

02 December 2015

**Attention:** Sarah Forté,  
Water Management Coordinator  
Aboriginal Affairs and Northern Development Canada  
Nunavut Regional Office, Building 918  
Iqaluit, Nunavut X0A 0H0

**Subject:** **Licence No. 2AM-MRY1325, Mary River Project: Annual Security Review under Part C and Schedule C of the Type 'A' Water Licence – FINAL**

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Dear Sarah,

SNC-Lavalin appreciates the opportunity to participate in the Annual Security Review (ASR) required under Part C and Schedule C of Baffinland Iron Mines Corporation's (BIMC's) Type 'A' Water Licence No. 2AM-MRY1325 for the Mary River Project. This work represents a deliverable under a task (Task 4) of larger call-up mandate for SNC-Lavalin associated with the Mary River Project mine licensing and site closure and reclamation.

The following advice has been provided pursuant to AANDC's responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Indian Affairs and Northern Development Act*.

### **Background**

On October 30th, BIMC filed information for the ASR with the Nunavut Water Board (NWB) in accordance with relevant sections of Schedule C, Item 2 of the Type A Licence. The ASR was subsequently initiated by the NWB, following guidance provided for the review on October 23<sup>rd</sup> (as updated November 9<sup>th</sup>) which requested parties to file written submissions by December 3, 2015.

In conducting this analysis, SNC-Lavalin has relied on the following documentation:

- NWB Type "A" Water Licence 2AM-MRY1325, Mary River Project; 2015-2016 Annual Security Review Process and Guidance for Timing with respect to Part C and Schedule C (dated October 23, 2015);
- Licence No. 2AM-MRY13250 Projected Events and Timelines for the 2015-2016 ASR Process (Updated Version dated November 9, 2015);
- BIMC 2016 Work Plan (dated October 30, 2015);
- BIMC 2016 Marginal Closure and Reclamation Financial Security Estimate (H349000-1000-07-126-0002 dated October 30, 2015);
- BIMC Interim Closure and Reclamation Plan (BAF-PH1-830-P16-0012 rev. 4 dated 4 November 2015)
- AANDC's November 5, 2015 Intervention to the ASR process for the Mary River Project;

- BIMC's letter to Scott Burgess, AANDC, re. 2AM-MRY1325: Baffinland's Comments on AANDC's November 5 Intervention in the upcoming ASR, dated November 11, 2015;
- NWB Water Licence No. 2AM-MRY1325 (Amendment #1, dated July 31, 2014);
- NWB Water Licence No. 2BE-MRY1421 (dated April 17, 2014);
- NWB Water Licence No. 8BC-MRY1416 (dated August 6, 2014); and
- Nunavut Impact Review Board (NIRB) Project Certificate No. 005 (as amended May 28, 2014).

### ***Scope of the ASR Review***

SNC-Lavalin's review builds on our previous reviews carried out for the Mary River Project and addresses whether the existing global security amount as set by the NWB during the 2015 ASR process is adequate to account for the updated scope of activities and undertakings proposed by BIMC in the 2016 Work Plan.

Specifically, the review examines:

- Whether the 2016 cost estimate is sufficient to ensure appropriate closure of the undertaking, restoration of the sites and implementation of any required on-going measures after closure of the undertaking (cumulative and legacy liabilities) estimated in the 2016 Work Plan;
- If the proportion of security applied to both Crown and Inuit Owned Land (IOL) is adequate to meet the highest reclamation liability proposed in 2016/17;
- Whether any issues have not been adequately addressed based on comparisons between the content of the updated work plan and security to Water Licences No. 2AM-MRY1325, No. 2BE-MRY1421, and No. 8BC-MRY1416 including relevant Management Plans as well as previous work plans and closure cost summaries (2014 - 2015) for the Mary River Project; and
- The implications of the BIMC revised estimates on the end-of-2015 RECLAIM model prepared in as part of AANDC's November 5, 2015 ASR intervention.

### ***2016 Work Plan Components***

BIMC has provided their proposed operation and work plan for 2016 in a tabular format broken down by geographic area (i.e., Milne Port, Tote Road, Mine Site) and emphasizing changes from the previous year. The major work activities can be summarized as follows:

#### **Milne Port**

##### *New Work for 2016*

- Install 50,000L portable fuel dispensing unit;
- Convert existing concrete batch plant to a maintenance building;
- Construct approved PWSP at Milne Port; and
- Consideration given to designing and constructing a new landfill. Note this activity would require application and approval from NWB and QIA.

##### *Work Carried over from 2015 Work Plan Addendum;*

- Additional lay down areas required as storage for the 2016 Sealift equipment, supplies and materials; and
- Continue to install and commission communications and IT Infrastructure.

#### **Tote Road**

##### *New Work for 2016*

- Install and operate mobile maintenance depot along the Tote Road;
- Bridge Structure maintenance including abutment stabilization and reinforcement;
- Land clearing within footprint of proposed quarries (multiple locations);

- Road widening and elimination of steep grades (cut and fill) with culvert extensions as required, at multiple locations;
- Eliminate snow trap safety hazard at Km 77 by blasting south side road embankment and widening of the road; and
- Install snow fills and ice bridges for the purpose of transporting large wide loads from Milne Inlet to the Mine Site (i.e., existing bridges not adequate for large, wide and heavy loads).

*Work Carried over from 2015 Work Plan Addendum;*

- Continued improvements including realignment of the road and the offsetting some culvert crossing locations for the purpose of improved safety and efficiency;
- Reduction of maximum slopes, increasing turn radii and road embankment width and thickness for the purpose of improved safety and efficiency;
- Replacement of culverts, and culvert extension as required;
- Installing of safety berms, as required;
- Drill, blast excavate, and cut and fill activities as required to reduce steep grades where necessary to improve sight distance and visibility along the road;
- Remove the three remaining sea-can bridges (bin walls will remain in place); and
- Dust Suppression along the Tote Road (with water and calcium carbonate, and EK 35 for the Airstrip).

**Mine Site**

*New Work for 2016*

- Install 50,000L portable fuel dispensing unit;
- Completion of the Waste Rock Stockpile Pond; and
- Consideration given to designing and constructing a new landfarm during 2016.

*Work Carried over from 2015 Work Plan Addendum;*

- Temporary contractor infrastructure as determined and required by construction contractors (including lunchrooms, offices, etc.), no new units required;
- Complete truck wash;
- Construct and Install three hazardous waste berms; and
- Ongoing maintenance and drainage improvements on Mine Haul Road, Ore Crusher Stockpile Area, and Ponds.

BIMC's 2016 Work Plan also outlines the following activities to be carried out in 2016-17:

- Continued progressive reclamation including the decommissioning of the existing bladder farm at the Mine Site, management of hydrocarbon-impacted soils, continued development of the Mine Site landfill, demobilization (by sealift) of equipment no longer required, reclamation of roads no longer in use, etc.
- Exploration activities (not currently defined);
- Geotechnical drilling as may be required to support engineering, design and construction activities of Project
- Development and operation of the mine, ore crushing and land transportation, stockpiling and marine shipment of ore;
- Additional supplies to support construction and operations through the remainder of 2016 and 2017 will arrive at Milne Port on the 2016 sea lift including:
  - Fuel;
  - Ammonium nitrate.
  - Pre-packaged explosives.

- Maintenance parts.
- Consumables (lubricants, grease, detergents, boosters, EZ Dets, dry goods, food, household supplies, etc.).
- Material, fuel and supplies required for construction and operational activities to be transported to the Mine Site year round via the Tote Road year round;
- Ongoing environmental effects studies and baseline data collection;
- Continued environmental monitoring in accordance with the approved Project Certificate, licences, authorizations, management plans and environmental effects monitoring plans.

### ***BIMC's Security Estimate Development***

On October 30, 2015 BIMC submitted their 2016 Work Plan and the 2016 Marginal Closure and Reclamation Financial Security Estimate (H349000-1000-07-126-0002) for the Project to the NWB, the QIA, and AANDC. The 2016 Marginal Closure and Reclamation Financial Security Estimate represents Baffinland's proposed annual adjustment to reclamation security for 2016. It is BIMC's position that the aggregate of the 2016 Marginal Closure and Reclamation Financial Security Estimate and the previous 2015 Project closure and reclamation security represent the total global closure and reclamation costs required. The estimate assumes a third-party contractor will perform the work in a worst-case scenario to meet reclamation objectives as outlined in the Interim Mine Closure and Reclamation Plan (BAF-PH1-830-P16-0012). The estimate is intended to address all disturbed areas, project components and project activities existing on the Mary River Project site upon conclusion of the 2016 Work Plan.

As part of the 2016 marginal closure and reclamation financial security estimate, BIMC carried out a reassessment of the 2015/16 Annual Security Review. This process was termed the "2015/16 ASR Reconciliation". The reconciliation was intended to more accurately estimate the total global closure and reclamation security by identifying the Project components and activities that have materially changed from the position presented by BIMC during the previous year's ASR and hence warranted a recalculation of the security required. These material changes were identified through an Annual Security Audit of the Project sites conducted August 6 to 11, 2015 by Hatch and QIA representatives.

Based on these identified material changes, Hatch determined the resulting associated security impacts expressed in either positive or negative dollars. The changes primarily relate to:

- Components or activities that have not occurred to-date and are not anticipated to occur in 2016/17; or
- Components or activities that have been superseded by a more current/accurate allocation.

During the 2015/16 ASR Reconciliation process, project components or activities that have been removed from or added to the 2016 ASR direct cost estimate include:

- Buildings and foundations;
- Mobile and mechanical equipment;
- Disturbed areas;
- Vendor packages;
- Consumables; and
- Fill application.

The additional allocations of indirect costs to the 2016 ASR estimate are related to:

- Short-term care and maintenance;
- Closure and post closure monitoring and reporting; and
- Re-estimation based on revised direct costs.

The costs related to short-term care and maintenance and closure and post closure monitoring and reporting are associated with the execution of updated programs as defined in the most current Mary River Project Interim Mine Closure and Reclamation Plan (BAF-PH1-830-P16-0012).

In developing the costs for both the 2016 Work Plan Marginal Financial Security estimate and for the 2015/16 Reconciliation process, BIMC employed Hatch's Estimate Breakdown Structure (EBS) approach. The EBS approach and the unit costs developed are described in 2014 Complete Project Financial Security Assessment Report (H349000-1000-07-126-0018, Rev. 1, October 31, 2014).

BIMC's security estimates for the 2016 Work Plan Marginal Financial Security estimate and the 2015/16 ASR Reconciliation process are summarized in Table 1 with additional detail provided in Table 2.

### ***Review of 2015/16 Reconciliation***

As summarized in Baffinland's Comments on AANDC's November 5 Intervention in the upcoming ASR, (November 11, 2015), various factors led to the need to re-examine or reconcile the amount of security held based on the 2015 ASR process. There was significant reduction in the scope of work undertaken compared to the 2015 Work Plan Addendum. Work that was completed in 2015 was limited to minor capital work activities as follows:

- Tote Road improvements;
- Laydown pad development;
- Small-scale containment berm construction for short term hazardous waste storage;
- Construction of single story, small-scale field-erected geology "core buildings" and an electrical shop; and
- Limited mobilization of additional storage day tanks for water.

Other material changes at the Project sites warranting changes to the security estimate were identified through an Annual Security Audit conducted August 6 to 11, 2015 by Hatch and QIA representatives.

During the 2015 ASR, the inventory of mechanical and mobile equipment on site was based primarily on Hatch's Mechanical Equipment and Motor List (H349000-1000-50-144-0001, Rev.0). This inventory has been superseded by a more current and accurate inventory of mobile and mechanical equipment based on a system provided by SAP Software & Solutions. In the 2016 ASR, this new SAP inventory has become the basis for estimating quantities of mobile and mechanical equipment on-site. The unit costs used for each category of mobile and mechanical equipment remained unchanged from the 2015 estimates.

As part of the 2016 ASR BIMC also refined the security estimates for short-term care and maintenance, closure and post closure monitoring and reporting. This was done in conjunction with the QIA and the refinements reflected the current program designs outlined in the revised Interim Closure and Reclamation Plan (BAF-PH1-830-P16-0012 rev. 4, November 4, 2015).

### ***Direct Cost Reconciliation***

BIMC's 2016 Marginal Closure and Reclamation Financial Security Estimate (H349000-1000-07-126-0002, October 30, 2015) itemizes the activities, facilities and equipment which were either removed or added to their EBS security estimate. The overall summary of these changes to direct costs is provided in Table 3.

**TABLE 1 Mary River Project Total Closure and Reclamation Security Summary<sup>1</sup>**

From: BIMC 2016 Work Plan - October 30, 2015. 2016 Marginal Closure and Reclamation Financial Security Estimate (H349001-1000-07-126-0002, Rev. 0)

	A	B	C	D	E	F	G	H
	Authorization	Liability	Total Estimated for 2015 (\$)	Total Posted (\$)	2015/16 ASR Reconciliation (\$)	Difference (\$)	2016 Work Plan Security Estimate (\$)	Adjustment to be Posted (\$)
						E-D		F+G
1	Type A 2AM-MRY1325	IOL <sup>2</sup>	45,089,000	47,518,000	43,627,000	(3,891,000)	735,000	(3,156,000)
2		Crown	-	166,000	214,000	48,000	192,000	240,000
3		Water	2,214,000	-	1,342,000	1,342,000	0	1,342,000
4		Land	42,876,000	-	42,499,000	42,499,000	928,000	43,427,000
5	<i>Subtotal Type A</i>		<i>45,089,000</i>	<i>47,684,000</i>	<i>43,841,000</i>	<i>(3,843,000)</i>	<i>927,000</i>	<i>(2,916,000)</i>
6	Type B Construction 2BC-MRY1416	IOL <sup>2</sup>	-	-	-	-	-	-
7		Crown	-	147,000	-	(147,000)	-	(147,000)
8		Water	-	-	-	-	-	-
9		Land	-	-	-	-	-	-
10	<i>Subtotal Type B Construction</i>		<i>-</i>	<i>147,000</i>	<i>-</i>	<i>(147,000)</i>	<i>-</i>	<i>(147,000)</i>
11	Type B Exploration 2BE-MRY1421 <sup>3</sup>	IOL	165,000	-	165,000	165,000	-	165,000
12		Crown	1,082,000	1,250,000	1,082,000	(168,000)	-	(168,000)
13		Water	18,000	-	18,000	18,000	-	18,000
14		Land	1,229,000	-	1,229,000	1,229,000	-	1,229,000
15	<i>Subtotal Type B Exploration</i>		<i>1,247,000</i>	<i>1,250,000</i>	<i>1,247,000</i>	<i>(3,000)</i>	<i>-</i>	<i>(3,000)</i>
16	DFO Security Associated with Ore Dock	IOL <sup>2</sup>	-	-	-	-	-	-
17		Crown	3,566,000	3,566,000	3,566,000	-	-	-
18		Water	3,566,000	3,566,000	3,566,000	-	-	-
19		Land	-	-	-	-	-	-
20	<i>Subtotal DFO</i>		<i>3,566,000</i>	<i>3,566,000</i>	<i>3,566,000</i>	<i>-</i>	<i>-</i>	<i>-</i>
21	AANDC Land Lease 47H/16-1-2 <sup>5</sup>	IOL <sup>2</sup>	-	-	-	-	-	-
22		Crown	4,975,000	Note 4	4,975,000	-	-	-
23		Water	-	-	-	-	-	-
24		Land	4,975,000	-	4,975,000	-	-	-
25	<i>Subtotal AANDC Land Lease</i>		<i>4,975,000</i>	<i>-</i>	<i>4,975,000</i>	<i>-</i>	<i>-</i>	<i>-</i>
27	<b>GRAND TOTAL</b>		<b>54,877,000</b>	<b>52,647,000</b>	<b>53,629,000</b>	<b>(3,993,000)</b>	<b>927,000</b>	<b>(3,066,000)</b>

NOTES:

1) Totals rounded to nearest '000 in CAD

2) Security relating to IOL held by Qikiqtani Inuit Association (QIA) under Commercial Lease No. Q13C301

3) As per Mary River Exploration Project Closure and Reclamation Plan (BAF-PH1-830-P16-0038, Rev 1)

4) Posting process for security relating to AANDC Land Lease 47H/16-1-2 still to be determined

5) As per Closure and Reclamation Strategy and Financial Security Estimate for Nunavut Lease #47H/16-1-2 (H349001-2000-07-126-0001, Rev.0)

**TABLE 2 2016 Estimated Closure and Reclamation Security Detailed Summary<sup>1</sup>**

From: BIMC 2016 Work Plan - October 30, 2015. 2016 Marginal Closure and Reclamation Financial Security Estimate (H349001-1000-07-126-0002, Rev. 0)

Cost	2015 Security Addendum (\$)	2015/16 Reconciliation (\$)	2016/17 Work Plan (\$)	Total for 2016/17 ASR (\$)	IOL	Crown Land	Water Liability	Land Liability
<b>Direct Costs</b>					<b>Direct Costs</b>			
Project Wide	886,000	1,150,000	30,000	1,180,000	1,180,000	-	-	1,180,000
Milne Port	6,860,000	5,501,000	131,000	5,632,000	5,632,000	-	227,000	5,405,000
Construction Facilities & Services	2,768,000	2,127,000	-	2,127,000	2,127,000	-	-	2,127,000
Mine Site	9,201,000	8,080,000	80,000	8,160,000	8,160,000	-	1,115,000	7,046,000
Tote Road	4,120,000	4,356,000	339,000	4,695,000	4,435,000	259,000	-	4,695,000
Mary River Exploration Activities	1,022,000	1,022,000	-	1,022,000	135,000	887,000	15,000	1,007,000
<b>Subtotal</b>	<b>24,856,000</b>	<b>22,236,000</b>	<b>580,000</b>	<b>22,816,000</b>	<b>21,670,000</b>	<b>1,146,000</b>	<b>1,357,000</b>	<b>21,459,000</b>
<b>Indirect Costs</b>					<b>Indirect Costs</b>			
Off-Site Disposal of Waste & Material	1,969,000	1,969,000	-	1,969,000	1,969,000	-	-	1,969,000
Fuel Mobilization and Demobilization	3,103,000	3,130,000	14,000	3,144,000	3,144,000	-	-	3,144,000
Ammonium Nitrate (explosive material)	1,429,000	1,429,000	-	1,429,000	1,429,000	-	-	1,429,000
Contaminated Soil Treatment	234,000	239,000	-	239,000	239,000	-	-	239,000
Mobilization of Workers Required for Reclamation	1,001,000	944,000	28,000	972,000	960,000	12,000	-	972,000
Worker Accommodation & Camp Operation	2,710,000	2,440,000	77,000	2,517,000	2,486,000	31,000	-	2,517,000
Mob/Demob of Equipment and Materials by Sealift	2,383,000	2,122,000	58,000	2,180,000	2,154,000	26,000	-	2,180,000
Geotechnical Inspections	150,000	-	-	-	-	-	-	-
Project Environmental Site Assessment	90,000	-	-	-	-	-	-	-
Closure & Post Closure Monitoring	851,000	-	-	-	-	-	-	-
Short Term C&M, Closure Monitoring & Reporting	-	3,766,000	-	3,766,000	3,766,000	-	-	3,766,000
Supervision, PM & Contract Administration	2,422,000	2,176,000	55,000	2,231,000	2,206,000	25,000	-	2,231,000
Engineering Fees	930,000	828,000	23,000	851,000	841,000	10,000	-	851,000
Contingency	3,983,000	3,583,000	93,000	3,676,000	3,634,000	42,000	-	3,676,000
Mary River Exploration Activities	225,000	225,000	-	225,000	30,000	195,000	3,000	222,000
DFO Financial Security for Ore Dock	3,566,000	3,566,000	-	3,566,000	-	3,566,000	3,566,000	-
AANDC Land Lease	4,975,000	4,975,000	-	-	-	-	-	-
<b>Subtotal</b>	<b>30,021,000</b>	<b>31,392,000</b>	<b>348,000</b>	<b>26,765,000</b>	<b>22,857,000</b>	<b>3,908,000</b>	<b>3,569,000</b>	<b>23,196,000</b>
<b>TOTAL</b>	<b>54,877,000</b>	<b>53,628,000</b>	<b>928,000</b>	<b>49,581,000</b>	<b>44,527,000</b>	<b>5,054,000</b>	<b>4,926,000</b>	<b>44,655,000</b>

