$18,000	100%	$18,000	$0	Mineral Exploration Areas tab, cells 4
OBJECTIVE: SPILLWAY									
Excavate channel, soil A	m3		#N/A	0	$0		$0	$0	
Excavate channel, soil B	m3		#N/A	0	$0		$0	$0	
Concrete	m3		#N/A	0	$0		$0	$0	
Rip rap	m3		#N/A	0	$0		$0	$0	
Other	each		#N/A	0	$0		$0	$0	
OBJECTIVE: FLOOD PIT									
remove stationary equipment (sump pump)	each		#N/A	0	$0		$0	$0	
remove power lines	each		#N/A	0	$0		$0	$0	
Embankment/dam - Soil A	m3		#N/A	0	$0		$0	$0	
Embankment/dam - Soil B	m3		#N/A	0	$0		$0	$0	
supply/install pump & piping system	each		#N/A	0	$0		$0	$0	
operate pumps to flood pit	each		#N/A	0	$0		$0	$0	
Llme addition, _____ kg/m3 of water	tonne		#N/A	0	$0		$0	$0	
Lime, purchase and shipping	tonne		#N/A	0	$0		$0	$0	
Other			#N/A	0	$0		$0	$0	
RECLAIM QUARRIES									
Contour slopes	m3		#N/A	0	$0		$0	$0	
Berm at crest	m3		#N/A	0	$0		$0	$0	
Place overburder	m3		#N/A	0	$0		$0	$0	
Vegetate	m3		#N/A	0	$0		$0	$0	
OTHER ITEMS									
Stability inspection			#N/A	0	$0		$0	$0	
Drill Holes fillled and Residual Casings Cuts	$	30376	TBUS	1	$30,376	100%	$30,376	$0	Mineral Exploration Areas tab, cells 3
Inspection and final reclamation of exploration	$	11213	TBUS	1	$11,213	100%	$11,213	$0	Mineral Exploration Areas tab, cells 6
				Subtotal	$59,589	100%	$59,589	$0	
						Pct Land	Total Land	Total Water	

