



Water Resources Division
Nunavut Regional Office
Iqaluit, NU X0A 0H0

Your file - Votre référence
2AM-MRY1325

December 2, 2016

Our file - Notre référence
CIDM#1115380

Stephanie Autut
Executive Director
Nunavut Water Board
Gjoa Haven, NU X0B 1J0

**Re: Indigenous and Northern Affairs Canada's written submission regarding
the 2017-2018 Annual Security Review of Baffinland Iron Mines Corporation
2AM-MRY1325 Type A Water Licence**

Dear Ms. Autut,

I am following up on our letter of November 3, 2016. Indigenous and Northern Affairs Canada (INAC or the Department) has had the opportunity to review information provided by Baffinland Iron Mines Corporation (Baffinland). We have revised the reclamation cost estimate for the Mary River Project using the RECLAIM model v.7. produced last year, and submitted to the Nunavut Water Board (Board or NWB) on December 24, 2015. As was the case last year, our estimate was prepared by a consultant, SNC-Lavalin Inc., and it is provided as a separate document in this submission.

Security reclamation estimate for 2017

Documents and files provided by Baffinland in November 2016 that were considered in the generation of our reclamation cost estimate include:

- 2017 Work Plan (November 4, 2016)
- 2017 Marginal Closure and Reclamation Financial Security Estimate submitted (November 4, 2016)
- 2017 Work Plan – EstimateBreakdownStructure (EBS) (November 4, 2016)
Excel file
- Revisions to reflect stakeholder feedback on 2017 Marginal Closure and Reclamation Security Estimate (November 24, 2016).
- 2017 Work Plan – EstimateBreakdownStructure (EBS) (November 24, 2016)
Excel file

INAC notes that when preparing the security estimate for 2017, Baffinland modified their intermediate estimate for the 2016 Annual Security Review (ASR) rather than modifying the value of their final joint submission with Qikiqtani Inuit Association (QIA).

On the basis of the information presently available, our consultant developed a reclamation cost estimate of \$49,932,123 for the project. The splitting of this cost based on land ownership and land-water reclamation activities is detailed in Table 1.

Table 1: Splitting of total reclamation cost estimate

Total cost	Crown land Reclamation Cost Estimate	Inuit-owned land Reclamation Cost Estimate	Water Reclamation Cost Estimate	Land Reclamation Cost Estimate
\$ 49,932,123	\$ 1,298,555	\$ 48,633,568	\$ 10,341,691	\$ 39,590,432
<i>percentage</i>	<i>2.6%</i>	<i>97.4%</i>	<i>20.7%</i>	<i>79.3%</i>

The difference between this total reclamation cost estimate and the value proposed by Baffinland of \$49,271,000 is less than 2%. The estimate from the QIA is not included because it is not available to us at the time of our review.

The marginal increases from the 2016 ASR process for both the INAC and Baffinland estimates are very similar. The principle differences in the total amount originate from:

- 2% bonding is included in the RECLAIM model (\$564,885) which is not part of the EBS model.
- Assignment of certain items to direct or indirect costs differs between RECLAIM and EBS models. Project management and engineering fees are calculated as percentages of direct costs and therefore these calculated costs also differ. RECLAIM classifies more costs as direct, including interim care and maintenance and contaminated soil management, which results in higher project management and engineering fees.

Recommendation

Based on the material provided by Baffinland, and from our analysis, informed by the work of our consultant, the Department is of the opinion that the peak projected reclamation cost for the year can be estimated at \$49,932,123.

Presently the Minister holds \$1,210,000, as determined by the Board, under the Type A Water Licence and QIA holds \$48,845,500 in financial security for reclamation purposes.

The allocation of the Global Security Amount between security holders is a challenging topic. Our perspectives since the last Annual Security Review process remain unchanged. The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* is designed to place a meaningful amount of security in the hands of government to enable a government response where intervention at a site is warranted. We also recognize that QIA has a legitimate need to secure itself because the majority of the project is on Inuit-owned land.

Our objective is to ensure that the Minister in her regulatory capacity is not at risk of being unfunded or under-funded for remedial intervention at the site, should Baffinland not fulfill its obligations. We remain concerned that this objective has not yet been achieved.

While it is not a fully satisfactory resolution of the issue, the Department will mitigate any risks through the active inspection and enforcement of the Water Licence and hold the licensee (and the landowner, in the event that the licensee is not able to fulfill its obligations) responsible.

It is INAC's submission that the amount held by the Minister remains unchanged, at \$1,210,000. If the Board concludes otherwise, and sees a need to change the amount of security under the licence, we would like an opportunity to speak to the procedure for doing so.

Please contact Sarah Forté at 867-975-3876 or sarah.forte@aandc-aadnc.gc.ca for any additional information.

Regards,



Karen D. Costello, P. Geol.
Director, Resource Management

c.c.: Mr. Todd Burlingame, Vice-President of Sustainable Development, Health,
Safety and Environment, Baffinland
Mr. Stephen Williamson Bathory, Director of Department of Major Projects, QIA

01 December 2016

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

Subject: Licence No. 2AM-MRY1325, Mary River Project: 2017 Annual Security Review
under Part C and Schedule C of the Type 'A' Water Licence - Revised

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 2) of larger call-up mandate for SNC-Lavalin on behalf of Indigenous and Northern Affairs Canada (INAC) associated with the Mary River Project mine licensing and site closure and reclamation.

Background

The Mary River Project is located in Nunavut, on the northern end of Baffin Island, 160 km south of Pond Inlet. This project is an iron ore mine owned and managed by Baffinland Iron Mines Corporation (BIMC or Baffinland). It has been in production since fall 2014, hauling ore from the mine site along the Tote Road to Milne Port, where the first ore shipments were made in summer 2015. BIMC is operating under a Nunavut Impact Review Board project certificate and Nunavut Water Board (NWB) Type A water licence, 2AM-MRY1325 Amendment #1. The Type A water licence is required for project construction and operations.

INAC's Mine Site Reclamation Policy for Nunavut (INAC, 2002) requires that financial security be held for the highest reclamation liability for both land and water for a mine project. The assumptions for determining the security amount are detailed in the 2002 Policy.

For the Mary River Project, the financial security estimations for site development and related activities were previously completed by BIMC, the Qikiqtani Inuit Association (QIA), and SNC-Lavalin, the latter working on behalf of INAC. Financial security for the undertakings permitted under the above water licence is held by either INAC or the QIA depending on the land ownership where infrastructure and activities are located (Crown-owned land and Inuit-owned land, respectively).

On November 4, 2016, BIMC filed information for the 2017 ASR with the Nunavut Water Board (NWB) in accordance with relevant sections of Schedule C, Item 2 of the Type A Licence. On November 24, 2016 BIMC submitted documentation to revise their financial security estimate to reflect stakeholder feedback on their November 4, 2016 submission. The 2017 ASR process followed NWB guidance provided on October 5, 2016 and a revised schedule on November 1, 2016.

This letter report outlines SNC-Lavalin's update of the mine reclamation cost estimate for the Mary River Project taking into account the current state of site development and BIMC's proposed 2017 Work Plan. The updated reclamation cost estimate will form part of INAC's intervention in the 2017 ASR.

Under the Water Licence, INAC currently holds security in the amount of \$1,210,000.

Scope of the 2017 ASR Review

SNC-Lavalin's 2017 ASR builds on our previous reviews carried out for the Mary River Project on behalf of INAC and addresses whether the existing global security amount as set by the NWB during the 2016 ASR process is adequate to account for the updated scope of activities and undertakings proposed by BIMC in their 2017 Work Plan.

For the 2017 ASR we have updated our previous 2016 ASR mine reclamation cost estimate of the Mary River Project (December 23, 2015). The security estimate is again based on the RECLAIM model (Version 7). Our security estimation integrates information gleaned from our geotechnical site visit conducted July 27 to August 3, 2016 and from a review of BIMC's 2017 Work Plan dated November 4, 2017 and November 24, 2016 financial security revisions. As specified in our call-up Statement of Work (July 4, 2016) we have explicitly separated liabilities between land and water and between Crown- and Inuit-owned land (IOL).

The reclamation costs for all infrastructure related to the Mary River Project Type A water licence, including at Milne Port, Mine Site, Steensby Camp and Mid-Rail Camp have been included as appropriate. The reclamation costs for the ore dock facilities in Milne Inlet have not been included as these are considered under the land lease rather than the water licence. Costs for post-abandonment Interim Care and Maintenance (ICM) for an eighteen-month period between the hypothetical abandonment of the site and the beginning of reclamation work have been assumed consistent with the defined level of effort estimated in the 2016 ASR.

The objective of SNC-Lavalin's review is to determine whether the previous 2016 cost estimate is sufficient to ensure appropriate closure and restoration of the site and implementation of any required ongoing measures after site restoration, and to confirm whether the securities BIMC proposes to apply to Crown- and Inuit-owned land in 2017/18 are adequate to meet the highest reclamation liability.