NOTES:

1) All totals rounded to nearest '000 in CAD

**TABLE 3 Summary of BIMC Direct Cost Reconciliation**

Description	Cost Removed from EBS [\$]	Cost Added to EBS [\$]	Difference [\$]	Total Difference [\$]
Disturbed Areas				
Fill Application		243,248	243,248	379,071
Grade and Contour	2,037,595	2,165,313	127,718	
Grade & Re-contour Signif. Disturbed Areas	85,664	286,096	200,432	
Grade and Re-contour with Liner	272,330	83,403	-188,927	
Liner Removal	3,400		-3,400	
Total Difference	2,398,989	2,778,060	379,071	
Buildings and Flooring / Foundations				
Modular Buildings (Not Contaminated)	532,271	13,480	-518,791	-1,407,711
Modular Buildings (Contaminated)	445,554		-445,554	
Fold Away Buildings (Not Contaminated)		3,159	3,159	
Fold Away Buildings (Contaminated)	269,897		-269,897	
Precast Concrete Foundations	87,199	2,923	-84,276	
Slab on Grade	34,456		-34,456	
Timber Cribbing	57,898		-57,898	
Total Difference	1,427,274	19,563	-1,407,711	
Mobile Equipment				
Light Mobile Equipment	195,747	205,157	9,410	203,577
Medium Mobile Equipment	153,896	156,884	2,988	
Heavy Mobile Equipment	526,394	717,571	191,177	
Total Difference	876,036	1,079,613	203,577	
Mechanical Equipment				
Light Mechanical Equipment	348,621	188,176	-160,445	-1,788,424
Medium Mechanical Equipment	549,712	123,579	-426,133	
Heavy Mechanical Equipment	1,442,191	247,233	-1,194,958	
Misc. Items (Minor)	6,888		-6,888	
Total Difference	2,347,411	558,987	-1,788,424	
Tanks				
Light Tanks	27,928	12,890	-15,038	-64,949
Light Diesel Tanks		3,694	3,694	
Medium Tanks	22,162		-22,162	
Medium Mobile Diesel Tanks	31,443		-31,443	
Total Difference	81,533	16,584	-64,949	
Vendor Packages				
Potable Water Treatment Plant	9,976		-9,976	-21,012
Sewage Water Treatment Plant	11,036		-11,036	
Total Difference	21,012		-21,012	
Consumables				
Consumables		385,441	385,441	385,441
Total Difference		385,441	385,441	
Fill Application				
Fill Application	534,990		-534,990	-534,990
Total Difference	534,990		-534,990	
TOTAL [\$]				-2,848,997



As shown in Table 3, BIMC suggests a decrease in global security associated with the reconciliation of direct costs in the order of \$2,849,000. Most of this decrease is associated with reductions in the number of buildings and associated foundations to be decommissioned, and the reduced inventory of on-site equipment. The overall decrease is partially offset by increased costs associated with grading and re-contouring of disturbed areas and additional costs for the disposal of consumables. The changes BIMC reports are relative the 2014 EBS model as employed during the 2015 ASR process. SNC-Lavalin notes that many of the proposed changes suggested by BIMC were already incorporated into the September 2015 version of the EBS model (in Excel format) which BIMC provided to AANDC and which was used in the development of the RECLAIM ver. 7 model under Task 3 of this call-up. One notable exception is that the new SAP equipment inventories had not yet been incorporated into the September 2015 EBS model provided to AANDC.

SNC-Lavalin notes there is a major reduction in on-site equipment from the original Hatch inventory compared to the new SAP inventory. For example, heavy mechanical equipment decreases from 35 units to only 6 units, and medium mechanical equipment decreases from 129 units to 29 units. BIMC should provide an explanation for the large discrepancies in the two inventories.

Table 2 has been based on the direct costs summarized in various tables from BIMC's 2016 Marginal Closure and Reclamation Financial Security Estimate (H349001-1000-07-126-0002, Rev. 0). Table 3 reproduced from the same BIMC document, indicates a decrease in global security associated with the reconciliation of direct costs in the order of \$2,620,000 (i.e., 2015 Security Addendum direct cost sub-total of \$24,856,000 minus 2015/16 Reconciliation direct cost sub-total of \$22,236,000). This is less than the value of \$2,849,000 generated in Table 3. The difference amounts to \$229,000. BIMC should provide an explanation for the discrepancy between the two values.

Aside from two discrepancies noted above, SNC-Lavalin does not have any major issue with the approach used to reconcile direct costs as described by BIMC. The reconciliation approach was applied in a systematic and comprehensible manner. The unit rates remain consistent with those employed earlier and the proposed changes have been based on their Annual Security Audit findings and their new SAP equipment inventory system.

#### Indirect Cost Reconciliation

For the 2015/16 ASR Reconciliation BIMC identified changes required for indirect costs relating to:

- contaminated soil treatment;
- Short-Term Care and Maintenance, Closure and Post Closure Monitoring and Reporting costs;
- proportional indirect cost changes resulting from a net reduction of direct costs, person-days required on-site and fuel consumption; and
- previous indirect costs.

For contaminated soil treatment an additional \$4,937 has been added to the EBS as part of indirect cost reconciliation. This addition relates to potential soil contamination associated with the Anmar Workshop at Milne Port (based on footprint of 1,670 m<sup>2</sup>, a potential contaminated soil depth of 20 cm and a unit rate of \$14.78/m<sup>3</sup>). This is in addition to the \$234,000 allocated for treating contaminated soils on-site during the 2015/16 ASR.

BIMC has assumed a 2 year Short Term Care and Maintenance Period, followed by 3 years of active closure and 5 years of post-closure activities. Originally as part of the 2015/16 ASR, BIMC allocated \$1,091,000 for closure and post-closure monitoring, follow-up inspections and reporting. They conceded there was a lot of uncertainty with these activities and working together with the QIA endeavored to develop a better security estimate. The 2015/16 ASR Reconciliation has further defined the required

programs and the associated closure costs. The increased definition in the required programs was gleaned from the revised Interim Closure and Reclamation Plan (BAF-PH1-830-P16-0012 rev. 4, November 4, 2015). Based on this additional definition, Baffinland has allocated \$3,766,000 for Short-Term Care and Maintenance, Closure and Post Closure Monitoring and Reporting as part of the 2015/16 ASR reconciliation. This estimate replaces of the previous \$1,091,000 allowance.

BIMC provided an annual breakdown of costs for the Short-Term Care and Maintenance, Closure and Post Closure Monitoring and Reporting activities. For Short Term Care and Maintenance BIMC has assumed a 2-year final closure planning period will be required by a 3rd Party to go through the regulatory approval and planning processes. The total cost for this 2-year period was estimated as \$1,883,000. The major cost estimating assumptions for the Short Term Care and Maintenance program included:

- A two (2) person camp required to manage sites for 365 days/year ;
- Personnel labour cost of \$500/person-day;
- Allowance of \$15,000/year for external sampling fees;
- Environmental Site Assessment allowance of \$59,400 in second year;
- Geotechnical Monitoring allowance of \$17,200 in second year (geotechnical inspection to occur in first year but without formal reporting);
- Socio-Economic Reporting assumed captured under Annual Reporting allowance and overall Supervision, Project Management and Contract Administration closure budget;
- Annual Reporting allowance of \$30,000/year;
- Mob/Demob and Logistical Support Allowance of \$125,000 in first year and \$250,000 in second year;
- Worker Accommodation and Camp Operation costs based on \$225/person-day;
- Supervision, Project Management and Contract Administration of 9.4%; and
- Contingency of 12.5%.

Active final closure and reclamation activities are assumed to occur over a 3-year period. Based on the EBS breakdown of tasks and man-power requirements, BIMC has demonstrated that all the closure activities can be completed within this three year window assuming the work is carried out only in the summer months (mid-June to mid-September) with available camp space of no more than 100 beds site-wide. A total cost estimate of \$500,000 over 3 years has been proposed by BIMC for Closure and Post-Closure Monitoring and Reporting. The major cost estimating assumptions for the Closure Monitoring and Reporting program included:

- Aquatic Monitoring and Reporting allowance of \$35,800 in years 1, 2 and 3;
- Environmental Effects Monitoring allowance of \$ 20,400 in years 1, 2 and 3;
- Air Quality Monitoring Program allowance of \$31,400 in year 2;
- Geotechnical Monitoring to occur every year but without formal reporting (routine inspections);
- Socio-Economic Reporting assumed captured under Annual Reporting allowance and overall Supervision, Project Management and Contract Administration closure budget;
- Annual Reporting allowance of \$30,000/year;
- Mob/Demob and Logistical Support Allowances ranging from \$25,000 to \$50,000 per year;
- Worker Accommodation and Camp Operation costs based on \$225/person-day;
- Supervision, Project Management and Contract Administration of 9.4%; and
- Contingency of 12.5%.

Post-Closure Monitoring and Reporting is assumed to occur over a period of five (5) years following active final closure (post-closure defined as years 4 through 8 in the Interim Closure and Reclamation

Plan (November 4, 2015) after the 3-year active closure period). It is acknowledged that this post-closure period may need to be increased in the future depending on future operational monitoring results. Based on current site development, this 5-year period is reasonable since no legacy issues (e.g., pit creation with acid rock drainage concerns) have developed. A total cost estimate of \$1,384,000 over 5 years has been proposed by BIMC for Closure and Post-Closure Monitoring and Reporting. The major cost estimating assumptions for the Post-Closure Monitoring and Reporting program included:

- Aquatic Monitoring and Reporting allowance for each of the five years ranging from \$23,000 to \$69,000 (sampling events/year decrease from 3 to 1 event over the five year period);
- Environmental Site Assessment allowance of \$59,400 in year 4;
- Environmental Effects Monitoring allowance of \$35,400 and \$23,600 in years 4 and 6 (3 versus 2 sampling events/year), respectively;
- Post-Closure Fauna and Flora Monitoring allowance of \$40,000 in years 5 and 7;
- Geotechnical Monitoring allowance of \$17,200 in years 4 and 8 (geotechnical inspection to occur in other 3 years but without formal reporting);
- Socio-Economic Reporting assumed captured under Annual Reporting allowance and overall Supervision, Project Management and Contract Administration closure budget;
- Annual Reporting allowance of \$30,000/year;
- Mob/Demob and Logistical Support Allowances ranging from \$75,000 to \$150,000 per year;
- Worker Accommodation and Camp Operation costs based on \$225/person-day;
- Supervision, Project Management and Contract Administration of 9.4%; and
- Contingency of 12.5%.

SNC-Lavalin notes that the costing of the monitoring programs has now been linked to the program definitions provided in the most recent version of the Interim Closure and Reclamation Plan (BAF-PH1-830-P16-0012 rev. 4, November 4, 2015). This is appropriate and provides a rationale to modify costs as program definitions and/or closure objectives change with time. Overall SNC-Lavalin has no issues with the cost estimates and the allowances proposed are reasonable.

#### Reconciliation of Previous Indirect Costs

As a result of the reconciliation process, there was a net reduction in overall closure activities as reflected in the reduced direct costs over the 2015/16 ASR process. In the EBS model these reductions yield an associated reduction in man-power and equipment requirements which are tracked by the model. These reduced man-power and equipment requirements translate into reduced mobilization/demobilization costs, reduced fuel, reduced worker accommodation and camp operating costs. Any reduced direct costs also lead to reduced indirect costs where the latter are factored as percentages of the former (e.g., Supervision, Project Management and Contract Administration, Contingency, etc.).

BIMC during the 2015/16 ASR allocated a total of \$23,412,000 to indirect costs. As part of the reconciliation process a total of \$811,031 was removed from the EBS as a result of the net reduction in indirect costs. BIMC's breakdown is provided Table 4. SNC-Lavalin notes there is a \$25,000 discrepancy between BIMC's cited value of \$811,031 in their 2016 Marginal Closure and Reclamation Financial Security Estimate document text and the value provided in Table 4 as reproduced from the same document. No explanation is provided.

SNC-Lavalin does not have any issue with the approach used to reconcile the previous indirect costs. The approach is generally traceable and reproducible (assuming working versions of the EBS model for both scenarios, i.e., pre- and post-reconciliation, are available for review). The EBS Excel files provided

to AANDC had the formulas removed so the derivation of some of the revised values calculated as part of the reconciliation could not be traced. For example, the derivation of the modifications posted for Mobilization & Demobilization of Equipment and Materials by Sealift in Table 4 are not readily apparent. Further explanation from BIMC is warranted.

**TABLE 4 Indirect Costs Modification Based on 2015/16 ASR Reconciliation**

From: BIMC 2016 Marginal Closure and Reclamation Financial Security Estimate (H349000-1000-07-126-0002, October 30, 2015).

Description	Cost (\$)		
	Original	Modified	Difference
Off-Site Disposal of Waste & Material	1,969,000	1,969,000	-
Fuel Mobilization & Demobilization	3,186,000	3,130,000	(58,000)
Ammonium Nitrate (explosive material)	1,429,000	1,429,000	-
Contaminated Soil Treatment	234,000	238,937	4,937
Mobilization of Workers Required for Reclamation	1,155,000	944,000	(214,000)
Worker Accommodation & Camp Operation	3,064,000	2,440,000	(630,000)
Mobilization & Demobilization of Equipment and Materials by Sealift	2,789,000	2,122,000	(671,000)
Geotechnical Inspections	150,000	-	(150,000)
Project Environmental Site Assessment	90,000	-	(90,000)
Closure & Post Closure Monitoring	851,000	-	(851,000)
Short Term C&M, Closure & Post-Closure Monitoring & reporting	-	3,766,032	3,766,032
Supervision, Project Management & Contract Administration	2,803,000	2,176,000	(630,000)
Engineering Fees	1,088,000	828,000	(261,000)
Contingency	4,604,000	3,583,000	(1,027,000)
<b>TOTAL</b>	<b>23,412,000</b>	<b>22,625,969</b>	<b>(786,031)</b>

[Note: In the "Difference" column there are some arithmetic errors which would appear to be greater than mere rounding errors.]

#### Summary of 2015/16 ASR Reconciliation Process

Based on the numbers presented in the text of their 2016 Marginal Closure and Reclamation Financial Security Estimate, BIMC proposes a direct cost reconciliation of -\$2,848,997 (Table 3) and an indirect cost reconciliation of -\$786,031 (Table 4). Together these yield an overall reduction in security of \$3,635,028. This does not match the difference of \$1,248,000 (Subtotal Type A \$45,089,000 minus \$43,841,000) shown in Table 2 which was directly extracted from the 2016 Marginal Closure and Reclamation Financial Security Estimate document. The difference amounts to approximately \$2,387,000. The reason for this discrepancy is not immediately obvious and BIMC should be asked to account for the difference.

Overall SNC-Lavalin has no issues with the approach used to reconcile historical estimates. The introduction/refinement of Short-Term Care and Maintenance, Closure and Post Closure Monitoring and Reporting are welcome improvements.

#### **Review of 2016 Work Plan Revisions**

BIMC assumed the following in deriving the marginal security estimates for the 2016 Work Plan:

- an additional \$120,000, plus proportional cover material application costs, related to the requirement for a Mobile Maintenance Depot on the Tote Road. Assumed as a Fold-Away building (contaminated) with a slab floor (Note: actually constructed with a welded liner floor with soil cover);
- an additional \$181,000, plus cover material application costs to account for a marginal increase of mechanical and mobile equipment. This includes 4 Medium Fuel Tanks, 25 pieces of Heavy Mobile Equipment, 28 pieces of Medium Mobile Equipment and 34 pieces of Light Mobile Equipment; as itemized in the 2016 Work Plan;

- an additional \$279,000 for cover material application resulting from the marginal increase of demolition materials to be disposed of on-site, reclamation of additional disturbed areas, and liner removal;
- an additional \$14,000 for fuel mobilization is based on the cost of mobilizing 50% of the fuel required for marginal reclamation and closure activities, including direct activities, power generation and heat production;
- an additional \$28,000 for worker mobilization related on-site marginal reclamation activities. Estimated at 343 person-days with 70% of hires from southern communities at \$85.45/person-day on-site and 30% from northern communities at \$75.00/person-day on-site;
- an additional \$77,000 for worker accommodation and camp operation assuming additional 343 person-days and accommodation and camp operating costs of \$225.50/person-day which includes camp maintenance, catering, housekeeping, and fuel costs;
- an additional \$58,000 for mobilization and demobilization of equipment and materials (i.e., indirect costs for moving equipment and materials to and from the reclamation site). Estimated as 10% of total direct costs;
- for Project Supervision, Management and Contract Administration an allowance of \$55,000 based on 9.4% of total direct costs, contaminated soil treatment costs, care and maintenance costs, and closure monitoring/reporting costs;
- cost allowance of \$23,000 for Engineering Fees based on 3.9% of the total direct costs; and
- an additional contingency of \$93,000 or 12.5% of the total of direct costs, mobilization and demobilization of equipment and materials costs, worker accommodation and camp operation costs, mobilization of workers costs, care and maintenance costs, and closure monitoring/reporting costs.

Overall the marginal 2016 Work Plan security estimate was calculated as an additional \$928,000. This is summarized in Table 5.

The security estimates provided by BIMC are considered reasonable given the limited construction activity proposed in the 2016 Work Plan. The unit costs and costing assumptions were consistent with the cost assumptions described in the 2014 Complete Project Financial Security Assessment (H349000-1000-07-126-0018, Rev 1).

SNC-Lavalin notes there is no reference to the Mobile Maintenance Depot facility in the Project Certificate or in any of the project Water Licences. It is our understanding the facility is being addressed as part of its Land Use Permit, and the Lands Division of AANDC is currently in discussions with BIMC. In Project Certificate No. 005, Term and Condition No. 46 states "*The Proponent shall ensure that runoff from fuel storage and maintenance facility areas, sewage and wastewater other facilities responsible for generating liquid effluent and runoff meet discharge requirements*". This would need to be addressed for the Mobile Maintenance Depot. Similarly the Mobile Maintenance Depot would need to be addressed in the next revisions to the Spill Contingency Plan, Emergency Response Plan and any other applicable management plans.

#### ***BIMC EBS Estimate versus RECLAIM ver. 7***

SNC-Lavalin carried out RECLAIM modeling of the required global security requirements representative of conditions at the completion of the 2016 Work Plan. The end-of-2015 RECLAIM model created during Task 3 was used as the starting point. The approach was to modify the end-of-2015 RECLAIM model by instituting the changes identified as part of BIMC's 2015/16 ASR reconciliation process and then add the work activities associated with the 2016 Work Plan. When Task 3 was initiated, BIMC provided the latest version of their EBS Excel file (dated September 23, 2015) which was used as a basis to create the end-of-2015 RECLAIM model. The September 23rd EBS file already incorporated many of the changes

identified as part of BIMC's 2015/16 ASR reconciliation, but not all. SNC-Lavalin compared the September 23 file with the October 30<sup>th</sup> version provided with the ASR documents to itemize those changes still required to be made. One major change still required to be made to the September 23rd EBS file was the incorporation of the new SAP equipment inventories replacing the original Hatch Mechanical Equipment and Motor List.