Figure 12: Revised Type B Open Pit Reclamation Costs

E.3 Buildings and Equipments

Building / Equip Name: *Mineral Exploration Areas* **Bldg / Equip #:** *6*

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost % Land	Land Cost	Water Cost	Refer in Appendix G3
OBJECTIVE: DISPOSE MOBILE EQUIPMENT								
Decontaminate and ship off-site	each		#N/A	0	$0	$0	$0	
Decontaminate, dispose on-site	each		#N/A	0	$0	$0	$0	
Other (sealift for equipmt)	each		#N/A	0	$0	$0	$0	
OBJECTIVE: REMOVE CONTAMINATED BUILDINGS								
Decontaminate crushing plant	each		#N/A	0	$0	$0	$0	
Decontaminate tanks & plumbing	each		#N/A	0	$0	$0	$0	
Decontaminate thickeners	each		#N/A	0	$0	$0	$0	
Decontaminate water treatment plant	each		#N/A	0	$0	$0	$0	
Decontaminate maintenance shop	each		#N/A	0	$0	$0	$0	
Decontaminate power plant	each		#N/A	0	$0	$0	$0	
Decontaminate bulk fuel storage	each		#N/A	0	$0	$0	$0	
Decontaminate ANFO plant	each		#N/A	0	$0	$0	$0	
Deontaminate offices/warehouse/accom	each		#N/A	0	$0	$0	$0	
Removal of asbestos siding on buildings	each		#N/A	0	$0	$0	$0	
Removal of friable asbestos on equipment	each		#N/A	0	$0	$0	$0	
Other			#N/A	0	$0	$0	$0	
OBJECTIVE: REMOVE NON-CONTAMINATED BUILDINGS								
crushing plant	m2		#N/A	0	$0	$0	$0	
conveyors & transfer towers	m2		#N/A	0	$0	$0	$0	
tanks & plumbing	m2		#N/A	0	$0	$0	$0	
thickeners	m2		#N/A	0	$0	$0	$0	
water treatment plant	m2		#N/A	0	$0	$0	$0	
maintenance shop	m2		#N/A	0	$0	$0	$0	
power plant	m2		#N/A	0	$0	$0	$0	
bulk fuel storage	m2		#N/A	0	$0	$0	$0	
ANFO plant	m2		#N/A	0	$0	$0	$0	
offices/warehouse/accom	m2		#N/A	0	$0	$0	$0	
consolidate & dump boneyard debris	m3		#N/A	0	$0	$0	$0	
other			#N/A	0	$0	$0	$0	
OBJECTIVE: BREAK BASEMENT SLABS								
crushing plant	m2		#N/A	0	$0	$0	$0	
conveyors & transfer towers	m2		#N/A	0	$0	$0	$0	
tanks & plumbing	m2		#N/A	0	$0	$0	$0	
thickeners	m2		#N/A	0	$0	$0	$0	
water treatment plant	m2		#N/A	0	$0	$0	$0	
maintenance shop	m2		#N/A	0	$0	$0	$0	
power plant	m2		#N/A	0	$0	$0	$0	
bulk fuel storage	m2		#N/A	0	$0	$0	$0	
ANFO plant	m2		#N/A	0	$0	$0	$0	
offices/warehouse/accom	m2		#N/A	0	$0	$0	$0	
Other	m2		#N/A	0	$0	$0	$0	
OBJECTIVE: LANDFILL FOR DEMOLITION WASTE								
Place soil cover	m3		#N/A	0	$0	$0	$0	
Vegetate	ha		#N/A	0	$0	$0	$0	
Landfill disposal fee	tonne		#N/A	0	$0	$0	$0	
OBJECTIVE: GRADE AND CONTOUR MILL & PLANT SITE								
crushing plant	m2		#N/A	0	$0	$0	$0	
conveyors & transfer towers	m2		#N/A	0	$0	$0	$0	
tanks & plumbing	m2		#N/A	0	$0	$0	$0	
thickeners	m2		#N/A	0	$0	$0	$0	
water treatment plant	m2		#N/A	0	$0	$0	$0	
maintenance shop	m2		#N/A	0	$0	$0	$0	
power plant	m2		#N/A	0	$0	$0	$0	
bulk fuel storage	m2		#N/A	0	$0	$0	$0	
ANFO plant	m2		#N/A	0	$0	$0	$0	
offices/warehouse/accom	m2		#N/A	0	$0	$0	$0	
other	m2		#N/A	0	$0	$0	$0	
OBJECTIVE: RECLAIM ROADS								
Remove culverts	each		#N/A	0	$0	$0	$0	
Remove bridges	each		#N/A	0	$0	$0	$0	
Scarify and install water breaks	ha		#N/A	0	$0	$0	$0	
remove/doze down berms	m3		#N/A	0	$0	$0	$0	
create wildlife passage ramps	m3		#N/A	0	$0	$0	$0	
Vegetate	ha		#N/A	0	$0	$0	$0	
other			#N/A	0	$0	$0	$0	
SPECIALIZED ITEMS								
Prepare core for Long-term site storage	$	1756	TBUS	1	$1,756	100%	$1,756	$0 Bulk Mineral Exploration Areas tab, cells 5
Salt mixing stations	$	7570	TBUS	1	$7,570	100%	$7,570	$0 Bulk Mineral Exploration Areas tab, cells 7
				Subtotal	$9,326	100%	$9,326	$0
						Pct Land	Total Land	Total Water

Figure 13: Revised Type B Buildings and Equipment Reclamation Costs Mineral Exploration Areas