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

1. Nunavut Water Board Licence No. 2AM-MRY1325 – Amendment No. 1, July 21, 2015;
2. 2016 Work Plan, Baffinland Iron Mines Corporation, October 30, 2015 Important section: Appendix B – Marginal Closure and Reclamation Financial Security Estimate;
3. 2AM-MRY1325 Mary River Project: Annual Security Review – FINAL, SNC-Lavalin Inc., December 2, 2015;
4. Baffinland Iron Mines Corporation, Mary River Project, QIA 2016 Comprehensive Security Estimate, Arktis Solutions Inc., December 2, 2015;

5. INAC's updated estimate of reclamation costs and recommendation for the Mary River Project for the Annual Security Review Process for Water Licence 2AMMRY1325, INAC, December 24, 2015;
6. Type A 2015 Dec 2015 RECLAIM model estimate for Mary River Project reclamation (Excel file), SNC-Lavalin Inc., December 23, 2015;
7. Licence No. 2AM-MRY1325, Baffinland Iron Mines Corporation Type "A" Water Licence, Mary River Project: Direction from Nunavut Water Board Under the Annual Security Review Process Established Under Part C and Schedule C of the Water Licence, NWB, February 5, 2016;
8. 2017 Work Plan, Baffinland Iron Mines Corporation, November 4, 2016 including Appendix B – 2017 Marginal Closure and Reclamation Financial Security Estimate, Rev. 0 (November 2, 2016); and
9. 2017 Marginal Closure and Reclamation Security Estimate – Revisions to Reflect Interested Parties Feedback, Rev. 0, Baffinland Iron Mines Corporation, November 24, 2016.

2017 Work Plan Components

BIMC has provided their proposed operation and work plan for 2017 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 2017

- Mobilization and occupation of additional 49 person modular camp inclusive of kitchen, dining, locker, recreational and washroom facilities. Camp to be utilized by sea lift personnel and environmental (seasonal) workers. Note: the camp was moved to the Milne Port site during the 2016 sea lift season with set-up planned prior to the 2017 shipping season;
- Portable batch plant set-up inclusive of water heating and storage, aggregate bins, stockpile areas and batching equipment;
- Expansion of Ore Stockpile Storage Area to provide increased area for equipment mobility, ore, and extra room for snow storage. Ditching and settling pond to be modified as warranted to address any drainage concerns;
- Additional power distribution infrastructure to be installed to allow for dedicated power to the ship loader; and
- Additional lighting and poles to be installed to improve safety around the Milne Port Site. Assumed approximately 3-4 km length for cabling and 20 light poles required.

Work Carried over from 2016 Work Plan;

- Consideration given to designing and constructing a new landfill. Note this activity would require application and approval from NWB and QIA. Security will be adjusted accordingly should Baffinland decide to proceed with this activity; and
- Construct approved PWSP at Milne Port.

Tote Road

New Work for 2017

- 'New' quarry location along the Tote Road to be developed to complete the work scope during 2017:

- Quarry Q18 at Km 60 along the Tote Road. (Note that this new quarry is on Crown land).

Work Carried over from 2016 Work Plan;

- Dust Suppression along the Tote Road (Water and Calcium Carbonate and EK 35 for the Airstrip); and.
- Quarry and borrow source locations along the Tote Road which were previously identified as being required in the 2016 Work Plan but have been deferred to 2017. These quarries and borrow sources are:
 - Quarry Q13 at Km 30.8 along the Tote Road;
 - Quarry Q16A at Km 50 along the Tote Road.

Mine Site

New Work for 2017

- Use old bladder farm as a hazardous waste storage area. Treatment of oily water contact water as necessary using portable oily water treatment plant;
- Expansion of Crusher Pad Storage Area to provide increased area for ore, equipment mobility, and extra room for snow storage. Ditch and settling pond to be modified as warranted to address any drainage concerns;
- Assembly of a tire shop (sea can construction) and parts staging area at ore haul truck line up pad;
- Construction of additional Truck Wash Building (anticipated to be 50% larger than existing Truck Wash Building at Mine Site); and
- Additional lighting and poles to be installed to improve safety around the Mine Site. Assumed approximately 3-4 km length for cabling and 20 light poles required.

Work Carried over from 2016 Work Plan;

- Consideration given to designing and constructing a new landfarm during 2016, located adjacent to existing landfill area. Security will be adjusted accordingly should Baffinland decide to proceed with this activity; and
- Construct and install three hazardous waste berms.

BIMC's 2017 Work Plan also outlines the following progressive reclamation activities to be carried out in 2017/18:

- Management of hydrocarbon impacted soils within the existing landfarm at Milne Port;
- Demobilization of equipment and supplies not required for near term activities as well as current inventory of hazardous waste and other materials by means of sealift from Milne Port;
- Ongoing clean-up at Milne Port Fuel Storage Area from Spill 16-283 that includes continued removal and storage of remaining residual P-50 fuel within the engineered containment and the treatment and discharge of impacted stormwater from the facility as required;
- Discharge and treatment of residual treated sewage effluent stored in PWSP at Mary River Exploration Camp and Milne Port Site;
- Continued development of the Mine Site landfill and deposition of nonhazardous waste in accordance with the Landfill Maintenance and Operations Manual;

- Ongoing removal from site, or safe disposal on-site of infrastructure, equipment and supplies no longer required for ongoing construction and operations;
- Where roads are no longer in use - removal of culvert and open/restore the natural drainage channel. Measures will be taken to minimize erosion and sedimentation; and
- Areas that have been contaminated by hydrocarbons from normal fuel transfer, handling and storage activities will be reclaimed to meet regulatory objectives. Use of reclamation soils for purpose of back fill or general site grading may be carried out with approval of applicable inspectors and agencies.

At the time when the 2017 Work Plan was submitted, the exploration and drilling programs for 2017 had not yet been finalized. However BIMC stated as a minimum, these activities will include:

- Mapping;
- Sampling; and
- Geophysical and geochemical surveys.

Operation of the Steensby Inlet Camp and the Mid Rail Camp are not anticipated by BIMC to be required during 2017.

As reported by BIMC, the transition of the Bladder Farm berm at the Mine Site to a Hazardous Waste Storage Area requires an Options Exercise Notice to reclassify the land use of the area to Waste Storage.

BIMC's Security Estimate Development

On November 4, 2016 BIMC submitted to the NWB, the QIA, and INAC their 2017 Work Plan for the Project and the 2017 Marginal Closure and Reclamation Financial Security Estimate (attached as Appendix B to their 2017 Work Plan). The 2017 Marginal Closure and Reclamation Financial Security Estimate was subsequently revised on November 24, 2016 with the submission of an updated estimate. The revisions addressed stakeholder comments and largely dealt with how mobile and mechanical equipment were reclassified into heavy, medium and light categories for disposal.

The 2017 Marginal Closure and Reclamation Financial Security Estimate represents BIMC's proposed annual adjustment to reclamation security for 2017. It is BIMC's position that the aggregate of the 2017 Marginal Closure and Reclamation Financial Security Estimate and the previous 2016 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 2017 Work Plan.

These security cost estimates were all developed by BIMC employing 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).

As part of the 2017 marginal closure and reclamation financial security estimate, BIMC also carried out a reassessment of the 2016/17 security estimate. This process was termed the "2016/17 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 September 14 to 21, 2016 by Hatch and QIA representatives. Based on these identified material changes, BIMC determined the resulting associated security impacts expressed in either positive or negative dollars. The changes primarily related to quarry and borrow pit development where it was noted that several quarry and borrow source locations along the Tote Road that were previously identified as being required in the 2016 Work Plan but have since been deemed as longer being required. Therefore as part of the 2016/17 ASR Reconciliation process these quarries and borrow pit areas have been removed from the updated ASR direct cost estimate.

As part of the November 24, 2016 revision to the 2017 ASR security estimate, BIMC also revised the previous 2016/17 ASR security estimate. These revisions reflected the reclassification of some of the existing equipment on site consistent with the November 24, 2016 reclassification undertaken during development of the 2017 marginal closure and reclamation financial security estimate.

In developing the 2017 ASR global security estimate, BIMC combined the 2016/17 Reconciliation estimate and the 2017 Work Plan Marginal Financial Security estimate to the 2016/17 ASR global security estimate. These security cost estimates were all developed by BIMC employing 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 2016/17 ASR Reconciliation

The 2016/17 ASR Reconciliation process removed the following quarries and borrow pit areas from the 2016 ASR direct cost estimate:

- Quarry Q9 at Km 10.5 along the Tote Road;
- Quarry Q14 at Km 38.6 along the Tote Road;
- Quarry Q15 at Km 45.0 along the Tote Road;
- Borrow Source P5 at km 65.1 along the Tote Road;
- Borrow Source P6 at Km 67.1 along the Tote Road;
- Borrow Source P7 at Km 71.7 along the Tote Road;
- Borrow Source P8 at Km 73.1 along the Tote Road;
- Borrow Source P10 at Km 75.9. along the Tote Road;
- Borrow Source P13 at Km 85.5 along the Tote Road;
- Borrow Source P14 at Km 90.0 along the Tote Road; and
- Borrow Source P15 at Km 91.1 along the Tote Road

In total these removed quarries and borrow areas represented a total disturbed area of 102,131 m² which no longer require grading and re-contouring. This corresponded to a direct cost security reduction of \$185,000. This security reduction would apply to IOL only since none of these removed quarries and borrow pit areas are situated on Crown land.