**TABLE 5 Summary of BIMC's 2016 Work Plan Marginal Cost Estimate**

Description	Unit Rate	Unit	Quantity	Cost [\$]	Total [\$]
<b>Buildings and Foundations</b>					
Foldaway Building	142	m <sup>2</sup>	682	97,000	
Slab on Grade	33	m <sup>2</sup>	682	23,000	
Total				120,000	120,000
<b>Mechanical and Mobile Equipment</b>					
Medium Fuel Tank	10,481	pcs	4	42,000	
Heavy Mobile Equipment	2,619	pcs	25	65,000	
Medium Mobile Equipment	1,494	pcs	28	42,000	
Light Mobile Equipment	941	pcs	34	32,000	
Total			91	181,000	181,000
<b>Site Works</b>					
Fill Application - 2016	44.4	m <sup>2</sup>	668	29,653	
Grade & Contour	1.8	m <sup>2</sup>	119,721	216,730	
Grade & Contour with Liner	5.3	m <sup>2</sup>	5,680	30,151	
Mobile Maintenance Depot - Liner Removal	3.5	m <sup>2</sup>	682	2,386	
Total				279,000	279,000
<b>Indirect Costs</b>					
Mobilization of Fuel				14,000	14,000
Worker Mobilization				28,000	28,000
Worker Accommodation and Camp Operation				77,000	77,000
Mobilization and Demobilization of Equipment and Materials <sup>1</sup>	10	%		58,000	58,000
Project Supervision, Management and Contract Administration <sup>2</sup>	9.4	%		55,000	55,000
Engineering Fees <sup>3</sup>	3.9	%		23,000	23,000
Contingency <sup>4</sup>	12.5	%		93,000	93,000
<b>TOTAL</b>					<b>928,000</b>

The RECLAIM model incorporating the 2015/16 ASR Reconciliation changes is provided in Attachment A. The reconciliation changes not previously captured under the end-of-2015 RECLAIM model completed under Task 3 have been highlighted in yellow. The 2016 Work Plan RECLAIM model representative of conditions at the end of 2016 (completion of the 2016 Work Plan) is provided in Attachment B. Changes in the 2016 Work Plan RECLAIM model relative to the 2015/16 Reconciliation RECLAIM model in Attachment A are highlighted in pale orange.

<sup>1</sup> Based on 10% of total direct costs.

<sup>2</sup> Based on 9.4% of total direct costs, contaminated soil treatment costs, care and maintenance costs, and closure monitoring/ reporting costs.

<sup>3</sup> Based on 3.9% of total direct costs.

<sup>4</sup> Based on 12.5 % of total of direct costs, mobilization and demobilization of equipment and materials costs, worker accommodation and camp operation costs, mobilization of workers costs, care and maintenance costs, and closure monitoring/reporting costs.

### Security Estimate Comparisons

BIMC estimated the required security for the Type A Water Licence after the 2015/16 ASR reconciliation would be \$43,841,000 (i.e., Subtotal Type A, column E in Table 1). The 2015/16 Reconciliation RECLAIM model generated a security estimate of approximately \$48,242,000. The difference between the two estimates (Table 6) for the Type A Water Licence is \$4,401,000. The increase can be largely attributed to the increased security calculated during the previous end-of-2015 RECLAIM modeling during Task 3 which can be partly attributed to higher costs for Interim Care and Maintenance.

**TABLE 6 Comparison of Type A Water Licence Reconciliation Security Estimates**

Type A Water Licence Reconciliation Security Estimates		
EBS Estimate	RECLAIM Estimate	Difference
\$43,841,000	\$48,242,000	\$4,401,000

BIMC estimated the required marginal security for the 2016 Work Plan would be \$928,000 for the Type A Water Licence (Table 2, or \$927,000 in Table 1). The RECLAIM model calculated a marginal security estimate of \$859,000 (i.e., the end-of-2016 RECLAIM model result of \$49,101,425 minus the 2015/16 Reconciliation RECLAIM model result of \$48,242,441). The difference between the EBS and RECLAIM estimates is \$69,000 (Table 7). The small difference is related to the calculation of indirect costs. Direct costs would be similar as quantities and unit rates used in both models were similar.

**TABLE 7 Comparison of Type A Water Licence Marginal 2016 Work Plan Security Estimates**

Type A Water Licence Marginal 2016 Work Plan Security Estimates		
EBS Estimate	RECLAIM Estimate	Difference
\$928,000	\$859,000	-\$69,000

BIMC estimated the required global security for the Type A Water Licence after completion of the 2016 Work Plan would be \$44,769,000 (i.e., reconciliation value of \$43,841,000 plus \$928,000 for 2016 Work Plan). The end-of-2016 RECLAIM model generated a security estimate of approximately \$49,101,000. The difference between the two estimates (Table 8) for the Type A Water Licence is \$4,332,000 and is largely the result of the proportioning of indirect costs.

**TABLE 8 Type A Water Licence Security Estimates at Completion of the 2016 Work Plan**

Type A Water Licence Security Estimates at Completion of 2016 Work Plan		
EBS Estimate	RECLAIM Estimate	Difference
\$44,769,000	\$49,101,000	\$4,332,000

### Land versus Water

As identified in the Task 3 report, only a limited number of items in the EBS model were allocated to water liability (e.g., pipelines, water and wastewater treatment plants). In the October 30<sup>th</sup> EBS, culvert removal at a cost of \$419,186 and bridge removal at \$807,355 have both been allocated to land liability. In the RECLAIM model these have been assigned to water liability. In the RECLAIM model SNC-Lavalin has also allocated all water and wastewater pumps, sediment and water management ponds and water

tanks/mobile water tankers to water liability. As a result, the RECLAIM model output indicates a higher proportion of water liability than the EBS results in terms of direct costs. It follows that indirect costs proportionally assigned to water liability are also higher in the RECLAIM model compared to the EBS results. This includes proportioning some of the RECLAIM Closure and Post-closure Monitoring and Reporting costs to water liability (as per the proportion of water to land liability under direct costs).

The breakdown of water versus land liability for the RECLAIM models is shown on the “Summary of Costs” worksheets in Attachments A and B. As indicated on the “Summary of Costs” worksheets, water liabilities represent approximately 23% of the total security estimates for both RECLAIM models. This is significantly higher than the approximately 3% indicated for the EBS model (Table 2) once the “DFO Financial Security for Ore Dock” and “Mary River Exploration Activities” are removed.

#### IOL versus Crown

The RECLAIM modeling results assign a higher proportion of direct costs to the Crown than the EBS model.

P1 Borrow has now been correctly identified in the Oct 30 EBS model as Crown liability as it has always been identified in the RECLAIM models. However, culvert removal and Tote Road grading and contouring in the October 30<sup>th</sup> EBS is indicated as all IOL liability despite the fact that a portion of the Tote Road (about 7.5 km) is on Crown Land. A portion of these reclamation costs have been assigned to Crown liability in the RECLAIM models (7%). Both RECLAIM and EBS assign the Mobile Maintenance Depot facility identified in the 2016 Work Plan to Crown liability.

The breakdown of IOL versus Crown Land liability for the RECLAIM models is shown on the “Summary of Costs” worksheets in Attachments A and B. As indicated on the “Summary of Costs” worksheets, Crown liabilities represent approximately 1.2 to 1.8% of the total security estimates in the two RECLAIM models; the higher value in the end-of-2016 RECLAIM model given the Mobile Maintenance Depot is on Crown land. These RECLAIM estimates are higher than the approximately 0.9% indicated for the EBS model in Table 2 once “DFO Financial Security for Ore Dock” and “Mary River Exploration Activities” are excluded.

Table 9 shows a comparison of the RECLAIM Crown liability security estimates at the completion of the 2016 Work Plan versus the amount of security held under Type A Licence No. 2AM-MRY1325.

**TABLE 9 RECLAIM Estimates versus Type A Licence Security Currently Held**

Type A Water Licence Security Estimate at Completion of the 2016 Work Plan		
Licence	RECLAIM Crown Liability Estimate	Security Held
No. 2AM-MRY1325	\$887,000 <sup>5</sup>	\$166,000
No. 8BC-MRY1416 <sup>6</sup>		\$147,000
<b>Total</b>	<b>\$887,000</b>	<b>\$313,000</b>

Table 10 summarizes the RECLAIM security estimates calculated for the 2015/16 reconciliation and at the completion of the 2016 Work Plan. Table 11 provides the detailed RECLAIM summary (from Attachment B) representing the total security estimate by project component for the mine development at the completion of the 2016 Work Plan.

Based on the ASR review, the following comments are offered:

<sup>5</sup> From Attachment B, “Summary of Costs” worksheet rounded to nearest ‘000.

<sup>6</sup> While the activities of Licence No. 8BC-MRY1416 have been incorporated into Licence No. 2AM-MRY1325, the security amount of \$147,000 has not been incorporated and is held separately.



- The assignment of water liability needs to address a broader definition of activities (e.g., bridge and culvert removal) and equipment (e.g., water and wastewater pumps and tanks). This should also include an appropriate proportion of costs related to Closure and Post-closure monitoring and reporting.
- The assignment of Crown versus IOL liabilities in the EBS model needs to be re-examined to recognize a portion of the Tote Road is on Crown land as it relates to culvert removal and grading and re-contouring. Also indirect costs in the EBS model need to be appropriately proportioned to Crown liability particularly those related to Closure and Post-closure monitoring and reporting.
- The proponent should provide an explanation for the large discrepancies between the original Hatch inventory compared to the new SAP inventory for mobile and fixed equipment.
- The proponent should provide an explanation for the discrepancies between various cost summaries in their 2016 Marginal Closure and Reclamation Financial Security Estimate (H349000-1000-07-126-0002, October 30, 2015) document. These discrepancies relate to differences in text versus tabular summaries for the 2015/16 ASR Reconciliation of \$229,000 for direct costs, \$25,000 for indirect costs and \$2,387,000 for overall reconciliation costs.
- As part of the 2015/16 ASR Reconciliation process, BIMC has “modified” some of their earlier cost estimates. How these reconciliation modifications were calculated is not clear and should be explained in more detail. Further, many of the “modifications”, unlike the EBS “additions” and “removals”, are not clearly identified in the October 30, 2015 EBS model and hence were not captured in the 2015/16 Reconciliation RECLAIM model thus increasing differences between the EBS and RECLAIM models.
- AANDC should consider modifying the RECLAIM model to enable the program to track land ownership (i.e., IOL versus Crown land liability).

**TABLE 10 RECLAIM Security Cost Summaries for the 2015/16 ASR Reconciliation and 2016 Work Plan**

<b>Type A Water Licence RECLAIM Security Estimates</b>					
<b>Cost Category</b>	<b>Total</b>	<b>Land Liability</b>	<b>Water Liability</b>	<b>IOL Liability</b>	<b>Crown Liability</b>
<b>2015/16 Reconciliation</b>					
Direct	\$25,211,062	\$19,398,069	\$5,812,993	\$24,903,783	\$307,279
Indirect	\$23,031,379	\$17,720,963	\$5,310,417	\$22,750,667	\$280,713
<b>Total</b>	<b>\$48,242,441</b>	<b>\$37,119,032</b>	<b>\$11,123,409</b>	<b>\$47,654,449</b>	<b>\$587,992</b>
<b>Marginal 2016 Work Plan</b>					
Direct	\$531,468	\$409,127	\$122,341	\$373,700	\$157,768
Indirect	\$327,516	\$252,182	\$75,334	\$186,242	\$141,273
<b>Total</b>	<b>\$858,984</b>	<b>\$661,309</b>	<b>\$197,675</b>	<b>\$559,943</b>	<b>\$299,041</b>
<b>2015/16 ASR Reconciliation and 2016 Work Plan</b>					
Direct	\$25,742,530	\$19,807,196	\$5,935,334	\$25,277,483	\$465,047
Indirect	\$23,358,895	\$17,973,145	\$5,385,750	\$22,936,909	\$421,986
<b>Total</b>	<b>\$49,101,425</b>	<b>\$37,780,341</b>	<b>\$11,321,084</b>	<b>\$48,214,392</b>	<b>\$887,032</b>

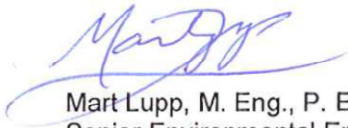
**TABLE 11 Detailed RECLAIM Cost Summary for 2015/16 ASR Reconciliation and 2016 Work Plan**

RECLAIM Cost Summary for 2015/16 ASR Reconciliation and 2016 Work Plan						
Capital Costs	Component Name	Cost	Land Liability	Water Liability	IOL Liability	Crown Liability
Open Pit	Mary River Mine Pit	\$4,059,486	\$4,059,486		\$3,922,229	\$137,257
Underground Mine						
Tailings Facility						
Rock Pile	Mine Site Waste Rock Pile	\$343,956	\$343,956		\$343,956	
Buildings and Equipment	Mine Site	\$6,524,804	\$6,326,822	\$197,982	\$6,524,804	
	Milne Port	\$5,918,170	\$5,859,710	\$58,460	\$5,918,170	
	Tote Road	\$2,333,618	\$1,009,954	\$1,323,664	\$2,114,640	\$218,978
	Project Wide/ Other	\$539,255	\$539,255		\$539,255	
Chemicals and Contaminated Soil Management		\$1,668,014	\$1,668,014		\$1,637,881	\$30,133
Surface and Groundwater Management		\$1,563,082		\$1,563,082	\$1,534,845	\$28,238
Interim Care and Maintenance		\$2,792,145		\$2,792,145	\$2,741,704	\$50,441
	<b>Sub-total: Capital Costs</b>	<b>\$25,742,530</b>	<b>\$19,807,196</b>	<b>\$5,935,334</b>	<b>\$25,277,483</b>	<b>\$465,047</b>
	<b>Percent of Subtotal</b>		<b>76.9%</b>	<b>23.1%</b>	<b>98.2%</b>	<b>1.8%</b>
Overall Indirect Costs		Cost	Land Liability	Water Liability	IOL Liability	Crown Liability
Mobilization/Demobilization		\$13,998,908	\$10,771,246	\$3,227,662	\$13,746,014	\$252,895
Post-Closure Monitoring and Maintenance		\$1,560,000	\$1,200,318	\$359,682	\$1,531,818	\$28,182
Engineering	3.9%	\$1,003,959	\$772,481	\$231,478	\$985,822	\$18,137
Project Management	9.4%	\$2,419,798	\$1,861,876	\$557,921	\$2,376,083	\$43,714
H&S Plans/Monitoring & QA/QC	0%					
Bonding/Insurance	2%	\$514,851	\$396,144	\$118,707	\$505,550	\$9,301
Contingency	15%	\$3,861,379	\$2,971,079	\$890,300	\$3,791,622	\$69,757
Market Price Factor Adjustment	0%					
	<b>Sub-total: Overall Indirect Costs</b>	<b>\$23,358,895</b>	<b>\$17,973,145</b>	<b>\$5,385,750</b>	<b>\$22,936,909</b>	<b>\$421,986</b>
<b>TOTAL COSTS</b>		<b>\$49,101,425</b>	<b>\$37,780,341</b>	<b>\$11,321,084</b>	<b>\$48,214,392</b>	<b>\$887,032</b>

SNC-Lavalin appreciates the opportunity to participate in this study and trusts the provided review will be useful in the upcoming ASR process. Please do not hesitate to contact the under-signed if you require any clarification of the information contained within this submission.

Sincerely,

**SNC-Lavalin Inc.**



Mart Lupp, M. Eng., P. Eng.  
Senior Environmental Engineer



Attach.

## Attachment A

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### 2015/16 Reconciliation RECLAIM Model

## SUMMARY OF COSTS

CAPITAL COSTS	COMPONENT NAME	COST	LAND LIABILITY	WATER LIABILITY	IOL LIABILITY	CROWN LIABILITY
OPEN PIT	Mary River Mine Pit	\$3,842,756	\$3,842,756	\$0	\$3,705,499	\$137,257
UNDERGROUND MINE		\$0	\$0	\$0	\$0	\$0
TAILINGS FACILITY		\$0	\$0	\$0	\$0	\$0
ROCK PILE	Mine Site Waste Rock Pile	\$343,956	\$343,956	\$0	\$343,956	\$0
BUILDINGS AND EQUIPMENT	Mine Site	\$6,445,399	\$6,255,974	\$189,425	\$6,445,399	\$0
	Milne Port	\$5,827,545	\$5,763,132	\$64,413	\$5,827,545	\$0
	Tote Road	\$2,211,524	\$984,983	\$1,226,541	\$2,114,639	\$96,885
	Project Wide/ Other	\$539,255	\$539,255	\$0	\$539,255	\$0
CHEMICALS AND CONTAMINATED SOIL MANAGEMENT		\$1,668,014	\$1,668,014	\$0	\$1,647,684	\$20,330
SURFACE AND GROUNDWATER MANAGEMENT		\$1,540,469	-	\$1,540,469	\$1,521,693	\$18,776
INTERIM CARE AND MAINTENANCE		\$2,792,145	-	\$2,792,145	\$2,758,113	\$34,031
SUBTOTAL: Capital Costs		<u>\$25,211,062</u>	<u>\$19,398,069</u>	<u>\$5,812,993</u>	<u>\$24,903,783</u>	<u>\$307,279</u>
PERCENT OF SUBTOTAL			76.9%	23.1%	98.8%	1.2%

OVERALL INDIRECT COSTS		COST	LAND LIABILITY	WATER LIABILITY	IOL LIABILITY	CROWN LIABILITY
MOBILIZATION/DEMOBILIZATION		\$13,832,428	\$10,643,042	\$3,189,386	\$13,663,834	\$168,593
POST-CLOSURE MONITORING AND MAINTENANCE		\$1,560,000	\$1,200,306	\$359,694	\$1,540,986	\$19,014
ENGINEERING	3.9%	\$983,231	\$756,525	\$226,707	\$971,248	\$11,984
PROJECT MANAGEMENT	9.4%	\$2,369,840	\$1,823,418	\$546,421	\$2,340,956	\$28,884
HEALTH AND SAFETY PLANS/MONITORING & QA/QC	0%	\$0	\$0	\$0	\$0	\$0
BONDING/INSURANCE	2%	\$504,221	\$387,961	\$116,260	\$498,076	\$6,146
CONTINGENCY	15%	\$3,781,659	\$2,909,710	\$871,949	\$3,735,567	\$46,092
MARKET PRICE FACTOR ADJUSTMENT	0%	\$0	\$0	\$0	\$0	\$0
SUBTOTAL: Overall Indirect Costs		<u>\$23,031,379</u>	<u>\$17,720,963</u>	<u>\$5,310,417</u>	<u>\$22,750,667</u>	<u>\$280,713</u>

<b>TOTAL COSTS</b>		<b>\$48,242,441</b>	<b>\$37,119,032</b>	<b>\$11,123,409</b>	<b>\$47,654,449</b>	<b>\$587,992</b>
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Open Pit Name: <i>Mary River Mine Pit</i>					Pit # <u>1</u>				
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	% Cost Land	Land Cost	Water Cost	
CONTROL ACCESS									
Fence		m3		#N/A	\$0.00	\$0	\$0	\$0	
Signs		each		#N/A	\$0.00	\$0	\$0	\$0	
Berm at crest		m3		#N/A	\$0.00	\$0	\$0	\$0	
Block roads		m3		#N/A	\$0.00	\$0	\$0	\$0	
Other				#N/A	\$0.00	\$0	\$0	\$0	
STABILITY STUDY									
Conduct stability and setback study		allow		#N/A	\$0.00	\$0	\$0	\$0	
COVER/CONTOUR SLOPES									
Place fill, soil A		m3		#N/A	\$0.00	\$0	\$0	\$0	
Place fill, soil B		m3		#N/A	\$0.00	\$0	\$0	\$0	
Rip rap		m3		#N/A	\$0.00	\$0	\$0	\$0	
CONSTRUCT DIVERSION DITCHES									
Excavate ditches -soil		m3		#N/A	\$0.00	\$0	\$0	\$0	
Excavate ditches -rock		m3		#N/A	\$0.00	\$0	\$0	\$0	
Rip rap in channel base		m3		#N/A	\$0.00	\$0	\$0	\$0	
CONSTRUCT SPILLWAY									
Excavate channel		m3		#N/A	\$0.00	\$0	\$0	\$0	
Concrete		m3		#N/A	\$0.00	\$0	\$0	\$0	
Rip rap		m3		#N/A	\$0.00	\$0	\$0	\$0	
Other				#N/A	\$0.00	\$0	\$0	\$0	
GRADE AND CONTOUR									
D1Q2 Quarry	The unit cost is inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19).	m2	109,807	15GCS	\$1.81	\$198,783	100%	\$198,783	\$0
Q1 Quarry	The unit cost is inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19).	m2	64,200	15GCS	\$1.81	\$116,221	100%	\$116,221	\$0
Q11 Quarry	The unit cost is inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19).	m2	50,433	15GCS	\$1.81	\$91,299	100%	\$91,299	\$0
Q19 Quarry	The unit cost is inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19).	m2	18,760	15GCS	\$1.81	\$33,961	100%	\$33,961	\$0
Q7 Quarry	The unit cost is inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19).	m2	53,050	15GCS	\$1.81	\$96,036	100%	\$96,036	\$0
QMR2 Quarry	The unit cost is inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19).	m2	258,580	15GCS	\$1.81	\$468,106	100%	\$468,106	\$0
Pit 1	The unit cost is inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19).	m2	55,000	15GCS	\$1.81	\$99,566	100%	\$99,566	\$0
Pit 1 - Marginal increase	The unit cost is inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19).	m2	214,450	15GCS	\$1.81	\$388,218	100%	\$388,218	\$0
P1 Borrow Source	The unit cost is inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19).	m2	75,820	15GCS	\$1.81	\$137,257	100%	\$137,257	\$0
Km 2 Borrow source	The unit cost is inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19).	m2	41,795	15GCS	\$1.81	\$75,661	100%	\$75,661	\$0
Borrow development areas	The unit cost is inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19).	m2	42,080	15GCS	\$1.81	\$76,177	100%	\$76,177	\$0
Unidentified Borrow Sources	The unit cost is inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19).	m2	697,910	15GCS	\$1.81	\$1,263,423	100%	\$1,263,423	\$0
GRADE AND CONTOUR SIGNIFICANTLY DISTURBED AREAS									
Km 97 Borrow source	The unit cost is inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19).	m2	157,012	15GCDS	\$2.72	\$426,357	100%	\$426,357	\$0
Type A Quarry	The unit cost is inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19).	m2	136,880	15GCDS	\$2.72	\$371,690	100%	\$371,690	\$0
RECLAIM QUARRIES									
Contour slopes		m3		#N/A	\$0.00	\$0	\$0	\$0	
Place overburden		m3		#N/A	\$0.00	\$0	\$0	\$0	
Total						\$3,842,756	\$3,842,756	\$0	
% of Total							100%	0%	

Ref 1: 2014 Complete Project Financial Security Assessment, Document No. H349000-1000-07-126-0018, Rev. 1.