Building / Equip Name: ***Remote Sites*** **Bldg / Equip #:** ***7***

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost % Land	Land Cost	Water Cost	Refer in Appendix G3
OBJECTIVE: DISPOSE MOBILE EQUIPMENT								
Decontaminate and ship off-site	each		#N/A	0	$0	$0	$0	
Decontaminate, dispose on-site	each		#N/A	0	$0	$0	$0	
Other (sealift for equipmt)	each		#N/A	0	$0	$0	$0	
OBJECTIVE: REMOVE CONTAMINATED BUILDINGS								
Decontaminate crushing plant	each		#N/A	0	$0	$0	$0	
Decontaminate tanks & plumbing	each		#N/A	0	$0	$0	$0	
Decontaminate thickeners	each		#N/A	0	$0	$0	$0	
Decontaminate water treatment plant	each		#N/A	0	$0	$0	$0	
Decontaminate maintenance shop	each		#N/A	0	$0	$0	$0	
Decontaminate power plant	each		#N/A	0	$0	$0	$0	
Decontaminate bulk fuel storage	each		#N/A	0	$0	$0	$0	
Decontaminate ANFO plant	each		#N/A	0	$0	$0	$0	
Deontaminate offices/warehouse/accom	each		#N/A	0	$0	$0	$0	
Removal of asbestos siding on buildings	each		#N/A	0	$0	$0	$0	
Removal of friable asbestos on equipment	each		#N/A	0	$0	$0	$0	
Other			#N/A	0	$0	$0	$0	
OBJECTIVE: REMOVE NON-CONTAMINATED BUILDINGS								
crushing plant	m2		#N/A	0	$0	$0	$0	
conveyors & transfer towers	m2		#N/A	0	$0	$0	$0	
tanks & plumbing	m2		#N/A	0	$0	$0	$0	
thickeners	m2		#N/A	0	$0	$0	$0	
water treatment plant	m2		#N/A	0	$0	$0	$0	
maintenance shop	m2		#N/A	0	$0	$0	$0	
power plant	m2		#N/A	0	$0	$0	$0	
bulk fuel storage	m2		#N/A	0	$0	$0	$0	
ANFO plant	m2		#N/A	0	$0	$0	$0	
offices/warehouse/accom	m2		#N/A	0	$0	$0	$0	
consolidate & dump boneyard debris	m3		#N/A	0	$0	$0	$0	
other			#N/A	0	$0	$0	$0	
OBJECTIVE: BREAK BASEMENT SLABS								
crushing plant	m2		#N/A	0	$0	$0	$0	
conveyors & transfer towers	m2		#N/A	0	$0	$0	$0	
tanks & plumbing	m2		#N/A	0	$0	$0	$0	
thickeners	m2		#N/A	0	$0	$0	$0	
water treatment plant	m2		#N/A	0	$0	$0	$0	
maintenance shop	m2		#N/A	0	$0	$0	$0	
power plant	m2		#N/A	0	$0	$0	$0	
bulk fuel storage	m2		#N/A	0	$0	$0	$0	
ANFO plant	m2		#N/A	0	$0	$0	$0	
offices/warehouse/accom	m2		#N/A	0	$0	$0	$0	
Other	m2		#N/A	0	$0	$0	$0	
OBJECTIVE: LANDFILL FOR DEMOLITION WASTE								
Place soil cover	m3		#N/A	0	$0	$0	$0	
Vegetate	ha		#N/A	0	$0	$0	$0	
Landfill disposal fee	tonne		#N/A	0	$0	$0	$0	
OBJECTIVE: GRADE AND CONTOUR MILL & PLANT SITE								
crushing plant	m2		#N/A	0	$0	$0	$0	
conveyors & transfer towers	m2		#N/A	0	$0	$0	$0	
tanks & plumbing	m2		#N/A	0	$0	$0	$0	
thickeners	m2		#N/A	0	$0	$0	$0	
water treatment plant	m2		#N/A	0	$0	$0	$0	
maintenance shop	m2		#N/A	0	$0	$0	$0	
power plant	m2		#N/A	0	$0	$0	$0	
bulk fuel storage	m2		#N/A	0	$0	$0	$0	
ANFO plant	m2		#N/A	0	$0	$0	$0	
offices/warehouse/accom	m2		#N/A	0	$0	$0	$0	
other	m2		#N/A	0	$0	$0	$0	
OBJECTIVE: RECLAIM ROADS								
Remove culverts	each		#N/A	0	$0	$0	$0	
Remove bridges	each		#N/A	0	$0	$0	$0	
Scarify and install water breaks	ha		#N/A	0	$0	$0	$0	
remove/doze down berms	m3		#N/A	0	$0	$0	$0	
create wildlife passage ramps	m3		#N/A	0	$0	$0	$0	
Vegetate	ha		#N/A	0	$0	$0	$0	
other			#N/A	0	$0	$0	$0	
SPECIALIZED ITEMS								
Decommission remote sites	$	102792	TBUS	1	$102,792	100%	$102,792	$0 Remote Sites tab, cells 1 to 5
				Subtotal	$102,792	100%	$102,792	$0
						Pct Land	Total Land	Total Water