BIMC's 2017 Work Plan Security Revisions

BIMC assumed the following in deriving the marginal security estimates for the 2017 Work Plan:

Direct Costs

Quarries and Borrow Areas

BIMC's 2017 Work Plan document allocates \$36,200, in direct costs to account for grading and re-contouring the new quarry and the marginal increases to existing quarries and borrow areas associated with the 2017 Work Plan. These correspond to the following:

- Development of a new Quarry Q18 at Km 60 along the Tote Road on Crown land (2000 m²);
- Development of Quarry Q13 at Km 30.8 and Quarry Q16A at Km 50 along the Tote Road; both originally in 2016 Work Plan but now deferred to 2017 Work Plan;
- Marginal increase to existing Q1 Quarry (6000 m²);
- Marginal increase to existing Q7 Quarry (2000 m²);
- Marginal increase to existing Q11 Quarry (2000 m²);
- Marginal increase to existing QMR2 (6000 m²);
- Marginal increase to existing Km 2 Borrow Source (1000 m²); and
- Marginal increase to existing Km 97 Borrow Source (1000 m²).

In BIMC's EBS model (Nov. 24, 2016 revision) the actual security estimate is indicated as \$29,900. SNC-Lavalin notes that while Quarries Q7 and Q11 are addressed in Table 3-5 of 2017 Marginal Closure and Reclamation Financial Security Estimate (Rev.0, November 2, 2016) document, the corresponding marginal increase entries could not be located in the EBS Excel file submitted by BIMC on November 24, 2016. Further, Table 3-5 assumes that a unit rate of \$1.81 per m² is applicable for grading and re-contouring for the marginal increase to the existing Km 97 Borrow Source. For the corresponding entry in the EBS, a unit rate of \$2.72 per m² has been applied which corresponds to "Grade and Re-Contour Significant Disturbed Areas". This latter unit rate has been previously applied in the EBS to all of the Km 97 Borrow Source area and SNC-Lavalin has assumed the same in our subsequent RECLAIM estimate.

According to Table 4-3 of the 2017 Work Plan the deferred Quarries Q13 and Q16 will have estimated disturbed areas in 2017 of 1,500 and 2,000 m², respectively. In the EBS the corresponding disturbed areas for these quarries added as part of the 2016 Work Plan are much larger at 6,350 and 11,240 m², respectively. Given that Quarries Q13 and Q16 are already included in the EBS estimate at much higher disturbed area estimates, the overall global allocation for the reclamation of quarries and borrow areas in the EBS over-states the actual requirement.

Buildings and Foundations

BIMC's 2017 Work Plan security estimate allocates \$399,400, plus proportional cover material application costs (addressed under Site Works below), in direct costs to account for a marginal increase of buildings and foundations associated with the 2017 Work Plan. These correspond to the following:

- Mobilization of additional 49 person camp (950 m²) at Milne Port (modular construction (ATCO trailers) at \$59.38/m²);
- Assembly of a tire shop at the Mine Site using sea can construction (500m²);
- Development of an additional Truck Wash Building (1500 m²) at the Mine Site using fold away type construction (assumed contaminated), with a precast foundations with gravel base.

SNC-Lavalin notes that in Table 3-1 of the BIMC's 2017 Marginal Security Estimate the cost to reclaim the 500 m² Tire Shop is based on \$29.69 per m² (i.e., uncontaminated ISO container removal rate). In

the EBS an assumed unit reclamation rate of \$143.42 has been applied which is representative of removal of contaminated ISO container buildings. Although not indicated in the 2017 Marginal Security Estimate report as such, the “contaminated” cost was correctly carried forward in BIMC’s 2017 marginal and global summary tables. SNC-Lavalin has also assumed in the RECLAIM model that the Tire Shop would be a contaminated ISO container building with the higher reclamation rate applicable.

Mobile and Mechanical Equipment

The mobile and mechanical equipment to be delivered to the Mary River Project in 2017 are summarized by category in Table 1. This distribution of equipment reflects revisions to the EBS provided by BIMC on November 24, 2016. There are minor discrepancies between equipment numbers in the 2017 Work Plan and the EBS: EBS numbers have been assumed as most applicable and are carried forward in Table 1 and the subsequent SNC-Lavalin RECLAIM modeling.

BIMC’s 2017 Work Plan security estimate allocates \$551,600, plus cover material application costs, in direct costs to account for the marginal increase of mechanical and mobile equipment to be delivered to the Project in 2017.

TABLE 1 Mobile and Mechanical Equipment to be Delivered to Project in 2017

(Based on BIMC’s revised November 24, 2016 EBS file)

Type/ Location	Heavy Mobile	Medium Mobile	Light Mobile	Heavy Mechanical	Medium Mechanical	Light Mechanical	Total
Mine Site	21	10	6	1	2	20	60
Milne Port	4	-	6	1	16	20	47
Tote Road	-	-	-	-	-	-	-
Total	25	10	12	2	18	40	107

The security estimate also includes a “cross conveyor” to be constructed at the Milne Port site. BIMC reports that detailed design for the additional ‘cross-conveyor’ has not been completed. Therefore for the purpose of the 2017 Work Plan Security Estimate, BIMC has assumed the cross-conveyor is one sixth the length of the existing reclaim ship loader conveyor at Milne Port at the prorated version of the same unit rate developed previously. The reclamation cost for the cross conveyor is estimated at approximately \$221,600 or 40% of the \$551,600 allocation.

Cabling

BIMC’s 2017 Work Plan security estimate allocates \$185,400 to account for additional cabling and lighting being constructed at Milne Port and the Mine Site in 2017. This cost allocation is based on the assumption 3.5 km of cabling/lighting will be installed at each of the Mine site and Milne Port for improved safety.

Consumables

BIMC has assumed all planned 2017 Work Plan activities have taken place on site and all material/consumables (excluding fuel) that are mobilized to site in 2017 are in full inventory.

BIMC has assumed that for the additional 49 person camp to be erected at Milne Port a reclamation cost of \$34,300 would apply for the removal and reclamation of “consumables” (reclamation of the actual buildings are addressed under “Buildings”). This is based on a rate of \$700.80 per bed space. This cost includes:

- Disassembly (if required), load, transport of consumables – \$577.99/bed space;
- Fill application for additional compacted volume of material requiring disposal on-site – \$67.20/bed space;
- Mobilization/demobilization of workers required for the task – \$14.87/bed space; and
- Worker accommodation and camp operation – \$40.74/bed space.

Site Works

BIMC's 2017 Work Plan security estimate allocates \$248,000 to account for application of cover material due to the marginal increase of demolition materials to be disposed of on-site and reclamation (grade and re-contour) of additional disturbed areas (Disturbed "Quarries and Borrow Areas" addressed previously under separate heading).

- Fill application for 2017 Work Plan Demolition Materials (e.g., equipment, buildings, cabling, etc.) (1192 m²);
- Expansion of Crusher Pad Storage Area - Phase 1 (8,200 m²);
- Expansion of Crusher Pad Storage Area - Phase 2 (17,500 m²);
- Expansion of Ore Stockpile Storage Area - Phase 1 (36,900 m²); and
- Expansion of Ore Stockpile Storage Area - Phase 2 (45,100 m²)

Indirect Costs

BIMC applied similar indirect unit rates and multipliers as in previous EBS estimates. These are described in the 2014 Complete Project Financial Security Assessment (H349000-1000-07-126-0018, Rev. 1) report. BIMC developed the following indirect costs for the purpose of the 2017 Work Plan Security Estimate:

On-Site Fuel Demobilization and Reclamation Fuel Mobilization

BIMC's 2017 Work Plan security estimate allocates an additional \$30,000 to account for the mobilization of fuel required for the marginal increase in reclamation activities addressed in the 2017 Work Plan. This is based on mobilizing 50% of the fuel required for marginal reclamation activities, including direct activities, power generation, and heat production. Fuel mobilization costs are based on \$0.40/L of Type-1 fuel. Direct marginal reclamation activities are estimated to require 90,987L of fuel. An additional 517 person-days on-site was estimated for camp operations during reclamation to account for 2017 Work Plan activities. It is assumed that each person-day on site utilizes 116 L of Type-1 fuel for heat and power generation.