Rock Pile Name: <i>Mine Site Waste Rock Pile</i>									
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
<b>STABILIZE SLOPES</b>									
Flatten slopes with dozer		m3		#N/A	\$0.00	\$0		\$0	\$0
Flatten "bubble dump" areas		m3		#N/A	\$0.00	\$0		\$0	\$0
Divert runon, ditch mat'l A		m3		#N/A	\$0.00	\$0		\$0	\$0
Divert runon, ditch mat'l B		m3		#N/A	\$0.00	\$0		\$0	\$0
Toe buttress, drain mat'l		m3		#N/A	\$0.00	\$0		\$0	\$0
Toe buttress, fill mat'l A		m3		#N/A	\$0.00	\$0		\$0	\$0
Toe buttress, fill mat'l B		m3		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
<b>COVER ROCK PILE</b>									
Subgrade preparation - doze surface		m3		#N/A	\$0.00	\$0		\$0	\$0
Soil cover - excavate,haul,spread&compact		m3		#N/A	\$0.00	\$0		\$0	\$0
Rock cover - excavate,haul & spread		m3		#N/A	\$0.00	\$0		\$0	\$0
Excavate downslope drainage channel & chute		m3		#N/A	\$0.00	\$0		\$0	\$0
Rip rap drainage channel and chute		m3		#N/A	\$0.00	\$0		\$0	\$0
Vegetate		ha		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
<b>VERY LOW PERMEABILITY COVER (in addition to above)</b>									
Liner subgrade preparation - compact		m2		#N/A	\$0.00	\$0		\$0	\$0
Supply geomembrane		m2		#N/A	\$0.00	\$0		\$0	\$0
Install geomembrane		m2		#N/A	\$0.00	\$0		\$0	\$0
Protective cover - excavate,haul,spread&compact		m3		#N/A	\$0.00	\$0		\$0	\$0
Vegetate		ha		#N/A	\$0.00	\$0		\$0	\$0
Install infiltration/seepage instrumentation		allow		#N/A	\$0.00	\$0		\$0	\$0
<b>CONSTRUCT DIVERSION DITCHES</b>									
Excavate ditches -soil		m3		#N/A	\$0.00	\$0		\$0	\$0
Excavate ditches -rock		m3		#N/A	\$0.00	\$0		\$0	\$0
Rip rap in channel base		m3		#N/A	\$0.00	\$0		\$0	\$0
<b>CONSTRUCT SEEPAGE COLLECTION POND</b>									
Excavate seepage collection pond		m3		#N/A	\$0.00	\$0		\$0	\$0
Doze & spread excavated material		m3		#N/A	\$0.00	\$0		\$0	\$0
Vegetate spread material		ha		#N/A	\$0.00	\$0		\$0	\$0
Bedding layer		m3		#N/A	\$0.00	\$0		\$0	\$0
Supply geomembrane		m2		#N/A	\$0.00	\$0		\$0	\$0
Install geomembrane		m2		#N/A	\$0.00	\$0		\$0	\$0
Erosion protection layer		m3		#N/A	\$0.00	\$0		\$0	\$0
<b>RELOCATE DUMPS</b>									
Load, haul, dump or doze		m3		#N/A	\$0.00	\$0		\$0	\$0
Add lime		tonne		#N/A	\$0.00	\$0		\$0	\$0
Contour reclaimed area		ha		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
<b>SPECIALIZED ITEMS</b>									
Install permanent instrumentation		each		#N/A	\$0.00	\$0		\$0	\$0
Install permanent instrumentation, drilling		each		#N/A	\$0.00	\$0		\$0	\$0
Grade and contour waste rock dump		m2	190,000	15GCS	\$1.81	\$343,956	100%	\$343,956	\$0
					<b>Total</b>	\$343,956		\$343,956	\$0
					<b>% of Total</b>			100%	0%



## 1 Chemicals/Soil Area Name:

**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.

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost % Land	Land Cost	Water Cost
<b>HAZARDOUS MATERIALS AUDIT</b>								
Hazardous materials audit		mandays		#N/A	\$0.00	\$0	\$0	\$0
<b>BUILDING DECONTAMINATION &amp; CONSOLIDATION OF HAZARDOUS MATERIALS</b>								
Environmental technician/coordinator		mandays		#N/A	\$0.00	\$0	\$0	\$0
Decontaminate: oil, fuel		mandays		#N/A	\$0.00	\$0	\$0	\$0
Decontaminate maintenance shop		mandays		#N/A	\$0.00	\$0	\$0	\$0
Decontaminate power plant		mandays		#N/A	\$0.00	\$0	\$0	\$0
Decontaminate bulk fuel storage		mandays		#N/A	\$0.00	\$0	\$0	\$0
Decontaminate ANFO plant		mandays		#N/A	\$0.00	\$0	\$0	\$0
Decontaminate offices/warehouse/accom		mandays		#N/A	\$0.00	\$0	\$0	\$0
Removal of asbestos siding on buildings		m2		#N/A	\$0.00	\$0	\$0	\$0
Removal of friable asbestos on equipment		m2		#N/A	\$0.00	\$0	\$0	\$0
Other				#N/A	\$0.00	\$0	\$0	\$0
<b>HAZARDOUS MATERIALS REMOVAL</b>								
Waste oils		litre		#N/A	\$0.00	\$0	\$0	\$0
Waste fuel		litre		#N/A	\$0.00	\$0	\$0	\$0
Waste batteries		kg		#N/A	\$0.00	\$0	\$0	\$0
Assay & environmental lab reagents		kg		#N/A	\$0.00	\$0	\$0	\$0
Machine shop paints, solvents etc		litre		#N/A	\$0.00	\$0	\$0	\$0
Glycol		litre		#N/A	\$0.00	\$0	\$0	\$0
Process reagents		kg		#N/A	\$0.00	\$0	\$0	\$0
Nuclear sources		allow		#N/A	\$0.00	\$0	\$0	\$0
Other hazardous materials		allow		#N/A	\$0.00	\$0	\$0	\$0
<b>HAZARDOUS MATERIALS</b>								
Transportation to disposal facility		allow		#N/A	\$0.00	\$0	\$0	\$0
Disposal fees		allow		#N/A	\$0.00	\$0	\$0	\$0
Other				#N/A	\$0.00	\$0	\$0	\$0
<b>CONTAMINATED SOILS</b>								
Contam. soil investigation - Phase 1		each		#N/A	\$0.00	\$0	\$0	\$0
Contam. soil investigation - Phase 2		each		#N/A	\$0.00	\$0	\$0	\$0
<b>CONTAMINATED SOIL REMOVAL</b>								
Contaminated soil treatment		m3	16,164	15CSTS	\$14.78	\$238,904	100%	\$238,904
Excavate and transport to onsite facility		m2		#N/A	\$0.00	\$0	\$0	\$0
Manage hydrocarbon remediation at facility		m3		#N/A	\$0.00	\$0	\$0	\$0
Reagents/stabilizing agent		m2		#N/A	\$0.00	\$0	\$0	\$0
Excavate and transport to offsite facility		m3		#N/A	\$0.00	\$0	\$0	\$0
Contour decontaminated area		m3		#N/A	\$0.00	\$0	\$0	\$0
<b>OTHER</b>								
Ammonium nitrate (explosive material)		kg	603,000	15ANS	\$2.37	\$1,429,110	100%	\$1,429,110
Other		-		#N/A	\$0.00	\$0	\$0	\$0
<b>Total</b>						\$1,668,014	\$1,668,014	\$0
<b>% of Total</b>							100%	0%

Building / Equip Name: <i>Mine Site</i>				Bldg / Equip #: <i>1</i>					
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
DISPOSE MOBILE EQUIPMENT - Unit costs includes disassembly, necessary decontamination required for on-site disposal, load and transport (Ref 1, pg 24-25, 40)									
Light Mobile Equipment	Includes forklifts, picks up, vehicles around five (5) tonnes and under, scissor lift, man lifts, and small garbage bins (Ref 1, pg 24-25).	Ea	142	15MOLS	\$941.09	\$133,635	95%	\$126,953	\$6,682
Medium Mobile Equipment	Includes vehicles around 10 tonnes, trailers, buses, tow trucks, large garbage bins and water trucks (Ref 1, pg 24-25).	Ea	69	15MOMS	\$1,494.13	\$103,095	99%	\$102,064	\$1,031
Heavy Mobile Equipment	Includes vehicles over 10 tonnes, boom trucks, large front end loaders, dump trucks, graders and cranes (Ref 1, pg 24-25).	Ea	235	15MOHS	\$2,618.87	\$615,435	99%	\$609,281	\$6,154
DISPOSE MECHANICAL EQUIPMENT - Unit costs include equipment disassembly, necessary decontamination required for on-site disposal, load and transport (Ref 1, pg 23-42))									
Light mechanical equipment - Decontaminate and dispose on-site	Light equipment includes pumps, fuel dispenser, laboratory equipment, and sample bins (Ref 1, pg 23).	Ea	57	15LMES	\$1,980.80	\$112,906	98%	\$110,647	\$2,258
Medium mechanical equipment - Decontaminate and dispose on-site	Medium equipment includes aerodrome equipment, generators, shop / maintenance equipment, screens, and chutes (Ref 1, pg 23).	Ea	29	15MMES	\$4,261.34	\$123,579	100%	\$123,579	\$0
Heavy mechanical equipment - Decontaminate and dispose on-site	Heavy equipment includes crusher, feeder, power plant generators, large screens, conveyors, and stackers (Ref 2, pg 23).	Ea	3	15MEHS	\$41,205.45	\$123,616	100%	\$123,616	\$0
Light Tanks	Light non- fuel storage tanks. The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 26).	Ea	1	15TLS	\$2,148.33	\$2,148	0%	\$0	\$2,148
Medium Tanks	Medium non- fuel storage tanks. The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 26).	Ea	12	15MTS	\$7,387.31	\$88,648	0%	\$0	\$88,648
Light Diesel Tanks	Small fuel tanks (10,000-20,000L) (Ref 1, pg 27).	Ea	5	15LDTS	\$3,693.66	\$18,468	100%	\$18,468	\$0
Medium Diesel Tanks	Medium fuel tanks (500,000-750,000L). The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 27).	Ea	4	15MDTS	\$16,166.40	\$64,666	100%	\$64,666	\$0
Misc Items (Minor) (was 8)	On-site disposal. Miscellaneous (minor) items were defined as any item less than 200 kg not captured in other unit costs (Ref 1, pg 42).	Lot	-	15MEIS	\$529.83	\$0	100%	\$0	\$0
Fuel tanks - Medium Mobile Diesel Tanks (3000-500KL)	On-site disposal of medium-mobile fuel tanks (3,000 to 500,000L).	Ea	3	15MMFTS	\$10,481.05	\$31,443	100%	\$31,443	\$0
REMOVE BUILDINGS - Unit costs include disassembling, removing or securing all items, and load and transport (Ref1, pg 29-32, 39)									
Modular	Trailers and pre-fabricated buildings. (Ref 1, pg 29).	m2	9,027	15RBMS	\$59.38	\$536,066	89%	\$474,574	\$61,492
Fold Away Building		m2	709	15RBFS	\$41.57	\$29,473	100%	\$29,473	\$0
Soft-walled		m2	6,017	15RBSS	\$47.51	\$285,861	100%	\$285,861	\$0
ISO Shipping Containers (shelters, comm. Facilities)		m2	30	15RBIS	\$29.69	\$883	100%	\$883	\$0
Wastewater Treatment Facilities	(2015 Security Assessment, pg 39).	Ea	1	15WWTS	\$11,035.58	\$11,036	0%	\$0	\$11,036
REMOVE CONTAMINATED BUILDINGS - Unit costs include disassembling, removing or securing all items, decontamination, and load and transport (Ref 1, pg 29-32)									
Modular	Trailers and pre-fabricated buildings. (Ref 1, pg 29).	m2	1,556	15RCBMS	\$143.42	\$223,098	100%	\$223,098	\$0
Fold Away Building		m2	8,727	15RCBFS	\$142.41	\$1,242,845	100%	\$1,242,845	\$0
ISO Shipping Containers		m2	104	15RCBIS	\$143.42	\$14,928	100%	\$14,928	\$0
Temporary construction warehouses and offices Allowance		m2	1	15RCBTS	\$25,000	\$25,000	100%	\$25,000	\$0
BREAK FOUNDATIONS									
Precast foundations	Includes load and transport of precast concrete foundations (Ref 1, pg 34).	m2	7,544	15FCS	\$38.47	\$290,196	100%	\$290,196	\$0
Slab on grade	Includes perforating the concrete slabs on grade (Ref 1, pg 35).	m2	15,704	15FSS	\$33.11	\$520,014	100%	\$520,014	\$0
Timber Cribbing	Includes disassembly, load and transport of the timber cribbing (Ref 1, pg 33).	m2	1,102	15TCS	\$20.78	\$22,902	100%	\$22,902	\$0
GRADE AND CONTOUR , GENERAL - Unit costs are inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19-20).									
Grade and contour laydown areas		m2	62,193	15GCS	\$1.81	\$112,588	100%	\$112,588	\$0
Grade and contour building footprints		m3	223	15GCS	\$1.81	\$404	100%	\$404	\$0
Grade and contour infrastructure pads		m2	157,201	15GCS	\$1.81	\$284,580	100%	\$284,580	\$0
Aerodrome Facilities		m2	5,776	15GCS	\$1.81	\$10,456	100%	\$10,456	\$0
Roads		m2	121,619	15GCS	\$1.81	\$220,166	100%	\$220,166	\$0
Stockpiles		m2	5,100	15GCS	\$1.81	\$9,233	100%	\$9,233	\$0
Truck Weigh Facility Disturbed Area		m2	13,000	15GCS	\$1.81	\$23,534	100%	\$23,534	\$0
GRADE AND CONTOUR WITH LINER - Unit costs include liner removal and disposal, backfill, compaction and scarification with a dozer (Ref 1, pg 19-21).									
Waste disposal		m2	900	15GCLS	\$5.31	\$4,777	100%	\$4,777	\$0
Fuel tank farm dyke		m2	1,911	15GCLS	\$5.31	\$10,146	100%	\$10,146	\$0
Hazardous waste berm		m2	686	15GCLS	\$5.31	\$3,641	100%	\$3,641	\$0
Bulk Fuel Storage facility (Bladder Farm)		m2	5788	15GCLS	\$5.31	\$30,724	100%	\$30,724	\$0
Other		m2	11,599	15GCLS	\$5.31	\$61,573	100%	\$61,573	\$0
LANDFILL FOR DEMOLITION WASTE									
Place fill material over demolition waste	Includes drill and blasting of material aggregated crushing, excavation of fill, load and haul of fill material, backfill and compact source of material, and fill application. Assumes avg fill depth 1.5m over 6m of demolition waste (Ref 1, pg 17).	m2	13,625	15PFS	\$44.37	\$604,524	100%	\$604,524	\$0
SPECIALIZED ITEMS									
Electrical Cable	Includes the removal, loading, hauling and disposal of cable (Ref 1, pg 41).	m	16,200	15ECS	\$26.49	\$429,160	100%	\$429,160	\$0
Incinerator	Waste Incinerator. Includes disassembly, decontamination (if required), load and transport (2015 Security Assessment, pg 37).	Ea	1	15FIS	\$9,975.93	\$9,976	100%	\$9,976	\$0
Potable Water	Includes disassembly, decontamination (if required), load and transport (2015 Security Assessment, pg 38).	Ea	1	15PWS	\$9,975.93	\$9,976	0%	\$0	\$9,976
Total						\$6,445,399		\$6,255,974	\$189,425
% of Total								97%	3%

Ref 1: 2014 Complete Project Financial Security Assessment, Document No. H349000-1000-07-126-0018, Rev. 1.