Figure 14: Revised Type B Buildings and Equipment Reclamation Costs – Remote Sites

Building / Equip Name: *Mid-Rail Camp* **Bldg / Equip #:** *8*

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost % Land	Land Cost	Water Cost	Refer in Appendix G3
OBJECTIVE: DISPOSE MOBILE EQUIPMENT								
Decontaminate and ship off-site	each		#N/A	0	$0	$0	$0	
Decontaminate, dispose on-site	each		#N/A	0	$0	$0	$0	
Other (sealift for equipmt)	each		#N/A	0	$0	$0	$0	
OBJECTIVE: REMOVE CONTAMINATED BUILDINGS								
Decontaminate crushing plant	each		#N/A	0	$0	$0	$0	
Decontaminate tanks & plumbing	each		#N/A	0	$0	$0	$0	
Decontaminate thickeners	each		#N/A	0	$0	$0	$0	
Decontaminate water treatment plant	each		#N/A	0	$0	$0	$0	
Decontaminate maintenance shop	each		#N/A	0	$0	$0	$0	
Decontaminate power plant	each		#N/A	0	$0	$0	$0	
Decontaminate bulk fuel storage	each		#N/A	0	$0	$0	$0	
Decontaminate ANFO plant	each		#N/A	0	$0	$0	$0	
Deontaminate offices/warehouse/accom	each		#N/A	0	$0	$0	$0	
Removal of asbestos siding on buildings	each		#N/A	0	$0	$0	$0	
Removal of friable asbestos on equipment	each		#N/A	0	$0	$0	$0	
Other			#N/A	0	$0	$0	$0	
OBJECTIVE: REMOVE NON-CONTAMINATED BUILDINGS								
crushing plant	m2		#N/A	0	$0	$0	$0	
conveyors & transfer towers	m2		#N/A	0	$0	$0	$0	
tanks & plumbing	m2		#N/A	0	$0	$0	$0	
thickeners	m2		#N/A	0	$0	$0	$0	
water treatment plant	m2		#N/A	0	$0	$0	$0	
maintenance shop	m2		#N/A	0	$0	$0	$0	
power plant	$	1756	TBUS	1	$1,756	100%	$1,756	$0 Camps & Related Facilities tab, cell 47
bulk fuel storage	m2		#N/A	0	$0	$0	$0	
ANFO plant	m2		#N/A	0	$0	$0	$0	
offices/warehouse/accom	$	15804	TBUS	1	$15,804	100%	$15,804	$0 Camps & Related Facilities tab, cell 46
consolidate & dump boneyard debris	m3		#N/A	0	$0	$0	$0	
Related Infrastructure	$	3512	TBUS	1	$3,512	100%	$3,512	$0 Camps & Related Facilities tab, cell 48
OBJECTIVE: BREAK BASEMENT SLABS								
crushing plant	m2		#N/A	0	$0	$0	$0	
conveyors & transfer towers	m2		#N/A	0	$0	$0	$0	
tanks & plumbing	m2		#N/A	0	$0	$0	$0	
thickeners	m2		#N/A	0	$0	$0	$0	
water treatment plant	m2		#N/A	0	$0	$0	$0	
maintenance shop	m2		#N/A	0	$0	$0	$0	
power plant	m2		#N/A	0	$0	$0	$0	
bulk fuel storage	m2		#N/A	0	$0	$0	$0	
ANFO plant	m2		#N/A	0	$0	$0	$0	
offices/warehouse/accom	m2		#N/A	0	$0	$0	$0	
Other	m2		#N/A	0	$0	$0	$0	
OBJECTIVE: LANDFILL FOR DEMOLITION WASTE								
Place soil cover	m3		#N/A	0	$0	$0	$0	
Vegetate	ha		#N/A	0	$0	$0	$0	
Landfill disposal fee	tonne		#N/A	0	$0	$0	$0	
OBJECTIVE: GRADE AND CONTOUR MILL & PLANT SITE								
crushing plant	m2		#N/A	0	$0	$0	$0	
conveyors & transfer towers	m2		#N/A	0	$0	$0	$0	
tanks & plumbing	m2		#N/A	0	$0	$0	$0	
thickeners	m2		#N/A	0	$0	$0	$0	
water treatment plant	m2		#N/A	0	$0	$0	$0	
maintenance shop	m2		#N/A	0	$0	$0	$0	
power plant	m2		#N/A	0	$0	$0	$0	
bulk fuel storage	m2		#N/A	0	$0	$0	$0	
ANFO plant	m2		#N/A	0	$0	$0	$0	
offices/warehouse/accom	m2		#N/A	0	$0	$0	$0	
other	m2		#N/A	0	$0	$0	$0	
OBJECTIVE: RECLAIM ROADS								
Remove culverts	each		#N/A	0	$0	$0	$0	
Remove bridges	each		#N/A	0	$0	$0	$0	
Scarify and install water breaks	ha		#N/A	0	$0	$0	$0	
remove/doze down berms	m3		#N/A	0	$0	$0	$0	
create wildlife passage ramps	m3		#N/A	0	$0	$0	$0	
Vegetate	ha		#N/A	0	$0	$0	$0	
other			#N/A	0	$0	$0	$0	
SPECIALIZED ITEMS								
Decomission Decommission Laydown Areas	$	878	TBUS	1	$878	100%	$878	$0 Camps & Related Facilities tab, cell 50
General site Clean up	$	2634	TBUS	1	$2,634	100%	$2,634	$0 Camps & Related Facilities tab, cell 51
Camp Operation	$	7404	TBUS	1	$7,404	100%	$7,404	$0 Camp Operations tab, cell 18 to 22
Fly waste from Mid Rail Camp to Mary River Camp for landfillir	$	104180	TBUS	1	$104,180	100%	$104,180	$0 Camps & Related Facilities tab, cell 49
			Subtotal		$136,168	100%	$136,168	$0
						Pct Land	Total Land	Total Water