Mobilization of Workers Required for Reclamation

BIMC's 2017 Work Plan security estimate allocates an additional \$43,000 for worker mobilization. This assumes 5,170 hrs or 517 person-days (based on 10hr/day productivity) required to complete the direct cost works outlined in the 2017 Work Plan as calculated by the EBS. It is assumed that 70% of hires are from southern communities and 30% are from northern communities. The cost per day for worker mobilization from southern communities is \$85.45/person-day on site. The equivalent cost per person-day on site for worker mobilization from northern communities is \$75.00/person-day.

Worker Accommodation & Camp Operation

BIMC's 2017 Work Plan security estimate allocates an additional \$117,000 for worker accommodation and camp operation. This cost is based on 517 person-days (based on 10hr/day productivity) to complete the marginal reclamation activities associated with the 2017 Work Plan. The cost for accommodation and camp operation is assumed to be \$225.50/person-day. This rate includes camp maintenance, catering, housekeeping, and fuel costs.

Contaminated Soil

BIMC's 2017 Work Plan security estimate allocates an additional \$63,000 to account for on-site treatment of the marginal increase of known contaminated soil on-site. This cost is based on 4,232 m³ of additional known contaminated soil attributable to a fuel release within the existing secondary containment at the Milne Port Bulk Fuel Steel Tank Farm in 2016 (Spill 16-283). This volume assumes that half of the soil within the berm was contaminated to a depth of 1/3 of a meter. A contaminated soil treatment rate of \$14.78/m³ was applied.

Mobilization and Demobilization of Equipment and Materials

BIMC's 2017 Work Plan security estimate allocates an additional \$126,000 to account for moving equipment and materials to and from the reclamation site. The estimate is based the assumption that mobilization and demobilization costs are 10% of total direct costs.

Supervision, Project Management and Contract Administration

BIMC's 2017 Work Plan security estimate includes an indirect cost allowance of \$125,000 for project supervision, management and contract administration. This is based on 9.4% of total direct costs, contaminated soil treatment costs, care and maintenance costs, and closure monitoring/reporting costs.

Engineering Fees

BIMC's 2017 Work Plan security estimate includes an indirect cost allowance of \$49,000 for engineering, design and execution planning. This is based on 3.9% of the total direct costs.

Contingency

An additional contingency of \$202,000 has been added to BIMC's 2017 Work Plan Security Estimate. This is based on 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.

Exclusions

While BIMC recognizes that the following activities are necessary in the event of an unforeseen closure and reclamation of the Project, no additional costs have not been included in the marginal 2017 Work Plan Security Estimate:

- Off-Site Disposal of Hazardous and Non-Hazardous Waste (including Ammonium Nitrate and explosives).
- Short-Term Care and Maintenance, Closure and Post-Closure Monitoring and Reporting.

BIMC's position is that existing allocations for these activities incorporated into the EBS during earlier annual security reviews are adequate and do not warrant additional increases.

BIMC Marginal 2017 Work Plan Security Estimate

The overall the marginal 2017 Work Plan security estimate was calculated as an additional \$2,019,000. This includes the adjustment (-\$185,000) for the quarries and borrow areas not developed in 2016 which form part of the 2016/17 ASR Reconciliation. The breakdown in the estimate by geographic area is summarized in Table 2. Both the original November 4th and the revised November 24th estimates are provided in the table.

BIMC has assumed the marginal 2017 Work Plan liabilities would all (100%) be assigned to IOL (despite the fact that proposed new Quarry Q18 is on Crown land).

BIMC has further assumed all marginal 2017 Work Plan liabilities would be attributed 100% to land liability.

BIMC Global 2017 ASR Estimate

The derivation of the global 2017 security estimate by BIMC is shown in Table 3. As indicated in the table the estimate from the revised 2016/17 ASR plus the adjustment (Table 2) for the 2017 Work Plan (including the 2017 Reconciliation) are combined to yield the 2017/18 ASR security estimate.

The proposed 2017 ASR estimate is \$49,271,000 under the Type A Water Licence 2AM-MRY1325. Of this total \$48,072,000 (97.6% of the total) would be assigned to IOL liability and the remaining \$1,199,000 (2.4%) would be assigned to Crown land liability. Land liability represents \$47,929,000 (or 97.3% of the total) while water liability represents \$1,342,000 (2.7%).

TABLE 2 Marginal 2017 Work Plan Security Estimate

Component	2017/18 ASR Marginal Estimate (Nov. 4, 2016) [\$]	2017/18 ASR Marginal Estimate (Nov. 24, 2016 Revision) [\$]
Direct Costs		
Project Wide	83,000	87,000
Milne Port	591,000	628,000
Construction Facilities & Services (49-person Camp)	45,000	57,000
Mine Site	621,000	658,000
Tote Road	-166,000	-166,000
Mary River Exploration Activities	-	-
Subtotal	1,174,000	1,264,000
Indirect Costs		
Off-site Disposal of Waste & Material	-	-
Fuel Mobilization & Demobilization	28,000	30,000
Ammonium Nitrate (Explosives)	-	-
Contaminated Soil Treatment	63,000	63,000
Mobilization of Workers Req'd for Reclamation	40,000	43,000
Worker Accommodation & Camp Operation	108,000	117,000
Mob. & Demob. of Equip. & Mat'ls by Sealift ¹	117,000	126,000
Short Term C & M, Closure Monitoring & Reporting	-	-
Supervision, PM & Contract Administration ²	116,000	125,000
Engineering Fees ³	46,000	49,000
Contingency ⁴	188,000	202,000
Subtotal	706,000	755,000
Total Marginal Cost	\$1,880,000	\$2,019,000

Footnotes: 1. 10% of total direct costs.

2. 9.4% of total direct costs, contaminated soil treatment costs, care and maintenance costs, and closure monitoring/reporting costs.

3. 3.9% of the total direct costs.

4. 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

TABLE 3 BIMC 2017 Estimated Closure and Reclamation Security Detailed Summary

Sources: BIMC 2017 Work Plan – November 4, 2016 (modified from Table 4-2 in Appendix B - 2017 Marginal Closure and Reclamation Financial Security Estimate, Rev. 0 (November 2, 2016)) and BIMC November 24, 2016 Revisions to Reflect Stakeholder Feedback on 2017 Marginal Closure and Reclamation Financial Security Estimate.

Component	Global Estimate from 2016/17 ASR [\$]	Nov. 24, 2016 Revised Global Estimate for 2016/17 ASR [\$]	Nov. 24, 2016 Revised 2017/18 ASR Marginal Estimate [\$]	Nov. 24, 2016 Total Global Estimated Security for 2017/18 [\$]
Direct Costs				
Project Wide	1,395,000	1,385,000	87,000	1,472,000
Milne Port	5,670,000	5,673,000	628,000	6,301,000
Construction Facilities & Services (49-person Camp)	2,102,000	2,102,000	57,000	2,159,000
Mine Site	8,205,000	8,856,000	658,000	9,514,000
Tote Road	4,695,000	4,695,000	-166,000	4,529,000
Subtotal	22,067,000	22,711,000	1,264,000	23,975,000
Indirect Costs				
Off-site Disposal of Waste & Material	1,969,000	1,969,000	-	1,969,000
Fuel Mobilization & Demobilization	3,152,000	3,165,000	30,000	3,195,000
Ammonium Nitrate (Explosives)	2,537,000	2,537,000	-	2,537,000
Contaminated Soil Treatment	239,000	239,000	63,000	302,000
Mobilization of Workers Req'd for Reclamation	988,000	1,009,000	43,000	1,052,000
Worker Accommodation & Camp Operation	2,560,000	2,620,000	117,000	2,737,000
Mob. & Demob. of Equip. & Mat'ls by Sealift ¹	2,206,000	2,270,000	126,000	2,396,000
Short Term C & M, Closure Monitoring & Reporting	3,766,000	3,766,000	-	3,766,000
Supervision, PM & Contract Administration ²	2,256,000	2,317,000	125,000	2,442,000
Engineering Fees ³	861,000	887,000	49,000	936,000
Contingency ⁴	3,663,000	3,762,000	202,000	3,964,000
Subtotal	24,197,000	24,541,000	755,000	25,296,000
Total Cost	46,264,000	47,252,000	2,019,000	49,271,000

Footnotes: 1. 10% of total direct costs.
2. 9.4% of total direct costs, contaminated soil treatment costs, care and maintenance costs, and closure monitoring/reporting costs.
3. 3.9% of the total direct costs.
4. 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

IOL [\$]	Crown Land [\$]	Water Liability [\$]	Land Liability [\$]
Direct Costs			
1,248,000	224,000	-	1,472,000
6,301,000	-	227,000	6,074,000
2,159,000	-	-	2,159,000
9,514,000	-	1,115,000	8,399,000
4,056,000	473,000		4,529,000
23,277,000	697,000	1,342,000	22,633,000
Indirect Costs			
1,969,000	-	-	1,969,000
3,195,000	-	-	3,195,000
2,537,000	-	-	2,537,000
302,000	-	-	302,000
1,021,000	31,000	-	1,052,000
2,655,000	82,000	-	2,737,000
2,326,000	70,000	-	2,396,000
3,656,000	110,000	-	3,766,000
2,374,000	68,000	-	2,442,000
909,000	27,000	-	936,000
3,851,000	113,000	-	3,964,000
24,795,000	502,000	-	25,296,000
48,072,000	1,199,000	1,342,000	47,929,000

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 2017 Work Plan. The “End-of-2016” RECLAIM model (December 24, 2015 revision) created during the 2016 ASR was used as the starting point. The approach was to modify the “end-of-2016” RECLAIM model by instituting the changes identified as part of BIMC’s 2017 ASR reconciliation process and then adding the work activities associated with BIMC’s 2017 Work Plan. The RECLAIM results also incorporate the recent November 24, 2016 EBS security revisions provided by BIMC.