Building / Equip Name: <i>Milne Port</i>				Bldg / Equip #: <i>2</i>						
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost	
DISPOSE MOBILE EQUIPMENT - Unit costs includes disassembly, necessary decontamination required for on-site disposal, load and transport (Ref 1, pg 24-25, 40)										
Light Mobile Equipment	Includes forklifts, picks up, vehicles around five (5) tonnes and under, scissor lift, man lifts, and small garbage bins (Ref 1, pg 24-25).	Ea	76	15MOLS	\$941.09	\$71,523	97%	\$69,377	\$2,146	
Medium Mobile Equipment	Includes vehicles around 10 tonnes, trailers, buses, tow trucks, large garbage bins and water trucks (Ref 1, pg 24-25).	Ea	36	15MOMS	\$1,494.13	\$53,789	92%	\$49,486	\$4,303	
Heavy Mobile Equipment	Includes vehicles over 10 tonnes, boom trucks, large front end loaders, dump trucks, graders and cranes (Ref 1, pg 24-25).	Ea	39	15MOHS	\$2,618.87	\$102,136	100%	\$102,136	\$0	
Other (reclaim conveyor)	Conveyors have been classified as large mobile equipment, with the exception of the reclaim conveyor (850m in length). (Ref 1, pg 40).	Ea	1	15MORS	\$1,329,441.31	\$1,329,441	100%	\$1,329,441	\$0	
DISPOSE MECHANICAL EQUIPMENT - Unit costs include equipment disassembly, necessary decontamination required for on-site disposal, load and transport (Ref 1, pg 23-42))										
Light mechanical equipment - Decontaminate and dispose on-site	Light equipment includes pumps, fuel dispenser, laboratory equipment, and sample bins (Ref 1, pg 23).	Ea	38	15LMES	\$1,980.80	\$75,270	100%	\$75,270	\$0	
Medium mechanical equipment - Decontaminate and dispose on-site	Medium equipment includes aerodrome equipment, generators, shop / maintenance equipment, screens, and chutes (Ref 1, pg 23).	Ea	2	15MMES	\$4,261.34	\$8,523	100%	\$8,523	\$0	
Heavy mechanical equipment - Decontaminate and dispose on-site	Heavy equipment includes crusher, feeder, power plant generators, large screens, conveyors, and stackers (Ref 2, pg 23).	Ea	3	15MEHS	\$41,205.45	\$782,904	100%	\$782,904	\$0	
Light Tanks	Light non- fuel storage tanks. The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 26).	Ea	3	15TLS	\$2,148.33	\$6,445	0%	\$0	\$6,445	
Medium Tanks	Medium non- fuel storage tanks. The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 26).	Ea	0	15MTS	\$7,387.31	\$0	100%	\$0	\$0	
Light Diesel Tanks	Small fuel tanks (10,000-20,000L) (Ref 1, pg 27)	Ea	1	15LDTS	\$3,693.66	\$3,694	100%	\$3,694	\$0	
Medium Diesel Tanks	Medium fuel tanks (500,000-750,000L). The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 27).	Ea	0	15MDTS	\$16,166.40	\$0	100%	\$0	\$0	
Large Diesel Tanks	Large fuel tanks (5M L). The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 27).	Ea	0	15LDTS	\$106,338.74	\$0	100%	\$0	\$0	
Largest Diesel Tanks	Largest fuel tanks (10M to 12M L). The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 27).	Ea	0	15XLDTs	\$171,468.15	\$0	100%	\$0	\$0	
Misc Items (Minor)	Miscellaneous (minor) items were defined as any item less than 200 kg not captured in other unit costs (Ref 1,	Ea	0	15MEIS	\$529.83	\$0	100%	\$0	\$0	
REMOVE BUILDINGS - Unit costs include disassembling, removing or securing all items, and load and transport (Ref1, pg 29-32, 39)										
Modular	Trailers and pre-fabricated buildings. (Ref 1, pg 29).	m2	5,521	15RBMS	\$59.38	\$327,871	100%	\$327,871	\$0	
Fold Away Building		m2	1,525	15RBFS	\$41.57	\$63,378	100%	\$63,378	\$0	
Soft-walled		m2	5392.34	15RBSS	\$47.51	\$256,178	100%	\$256,178	\$0	
ISO Shipping Containers (shelters, comm. Facilities)		m2	15	15RBIS	\$29.69	\$442	100%	\$442	\$0	
Wastewater Treatment Facilities	(2015 Security Assessment, pg 39).	Ea	1	15VWTS	\$11,035.58	\$11,036	0%	\$0	\$11,036	
REMOVE CONTAMINATED BUILDINGS - Unit costs include disassembling, removing or securing all items, decontamination, and load and transport (Ref 1, pg 29-32)										
Modular	Trailers and pre-fabricated buildings. (Ref 1, pg 29).	m2	1,171	15RCBMS	\$143.42	\$167,996	85%	\$142,797	\$25,199	
Fold Away Building		m2	3,194	15RCBFS	\$142.41	\$454,924	100%	\$454,924	\$0	
Soft walled		m2	2,131	15RCBSS	\$148.35	\$316,059	100%	\$316,059	\$0	
ISO Shipping Containers (shelters, comm. facilities)		m2	134	15RCBIS	\$143.42	\$19,194	100%	\$19,194	\$0	
Temporary construction warehouses and offices Allowance		m2	1	15RCBTS	\$25,000.00	\$25,000	100%	\$25,000	\$0	
BREAK FOUNDATIONS										
Precast foundations	Includes load and transport of precast concrete foundations (Ref 1, pg 34).	m2	3,513	15FCS	\$38.47	\$135,154	100%	\$135,154	\$0	
Slab on grade	Includes perforating the concrete slabs on grade (Ref 1, pg 35).	m2	1,766	15FSS	\$33.11	\$58,473	100%	\$58,473	\$0	
Timber Cribbing	Includes disassembly, load and transport of the timber cribbing (Ref 1, pg 33).	m2	732	15TCS	\$20.78	\$15,206	100%	\$15,206	\$0	
GRADE AND CONTOUR , GENERAL - Unit costs are inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19-20).										
Grade and contour laydown areas		m2	312,921	15GCS	\$1.81	\$566,479	100%	\$566,479	\$0	
Grade and contour building footprints		m3	14,306	15GCS	\$1.81	\$25,898	100%	\$25,898	\$0	
Grade and contour infrastructure pads		m2	66,536	15GCS	\$1.81	\$120,450	100%	\$120,450	\$0	
Roads		m2	12,149	15GCS	\$1.81	\$21,992	100%	\$21,992	\$0	
Stockpiles		m2	134,046	15GCS	\$1.81	\$242,663	100%	\$242,663	\$0	
GRADE AND CONTOUR WITH LINER - Unit costs include liner removal and disposal, backfill, compaction and scarification with a dozer (Ref 1, pg 19-21).										
Hazardous waste berm		m2	4,417	15GCLS	\$5.31	\$23,449	100%	\$23,449	\$0	
Weatherhaven genset fuel bladder berm		m2	1,000	15GCLS	\$5.31	\$5,308	0%	\$0	\$5,308	
Storage Area		m2	1,971	15GCLS	\$5.31	\$10,461	100%	\$10,461	\$0	
Fuel tank farm dyke		m2	25,893	15GCLS	\$5.31	\$137,448	100%	\$137,448	\$0	
Landfarm		m2	14,083	15GCLS	\$5.31	\$74,757	100%	\$74,757	\$0	
SPECIALIZED ITEMS										
Electrical Cable	Includes the removal, loading, hauling and disposal of cable (Ref 1, pg 41).	m	11,100	15ECS	\$26.49	\$294,054	100%	\$294,054	\$0	
Incinerator	Includes disassembly, decontamination (if required), load	Ea	1	15FIS	\$9,975.93	\$9,976	100%	\$9,976	\$0	
Potable Water	Includes disassembly, decontamination (if required), load and transport (2015 Security Assessment, pg 38).	Ea	1	15PWS	\$9,975.93	\$9,976	0%	\$0	\$9,976	
LANDFILL FOR DEMOLITION WASTE										
Place fill material over demoiition waste		m2	5,082	15PFS	\$44.37	\$225,500	0%	\$0	\$225,500	
Total						\$5,827,545		\$5,763,132	\$64,413	
% of Total								99%	1%	

Ref 1: 2014 Complete Project Financial Security Assessment, Document No. H349000-1000-07-126-0018, Rev. 1.

Building / Equip Name: Tote Road				Bldg / Equip #: 3					
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
DISPOSE MOBILE EQUIPMENT - Unit costs includes disassembly, necessary decontamination required for on-site disposal, load and transport (Ref 1, pg 24-25, 40)									
Light Mobile Equipment		Ea		#N/A	\$0.00	\$0		\$0	\$0
Medium Mobile Equipment	Includes vehicles around 10 tonnes, trailers, buses, tow trucks, large garbage bins & water trucks (Ref 1, pg 24-25).	Ea		15MOMS	\$1,494.13	\$0	100%	\$0	\$0
Heavy Mobile Equipment	Includes vehicles >10 tonnes, boom trucks, large front end loaders, dump trucks, graders & cranes (Ref 1, pg 24-25).	Ea		15MOHS	\$2,618.87	\$0	100%	\$0	\$0
REMOVE BUILDINGS									
Modular		m2		#N/A	\$0.00	\$0		\$0	\$0
Fold Away Building		m2		#N/A	\$0.00	\$0		\$0	\$0
ISO Shipping Containers (shelters, comm. facilities)		m2	223	15RBIS	\$29.69	\$6,621	100%	\$6,621	\$0
Accommodation Complex		m2		#N/A	\$0.00	\$0		\$0	\$0
REMOVE CONTAMINATED BUILDINGS									
Modular		m2		#N/A	\$0.00	\$0		\$0	\$0
Fold Away Building		m2		#N/A	\$0.00	\$0		\$0	\$0
Soft walled		m2		#N/A	\$0.00	\$0		\$0	\$0
ISO Shipping Containers (shelters, comm. facilities)		m2		#N/A	\$0.00	\$0		\$0	\$0
BREAK FOUNDATIONS									
Timber Cribbing	Includes disassembly, load and transport of the timber cribbing (Ref 1, pg 33).	m2	59	15TCS	\$20.78	\$1,236	100%	\$1,236	\$0
GRADE AND CONTOUR , GENERAL - Unit costs are inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19-20).									
Grade and contour laydown areas		m2		#N/A	\$0.00	\$0		\$0	\$0
Grade and contour building footprints		m3	13,040	#N/A	\$0.00	\$0	100%	\$0	\$0
Grade and contour infrastructure pads		m2	6,760	15GCS	\$1.81	\$12,238	100%	\$12,238	\$0
Aerodrome Facilities		m2		#N/A	\$0.00	\$0		\$0	\$0
Roads		m2	533,000	15GCS	\$1.81	\$964,887	100%	\$964,887	\$0
Stockpiles		m2		#N/A	\$0.00	\$0		\$0	\$0
Remove liner		m2			\$3.50	\$0	100%	\$0	\$0
Grade and Contour Significant Disturbed Areas		m2		15GCDS	\$2.72	\$0	100%	\$0	\$0
LANDFILL FOR DEMOLITION WASTE									
Place fill material over demolition waste		m2		#N/A	\$0.00	\$0		\$0	\$0
Place rock cover		m3		#N/A	\$0.00	\$0		\$0	\$0
Place soil cover		m3		#N/A	\$0.00	\$0		\$0	\$0
RECLAIM ROADS									
Remove bridges	The unit cost is inclusive of the demolition and removal of a bridge. Assumed not contaminated (Ref 1, pg 36).	each	4	15BRS	\$201,838.77	\$807,355	0%	\$0	\$807,355
Remove culverts	The unit cost is inclusive of the travel time to and from the culvert location, the earthwork necessary expose a culvert and the removal of the culvert material (Ref 1, pg 21).	each	383	15CRS	\$1,094.48	\$419,186	0%	\$0	\$419,186
Scarify and install water breaks		ha		#N/A	\$0.00	\$0		\$0	\$0
Scarify airstrip		ha		#N/A	\$0.00	\$0		\$0	\$0
Scarify laydown areas		ha		#N/A	\$0.00	\$0		\$0	\$0
Vegetate		ha		#N/A	\$0.00	\$0		\$0	\$0
Other		ha		#N/A	\$0.00	\$0		\$0	\$0
SPECIALIZED ITEMS									
Consumables		Ea		#N/A	\$0.00	\$0		\$0	\$0
Electrical Cable		m		#N/A	\$0.00	\$0		\$0	\$0
Incinerator		Ea		#N/A	\$0.00	\$0		\$0	\$0
Potable Water		Ea		#N/A	\$0.00	\$0		\$0	\$0
Total						\$2,211,524		\$984,983	\$1,226,541
% of Total								45%	55%

Ref 1: 2014 Complete Project Financial Security Assessment, Document No. H349000-1000-07-126-0018, Rev. 1.

Building / Equip Name: <i>Project Wide/ Other</i>				Bldg / Equip #: <i>4</i>					
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
<b>DISPOSE MOBILE EQUIPMENT</b>									
Light Mobile Equipment		Ea		#N/A	\$0.00	\$0		\$0	\$0
Medium Mobile Equipment		Ea		#N/A	\$0.00	\$0		\$0	\$0
Heavy Mobile Equipment		Ea		#N/A	\$0.00	\$0		\$0	\$0
Other (reclaim conveyor)		Ea		#N/A	\$0.00	\$0		\$0	\$0
<b>REMOVE BUILDINGS</b>									
Modular		m2		#N/A	\$0.00	\$0		\$0	\$0
Fold Away Building		m2		#N/A	\$0.00	\$0		\$0	\$0
Soft walled		m2		#N/A	\$0.00	\$0		\$0	\$0
ISO Shipping Containers (shelters, comm. facilities)		m2		#N/A	\$0.00	\$0		\$0	\$0
<b>REMOVE CONTAMINATED BUILDINGS</b>									
Modular		m2		#N/A	\$0.00	\$0		\$0	\$0
Fold Away Building		m2		#N/A	\$0.00	\$0		\$0	\$0
Soft walled		m2		#N/A	\$0.00	\$0		\$0	\$0
ISO Shipping Containers (shelters, comm. facilities)		m2		#N/A	\$0.00	\$0		\$0	\$0
<b>BREAK FOUNDATIONS</b>									
Timber Cribbing		m2		#N/A	\$0.00	\$0		\$0	\$0
<b>LANDFILL FOR DEMOLITION WASTE</b>									
Place fill material over demolition waste	Includes drill and blasting of material aggregated crushing, excavation of fill material, load and haul of fill material, backfill and compact source of material, and fill application. Assumes avg fill depth of 1.5m over 6m of demolition waste (Ref 1, pg 17).	m2	12,154	15PFS	\$44.37	\$539,255	100%	\$539,255	\$0
<b>RECLAIM ROADS</b>									
Remove bridges		each		#N/A	\$0.00	\$0		\$0	\$0
Remove culverts		each		#N/A	\$0.00	\$0		\$0	\$0
Scarify and install water breaks		ha		#N/A	\$0.00	\$0		\$0	\$0
Scarify airstrip		ha		#N/A	\$0.00	\$0		\$0	\$0
Scarify laydown areas		ha		#N/A	\$0.00	\$0		\$0	\$0
Vegetate		ha		#N/A	\$0.00	\$0		\$0	\$0
Other		ha		#N/A	\$0.00	\$0		\$0	\$0
<b>SPECIALIZED ITEMS</b>									
Electrical Cable		m		#N/A	\$0.00	\$0		\$0	\$0
Incinerator		Ea		#N/A	\$0.00	\$0		\$0	\$0
Potable Water		Ea		#N/A	\$0.00	\$0		\$0	\$0
<b>Total</b>						\$539,255		\$539,255	\$0
<b>% of Total</b>								100%	0%

Ref 1: 2014 Complete Project Financial Security Assessment, Document No. H349000-1000-07-126-0018, Rev. 1.

## 1 Capital Expenditures and Short Term Water Treatment identified in 'Instructions' worksheet

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
<b>BREACH DYKE EMBANKMENT</b>						
Remove fill		m3		#N/A	\$0.00	\$0
Contour water intake area		m3		#N/A	\$0.00	\$0
<b>STABILIZE SEDIMENT PONDS/WATER MANAGEMENT PONDS</b>						
Place soil cover		m3		#N/A	\$0.00	\$0
Doze & spread excavated material		m3		#N/A	\$0.00	\$0
Vegetate spread material		ha		#N/A	\$0.00	\$0
Rip rap in channel base		each		#N/A	\$0.00	\$0
Grade and contour with liner	Includes liner removal and disposal (Ref 1, pg 21) and backfill, compaction and scarification with a dozer (Ref 1, pg 19).	m2	45,376.20	15GCLS	\$5.31	\$240,870
<b>REDIRECT RUNOFF/CONSTRUCT DIVERSION DITCHES</b>						
Excavate ditches -soil		m3		#N/A	\$0.00	\$0
Excavate ditches -rock		m3		#N/A	\$0.00	\$0
Stabilize side slopes		m3		#N/A	\$0.00	\$0
Rip rap in channel base		m3		#N/A	\$0.00	\$0
<b>BREACH DITCHES</b>						
Excavate breaches		m3		#N/A	\$0.00	\$0
Backfill/recontour		m3		#N/A	\$0.00	\$0
Install flow dissipation		m3		#N/A	\$0.00	\$0
Vegetate remainder of ditch		m2		#N/A	\$0.00	\$0
<b>DECOMMISSION FRESH WATER SUPPLY</b>						
Breach embankment		m		#N/A	\$0.00	\$0
Remove pump		LS		#N/A	\$0.00	\$0
Remove pipeline		m		#N/A	\$0.00	\$0
Other		m3		#N/A	\$0.00	\$0
<b>WATER CONTROL IN RECLAMATION QUARRY</b>						
Install pumping system		LS		#N/A	\$0.00	\$0
Remove pumping system		LS		#N/A	\$0.00	\$0
<b>REMOVE PIPELINES</b>						
Remove pipes		m		#N/A	\$0.00	\$0
Remove pipes	The unit cost includes the cleaning, plugging, disassembly, loading, hauling and disposal of piping (Ref 1, pg 41).	m	19,623	15RPS	\$66.23	\$1,299,599
Concrete plug deep pipes		m3		#N/A	\$0.00	\$0
Other				#N/A	\$0.00	\$0
<b>CONSTRUCT CONTAMINATED WATER STORAGE POND</b>						
Excavate pond		m3		#N/A	\$0.00	\$0
Doze & spread excavated material		m3		#N/A	\$0.00	\$0
Vegetate spread material		ha		#N/A	\$0.00	\$0
Bedding layer		m3		#N/A	\$0.00	\$0
Supply geomembrane		m2		#N/A	\$0.00	\$0
Install geomembrane		m2		#N/A	\$0.00	\$0
Erosion protection layer		m3		#N/A	\$0.00	\$0
<b>CONSTRUCT WATER TREATMENT PLANT</b>						
Build treatment plant		LS		#N/A	\$0.00	\$0
Build sludge containment facility		LS		#N/A	\$0.00	\$0
					<b>Total</b>	<b>\$1,540,469</b>

Ref 1: 2014 Complete Project Financial Security Assessment, Document No. H349000-1000-07-126-0018, Rev. 1.

## 1 Interim Care and Maintenance (18-month duration)

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
INTERIM CARE & MAINTENANCE						
On-site caretakers	Three caretakers for 18 months (assume 2 at 3w/1w and 1 at 2w/2w rotation). Assume 36 days of travel for each caretaker over 18-months.10-hr days.	hr	11,160	15BLS	\$100.00	\$1,116,000
Extra personnel	Assume crew of 15 people for 56, 10-hr days, to stabilize site and equipment at both the Mine Site, and Milne Port. Blended unit rate is used to allow for different skill levels that would make up the crew.	hr	8,400	15BLS	\$100.00	\$840,000
-Electrician		manmonths		#N/A	\$0.00	\$0
-Mechanic		manmonths		#N/A	\$0.00	\$0
Annual fuel		litre		#N/A	\$0.00	\$0
Mobilization of Workers Required for Stabilization Period (from northern communities)	Assume two rotations per worker, 30% from northern communities and 70% from southern communities. Mobilization from the south is \$85.45/person days on site, and from the north \$75/person-days on site (Ref 1)	person-days	252	15NWS	\$75.00	\$18,900
Mobilization of Workers Required for Stabilization Period (from southern communities)	Assume two rotations per worker, 30% from northern communities and 70% from southern communities. Mobilization from the south is \$85.45/person days on site, and from the north \$75/person-days on site (Ref 1)	person-days	588	15SWS	\$85.45	\$50,245
Mobilization of caretakers	Assume mobilize from the north	person-days	1,080	15NWS	\$75.00	\$81,000
Camp accommodations- stabilization period	15 workers for 56 days	person-days	840	15WACS	\$225	\$189,000
Camp accommodations for caretakers	18 month duration full time	person-days	1,080	15WACS	\$225	\$243,000
Equipment - site stabilizaiton	Assume 1 dozer, 56 days, 10 hr/day	hr	560	15BES	\$150	\$84,000
Miscellaneous supplies		allow		#N/A	\$0.00	\$0
-Pick-up truck		each		#N/A	\$0.00	\$0
-Small dozer		allow		#N/A	\$0.00	\$0
-Small excavator		allow		#N/A	\$0.00	\$0
-Snow machine		allow		#N/A	\$0.00	\$0
-Communications		allow		#N/A	\$0.00	\$0
SNP/AEMP water sampling & reporting		Ea	3	15MCWL	\$30,000	\$90,000
Geotechnical assessment		Ea	3	15GTS	\$20,000	\$60,000
Envrionmental site assessment	Assume spending 1st year budget for this type of activity for interim care.	Ea	1	RPTH	\$20,000	\$20,000
Interim water treatment				#N/A	0	\$0
					18-month Interim C&M Cost	\$2,792,145
Number of years of ICM		years	2	Total		\$2,792,145

Ref 1: Baffinland Iron Mines Corporation, Mary River Project, 2014 Complete Project Financial Security Assessment, Document No. H349000-1000-07-126-0018, Rev. 1.