Figure 15: Revised Type B Buildings and Equipment Reclamation Costs - Mineral Mid-Rail Camp

Building / Equip Name: ***Steensby Inlet Camp*** **Bldg / Equip #:** ***9***

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost	Refer in Appendix G3
OBJECTIVE: DISPOSE MOBILE EQUIPMENT									
Decontaminate and ship off-site	$	4218	TBUS	1	$4,218	100%	$4,218	$0	Camps & Related Facilities tab, cell 60
Decontaminate, dispose on-site	each		#N/A	0	$0		$0	$0	
Other (sealift for equipmt)	$	2020	TBUS	1	$2,020	100%	$2,020	$0	Camps & Related Facilities tab, cell 59
OBJECTIVE: REMOVE CONTAMINATED BUILDINGS									
Decontaminate crushing plant	each		#N/A	0	$0		$0	$0	
Decontaminate tanks & plumbing	each		#N/A	0	$0		$0	$0	
Decontaminate thickeners	each		#N/A	0	$0		$0	$0	
Decontaminate water treatment plant	each		#N/A	0	$0		$0	$0	
Decontaminate maintenance shop	each		#N/A	0	$0		$0	$0	
Decontaminate power plant	each		#N/A	0	$0		$0	$0	
Decontaminate bulk fuel storage	each		#N/A	0	$0		$0	$0	
Decontaminate ANFO plant	each		#N/A	0	$0		$0	$0	
Deontaminate offices/warehouse/accom	each		#N/A	0	$0		$0	$0	
Removal of asbestos siding on buildings	each		#N/A	0	$0		$0	$0	
Removal of friable asbestos on equipment	each		#N/A	0	$0		$0	$0	
Other			#N/A	0	$0		$0	$0	
OBJECTIVE: REMOVE NON-CONTAMINATED BUILDINGS									
crushing plant	m2		#N/A	0	$0		$0	$0	
conveyors & transfer towers	m2		#N/A	0	$0		$0	$0	
tanks & plumbing	m2		#N/A	0	$0		$0	$0	
thickeners	m2		#N/A	0	$0		$0	$0	
water treatment plant	m2		#N/A	0	$0		$0	$0	
maintenance shop	m2		#N/A	0	$0		$0	$0	
power plant	$	2020	TBUS	1	$2,020	100%	$2,020	$0	Camps & Related Facilities tab, cell 54
bulk fuel storage	$	1670	TBUS	1	$1,670	100%	$1,670	$0	Camps & Related Facilities tab, cell 57
ANFO plant	m2		#N/A	0	$0		$0	$0	
offices/warehouse/accom	$	23448	TBUS	1	$23,448	100%	$23,448	$0	Camps & Related Facilities tab, cell 53
consolidate & dump boneyard debris	m3		#N/A	0	$0		$0	$0	
Related Infrastructure	$	2634	TBUS	1	$2,634	100%	$2,634	$0	Camps & Related Facilities tab, cell 55
OBJECTIVE: BREAK BASEMENT SLABS									
crushing plant	m2		#N/A	0	$0		$0	$0	