The RECLAIM model incorporating BIMC’s 2016/17 ASR Reconciliation adjustments, the 2017 Work Plan and November 24th security revisions is provided in **Attachment A**. This version of the RECLAIM model is representative of conditions at the end of 2017 (completion of the 2017 Work Plan). Modifications to the “End-of-2016” RECLAIM model which have been made to reflect the 2016/17 ASR reconciliation process adjustments and 2017 Work Plan activities and revisions are shown within green cells.

Attachment B contains the RECLAIM model which represents the marginal security estimate for the 2017 Work Plan activities and 2016/17 ASR Reconciliation adjustments (i.e., the summation of Attachment A green cells). This was completed to more readily make comparisons to BIMC’s 2017 marginal security estimates as summarized in Table 2.

Note: The colour coding provided in the original “End-of-2016” RECLAIM model has been maintained in the attached updated models to better track changes to the model over time. The 2015/16 reconciliation changes not previously captured under the end-of-2015 RECLAIM model completed in November 2015 are highlighted in yellow. Changes reflecting the 2016 Work Plan are highlighted in pale orange. Blue cells indicate changes to quantities which were undertaken with the finalization of the updated 2016 ASR reclamation cost estimate for the ASR process for Water Licence 2AM-MRY1325 on December 24, 2015. Modifications to the “End-of-2016” RECLAIM model which have been made to reflect the 2016/17 ASR reconciliation process adjustments and 2017 Work Plan activities are shown within green cells as stated above..

Table 4 provides a summary of the RECLAIM model results for the marginal adjustments for 2017 (from Attachment B) and the “End-of-2017” condition (from Attachment A).

BIMC estimated the required marginal security for the 2017 Work Plan would be \$2,019,000 for the Type A Water Licence (Table 2). The RECLAIM model calculated a marginal security estimate of \$2,047,000 (Table 4 and Attachment B). The difference between the EBS and RECLAIM estimates is \$28,000 (Table 5).

TABLE 4 Summary of RECLAIM Model Results

MARGINAL 2017 WORK PLAN & RECONCILIATION						GLOBAL 2017 ASR RECLAIM					
CAPITAL COSTS	COMPONENT NAME	TOTAL COST	LAND LIABILITY	WATER LIABILITY	IOL LIABILITY	CROWN LIABILITY	TOTAL COST	LAND LIABILITY	WATER LIABILITY	IOL LIABILITY	CROWN LIABILITY
OPEN PIT	Mary River Mine Pit	-\$147,776	-\$147,776	\$0	-\$151,397	\$3,621	\$3,911,710	\$3,911,710	\$0	\$3,770,833	\$140,877
UNDERGROUND MINE		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TAILINGS FACILITY		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ROCK PILE	Mine Site Waste Rock Pile	\$0	\$0	\$0	\$0	\$0	\$343,956	\$343,956	\$0	\$343,956	\$0
BUILDINGS AND EQUIPMENT	Mine Site	\$647,196	\$644,723	\$2,473	\$647,196	\$0	\$7,664,468	\$7,454,633	\$209,835	\$7,664,468	\$0
	Milne Port	\$684,322	\$684,209	\$113	\$684,322	\$0	\$5,945,190	\$5,886,991	\$58,199	\$5,945,190	\$0
	Tote Road	\$0	\$0	\$0	\$0	\$0	\$2,357,224	\$1,130,683	\$1,226,541	\$1,950,651	\$406,573
	Project Wide/ Other	\$52,888	\$52,888	\$0	\$52,888	\$0	\$828,054	\$828,054	\$0	\$828,054	\$0
CHEMICALS AND CONTAMINATED SOIL MANAGEMENT		\$62,549	\$62,549	\$0	\$62,366	\$183	\$2,838,397	\$2,838,397	\$0	\$2,764,580	\$73,817
SURFACE AND GROUNDWATER MANAGEMENT		\$0	-	\$0	\$0	\$0	\$1,563,082	\$0	\$1,563,082	\$1,522,432	\$40,650
INTERIM CARE AND MAINTENANCE		\$0	-	\$0	\$0	\$0	\$2,792,145	\$0	\$2,792,145	\$2,719,531	\$72,614
	Capital Costs SUBTOTAL	\$1,299,179	\$1,296,592	\$2,586	\$1,295,375	\$3,804	\$28,244,226	\$22,394,424	\$5,849,802	\$27,509,695	\$734,531
	PERCENT OF SUBTOTAL		99.8%	0.2%	99.7%	0.3%		79.3%	20.7%	97.4%	2.6%
OVERALL INDIRECT COSTS		TOTAL COST	LAND LIABILITY	WATER LIABILITY	IOL LIABILITY	CROWN LIABILITY	TOTAL COST	LAND LIABILITY	WATER LIABILITY	IOL LIABILITY	CROWN LIABILITY
MOBILIZATION / DEMOBILIZATION		\$353,849	\$353,145	\$704	\$352,813	\$1,036	\$11,569,896	\$9,173,597	\$2,396,299	\$11,269,005	\$300,891
POST-CLOSURE MONITORING AND MAINTENANCE		\$0	\$0	\$0	\$0	\$0	\$1,560,000	\$1,236,901	\$323,099	\$1,519,430	\$40,570
ENGINEERING	3.9%	\$50,668	\$50,567	\$101	\$50,520	\$148	\$1,101,525	\$873,383	\$228,142	\$1,072,878	\$28,647
PROJECT MANAGEMENT	9.4%	\$122,123	\$121,880	\$243	\$121,765	\$358	\$2,654,957	\$2,105,076	\$549,881	\$2,585,911	\$69,046
HEALTH AND SAFETY PLANS / MONITORING & QA/QC	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
BONDING/INSURANCE	2%	\$25,984	\$25,932	\$52	\$25,908	\$76	\$564,885	\$447,888	\$116,996	\$550,194	\$14,691
CONTINGENCY	15%	\$194,877	\$194,489	\$388	\$194,306	\$571	\$4,236,634	\$3,359,164	\$877,470	\$4,126,454	\$110,180
MARKET PRICE FACTOR ADJUSTMENT	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	SUBTOTAL: Overall Indirect Costs	\$747,500	\$746,012	\$1,488	\$745,312	\$2,189	\$21,687,897	\$17,196,009	\$4,491,888	\$21,123,873	\$564,024
TOTAL COSTS		\$2,046,679	\$2,042,605	\$4,074	\$2,040,687	\$5,992	\$49,932,123	\$39,590,432	\$10,341,691	\$48,633,568	\$1,298,555

TABLE 5 Comparison of Type A Water Licence Marginal 2017 Work Plan Security Estimates

Type A Water Licence Marginal 2017 Work Plan Security Estimates		
EBS Estimate	RECLAIM Estimate	Difference
\$2,019,000	\$2,047,000	\$28,000

A more detailed accounting of the difference between the EBS and RECLAIM models is provided in Table 6. There are minor accounting differences as follows:

- BIMC addresses the majority of quarries and borrow areas under Tote Road while in RECLAIM these are accounted for under Open Pit;
- RECLAIM has included marginal increases in costs (\$7,421) associated with grading and re-contouring of Quarries Q7 and Q11 which are not in the EBS;
- Consumables related to the 49-person camp are included in the Project Wide component in EBS while it is itemized as an Indirect Cost in RECLAIM;
- Removal of the 49-person camp buildings are categorized under Construction Facilities & Services in EBS while it is included under Milne Port in RECLAIM;
- Chemical/Contaminated Soil Management is categorized as an Indirect Cost in the EBS while it is considered a Direct Cost in RECLAIM; and
- RECLAIM includes a 2% allowance for Bonding/Insurance (\$24, 420) which is not included in the EBS.

The derivation of the marginal costs are very similar given that quantities and unit rates used in both models were similar. There are minor discrepancies in how indirect costs are calculated. For example in the EBS contingencies are calculated as 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. In the RECLAIM model a higher contingency of 15% has been selected but it is applied to direct costs alone.