**1 Post-Closure Monitoring & Maintenance:**

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
<b>MONITORING &amp; INSPECTIONS</b>						
Annual geotechnical inspection	Assume 2 geotech inspections are specified at year 4 and 8 (Ref 2, pg 81).	Ea	2	15GTS	\$20,000	\$40,000
Survey inspection		Ea		#N/A	\$0.00	\$0
Regulatory costs*	Annual reporting over 8 years. Unit rate from RECLAIM.	Ea	8	RPTL	\$10,000	\$80,000
Site water monitoring (AEMP and SNP)	Two sampling events per year for 8 years, at 20 sample locations.	Ea	16	15MCWL	\$30,000	\$480,000
- Active closure and flooding		Ea		#N/A	\$0.00	\$0
- Post pit flooding		Ea		#N/A	\$0.00	\$0
Air Quality Monitoring Program (AQMP)	Assume 3 sampling events specified at year 2, year 4 and year 7 (Ref 2, pg 81). Unit rate from RECLAIM.	Ea	3	RPTH	\$20,000	\$60,000
Wildlife Effects Monitoring Program (WEMP)	Assume 2 sampling events specified at year 5 and year 7 (Ref 1, pg 81). Unit rate from RECLAIM.	Ea	2	RPTH	\$20,000	\$40,000
Vegetation Monitoring		Ea		#N/A	\$0.00	\$0
Monitoring (general)		-		#N/A	\$0.00	\$0
Project Environmental Assessment	Assume carried once (1x) during closure/post closure period year 4; at Mine site, Tote Road and Milne Port (Ref 2, pg 81). Unit rate from RECLAIM.	-	3	RPTH	\$20,000	\$60,000
<b>COVER MAINTENANCE</b>						
Maintenance allowance	According to the PDW closure plan, mmaintenance costs are estimated at \$100,000 per year (Ref 1, pg 103). This allowance expected to cover all maintenance activities at the sites.	allow	8	15MCAL	\$100,000.00	\$800,000
Repair erosion - upgrade diversion ditches		allow		#N/A	\$0.00	\$0
Remove problem vegetation		allow		#N/A	\$0.00	\$0
Repair animal damage		allow		#N/A	\$0.00	\$0
Repair/upgrade access controls		allow		#N/A	\$0.00	\$0
Other		allow		#N/A	\$0.00	\$0
<b>SPILLWAY MAINTENANCE</b>						
Repair erosion		m3		#N/A	\$0.00	\$0
Clear spillway		Ea		#N/A	\$0.00	\$0
Subtotal, Annual post-closure costs (cumulative over 8 years)						\$1,560,000
Discount rate for calculation of net present value of post-closure cost, %				0.00%		
Number of years of post-closure activity (Note 1)				8	years	
<b>Present Value of payment stream</b>						\$1,560,000

\*Regulatory costs - annual reporting, management plans, progress reports etc.

Ref 1: Baffinland Iron Mines Corporation, Mary River Project, Interim Mine Closure and Reclamation Plan, Document No. BAF-PH1-830-P16-0012, Rev. 2, Jun 27, 2014.

Ref 2: Baffinland Iron Mines Corporation, Mary River Project, Interim Closure and Reclamation Plan, Document No. BAF-PH1-830-P16-0012, Rev. 3, March 19, 2015.



## 1 Mobilization/Demobilization:

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
MOBILIZE HEAVY EQUIPMENT						
Excavators		each		#N/A	0	\$0
Dump trucks		each		#N/A	0	\$0
Dozers		each		#N/A	0	\$0
Demolition shears		each		#N/A	0	\$0
Crane		each		#N/A	0	\$0
Loader		each		#N/A	0	\$0
Compactor		each		#N/A	0	\$0
Light duty vehicles		each		#N/A	0	\$0
MOBILIZE MISC. EQUIPMENT						
Mobilization and Demobilization of Equipment and Materials by Sealift		\$	1		3,056,000	\$3,056,000
Off-site disposal of waste and material	Ref 1, pg. 59	m3	5,500	15ODS	358	\$1,969,000
Pump shipping		each		#N/A	0	\$0
Pipe shipping		m		#N/A	0	\$0
Minor tools and equipment		allow		#N/A	0	\$0
Truck tires		allow		#N/A	0	\$0
Consumables	Cost to remove consumables delivered to site in 2015 (lubricants, grease, detergents, boosters, EZ Dets, dry goods, food, household supplies, etc.) (2015 Security Assessment, pg 18).	Ea	550	15CONS	\$701	\$385,440
MOBILIZE WORKERS						
Mobilization of Workers Required for Reclamation (from northern communities)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1).	person-days	4,914	15NWS	75.00	\$368,550
Mobilization of Workers Required for Reclamation (from southern communities)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1).	person-days	11,467	15SWS	85.45	\$979,855
Reclamation activities - travel time		manhours		#N/A	0	\$0
Long term reclamation activities (eg pump flooding) - transport		each		#N/A	0	\$0
Long term reclamation activities (eg pump flooding) - travel time		each		#N/A	0	\$0
Monitoring Airfare		each		#N/A	0	\$0
WORKER ACCOMODATIONS						
Worker Accommodation & Camp Operation		person-days	16,381	15WACS	225	\$3,685,725
Reclamation activities		manmonths		#N/A	0	\$0
Long term reclamation activities (eg pump flooding)		manmonths		#N/A	0	\$0
MOBILIZE FUEL						
Demobilization of Existing Fuel	Ref 1, pg 61	litre	25,550,000	15MF1S	0.1	\$2,555,000
Fuel Required for Reclamation	Ref 1, pg 61	litre	1,574,643.5	15MF2S	0.4	\$629,857
Fuel	Represents marginal increase in fuel provided in September 23rd, 2015 EBS	litre				\$203,000
Fuel freight - long term reclamation activities		litre		#N/A	0	\$0
Fuel freight accomodations		litre		#N/A	0	\$0
DEMOBILIZE HEAVY EQUIPMENT						
Excavators		km		#N/A	0	\$0
Dump trucks		km		#N/A	0	\$0
Dozers		km		#N/A	0	\$0
Demolition shears		km		#N/A	0	\$0
Crane		km		#N/A	0	\$0
Loader		km		#N/A	0	\$0
Compactor		each		#N/A	0	\$0
Light duty vehicles		km		#N/A	0	\$0
DEMOBILIZE WORKERS						
crew travel time		mandays		#N/A	0	\$0
crew transportation		each		#N/A	0	\$0
Total						\$13,832,428

Ref 1: 2014 Complete Project Financial Security Assessment, Document No. H349000-1000-07-126-0018, Rev. 1.

## Attachment B

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### End-of-2016 RECLAIM Model

## SUMMARY OF COSTS

CAPITAL COSTS	COMPONENT NAME	COST	LAND LIABILITY	WATER LIABILITY	IOL LIABILITY	CROWN LIABILITY
OPEN PIT	Mary River Mine Pit	\$4,059,486	\$4,059,486	\$0	\$3,922,229	\$137,257
UNDERGROUND MINE		\$0	\$0	\$0	\$0	\$0
TAILINGS FACILITY		\$0	\$0	\$0	\$0	\$0
ROCK PILE	Mine Site Waste Rock Pile	\$343,956	\$343,956	\$0	\$343,956	\$0
BUILDINGS AND EQUIPMENT	Mine Site	\$6,524,804	\$6,326,822	\$197,982	\$6,524,804	\$0
	Milne Port	\$5,918,170	\$5,859,710	\$58,460	\$5,918,170	\$0
	Tote Road	\$2,333,618	\$1,009,954	\$1,323,664	\$2,114,640	\$218,978
	Project Wide/ Other	\$539,255	\$539,255	\$0	\$539,255	\$0
CHEMICALS AND CONTAMINATED SOIL MANAGEMENT		\$1,668,014	\$1,668,014	\$0	\$1,637,881	\$30,133
SURFACE AND GROUNDWATER MANAGEMENT		\$1,563,082	-	\$1,563,082	\$1,534,845	\$28,238
INTERIM CARE AND MAINTENANCE		\$2,792,145	-	\$2,792,145	\$2,741,704	\$50,441
SUBTOTAL: Capital Costs		<u>\$25,742,530</u>	<u>\$19,807,196</u>	<u>\$5,935,334</u>	<u>\$25,277,483</u>	<u>\$465,047</u>
PERCENT OF SUBTOTAL			76.9%	23.1%	98.2%	1.8%

OVERALL INDIRECT COSTS		COST	LAND LIABILITY	WATER LIABILITY	IOL LIABILITY	CROWN LIABILITY
MOBILIZATION/DEMOBILIZATION		\$13,998,908	\$10,771,246	\$3,227,662	\$13,746,014	\$252,895
POST-CLOSURE MONITORING AND MAINTENANCE		\$1,560,000	\$1,200,318	\$359,682	\$1,531,818	\$28,182
ENGINEERING	3.9%	\$1,003,959	\$772,481	\$231,478	\$985,822	\$18,137
PROJECT MANAGEMENT	9.4%	\$2,419,798	\$1,861,876	\$557,921	\$2,376,083	\$43,714
HEALTH AND SAFETY PLANS/MONITORING & QA/QC	0%	\$0	\$0	\$0	\$0	\$0
BONDING/INSURANCE	2%	\$514,851	\$396,144	\$118,707	\$505,550	\$9,301
CONTINGENCY	15%	\$3,861,379	\$2,971,079	\$890,300	\$3,791,622	\$69,757
MARKET PRICE FACTOR ADJUSTMENT	0%	\$0	\$0	\$0	\$0	\$0
SUBTOTAL: Overall Indirect Costs		<u>\$23,358,895</u>	<u>\$17,973,145</u>	<u>\$5,385,750</u>	<u>\$22,936,909</u>	<u>\$421,986</u>

<b>TOTAL COSTS</b>		<b>\$49,101,425</b>	<b>\$37,780,341</b>	<b>\$11,321,084</b>	<b>\$48,214,392</b>	<b>\$887,032</b>
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Open Pit Name: <i>Mary River Mine Pit</i>					Pit # <u>1</u>				
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	% Cost	Land	Land Cost	Water Cost
CONTROL ACCESS									
Fence		m3		#N/A	\$0.00	\$0		\$0	\$0
Signs		each		#N/A	\$0.00	\$0		\$0	\$0
Berm at crest		m3		#N/A	\$0.00	\$0		\$0	\$0
Block roads		m3		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
STABILITY STUDY									
Conduct stability and setback study		allow		#N/A	\$0.00	\$0		\$0	\$0
COVER/CONTOUR SLOPES									
Place fill, soil A		m3		#N/A	\$0.00	\$0		\$0	\$0
Place fill, soil B		m3		#N/A	\$0.00	\$0		\$0	\$0
Rip rap		m3		#N/A	\$0.00	\$0		\$0	\$0
CONSTRUCT DIVERSION DITCHES									
Excavate ditches -soil		m3		#N/A	\$0.00	\$0		\$0	\$0
Excavate ditches -rock		m3		#N/A	\$0.00	\$0		\$0	\$0
Rip rap in channel base		m3		#N/A	\$0.00	\$0		\$0	\$0
CONSTRUCT SPILLWAY									
Excavate channel		m3		#N/A	\$0.00	\$0		\$0	\$0
Concrete		m3		#N/A	\$0.00	\$0		\$0	\$0
Rip rap		m3		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
GRADE AND CONTOUR - The unit cost is inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19).									
P10 Borrow Source	2016	m2	19,344	15GCS	\$1.81	\$35,018	100%	\$35,018	\$0
P13 Borrow Source	2016	m2	8,456	15GCS	\$1.81	\$15,308	100%	\$15,308	\$0
P14 Borrow Source	2016	m2	3,160	15GCS	\$1.81	\$5,721	100%	\$5,721	\$0
P15 Borrow Source	2016	m2	3,300	15GCS	\$1.81	\$5,974	100%	\$5,974	\$0
P5 Borrow Source	2016	m2	4,600	15GCS	\$1.81	\$8,327	100%	\$8,327	\$0
P6 Borrow Source	2016	m2	7,500	15GCS	\$1.81	\$13,577	100%	\$13,577	\$0
P7 Borrow Source	2016	m2	8,100	15GCS	\$1.81	\$14,663	100%	\$14,663	\$0
P8 Borrow Source	2016	m2	8,385	15GCS	\$1.81	\$15,179	100%	\$15,179	\$0
Q13 Quarry	2016	m2	6,350	15GCS	\$1.81	\$11,495	100%	\$11,495	\$0
Q14 Quarry	2016	m2	13,440	15GCS	\$1.81	\$24,330	100%	\$24,330	\$0
Q15 Quarry	2016	m2	10,680	15GCS	\$1.81	\$19,334	100%	\$19,334	\$0
Q16A Quarry	2016	m2	11,240	15GCS	\$1.81	\$20,348	100%	\$20,348	\$0
Q9 Quarry	2016	m2	15,166	15GCS	\$1.81	\$27,455	100%	\$27,455	\$0
D1Q2 Quarry	2016	m2	109,807	15GCS	\$1.81	\$198,783	100%	\$198,783	\$0
Q1 Quarry		m2	64,200	15GCS	\$1.81	\$116,221	100%	\$116,221	\$0
Q11 Quarry		m2	50,433	15GCS	\$1.81	\$91,299	100%	\$91,299	\$0
Q19 Quarry		m2	18,760	15GCS	\$1.81	\$33,961	100%	\$33,961	\$0
Q7 Quarry		m2	53,050	15GCS	\$1.81	\$96,036	100%	\$96,036	\$0
QMR2 Quarry		m2	258,580	15GCS	\$1.81	\$468,106	100%	\$468,106	\$0
Pit 1		m2	55,000	15GCS	\$1.81	\$99,566	100%	\$99,566	\$0
Pit 1 - Marginal increase		m2	214,450	15GCS	\$1.81	\$388,218	100%	\$388,218	\$0
P1 Borrow Source		m2	75,820	15GCS	\$1.81	\$137,257	100%	\$137,257	\$0
Km 2 Borrow source		m2	41,795	15GCS	\$1.81	\$75,661	100%	\$75,661	\$0
Borrow development areas		m2	42,080	15GCS	\$1.81	\$76,177	100%	\$76,177	\$0
Unidentified Borrow Sources		m2	697,910	15GCS	\$1.81	\$1,263,423	100%	\$1,263,423	\$0
GRADE AND CONTOUR SIGNIFICANTLY DISTURBED AREAS - The unit cost is inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19).									
Km 97 Borrow source		m2	157,012	15GCDS	\$2.72	\$426,357	100%	\$426,357	\$0
Type A Quarry		m2	136,880	15GCDS	\$2.72	\$371,690	100%	\$371,690	\$0
RECLAIM QUARRIES									
Contour slopes		m3		#N/A	\$0.00	\$0		\$0	\$0
Place overburden		m3		#N/A	\$0.00	\$0		\$0	\$0
Total						\$4,059,486		\$4,059,486	\$0
% of Total								100%	0%

Ref 1: 2014 Complete Project Financial Security Assessment, Document No. H349000-1000-07-126-0018, Rev. 1.

Rock Pile Name: <i>Mine Site Waste Rock Pile</i>									
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
<b>STABILIZE SLOPES</b>									
Flatten slopes with dozer		m3		#N/A	\$0.00	\$0		\$0	\$0
Flatten "bubble dump" areas		m3		#N/A	\$0.00	\$0		\$0	\$0
Divert runon, ditch mat'l A		m3		#N/A	\$0.00	\$0		\$0	\$0
Divert runon, ditch mat'l B		m3		#N/A	\$0.00	\$0		\$0	\$0
Toe buttress, drain mat'l		m3		#N/A	\$0.00	\$0		\$0	\$0
Toe buttress, fill mat'l A		m3		#N/A	\$0.00	\$0		\$0	\$0
Toe buttress, fill mat'l B		m3		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
<b>COVER ROCK PILE</b>									
Subgrade preparation - doze surface		m3		#N/A	\$0.00	\$0		\$0	\$0
Soil cover - excavate,haul,spread&compact		m3		#N/A	\$0.00	\$0		\$0	\$0
Rock cover - excavate,haul & spread		m3		#N/A	\$0.00	\$0		\$0	\$0
Excavate downslope drainage channel & chute		m3		#N/A	\$0.00	\$0		\$0	\$0
Rip rap drainage channel and chute		m3		#N/A	\$0.00	\$0		\$0	\$0
Vegetate		ha		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
<b>VERY LOW PERMEABILITY COVER (in addition to above)</b>									
Liner subgrade preparation - compact		m2		#N/A	\$0.00	\$0		\$0	\$0
Supply geomembrane		m2		#N/A	\$0.00	\$0		\$0	\$0
Install geomembrane		m2		#N/A	\$0.00	\$0		\$0	\$0
Protective cover - excavate,haul,spread&compact		m3		#N/A	\$0.00	\$0		\$0	\$0
Vegetate		ha		#N/A	\$0.00	\$0		\$0	\$0
Install infiltration/seepage instrumentation		allow		#N/A	\$0.00	\$0		\$0	\$0
<b>CONSTRUCT DIVERSION DITCHES</b>									
Excavate ditches -soil		m3		#N/A	\$0.00	\$0		\$0	\$0
Excavate ditches -rock		m3		#N/A	\$0.00	\$0		\$0	\$0
Rip rap in channel base		m3		#N/A	\$0.00	\$0		\$0	\$0
<b>CONSTRUCT SEEPAGE COLLECTION POND</b>									
Excavate seepage collection pond		m3		#N/A	\$0.00	\$0		\$0	\$0
Doze & spread excavated material		m3		#N/A	\$0.00	\$0		\$0	\$0
Vegetate spread material		ha		#N/A	\$0.00	\$0		\$0	\$0
Bedding layer		m3		#N/A	\$0.00	\$0		\$0	\$0
Supply geomembrane		m2		#N/A	\$0.00	\$0		\$0	\$0
Install geomembrane		m2		#N/A	\$0.00	\$0		\$0	\$0
Erosion protection layer		m3		#N/A	\$0.00	\$0		\$0	\$0
<b>RELOCATE DUMPS</b>									
Load, haul, dump or doze		m3		#N/A	\$0.00	\$0		\$0	\$0
Add lime		tonne		#N/A	\$0.00	\$0		\$0	\$0
Contour reclaimed area		ha		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
<b>SPECIALIZED ITEMS</b>									
Install permanent instrumentation		each		#N/A	\$0.00	\$0		\$0	\$0
Install permanent instrumentation, drilling		each		#N/A	\$0.00	\$0		\$0	\$0
Grade and contour waste rock dump		m2	190,000	15GCS	\$1.81	\$343,956	100%	\$343,956	\$0
					<b>Total</b>	\$343,956		\$343,956	\$0
					<b>% of Total</b>			100%	0%