conveyors & transfer towers	m2		#N/A	0	$0		$0	$0	
tanks & plumbing	m2		#N/A	0	$0		$0	$0	
thickeners	m2		#N/A	0	$0		$0	$0	
water treatment plant	m2		#N/A	0	$0		$0	$0	
maintenance shop	m2		#N/A	0	$0		$0	$0	
power plant	m2		#N/A	0	$0		$0	$0	
bulk fuel storage	m2		#N/A	0	$0		$0	$0	
ANFO plant	m2		#N/A	0	$0		$0	$0	
offices/warehouse/accom	m2		#N/A	0	$0		$0	$0	
Other	m2		#N/A	0	$0		$0	$0	
OBJECTIVE: LANDFILL FOR DEMOLITION WASTE									
Place soil cover	m3		#N/A	0	$0		$0	$0	
Vegetate	ha		#N/A	0	$0		$0	$0	
Landfill disposal fee	tonne		#N/A	0	$0		$0	$0	
OBJECTIVE: GRADE AND CONTOUR MILL & PLANT SITE									
crushing plant	m2		#N/A	0	$0		$0	$0	
conveyors & transfer towers	m2		#N/A	0	$0		$0	$0	
tanks & plumbing	m2		#N/A	0	$0		$0	$0	
thickeners	m2		#N/A	0	$0		$0	$0	
water treatment plant	m2		#N/A	0	$0		$0	$0	
maintenance shop	m2		#N/A	0	$0		$0	$0	
power plant	m2		#N/A	0	$0		$0	$0	
bulk fuel storage	m2		#N/A	0	$0		$0	$0	
ANFO plant	m2		#N/A	0	$0		$0	$0	
offices/warehouse/accom	m2		#N/A	0	$0		$0	$0	
other	m2		#N/A	0	$0		$0	$0	
OBJECTIVE: RECLAIM ROADS									
Remove culverts	each		#N/A	0	$0		$0	$0	
Remove bridges	each		#N/A	0	$0		$0	$0	
Scarify and install water breaks	ha		#N/A	0	$0		$0	$0	
remove/doze down berms	m3		#N/A	0	$0		$0	$0	
create wildlife passage ramps	m3		#N/A	0	$0		$0	$0	
Vegetate	ha		#N/A	0	$0		$0	$0	
other			#N/A	0	$0		$0	$0	
SPECIALIZED ITEMS									
Decomission Decommission Laydown Areas	$	7644	TBUS	1	$7,644	100%	$7,644	$0	Camps & Related Facilities tab, cell 56
General site Clean up	$	4218	TBUS	1	$4,218	100%	$4,218	$0	Camps & Related Facilities tab, cell 58
Camp Operation	$	18304	TBUS	1	$18,304	100%	$18,304	$0	Camp Operations tab, cell 18 to 22
Resupply by Helicopter	$	57239	TBUS	1	$57,239	100%	$57,239	$0	Camps & Related Facilities tab, cell 59
Demobilize Freight Sealift Steensby Port to Port of Valleyfield	$	575726	TBUS	1	$575,726	100%	$575,726	$0	Camps & Related Facilities tab, cell 60
				Subtotal	$699,141	100%	$699,141	$0	
						Pct Land	Total Land	Total Water	

Figure 16: Revised Type B Buildings and Equipment Reclamation - Steensby Inlet

E.4 Water

Water Management :

	ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost	Refer in Appendix G3
A	OBJECTIVE: WATER SUPPLY EMBANKMENT									
	Toe buttress, drain mat'l	m3		#N/A	0	$0		$0	$0	
	, fill mat'l A	m3		#N/A	0	$0		$0	$0	
	, fill mat'l B	m3		#N/A	0	$0		$0	$0	
	Rip rap	m3		#N/A	0	$0		$0	$0	
	Vegetate	ha		#N/A	0	$0		$0	$0	
	Breach dam	m3		#N/A	0	$0		$0	$0	
	Other			#N/A	0	$0		$0	$0	
B	OBJECTIVE: UPGRADE SPILLWAY									
	Excavate channel, mat'l A	m3		#N/A	0	$0		$0	$0	
	, mat'l B	m3		#N/A	0	$0		$0	$0	
	Concrete	m3		#N/A	0	$0		$0	$0	
	Rip rap	m3		#N/A	0	$0		$0	$0	
	Other			#N/A	0	$0		$0	$0	
E	OBJECTIVE: STABILIZE &/OR UPGRADE DIVERSION DITCHES									
	Excavate channel	m3		#N/A	0	$0		$0	$0	
	doze & spread excavated material	m3		#N/A	0	$0		$0	$0	
	Vegetate, spread material	ha		#N/A	0	$0		$0	$0	
	Rip rap in channel base	each		#N/A		$0		$0	$0	
F	OBJECTIVE: BREACH DITCHES									
	Excavate breaches	m3		#N/A	0	$0		$0	$0	
	install rip rap	m3		#N/A	0	$0		$0	$0	
	install flow dissipation	m3		#N/A	0	$0		$0	$0	
	vegetate remainder of ditch	m2		#N/A	0	$0		$0	$0	
G	OBJECTIVE: REMOVE PIPELINES									
	Remove pipes	$	14808	TBUS	1	$14,808		$0	$14,808	Water tab, cell 2
	Concrete plug deep pipes	m3		#N/A	0	$0		$0	$0	
	Other			#N/A	0	$0		$0	$0	
H	Groundwater Collection - Long-term Collection System									
	excavate/install sumps	m2		#N/A	0	$0		$0	$0	
	install pumping wells	m3		#N/A	0	$0		$0	$0	
	install pumps/pipelines/power supply			#N/A	0	$0		$0	$0	
I	OBJECTIVE: COLLECT DRAINAGE FOR TREATMENT									
	Excavate channel	m3		#N/A	0	$0		$0	$0	
	doze & spread excavated material	m3		#N/A	0	$0		$0	$0	
	Vegetate, spread material	ha		#N/A	0	$0		$0	$0	
	Rip rap in channel base	each		#N/A	0	$0		$0	$0	
	Construct contaminated water storage pond									
	Excavation	m3		#N/A	0	$0		$0	$0	
	supply geomembrame, HDPE, ES3, GCL	m2		#N/A	0	$0		$0	$0	
	upper and lower bedding layers	m3		#N/A	0	$0		$0	$0	
	install geomembrane, HDPE, ES3, GCL	m2		#N/A	0	$0		$0	$0	
	erosion protection layer	m3		#N/A	0	$0		$0	$0	
J	OBJECTIVE: TREAT DRAINAGE (see "ONGOING TREATMENT" for operating costs)									
	Build treatment plant	LS		#N/A	0	$0		$0	$0	
	build sludge containment facility	LS		#N/A	0	$0		$0	$0	
					Subtotal	$14,808	0%	$0	$14,808	
							Pct Land	Total Land	Total Water	

Figure 17: Revised Type B Water Management Reclamation Costs

Appendix F

Remaining Type 'B' Closure Cost – Mining RECLAIM Closure Cost Model Assumptions

F.1 Introduction

The costs for the Type B Closure Cost Estimate and the Closure Cost Estimate associated with activities that carry over from the Type 'B' Water Licence to the Type 'A' Water Licence were determined using the already agreed upon costs presented in Baffinland Iron Mines Corporation, Mary River Project, 2013 Abandonment And Reclamation Plan For Advanced Exploration Activities, January 2013 (hereon referred to as: 2013 A&R Plan (AMEC, January 2013)). Appendix G3, Cost Estimation Details for Closure of the 2013 A&R Plan (AMEC, January 2013) For Advanced Exploration Activities was used for detailed cost analysis. All capital costs described in 2013 A&R Plan (AMEC, January 2013) were captured in the RECLAIM models.