In the EBS marginal 2017 Work Plan estimate 100% of the liability was assigned to land versus water and 100% was assigned to IOL versus Crown land. For the RECLAIM 2017 Work Plan estimate 100% land liability was also assumed however some Crown land liability was also identified. The Crown land identified in the 2017 Work Plan which would be impacted is associated with Quarry Q18. This results in a direct cost of \$3,621 for grading and re-contouring plus additional allowances for Chemical/Contaminated Soils Management (\$183) and indirect costs (\$2,189) which are calculated in proportion to the percent of Crown land (0.3% for 2017 Work Plan activities) relative to IOL.

The Marginal security estimates provided by BIMC are considered reasonable given the limited construction activity proposed in the 2017 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).

TABLE 6 Detailed Comparison of Marginal 2017 Work Plan Security Estimate

Component	EBS 2017/18 ASR Marginal Estimate [\$]	RECLAIM 2017/18 ASR Marginal Estimate [\$]
Direct Costs		
Project Wide	87,000	52,888
Open Pit		-147,776
Milne Port	628,000	684,322
Construction Facilities & Services	57,000	
Mine Site	658,000	647,196
Tote Road	-166,000	
Chem./Contaminated Soil Management		62,549
Subtotal	1,264,000	1,299,000
Indirect Costs		
Off-site Disposal of Waste & Material		
Fuel Mobilization & Demobilization	30,000	29,792
Consumables		34,339
Chem./Contaminated Soil Management	63,000	
Mobilization of Workers Req'd for Reclamation	43,000	42,558
Worker Accommodation & Camp Operation	117,000	116,325
Mob. & Demob. of Equip.& Mat'ls by Sealift	126,000	130,835
Short Term C & M, Closure Monitoring & Reporting	-	
Supervision, PM & Contract Administration	125,000	122,123
Engineering Fees	49,000	50,668
Bonding / Insurance		25,984
Contingency	202,000	194,877
Subtotal	755,000	748,000
Total Marginal Cost	\$2,019,000	\$2,047,000

BIMC calculated the global security estimate for the 2017 ASR as \$49,271,000 for the Type A Water Licence (Table 3). The RECLAIM model calculated a 2017 ASR security estimate of \$49,932,000 (Table 4 and Attachment A). The difference between the EBS and RECLAIM global security estimates is \$661,000 (Table 7).

TABLE 7 Type A Water Licence Global Security Estimates at Completion of the 2017 Work Plan

Type A Water Licence Security Estimates at Completion of 2017 Work Plan		
EBS Estimate	RECLAIM Estimate	Difference
\$49,271,000	\$49,932,000	\$661,000

Table 8 provides a more detailed comparison of the two estimates by major components.

TABLE 8 Detailed Comparison of Global ASR Security Estimates at Completion of the 2017 Work Plan

	EBS 2017/18 ASR Estimate (November 24, 2016 Revision)					RECLAIM 2017/18 ASR Estimate				
Component	EBS 2017/18 ASR Global Estimate	IOL	Crown Land	Water Liability	Land Liability	RECLAIM 2017/18 ASR Global Estimate	IOL	Crown Land	Water Liability	Land Liability
	[\$]	[\$]	[\$]	[\$]	[\$]	[\$]	[\$]	[\$]	[\$]	[\$]
Direct Costs										
Project Wide	1,472,000	1,248,000	224,000		1,472,000	828,054	828,054			828,054
Open Pit						3,911,710	3,770,833	140,877		3,911,710
Milne Port	6,301,000	6,301,000		227,000	6,074,000	5,945,190	5,945,190		58,199	5,886,991
Construction Facilities & Services	2,159,000	2,159,000			2,159,000					
Mine Site (includes Rock Pile)	9,514,000	9,514,000		1,115,000	8,399,000	8,008,424	8,008,424		209,835	7,798,589
Tote Road	4,529,000	4,056,000	473,000		4,529,000	2,357,224	1,950,651	406,573	1,226,541	1,130,683
Chem./Contaminated Soil Management						2,838,397	2,764,580	73,817		2,838,397
Surface and Groundwater Management						1,563,082	1,522,432	40,650	1,563,082	
Interim Care & Maintenance						2,792,145	2,719,531	72,614	2,792,145	
Subtotal	23,975,000	23,277,000	697,000	1,342,000	22,633,000	28,244,226	27,509,695	734,531	5,849,802	22,394,424
Indirect Costs										
Off-site Disposal of Waste & Material	1,969,000	1,969,000			1,969,000					
Fuel Mobilization & Demobilization	3,195,000	3,195,000			3,195,000					
Ammonia Nitrate (Explosives)	2,537,000	2,537,000			2,537,000					
Contaminated Soil Management	302,000	302,000			302,000					
Mobilization of Workers Req'd for Reclamation	1,052,000	1,021,000	31,000		1,052,000					
Worker Accommodation & Camp Operation	2,737,000	2,655,000	82,000		2,737,000					
Mob. & Demob. of Equip.& Mat'ls by Sealift	2,396,000	2,326,000	70,000		2,396,000					
Mobilization/Demobilization						11,569,896	11,269,005	300,891	2,396,299	9,173,597
Post-Closure Monitoring/Reporting						1,560,000	1,519,430	40,570	323,099	1,236,901
Short Term C & M, Closure Monitoring & Reporting	3,766,000	3,656,000	110,000		3,766,000					
Supervision, PM & Contract Administration	2,442,000	2,374,000	68,000		2,442,000	2,654,957	2,585,911	69,046	549,881	2,105,076
Engineering Fees	936,000	909,000	27,000		936,000	1,101,525	1,072,878	28,647	228,142	873,383
Bonding / Insurance						564,885	550,194	14,691	116,996	447,888
Contingency	3,964,000	3,851,000	113,000		3,964,000	4,236,634	4,126,454	110,180	877,470	3,359,164
Subtotal	25,296,000	24,795,000	502,000	0	25,296,000	21,687,897	21,123,873	564,024	4,491,888	17,196,009
Total Cost	\$49,271,000	\$48,072,000	\$1,199,000	\$1,342,000	\$47,929,000	\$49,932,000	\$48,634,000	\$1,299,000	\$10,342,000	\$39,590,000

Land versus Water Liability

Only a limited number of items in the EBS model are allocated to water liability (e.g., pipelines, water and wastewater treatment plants). In the EBS, culvert removal at a total 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 model is shown in Table 8. Water liabilities represent approximately 21% of the total security estimate for the RECLAIM model. This is significantly higher than the approximately 2.7% indicated for the EBS model (Table 8).

Crown versus IOL Liability

In the RECLAIM estimate the following has been assumed in the calculation of the Crown-land liability:

- Proposed new Quarry 18 at Km 60 along Tote Road identified in the 2017 Work Plan is on Crown land;
- P1 Borrow Source is on Crown land;
- Approximately 7.5 km of the Tote Road is on Crown Land. Therefore a portion (7%) of grading and re-contouring costs, and shelter removal costs along Tote Road have been assigned to Crown liability in the RECLAIM model;
- Removal of 11 culverts and 1 bridge (Stat. 17) along Tote Road has been allocated to Crown land; and
- The Mobile Maintenance Depot facility identified in the 2016 Work Plan is also on Crown land.

The Crown liability in the RECLAIM model (\$1,299,000) has increased over our previous year's 2016 ASR estimate (\$879,000). The reason is largely due to the revision in the number of culverts and bridges to be removed on Crown property. The BIMC EBS model submitted this year was revised from last year's version (Oct. 30, 2015) to indicate 11 culverts and one bridge on Crown land would need to be removed (previously BIMC assumed all culverts and bridges were on IOL). In the RECLAIM model SNC-Lavalin incorporated these culvert and bridge revisions as well (previously SNC-Lavalin had assumed 7% of the culverts and no bridges were on Crown land in our 2016 ASR estimate). This adds about \$200,000 to Crown liability under direct costs in RECLAIM and increases the proportion of costs on Crown versus IOL from 1.9% to 2.6%. As a result other direct costs and indirect costs in RECLAIM calculated in proportion to this percentage also increased. This accounts for the increase to Crown security requirements in RECLAIM over last year's ASR result.

In the EBS estimate BIMC only assigns the P1 Borrow Source, the Mobile Maintenance Depot and the removal of 11 culverts and 1 bridge to Crown liability. The reason the EBS estimate remains close to the RECLAIM estimate is because the EBS model also assigns fill application for the shiploader (\$224,018) to Crown liability. Disposal of the shiploader is not included in the RECLAIM model as this is not considered part of the Type A licence.

Table 9 shows a comparison of the RECLAIM Crown liability security estimates at the completion of the 2017 Work Plan versus the amount of security held under Type A Licence No. 2AM-MRY1325.