## 1 Chemicals/Soil Area Name:

**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.

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost % Land	Land Cost	Water Cost
<b>HAZARDOUS MATERIALS AUDIT</b>								
Hazardous materials audit		mandays		#N/A	\$0.00	\$0	\$0	\$0
<b>BUILDING DECONTAMINATION &amp; CONSOLIDATION OF HAZARDOUS MATERIALS</b>								
Environmental technician/coordinator		mandays		#N/A	\$0.00	\$0	\$0	\$0
Decontaminate: oil, fuel		mandays		#N/A	\$0.00	\$0	\$0	\$0
Decontaminate maintenance shop		mandays		#N/A	\$0.00	\$0	\$0	\$0
Decontaminate power plant		mandays		#N/A	\$0.00	\$0	\$0	\$0
Decontaminate bulk fuel storage		mandays		#N/A	\$0.00	\$0	\$0	\$0
Decontaminate ANFO plant		mandays		#N/A	\$0.00	\$0	\$0	\$0
Decontaminate offices/warehouse/accom		mandays		#N/A	\$0.00	\$0	\$0	\$0
Removal of asbestos siding on buildings		m2		#N/A	\$0.00	\$0	\$0	\$0
Removal of friable asbestos on equipment		m2		#N/A	\$0.00	\$0	\$0	\$0
Other				#N/A	\$0.00	\$0	\$0	\$0
<b>HAZARDOUS MATERIALS REMOVAL</b>								
Waste oils		litre		#N/A	\$0.00	\$0	\$0	\$0
Waste fuel		litre		#N/A	\$0.00	\$0	\$0	\$0
Waste batteries		kg		#N/A	\$0.00	\$0	\$0	\$0
Assay & environmental lab reagents		kg		#N/A	\$0.00	\$0	\$0	\$0
Machine shop paints, solvents etc		litre		#N/A	\$0.00	\$0	\$0	\$0
Glycol		litre		#N/A	\$0.00	\$0	\$0	\$0
Process reagents		kg		#N/A	\$0.00	\$0	\$0	\$0
Nuclear sources		allow		#N/A	\$0.00	\$0	\$0	\$0
Other hazardous materials		allow		#N/A	\$0.00	\$0	\$0	\$0
<b>HAZARDOUS MATERIALS</b>								
Transportation to disposal facility		allow		#N/A	\$0.00	\$0	\$0	\$0
Disposal fees		allow		#N/A	\$0.00	\$0	\$0	\$0
Other				#N/A	\$0.00	\$0	\$0	\$0
<b>CONTAMINATED SOILS</b>								
Contam. soil investigation - Phase 1		each		#N/A	\$0.00	\$0	\$0	\$0
Contam. soil investigation - Phase 2		each		#N/A	\$0.00	\$0	\$0	\$0
<b>CONTAMINATED SOIL REMOVAL</b>								
Contaminated soil treatment		m3	16,164	15CSTS	\$14.78	\$238,904	100%	\$238,904
Excavate and transport to onsite facility		m2		#N/A	\$0.00	\$0	\$0	\$0
Manage hydrocarbon remediation at facility		m3		#N/A	\$0.00	\$0	\$0	\$0
Reagents/stabilizing agent		m2		#N/A	\$0.00	\$0	\$0	\$0
Excavate and transport to offsite facility		m3		#N/A	\$0.00	\$0	\$0	\$0
Contour decontaminated area		m3		#N/A	\$0.00	\$0	\$0	\$0
<b>OTHER</b>								
Ammonium nitrate (explosive material)		kg	603,000	15ANS	\$2.37	\$1,429,110	100%	\$1,429,110
Other		-		#N/A	\$0.00	\$0	\$0	\$0
<b>Total</b>						\$1,668,014	\$1,668,014	\$0
<b>% of Total</b>							100%	0%

Building / Equip Name: <i>Mine Site</i>				Bldg / Equip #: <i>1</i>					
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
DISPOSE MOBILE EQUIPMENT - Unit costs includes disassembly, necessary decontamination required for on-site disposal, load and transport (Ref 1, pg 24-25, 40)									
Light Mobile Equipment	Includes forklifts, picks up, vehicles around five (5) tonnes and under, scissor lift, man lifts, and small garbage bins (Ref 1, pg 24-25).	Ea	154	15MOLS	\$941.09	\$144,928	95%	\$137,681	\$7,246
Medium Mobile Equipment	Includes vehicles around 10 tonnes, trailers, buses, tow trucks, large garbage bins and water trucks (Ref 1, pg 24-25).	Ea	82	15MOMS	\$1,494.13	\$122,519	98%	\$120,069	\$2,450
Heavy Mobile Equipment	Includes vehicles over 10 tonnes, boom trucks, large front end loaders, dump trucks, graders and cranes (Ref 1, pg 24-25).	Ea	243	15MOHS	\$2,618.87	\$636,386	98%	\$623,659	\$12,728
DISPOSE MECHANICAL EQUIPMENT - Unit costs include equipment disassembly, necessary decontamination required for on-site disposal, load and transport (Ref 1, pg 23-42))									
Light mechanical equipment - Decontaminate and dispose on-site	Light equipment includes pumps, fuel dispenser, laboratory equipment, and sample bins (Ref 1, pg 23).	Ea	57	15LMES	\$1,980.80	\$112,906	98%	\$110,647	\$2,258
Medium mechanical equipment - Decontaminate and dispose on-site	Medium equipment includes aerodrome equipment, generators, shop / maintenance equipment, screens, and chutes (Ref 1, pg 23).	Ea	29	15MMES	\$4,261.34	\$123,579	100%	\$123,579	\$0
Heavy mechanical equipment - Decontaminate and dispose on-site	Heavy equipment includes crusher, feeder, power plant generators, large screens, conveyors, and stackers (Ref 2, pg 23).	Ea	3	15MEHS	\$41,205.45	\$123,616	100%	\$123,616	\$0
Light Tanks	Light non- fuel storage tanks. The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 26).	Ea	1	15TLS	\$2,148.33	\$2,148	0%	\$0	\$2,148
Medium Tanks	Medium non- fuel storage tanks. The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 26).	Ea	12	15MTS	\$7,387.31	\$88,648	0%	\$0	\$88,648
Light Diesel Tanks	Small fuel tanks (10,000-20,000L) (Ref 1, pg 27)	Ea	5	15LDTS	\$3,693.66	\$18,468	100%	\$18,468	\$0
Medium Diesel Tanks	Medium fuel tanks (500,000-750,000L). The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 27).	Ea	4	15MDTS	\$16,166.40	\$64,666	100%	\$64,666	\$0
Misc Items (Minor) (was 8)	On-site disposal. Miscellaneous (minor) items were defined as any item less than 200 kg not captured in other unit costs (Ref 1, pg 42).	Lot	-	15MEIS	\$529.83	\$0	100%	\$0	\$0
Fuel tanks - Medium Mobile Diesel Tanks (3000-500kL)	On-site disposal of medium-mobile fuel tanks (3,000 to 500,000L).	Ea	5	15MMFTS	\$10,481.05	\$52,405	100%	\$52,405	\$0
REMOVE BUILDINGS - Unit costs include disassembling, removing or securing all items, and load and transport (Ref1, pg 29-32, 39)									
Modular	Trailers and pre-fabricated buildings. (Ref 1, pg 29).	m2	9,027	15RBMS	\$59.38	\$536,066	89%	\$474,574	\$61,492
Fold Away Building		m2	709	15RBFS	\$41.57	\$29,473	100%	\$29,473	\$0
Soft-walled		m2	6,017	15RBSS	\$47.51	\$285,861	100%	\$285,861	\$0
ISO Shipping Containers (shelters, comm. Facilities)		m2	30	15RBIS	\$29.69	\$883	100%	\$883	\$0
Wastewater Treatment Facilities	(2015 Security Assessment, pg 39).	Ea	1	15WWTS	\$11,035.58	\$11,036	0%	\$0	\$11,036
REMOVE CONTAMINATED BUILDINGS - Unit costs include disassembling, removing or securing all items, decontamination, and load and transport (Ref 1, pg 29-32)									
Modular	Trailers and pre-fabricated buildings. (Ref 1, pg 29).	m2	1,556	15RCBMS	\$143.42	\$223,098	100%	\$223,098	\$0
Fold Away Building		m2	8,727	15RCBFS	\$142.41	\$1,242,845	100%	\$1,242,845	\$0
ISO Shipping Containers		m2	104	15RCBIS	\$143.42	\$14,928	100%	\$14,928	\$0
Temporary construction warehouses and offices Allowance		m2	1	15RCBTS	\$25,000	\$25,000	100%	\$25,000	\$0
BREAK FOUNDATIONS									
Precast foundations	Includes load and transport of precast concrete foundations (Ref 1, pg 34).	m2	7,524	15FCS	\$38.47	\$289,433	100%	\$289,433	\$0
Slab on grade	Includes perforating the concrete slabs on grade (Ref 1, pg 35).	m2	15,704	15FSS	\$33.11	\$520,014	100%	\$520,014	\$0
Timber Cribbing	Includes disassembly, load and transport of the timber cribbing (Ref 1, pg 33).	m2	1,102	15TCS	\$20.78	\$22,902	100%	\$22,902	\$0
GRADE AND CONTOUR , GENERAL - Unit costs are inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19-20).									
Grade and contour laydown areas		m2	62,193	15GCS	\$1.81	\$112,588	100%	\$112,588	\$0
Grade and contour building footprints		m3	223	15GCS	\$1.81	\$404	100%	\$404	\$0
Grade and contour infrastructure pads		m2	157,201	15GCS	\$1.81	\$284,580	100%	\$284,580	\$0
Aerodrome Facilities		m2	5,776	15GCS	\$1.81	\$10,456	100%	\$10,456	\$0
Roads		m2	121,619	15GCS	\$1.81	\$220,166	100%	\$220,166	\$0
Stockpiles		m2	5,100	15GCS	\$1.81	\$9,233	100%	\$9,233	\$0
Truck weigh facility disturbed area		m2	13,000	15GCS	\$1.81	\$23,534	100%	\$23,534	\$0
GRADE AND CONTOUR WITH LINER - Unit costs include liner removal and disposal, backfill, compaction and scarification with a dozer (Ref 1, pg 19-21).									
Waste disposal		m2	900	15GCLS	\$5.31	\$4,777	100%	\$4,777	\$0
Fuel tank farm dyke		m2	1,911	15GCLS	\$5.31	\$10,146	100%	\$10,146	\$0
Hazardous waste berm		m2	2106	15GCLS	\$5.31	\$11,179	100%	\$11,179	\$0
Bulk Fuel Storage facility (Bladder Farm)		m2	5788	15GCLS	\$5.31	\$30,724	100%	\$30,724	\$0
Other		m2	11,599	15GCLS	\$5.31	\$61,573	100%	\$61,573	\$0
LANDFILL FOR DEMOLITION WASTE									
Place fill material over demolition waste	Includes drill and blasting of material aggregated crushing, excavation of fill, load and haul of fill material, backfill and compact source of material, and fill application. Assumes avg fill depth 1.5m over 6m of demolition waste (Ref 1, pg 17).	m2	13,625	15PFS	\$44.37	\$604,524	100%	\$604,524	\$0
SPECIALIZED ITEMS									
Electrical Cable	Includes the removal, loading, hauling and disposal of cable (Ref 1, pg 41).	m	16,200	15ECS	\$26.49	\$429,160	100%	\$429,160	\$0
Incinerator	Waste Incinerator. Includes disassembly, decontamination (if required), load and transport (2015 Security Assessment, pg 37).	Ea	1	15FIS	\$9,975.93	\$9,976	100%	\$9,976	\$0
Potable Water	Includes disassembly, decontamination (if required), load and transport (2015 Security Assessment, pg 38).	Ea	1	15PWS	\$9,975.93	\$9,976	0%	\$0	\$9,976
Total						\$6,524,804		\$6,326,822	\$197,982
% of Total								97%	3%

Ref 1: 2014 Complete Project Financial Security Assessment, Document No. H349000-1000-07-126-0018, Rev. 1.

Building / Equip Name: <i>Milne Port</i>				Bldg / Equip #: <i>2</i>					
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
DISPOSE MOBILE EQUIPMENT - Unit costs includes disassembly, necessary decontamination required for on-site disposal, load and transport (Ref 1, pg 24-25, 40)									
Light Mobile Equipment	Includes forklifts, picks up, vehicles around five (5) tonnes and under, scissor lift, man lifts, and small garbage bins (Ref 1, pg 24-25).	Ea	98	15MOLS	\$941.09	\$92,227	98%	\$90,382	\$1,845
Medium Mobile Equipment	Includes vehicles around 10 tonnes, trailers, buses, tow trucks, large garbage bins and water trucks (Ref 1, pg 24-25).	Ea	53	15MOMS	\$1,494.13	\$79,189	95%	\$75,230	\$3,959
Heavy Mobile Equipment	Includes vehicles over 10 tonnes, boom trucks, large front end loaders, dump trucks, graders and cranes (Ref 1, pg 24-25).	Ea	56	15MOHS	\$2,618.87	\$146,657	100%	\$146,657	\$0
Other (reclaim conveyor)	Conveyors have been classified as large mobile equipment, with the exception of the reclaim conveyor (850m in length). (Ref 1, pg 40).	Ea	1	15MORS	\$1,329,441.31	\$1,329,441	100%	\$1,329,441	\$0
DISPOSE MECHANICAL EQUIPMENT - Unit costs include equipment disassembly, necessary decontamination required for on-site disposal, load and transport (Ref 1, pg 23-42))									
Light mechanical equipment - Decontaminate and dispose on-site	Light equipment includes pumps, fuel dispenser, laboratory equipment, and sample bins (Ref 1, pg 23).	Ea	38	15LMES	\$1,980.80	\$75,270	100%	\$75,270	\$0
Medium mechanical equipment - Decontaminate and dispose on-site	Medium equipment includes aerodrome equipment, generators, shop / maintenance equipment, screens, and chutes (Ref 1, pg 23).	Ea	2	15MMES	\$4,261.34	\$8,523	100%	\$8,523	\$0
Heavy mechanical equipment - Decontaminate and dispose on-site	Heavy equipment includes crusher, feeder, power plant generators, large screens, conveyors, and stackers (Ref 2, pg 23).	Ea	3	15MEHS	\$41,205.45	\$782,904	100%	\$782,904	\$0
Light Tanks	Light non- fuel storage tanks. The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 26).	Ea	3	15TLS	\$2,148.33	\$6,445	0%	\$0	\$6,445
Medium Tanks	Medium non- fuel storage tanks. The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 26).	Ea	0	15MTS	\$7,387.31	\$0	100%	\$0	\$0
Light Diesel Tanks	Small fuel tanks (10,000-20,000L) (Ref 1, pg 27)	Ea	1	15LDTS	\$3,693.66	\$3,694	100%	\$3,694	\$0
Medium Diesel Tanks	Medium fuel tanks (500,000-750,000L). The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 27).	Ea	0	15MDTS	\$16,166.40	\$0	100%	\$0	\$0
Large Diesel Tanks	Large fuel tanks (5M L). The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 27).	Ea	0	15LDTS	\$106,338.74	\$0	100%	\$0	\$0
Largest Diesel Tanks	Largest fuel tanks (10M to 12M L). The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 27).	Ea	0	15XLDTs	\$171,468.15	\$0	100%	\$0	\$0
Misc Items (Minor)	Miscellaneous (minor) items were defined as any item less than 200 kg not captured in other unit costs (Ref 1,	Ea	0	15MEIS	\$529.83	\$0	100%	\$0	\$0
REMOVE BUILDINGS - Unit costs include disassembling, removing or securing all items, and load and transport (Ref1, pg 29-32, 39)									
Modular	Trailers and pre-fabricated buildings. (Ref 1, pg 29).	m2	5,521	15RBMS	\$59.38	\$327,871	100%	\$327,871	\$0
Fold Away Building		m2	1,525	15RBFS	\$41.57	\$63,378	100%	\$63,378	\$0
Soft-walled		m2	5392.34	15RBSS	\$47.51	\$256,178	100%	\$256,178	\$0
ISO Shipping Containers (shelters, comm. Facilities)		m2	15	15RBIS	\$29.69	\$442	100%	\$442	\$0
Wastewater Treatment Facilities	(2015 Security Assessment, pg 39).	Ea	1	15VWTS	\$11,035.58	\$11,036	0%	\$0	\$11,036
REMOVE CONTAMINATED BUILDINGS - Unit costs include disassembling, removing or securing all items, decontamination, and load and transport (Ref 1, pg 29-32)									
Modular	Trailers and pre-fabricated buildings. (Ref 1, pg 29).	m2	1,171	15RCBMS	\$143.42	\$167,996	85%	\$142,797	\$25,199
Fold Away Building		m2	3,194	15RCBFS	\$142.41	\$454,924	100%	\$454,924	\$0
Soft walled		m2	2,131	15RCBSS	\$148.35	\$316,059	100%	\$316,059	\$0
ISO Shipping Containers (shelters, comm. facilities)		m2	134	15RCBIS	\$143.42	\$19,194	100%	\$19,194	\$0
Temporary construction warehouses and offices Allowance		m2	1	15RCBTS	\$25,000.00	\$25,000	100%	\$25,000	\$0
BREAK FOUNDATIONS									
Precast foundations	Includes load and transport of precast concrete foundations (Ref 1, pg 34).	m2	3,513	15FCS	\$38.47	\$135,154	100%	\$135,154	\$0
Slab on grade	Includes perforating the concrete slabs on grade (Ref 1, pg 35).	m2	1,766	15FSS	\$33.11	\$58,473	100%	\$58,473	\$0
Timber Cribbing	Includes disassembly, load and transport of the timber cribbing (Ref 1, pg 33).	m2	732	15TCS	\$20.78	\$15,206	100%	\$15,206	\$0
GRADE AND CONTOUR , GENERAL - Unit costs are inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19-20).									
Grade and contour laydown areas		m2	312,921	15GCS	\$1.81	\$566,479	100%	\$566,479	\$0
Grade and contour building footprints		m3	14,306	15GCS	\$1.81	\$25,898	100%	\$25,898	\$0
Grade and contour infrastructure pads		m2	66,536	15GCS	\$1.81	\$120,450	100%	\$120,450	\$0
Roads		m2	12,149	15GCS	\$1.81	\$21,992	100%	\$21,992	\$0
Stockpiles		m2	134,046	15GCS	\$1.81	\$242,663	100%	\$242,663	\$0
GRADE AND CONTOUR WITH LINER - Unit costs include liner removal and disposal, backfill, compaction and scarification with a dozer (Ref 1, pg 19-21).									
Hazardous waste berm		m2	4,417	15GCLS	\$5.31	\$23,449	100%	\$23,449	\$0
Weatherhaven genset fuel bladder berm		m2	1,000	15GCLS	\$5.31	\$5,308	100%	\$5,308	\$0
Storage Area		m2	1,971	15GCLS	\$5.31	\$10,461	100%	\$10,461	\$0
Fuel tank farm dyke		m2	25,893	15GCLS	\$5.31	\$137,448	100%	\$137,448	\$0
Landfarm		m2	14,083	15GCLS	\$5.31	\$74,757	100%	\$74,757	\$0
SPECIALIZED ITEMS									
Electrical Cable	Includes the removal, loading, hauling and disposal of cable (Ref 1, pg 41).	m	11,100	15ECS	\$26.49	\$294,054	100%	\$294,054	\$0
Incinerator	Includes disassembly, decontamination (if required), load	Ea	1	15FIS	\$9,975.93	\$9,976	100%	\$9,976	\$0
Potable Water	Includes disassembly, decontamination (if required), load	Ea	1	15PWS	\$9,975.93	\$9,976	0%	\$0	\$9,976
LANDFILL FOR DEMOLITION WASTE									
Place fill material over demolition waste		m2	5,750	15PFS	\$44.37	\$255,139	100%	\$255,139	\$0
Total						\$5,918,170		\$5,859,710	\$58,460
% of Total								99%	1%

Ref 1: 2014 Complete Project Financial Security Assessment, Document No. H349000-1000-07-126-0018, Rev. 1.