RECLAIM makes use of separate worksheets to organize the information, and calculate the closure and reclamation costs based on Unit Costs predefined for several activities (a list of the unit costs defined by RECLAIM can be found in the 'Unit_Costs' tab of each RECLAIM model). Based on the level of information and the type of activities to be performed during Closure and Reclamation, the following percentages were applied to the indirect costs. These percentages are calculated based on the subtotal of capital costs:

- Project Management – 5%
- Bonding – 1%
- Insurance – 1%
- Engineering – 5%
- Contingency – 10%

The cost estimate in the 2013 A&R Plan (AMEC, January 2013) Appendix G3 was developed based on all the closure and reclamation costs unit rates and quantities defined as person day and equipment hours. The dollar value of these calculations was carried over to the RECLAIM model to account for them.

To reflect the cost presented in Appendix G3 of the 2013 A&R Plan (AMEC, January 2013) into RECLAIM a hybrid system was developed. With this system the total cost for each item (man hour cost + equipment cost) was input as the quantity assuming a Unit Cost of $1 without contingency. For example, if the cost of the reclamation activities for a certain item was estimated as $20,000 in the 2013 A&R Plan (AMEC, January 2013), then it was assigned 20,000 units at $1 in the RECLAIM model.

Note: RECLAIM spreadsheet calculates Project Management fee as a percentage of the subtotal of capital costs (for the purpose of this estimate, a 5% of the subtotal of capital costs was assigned to the Project Management). Appendix G3 of 2012 A&R Plan has a breakdown for Project Management & Supervision costs (General Site Area, cells 1 to 9, Appendix G3 of 2013 A&R Plan (AMEC, January 2013)). This was therefore excluded from the RECLAIM model to avoid double counting.

Note: All contingency values assigned in 2013 A&R Plan (AMEC, January 2013) - Appendix G3 have not been included to allow for RECLAIM already defined contingency as a percentage of the subtotal of capital costs. For the purpose of this estimate, a 10% contingency was assigned.

In order to keep track the source of the costs and quantities and what activities drive them, a reference was inserted in each line item of RECLAIM that cross references the costing source to Appendix G3 of the 2013 A&R Plan (AMEC, January 2013). Therefore the RECLAIM Model presented and Appendix G3 of the 2013 A&R Plan (AMEC, January 2013) should be read as complementary documents. For further references, Appendix G3 has been incorporate in Appendix I of this document.

Based on calculations of the RECLAIM Model, the cost of reclamation for the following items is as follows:

Table 5: Type B Closure Cost Estimate Reallocation Summary

Applicable Licence	Revised Type B Closure Estimate	Carry-over Type A Estimate from Type B
Total	**$1,246,625**	**$23,651,165**
Land Liability	$1,228,560	$21,546,546
Water Liability	$18,066	$1,772,873

For further discussion of the Closure Cost Estimate for the Revised Type B Closure Estimate and the Carry-over Type A Estimate from Type B please refer to F.1 of this Appendix and Appendix H.

F.2 Type B Closure Cost Estimate

Costs Remaining under Type B Water Licence include:

- All costs associated with Steensby Camp
  - Steensby Inlet Camp operation
  - Decommission of Steensby Inlet Camp
  - Demobilize freight Sealift Steensby Port to Port Valleyfield
- All cost associated with Mid-Rail and any other rail camps
  - Mid-Rail Camp operation
  - Decommission of Remotes Sites
  - Decommission of Mid-Rail Camp
- All Costs associated with drilling and drill holes
  - Bulk Sample Pit
  - Mineral Exploration Areas

For specific references to which line items in the 2012 Mary River A&R Plan costs were considered in the Type B Model refer to the 'Revised Type B Water Licence Closure Cost Estimate' RECLAIM Model which cross references all costs.

A summary of the Revised Type B Closure Cost Estimate RECLAIM model is presented in Figure 11 of Appendix E. All subsequent figures (Figure 12 to Figure 17 of Appendix E) are screenshots from the respective tabs in the RECLAIM model that derives the summary cost table.