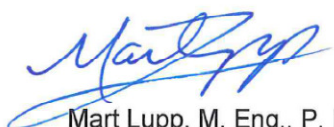
TABLE 9 RECLAIM Estimates versus Type A Licence Security Currently Held

Type A Water Licence Security Estimate at Completion of the 2017 Work Plan		
Licence	RECLAIM 2017 Crown-Land Liability Estimate	Security Held
No. 2AM-MRY1325	\$1,299,000	\$1,210,000

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.
Project Manager



Attach.

cc. Scott Burgess, INAC

Attachment A

End-of-2017 RECLAIM Model

SUMMARY OF COSTS

CAPITAL COSTS	COMPONENT NAME	COST	LAND LIABILITY	WATER LIABILITY	IOL LIABILITY	CROWN LIABILITY
OPEN PIT	Mary River Mine Pit	\$3,911,710	\$3,911,710	\$0	\$3,770,833	\$140,877
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	\$7,664,468	\$7,454,633	\$209,835	\$7,664,468	\$0
	Milne Port	\$5,945,190	\$5,886,991	\$58,199	\$5,945,190	\$0
	Tote Road	\$2,357,224	\$1,130,683	\$1,226,541	\$1,950,651	\$406,573
	Project Wide/ Other	\$828,054	\$828,054	\$0	\$828,054	\$0
CHEMICALS AND CONTAMINATED SOIL MANAGEMENT		\$2,838,397	\$2,838,397	\$0	\$2,764,580	\$73,817
SURFACE AND GROUNDWATER MANAGEMENT		\$1,563,082	-	\$1,563,082	\$1,522,432	\$40,650
INTERIM CARE AND MAINTENANCE		\$2,792,145	-	\$2,792,145	\$2,719,531	\$72,614
SUBTOTAL: Capital Costs		\$28,244,226	\$22,394,424	\$5,849,802	\$27,509,695	\$734,531
PERCENT OF SUBTOTAL			79.3%	20.7%	97.4%	2.6%

OVERALL INDIRECT COSTS		COST	LAND LIABILITY	WATER LIABILITY	IOL LIABILITY	CROWN LIABILITY
MOBILIZATION/DEMobilIZATION		\$11,569,896	\$9,173,597	\$2,396,299	\$11,269,005	\$300,891
POST-CLOSURE MONITORING AND MAINTENANCE		\$1,560,000	\$1,236,901	\$323,099	\$1,519,430	\$40,570
ENGINEERING	3.9%	\$1,101,525	\$873,383	\$228,142	\$1,072,878	\$28,647
PROJECT MANAGEMENT	9.4%	\$2,654,957	\$2,105,076	\$549,881	\$2,585,911	\$69,046
HEALTH AND SAFETY PLANS/MONITORING & QA/QC	0%	\$0	\$0	\$0	\$0	\$0
BONDING/INSURANCE	2%	\$564,885	\$447,888	\$116,996	\$550,194	\$14,691
CONTINGENCY	15%	\$4,236,634	\$3,359,164	\$877,470	\$4,126,454	\$110,180
MARKET PRICE FACTOR ADJUSTMENT	0%	\$0	\$0	\$0	\$0	\$0
SUBTOTAL: Overall Indirect Costs		\$21,687,897	\$17,196,009	\$4,491,888	\$21,123,873	\$564,024

TOTAL COSTS		\$49,932,123	\$39,590,432	\$10,341,691	\$48,633,568	\$1,298,555
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1

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

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	% Cost	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	2016/17 ASR Reconciliation	m2		15GCS	\$1.81	\$0 100%	\$0	\$0
P13 Borrow Source	2016/17 ASR Reconciliation	m2		15GCS	\$1.81	\$0 100%	\$0	\$0
P14 Borrow Source	2016/17 ASR Reconciliation	m2		15GCS	\$1.81	\$0 100%	\$0	\$0
P15 Borrow Source	2016/17 ASR Reconciliation	m2		15GCS	\$1.81	\$0 100%	\$0	\$0
P5 Borrow Source	2016/17 ASR Reconciliation	m2		15GCS	\$1.81	\$0 100%	\$0	\$0
P6 Borrow Source	2016/17 ASR Reconciliation	m2		15GCS	\$1.81	\$0 100%	\$0	\$0
P7 Borrow Source	2016/17 ASR Reconciliation	m2		15GCS	\$1.81	\$0 100%	\$0	\$0
P8 Borrow Source	2016/17 ASR Reconciliation	m2		15GCS	\$1.81	\$0 100%	\$0	\$0
Q13 Quarry	In 2016 Work Plan but deferred to 2017	m2	6,350	15GCS	\$1.81	\$11,495 100%	\$11,495	\$0
Q14 Quarry	2016/17 ASR Reconciliation	m2		15GCS	\$1.81	\$0 100%	\$0	\$0
Q15 Quarry	2016/17 ASR Reconciliation	m2		15GCS	\$1.81	\$0 100%	\$0	\$0
Q16A Quarry	In 2016 Work Plan but deferred to 2017	m2	11,240	15GCS	\$1.81	\$20,348 100%	\$20,348	\$0
Q9 Quarry	2016/17 ASR Reconciliation	m2		15GCS	\$1.81	\$0 100%	\$0	\$0
D1Q2 Quarry	2016 Work Plan	m2	109,807	15GCS	\$1.81	\$198,783 100%	\$198,783	\$0
Q1 Quarry	2017 Work Plan Marginal increase Add 6000m2.	m2	70,200	15GCS	\$1.81	\$127,083 100%	\$127,083	\$0
Q11 Quarry	2017 Work Plan Marginal increase Add 2000m2.	m2	52,433	15GCS	\$1.81	\$94,919 100%	\$94,919	\$0
Q18 Quarry (On CROWN LAND)	2017 Work Plan new quarry. Add 2000m2. (100% on CROWN LAND)	m2	2,000	15GCS	\$1.81	\$3,621 100%	\$3,621	\$0
Q19 Quarry		m2	18,760	15GCS	\$1.81	\$33,961 100%	\$33,961	\$0
Q7 Quarry	2017 Work Plan Marginal increase Add 2000m2.	m2	55,050	15GCS	\$1.81	\$99,657 100%	\$99,657	\$0
QMR2 Quarry	2017 Work Plan Marginal increase Add 6000m2.	m2	264,580	15GCS	\$1.81	\$478,968 100%	\$478,968	\$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 (on CROWN LAND)	(100% on CROWN LAND)	m2	75,820	15GCS	\$1.81	\$137,257 100%	\$137,257	\$0
Km 2 Borrow source	2017 Work Plan Marginal increase Add 1000m2.	m2	42,795	15GCS	\$1.81	\$77,472 100%	\$77,472	\$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	2017 Work Plan Marginal increase Add 1000m2.	m2	158,012	15GCDS	\$2.72	\$429,073 100%	\$429,073	\$0
Type A Quarry		m2	136,880	15GCDS	\$2.72	\$371,690 100%	\$371,690	\$0
RECLAIM QUARRIES								

1				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
Number of years of pump flooding		years						
Total pumping costs						\$0	\$0	\$0
Total						\$3,911,710	\$3,911,710	\$0
% of Total							100%	0%
Ref 1: 2014 Complete Project Financial Security Assessment. Document No. H349000-1000-07-126-0018, Rev. 1.								

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

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Rock Pile Name: *Mine Site Waste Rock Pile*

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
STABILIZE SLOPES									
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
COVER ROCK PILE									
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
VERY LOW PERMEABILITY COVER (in addition to above)									
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
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 SEEPAGE COLLECTION POND									
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
RELOCATE DUMPS									
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
SPECIALIZED ITEMS									
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
Total						\$343,956		\$343,956	\$0
% of Total								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
HAZARDOUS MATERIALS AUDIT								
Hazardous materials audit		mandays		#N/A	\$0.00	\$0	\$0	\$0
BUILDING DECONTAMINATION & CONSOLIDATION OF HAZARDOUS MATERIALS								
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
HAZARDOUS MATERIALS REMOVAL								
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
HAZARDOUS MATERIALS								
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
CONTAMINATED SOILS								
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
CONTAMINATED SOIL REMOVAL								
Contaminated soil treatment		m3	16,164	15CSTS	\$14.78	\$238,904	100%	\$238,904
Contaminated soil treatment (2017 Work Plan)	Marginal increase associated with 2017 Work Plan. Spill 16-283 at Milne Port Bulk Fuel Steel Tank Farm.	m3	4,232	15CSTS	\$14.78	\$62,549	100%	\$62,549
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
Other		-		#N/A	\$0.00	\$0	\$0	\$0
OTHER								
Ammonium nitrate (explosive material)		m3	2,343	16AN1S	\$358.00	\$838,794	100%	\$838,794
Pre-packaged explosives		kg	716,519	16AN2S	\$2.37	\$1,698,150	100%	\$1,698,150
Total						\$2,838,397		\$2,838,397
% of Total							100%	0%