Building / Equip Name: Tote Road				Bldg / Equip #: 3					
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
DISPOSE MOBILE EQUIPMENT - Unit costs includes disassembly, necessary decontamination required for on-site disposal, load and transport (Ref 1, pg 24-25, 40)									
Light Mobile Equipment		Ea		#N/A	\$0.00	\$0		\$0	\$0
Medium Mobile Equipment	Includes vehicles around 10 tonnes, trailers, buses, tow trucks, large garbage bins & water trucks (Ref 1, pg 24-25).	Ea		15MOMS	\$1,494.13	\$0	100%	\$0	\$0
Heavy Mobile Equipment	Includes vehicles >10 tonnes, boom trucks, large front end loaders, dump trucks, graders & cranes (Ref 1, pg 24-25).	Ea		15MOHS	\$2,618.87	\$0	100%	\$0	\$0
REMOVE BUILDINGS									
Modular		m2		#N/A	\$0.00	\$0		\$0	\$0
Fold Away Building		m2		#N/A	\$0.00	\$0		\$0	\$0
ISO Shipping Containers (shelters, comm. facilities)		m2	223	15RBIS	\$29.69	\$6,621	100%	\$6,621	\$0
Accommodation Complex		m2		#N/A	\$0.00	\$0		\$0	\$0
REMOVE CONTAMINATED BUILDINGS									
Modular		m2		#N/A	\$0.00	\$0		\$0	\$0
Fold Away Building		m2	682	15RCBF	\$142.41	\$97,123		\$0	\$97,123
Soft walled		m2		#N/A	\$0.00	\$0		\$0	\$0
BREAK FOUNDATIONS									
Slab on grade		m2	682	15FSS	\$33.11	\$22,584	100%	\$22,584	\$0
Timber Cribbing	Includes disassembly, load and transport of the timber cribbing (Ref 1, pg 33).	m2	59	15TCS	\$20.78	\$1,236	100%	\$1,236	\$0
GRADE AND CONTOUR , GENERAL - Unit costs are inclusive of backfill, compaction and scarification with a dozer (Ref 1, pg 19-20).									
Grade and contour laydown areas		m2		#N/A	\$0.00	\$0		\$0	\$0
Grade and contour building footprints		m3	13,040	#N/A	\$0.00	\$0	100%	\$0	\$0
Grade and contour infrastructure pads		m2	6,760	15GCS	\$1.81	\$12,238	100%	\$12,238	\$0
Aerodrome Facilities		m2		#N/A	\$0.00	\$0		\$0	\$0
Roads		m2	533,000	15GCS	\$1.81	\$964,887	100%	\$964,887	\$0
Stockpiles		m2		#N/A	\$0.00	\$0		\$0	\$0
Remove liner		m2	682		\$3.50	\$2,387	100%	\$2,387	\$0
Grade and Contour Significant Disturbed Areas		m2	-	15GCDS	\$2.72	\$0	100%	\$0	\$0
LANDFILL FOR DEMOLITION WASTE									
Place fill material over demolition waste		m2		#N/A	\$0.00	\$0		\$0	\$0
Place rock cover		m3		#N/A	\$0.00	\$0		\$0	\$0
Place soil cover		m3		#N/A	\$0.00	\$0		\$0	\$0
RECLAIM ROADS									
Remove bridges	The unit cost is inclusive of the demolition and removal of a bridge. Assumed not contaminated (Ref 1, pg 36).	each	4	15BRS	\$201,838.77	\$807,355	0%	\$0	\$807,355
Remove culverts	The unit cost is inclusive of the travel time to and from the culvert location, the earthwork necessary expose a culvert and the removal of the culvert material (Ref 1, pg 21).	each	383	15CRS	\$1,094.48	\$419,186	0%	\$0	\$419,186
Scarify and install water breaks		ha		#N/A	\$0.00	\$0		\$0	\$0
Scarify airstrip		ha		#N/A	\$0.00	\$0		\$0	\$0
Scarify laydown areas		ha		#N/A	\$0.00	\$0		\$0	\$0
Vegetate		ha		#N/A	\$0.00	\$0		\$0	\$0
Other		ha		#N/A	\$0.00	\$0		\$0	\$0
SPECIALIZED ITEMS									
Consumables		Ea		#N/A	\$0.00	\$0		\$0	\$0
Electrical Cable		m		#N/A	\$0.00	\$0		\$0	\$0
Incinerator		Ea		#N/A	\$0.00	\$0		\$0	\$0
Potable Water		Ea		#N/A	\$0.00	\$0		\$0	\$0
Total						\$2,333,618		\$1,009,954	\$1,323,664
% of Total								43%	57%

Ref 1: 2014 Complete Project Financial Security Assessment, Document No. H349000-1000-07-126-0018, Rev. 1.

Building / Equip Name: <i>Project Wide/ Other</i>				Bldg / Equip #: <i>4</i>					
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
<b>DISPOSE MOBILE EQUIPMENT</b>									
Light Mobile Equipment		Ea		#N/A	\$0.00	\$0		\$0	\$0
Medium Mobile Equipment		Ea		#N/A	\$0.00	\$0		\$0	\$0
Heavy Mobile Equipment		Ea		#N/A	\$0.00	\$0		\$0	\$0
Other (reclaim conveyor)		Ea		#N/A	\$0.00	\$0		\$0	\$0
<b>REMOVE BUILDINGS</b>									
Modular		m2		#N/A	\$0.00	\$0		\$0	\$0
Fold Away Building		m2		#N/A	\$0.00	\$0		\$0	\$0
Soft walled		m2		#N/A	\$0.00	\$0		\$0	\$0
ISO Shipping Containers (shelters, comm. facilities)		m2		#N/A	\$0.00	\$0		\$0	\$0
<b>REMOVE CONTAMINATED BUILDINGS</b>									
Modular		m2		#N/A	\$0.00	\$0		\$0	\$0
Fold Away Building		m2		#N/A	\$0.00	\$0		\$0	\$0
Soft walled		m2		#N/A	\$0.00	\$0		\$0	\$0
ISO Shipping Containers (shelters, comm. facilities)		m2		#N/A	\$0.00	\$0		\$0	\$0
<b>BREAK FOUNDATIONS</b>									
Timber Cribbing		m2		#N/A	\$0.00	\$0		\$0	\$0
<b>LANDFILL FOR DEMOLITION WASTE</b>									
Place fill material over demolition waste	Includes drill and blasting of material aggregated crushing, excavation of fill material, load and haul of fill material, backfill and compact source of material, and fill application. Assumes avg fill depth of 1.5m over 6m of demolition waste (Ref 1, pg 17).	m2	12,154	15PFS	\$44.37	\$539,255	100%	\$539,255	\$0
<b>RECLAIM ROADS</b>									
Remove bridges		each		#N/A	\$0.00	\$0		\$0	\$0
Remove culverts		each		#N/A	\$0.00	\$0		\$0	\$0
Scarify and install water breaks		ha		#N/A	\$0.00	\$0		\$0	\$0
Scarify airstrip		ha		#N/A	\$0.00	\$0		\$0	\$0
Scarify laydown areas		ha		#N/A	\$0.00	\$0		\$0	\$0
Vegetate		ha		#N/A	\$0.00	\$0		\$0	\$0
Other		ha		#N/A	\$0.00	\$0		\$0	\$0
<b>SPECIALIZED ITEMS</b>									
Electrical Cable		m		#N/A	\$0.00	\$0		\$0	\$0
Incinerator		Ea		#N/A	\$0.00	\$0		\$0	\$0
Potable Water		Ea		#N/A	\$0.00	\$0		\$0	\$0
<b>Total</b>						\$539,255		\$539,255	\$0
<b>% of Total</b>								100%	0%

Ref 1: 2014 Complete Project Financial Security Assessment, Document No. H349000-1000-07-126-0018, Rev. 1.

## 1 Capital Expenditures and Short Term Water Treatment identified in 'Instructions' worksheet

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
BREACH DYKE EMBANKMENT						
Remove fill		m3		#N/A	\$0.00	\$0
Contour water intake area		m3		#N/A	\$0.00	\$0
STABILIZE SEDIMENT PONDS/WATER MANAGEMENT PONDS						
Place soil cover		m3		#N/A	\$0.00	\$0
Doze & spread excavated material		m3		#N/A	\$0.00	\$0
Vegetate spread material		ha		#N/A	\$0.00	\$0
Rip rap in channel base		each		#N/A	\$0.00	\$0
Grade and contour with liner	Includes liner removal and disposal (Ref 1, pg 21) and backfill, compaction and scarification with a dozer (Ref 1, pg 19).	m2	49,636.20	15GCLS	\$5.31	\$263,484
REDIRECT RUNOFF/CONSTRUCT DIVERSION DITCHES						
Excavate ditches -soil		m3		#N/A	\$0.00	\$0
Excavate ditches -rock		m3		#N/A	\$0.00	\$0
Stabilize side slopes		m3		#N/A	\$0.00	\$0
Rip rap in channel base		m3		#N/A	\$0.00	\$0
BREACH DITCHES						
Excavate breaches		m3		#N/A	\$0.00	\$0
Backfill/recontour		m3		#N/A	\$0.00	\$0
Install flow dissipation		m3		#N/A	\$0.00	\$0
Vegetate remainder of ditch		m2		#N/A	\$0.00	\$0
DECOMMISSION FRESH WATER SUPPLY						
Breach embankment		m		#N/A	\$0.00	\$0
Remove pump		LS		#N/A	\$0.00	\$0
Remove pipeline		m		#N/A	\$0.00	\$0
Other		m3		#N/A	\$0.00	\$0
WATER CONTROL IN RECLAMATION QUARRY						
Install pumping system		LS		#N/A	\$0.00	\$0
Remove pumping system		LS		#N/A	\$0.00	\$0
REMOVE PIPELINES						
Remove pipes		m		#N/A	\$0.00	\$0
Remove pipes	The unit cost includes the cleaning, plugging, disassembly, loading, hauling and disposal of piping (Ref 1, pg 41).	m	19,623	15RPS	\$66.23	\$1,299,599
Concrete plug deep pipes		m3		#N/A	\$0.00	\$0
Other				#N/A	\$0.00	\$0
CONSTRUCT CONTAMINATED WATER STORAGE POND						
Excavate pond		m3		#N/A	\$0.00	\$0
Doze & spread excavated material		m3		#N/A	\$0.00	\$0
Vegetate spread material		ha		#N/A	\$0.00	\$0
Bedding layer		m3		#N/A	\$0.00	\$0
Supply geomembrane		m2		#N/A	\$0.00	\$0
Install geomembrane		m2		#N/A	\$0.00	\$0
Erosion protection layer		m3		#N/A	\$0.00	\$0
CONSTRUCT WATER TREATMENT PLANT						
Build treatment plant		LS		#N/A	\$0.00	\$0
Build sludge containment facility		LS		#N/A	\$0.00	\$0
					<b>Total</b>	<b>\$1,563,082</b>

Ref 1: 2014 Complete Project Financial Security Assessment, Document No. H349000-1000-07-126-0018, Rev. 1.

## 1 Interim Care and Maintenance (18-month duration)

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
INTERIM CARE & MAINTENANCE						
On-site caretakers	Three caretakers for 18 months (assume 2 at 3w/1w and 1 at 2w/2w rotation). Assume 36 days of travel for each caretaker over 18-months.10-hr days.	hr	11,160	15BLS	\$100.00	\$1,116,000
Extra personnel	Assume crew of 15 people for 56, 10-hr days, to stabilize site and equipment at both the Mine Site, and Milne Port. Blended unit rate is used to allow for different skill levels that would make up the crew.	hr	8,400	15BLS	\$100.00	\$840,000
-Electrician		manmonths		#N/A	\$0.00	\$0
-Mechanic		manmonths		#N/A	\$0.00	\$0
Annual fuel		litre		#N/A	\$0.00	\$0
Mobilization of Workers Required for Stabilization Period (from northern communities)	Assume two rotations per worker, 30% from northern communities and 70% from southern communities. Mobilization from the south is \$85.45/person days on site, and from the north \$75/person-days on site (Ref 1)	person-days	252	15NWS	\$75.00	\$18,900
Mobilization of Workers Required for Stabilization Period (from southern communities)	Assume two rotations per worker, 30% from northern communities and 70% from southern communities. Mobilization from the south is \$85.45/person days on site, and from the north \$75/person-days on site (Ref 1)	person-days	588	15SWS	\$85.45	\$50,245
Mobilization of caretakers	Assume mobilize from the north	person-days	1,080	15NWS	\$75.00	\$81,000
Camp accommodations- stabilization period	15 workers for 56 days	person-days	840	15WACS	\$225	\$189,000
Camp accommodations for caretakers	18 month duration full time	person-days	1,080	15WACS	\$225	\$243,000
Equipment - site stabilizaiton	Assume 1 dozer, 56 days, 10 hr/day	hr	560	15BES	\$150	\$84,000
Miscellaneous supplies		allow		#N/A	\$0.00	\$0
-Pick-up truck		each		#N/A	\$0.00	\$0
-Small dozer		allow		#N/A	\$0.00	\$0
-Small excavator		allow		#N/A	\$0.00	\$0
-Snow machine		allow		#N/A	\$0.00	\$0
-Communications		allow		#N/A	\$0.00	\$0
SNP/AEMP water sampling & reporting		Ea	3	15MCWL	\$30,000	\$90,000
Geotechnical assessment		Ea	3	15GTS	\$20,000	\$60,000
Envrionmental site assessment	Assume spending 1st year budget for this type of activity for interim care.	Ea	1	RPTH	\$20,000	\$20,000
Interim water treatment				#N/A	0	\$0
18-month Interim C&M Cost						\$2,792,145
Number of years of ICM		years	2	Total		\$2,792,145

Ref 1: Baffinland Iron Mines Corporation, Mary River Project, 2014 Complete Project Financial Security Assessment, Document No. H349000-1000-07-126-0018, Rev. 1.

**1 Post-Closure Monitoring & Maintenance:**

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
<b>MONITORING &amp; INSPECTIONS</b>						
Annual geotechnical inspection	Assume 2 geotech inspections are specified at year 4 and 8 (Ref 2, pg 81).	Ea	2	15GTS	\$20,000	\$40,000
Survey inspection		Ea		#N/A	\$0.00	\$0
Regulatory costs*	Annual reporting over 8 years. Unit rate from RECLAIM.	Ea	8	RPTL	\$10,000	\$80,000
Site water monitoring (AEMP and SNP)	Two sampling events per year for 8 years, at 20 sample locations.	Ea	16	15MCWL	\$30,000	\$480,000
- Active closure and flooding		Ea		#N/A	\$0.00	\$0
- Post pit flooding		Ea		#N/A	\$0.00	\$0
Air Quality Monitoring Program (AQMP)	Assume 3 sampling events specified at year 2, year 4 and year 7 (Ref 2, pg 81). Unit rate from RECLAIM.	Ea	3	RPTH	\$20,000	\$60,000
Wildlife Effects Monitoring Program (WEMP)	Assume 2 sampling events specified at year 5 and year 7 (Ref 1, pg 81). Unit rate from RECLAIM.	Ea	2	RPTH	\$20,000	\$40,000
Vegetation Monitoring		Ea		#N/A	\$0.00	\$0
Monitoring (general)		-		#N/A	\$0.00	\$0
Project Environmental Assessment	Assume carried once (1x) during closure/post closure period year 4; at Mine site, Tote Road and Milne Port (Ref 2, pg 81). Unit rate from RECLAIM.	-	3	RPTH	\$20,000	\$60,000
<b>COVER MAINTENANCE</b>						
Maintenance allowance	According to the PDW closure plan, mmaintenance costs are estimated at \$100,000 per year (Ref 1, pg 103). This allowance expected to cover all maintenance activities at the sites.	allow	8	15MCAL	\$100,000.00	\$800,000
Repair erosion - upgrade diversion ditches		allow		#N/A	\$0.00	\$0
Remove problem vegetation		allow		#N/A	\$0.00	\$0
Repair animal damage		allow		#N/A	\$0.00	\$0
Repair/upgrade access controls		allow		#N/A	\$0.00	\$0
Other		allow		#N/A	\$0.00	\$0
<b>SPILLWAY MAINTENANCE</b>						
Repair erosion		m3		#N/A	\$0.00	\$0
Clear spillway		Ea		#N/A	\$0.00	\$0
Subtotal, Annual post-closure costs (cumulative over 8 years)						\$1,560,000
Discount rate for calculation of net present value of post-closure cost, %				0.00%		
Number of years of post-closure activity (Note 1)				8	years	
<b>Present Value of payment stream</b>						\$1,560,000

\*Regulatory costs - annual reporting, management plans, progress reports etc.

Ref 1: Baffinland Iron Mines Corporation, Mary River Project, Interim Mine Closure and Reclamation Plan, Document No. BAF-PH1-830-P16-0012, Rev. 2, Jun 27, 2014.

Ref 2: Baffinland Iron Mines Corporation, Mary River Project, Interim Closure and Reclamation Plan, Document No. BAF-PH1-830-P16-0012, Rev. 3, March 19, 2015.

## 1 Mobilization/Demobilization:

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
<b>MOBILIZE HEAVY EQUIPMENT</b>						
Excavators		each		#N/A	0	\$0
Dump trucks		each		#N/A	0	\$0
Dozers		each		#N/A	0	\$0
Demolition shears		each		#N/A	0	\$0
Crane		each		#N/A	0	\$0
Loader		each		#N/A	0	\$0
Compactor		each		#N/A	0	\$0
Light duty vehicles		each		#N/A	0	\$0
<b>MOBILIZE MISC. EQUIPMENT</b>						
Mobilization and Demobilization of Equipment and Materials by Sealift		\$	1		3,114,000	\$3,114,000
Off-site disposal of waste and material	Ref 1, pg. 59	m3	5,500	15ODS	358	\$1,969,000
Pump shipping		each		#N/A	0	\$0
Pipe shipping		m		#N/A	0	\$0
Minor tools and equipment		allow		#N/A	0	\$0
Truck tires		allow		#N/A	0	\$0
Consumables	Cost to remove consumables delivered to site in 2015 (lubricants, grease, detergents, boosters, EZ Dets, dry goods, food, household supplies, etc.) (2015 Security Assessment, pg 18).	Ea	550	15CONS	\$701	\$385,440
<b>MOBILIZE WORKERS</b>						
Mobilization of Workers Required for Reclamation (from northern communities)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1).	person-days	5,016	15NWS	75.00	\$376,200
Mobilization of Workers Required for Reclamation (from southern communities)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1).	person-days	11,705	15SWS	85.45	\$1,000,192
Reclamation activities - travel time		manhours		#N/A	0	\$0
Long term reclamation activities (eg pump flooding) - transport		each		#N/A	0	\$0
Long term reclamation activities (eg pump flooding) - travel time		each		#N/A	0	\$0
Monitoring Airfare		each		#N/A	0	\$0
<b>WORKER ACCOMODATIONS</b>						
Worker Accommodation & Camp Operation		person-days	16,723	15WACS	225	\$3,762,675
Reclamation activities		manmonths		#N/A	0	\$0
Long term reclamation activities (eg pump flooding)		manmonths		#N/A	0	\$0
<b>MOBILIZE FUEL</b>						
Demobilization of Existing Fuel	Ref 1, pg 61	litre	25,585,435	15MF1S	0.1	\$2,558,544
Fuel Required for Reclamation	Ref 1, pg 61	litre	1,574,643.5	15MF2S	0.4	\$629,857
Fuel	Represents marginal increase in fuel provided in Sept	litre				\$203,000
Fuel freight - long term reclamation activities		litre		#N/A	0	\$0
Fuel freight accomodations		litre		#N/A	0	\$0
<b>DEMOBILIZE HEAVY EQUIPMENT</b>						
Excavators		km		#N/A	0	\$0
Dump trucks		km		#N/A	0	\$0
Dozers		km		#N/A	0	\$0
Demolition shears		km		#N/A	0	\$0
Crane		km		#N/A	0	\$0
Loader		km		#N/A	0	\$0
Compactor		each		#N/A	0	\$0
Light duty vehicles		km		#N/A	0	\$0
<b>DEMOBILIZE WORKERS</b>						
crew travel time		mandays		#N/A	0	\$0
crew transportation		each		#N/A	0	\$0
					<b>Total</b>	<b>\$13,998,908</b>

Ref 1: 2014 Complete Project Financial Security Assessment, Document No. H349000-1000-07-126-0018, Rev. 1.