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
DISPOSE MOBILE EQUIPMENT									
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
REMOVE 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
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		m2		#N/A	\$0.00	\$0		\$0	\$0
LANDFILL FOR DEMOLITION WASTE									
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). 2017 Work Plan and BIMC Nov. 24 EBS revision add 1192 m2 for disposal of 2017 mobile and mechanical equipment (107 units in total)	m2	18,663	15PFS	\$44.37	\$828,054	100%	\$828,054	\$0
RECLAIM ROADS									
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
SPECIALIZED ITEMS									
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						\$828,054		\$828,054	\$0
% of Total								100%	0%

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

Building / Equip Name: <i>Tote Road</i>				Bldg / Equip #: <i>3</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		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)	Assume 7% on CROWN LAND.	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	Mobile Maintenance Depot (100% on CROWN LAND)	m2	682	15RCBF	\$142.41	\$97,123	100%	\$97,123	\$0
Soft walled		m2		#N/A	\$0.00	\$0		\$0	\$0
BREAK FOUNDATIONS									
Slab on grade	Mobile Maintenance Depot (100% on CROWN LAND)	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). Assume 7% on CROWN LAND.	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	Assume 7% on CROWN LAND.	m3	13,040	15GCS	\$1.81	\$23,606	100%	\$23,606	\$0
Grade and contour infrastructure pads	Assume 7% on CROWN LAND.	m2	6,760	15GCS	\$1.81	\$12,238	100%	\$12,238	\$0
Aerodrome Facilities		m2		#N/A	\$0.00	\$0		\$0	\$0
Roads	Assume 7% on CROWN LAND.	m2	533,000	15GCS	\$1.81	\$964,887	100%	\$964,887	\$0
Stockpiles		m2		#N/A	\$0.00	\$0		\$0	\$0
Remove liner	Mobile Maintenance Depot (100% on CROWN LAND)	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 (IOL)	The unit cost is inclusive of the demolition and removal of a bridge. Assumed not contaminated (Ref 1, pg 36).	each	3	15BRS	\$201,838.77	\$605,516	0%	\$0	\$605,516
Remove bridge (CROWN)	The unit cost is inclusive of the demolition and removal of a bridge. Assumed not contaminated (Ref 1, pg 36).	each	1	15BRS	\$201,838.77	\$201,839	0%	\$0	\$201,839
Remove culverts (IOL)	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	372	15CRS	\$1,094.48	\$407,147	0%	\$0	\$407,147
Remove culverts (CROWN)	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	11	15CRS	\$1,094.48	\$12,039	0%	\$0	\$12,039
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						\$2,357,224		\$1,130,683	\$1,226,541
% of Total								48%	52%

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

4

Building / Equip Name: *Mine Site*Bldg / Equip #: *1*

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
DISPOSE MOBILE EQUIPMENT - Unit costs include disassembly, necessary decontamination required for on-site disposal, load and transport (Ref 1, pg 24-25, 40)									
Light Mobile Equipment	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Includes forklifts, picks up, vehicles around five (5) tonnes and under, scissor lift, man lifts, and small padstruck bins (Ref 1, pg 24-25). 2017 Work Plan add 2 units	Ea	154	15MOLS	\$941.09	\$144,928	95%	\$137,681	\$7,246
Medium Mobile Equipment	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Includes vehicles around 10 tonnes, trailers, buses, tow trucks, large garbage bins and water tank trailers (Ref 1, pg 24-25). 2017 Work Plan add 1 unit	Ea	147	15MOMS	\$1,494.13	\$219,638	98%	\$215,245	\$4,393
Heavy Mobile Equipment	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Includes vehicles over 10 tonnes, boom trucks, large front end loaders, dump trucks, graders and cranes (Ref 1, pg 24-25). 2017 Work Plan add 1 unit	Ea	212	15MOHS	\$2,618.87	\$555,201	98%	\$544,097	\$11,104
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	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Light equipment includes pumps, fuel dispenser, laboratory equipment, and sample bins (Ref 1, pg 23). 2017 Work Plan add 2 units	Ea	77	15LMES	\$1,980.80	\$152,521	98%	\$149,471	\$3,050
Medium mechanical equipment - Decontaminate and dispose on-site	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Medium equipment includes aerodrome equipment, generators, shop/ maintenance equipment, screens, and chutes (Ref 1, pg 23). 2017 Work Plan add 2 units	Ea	15	15MMES	\$4,261.34	\$63,920	100%	\$63,920	\$0
Heavy mechanical equipment - Decontaminate and dispose on-site	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Heavy equipment includes crusher, feeder, power plant generators, large screens, conveyors, and stackers (Ref 2, pg 23). 2017 Work Plan add 1 unit (Truck Wash system).	Ea	23	15MEHS	\$41,205.45	\$947,725	100%	\$947,725	\$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	6	15TLS	\$2,148.33	\$12,890	0%	\$0	\$12,890
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	15LIDS	\$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 (3000-5000L)	On-site disposal of medium-mobile fuel tanks (3,000 to 5,000L).	Ea	2	15MMFIS	\$10,481.05	\$20,962	100%	\$20,962	\$0
REMOVE BUILDINGS - Unit costs include disassembling, removing or securing all items, and load and transport (Ref 1, 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	\$891	100%	\$891	\$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	2017 Work Plan add 1500 m2 Truck wash Building	m2	10,227	15RCBFS	\$142.41	\$1,456,421	100%	\$1,456,421	\$0
ISO Shipping Containers	2017 Work Plan add 500 m2 Tire Shop	m2	604	15RCBIS	\$143.42	\$86,637	100%	\$86,637	\$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). Add 2017 Work Plan Truck Wash Building foundation of 1500 m2	m2	9,024	15FCS	\$38.47	\$347,127	100%	\$347,127	\$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	Add 2017 Work Plan Increase in Crusher Pad Storage Area - Ph 1: 8,200m2 & Ph 2: 17,500m2	m2	30,800	15GCS	\$1.81	\$55,758	100%	\$55,758	\$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	6,812	15GCLS	\$5.31	\$30,852	100%	\$30,852	\$0

4 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	
LANDFILL FOR DEMOLITION WASTE										
Place fill material over demolition waste (Mine Site Landfill)	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	11,120	15PFS	\$44.37	\$493,380	100%	\$493,380	\$0	
SPECIALIZED ITEMS										
Electrical Cable	Includes the removal, loading, hauling and disposal of cable (Ref 1, pg 41). 2017 Work Plan add 3500 m of cable.	m	19,700	15ECS	\$26.49	\$521,879	100%	\$521,879	\$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 % of Total						\$7,664,468		\$7,454,633 97%	\$209,835 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	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Includes forklifts, picks up, vehicles around five (5) tonnes and under, scissor lift, man lifts, and small garbage bins (Ref 1, pg 24-25). 2017 Work Plan add 4 units.	Ea	104	15MOLS	\$941.09	\$97,873	98%	\$95,916	\$1,957	
Medium Mobile Equipment	Includes vehicles around 10 tonnes, trailers, buses, tow trucks, large garbage bins and water trucks (Ref 1, pg 24-25).	Ea	48	15MOMS	\$1,494.13	\$71,718	95%	\$68,133	\$3,586	
Heavy Mobile Equipment	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Includes vehicles over 10 tonnes, boom trucks, large front end loaders, dump trucks, graders and scrapers (Ref 1, pg 24-25). 2017 Work Plan add 4 units.	Ea	63	15MOHS	\$2,618.87	\$164,989	100%	\$164,989	\$0	
Other (reclaim conveyor)	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Conveyors have been classified as large mobile equipment, with the exception of the reclaim conveyor (850m in length). (Ref 1, pg 40). For 2017 Work Plan add 0.1667 units for for cross	Ea	1.1667	15MORS	\$1,329,441.31	\$1,551,059	100%	\$1,551,059	\$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	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Light equipment includes pumps, fuel dispenser, laboratory equipment, and sample bins (Ref 1, pg 23). 2017 Work Plan add 20 units.	Ea	58	15LMES	\$1,980.80	\$114,886	100%	\$114,886	\$0	
Medium mechanical equipment - Decontaminate and dispose on-site	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Medium equipment includes aerodrome equipment, generators, shop / maintenance equipment, screens, and chutes (Ref 1, pg 23). 2017 Work Plan add 16 units.	Ea	19	15MMES	\$4,261.34	\$80,965	100%	\$80,965	\$0	
Heavy mechanical equipment - Decontaminate and dispose on-site	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Heavy equipment includes crusher, feeder, power plant generators, large screens, conveyors, and stackers (Ref 2, pg 23). 2017 Work Plan add 1 unit (Cone Crusher).	Ea	4	15MEHS	\$41,205.45	\$164,822	100%	\$164,822	\$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, pg 42).	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). Add 2017 Work Plan 49-person Camp (ATCO, not soft-walled, 950 m2)	m2	6,471	15RBMS	\$59.38	\$384,279	100%	\$384,279	\$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	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	1,171	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	Camp	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	Add 2017 Work Plan Increase in Ore Stockpile Storage Area - Ph 1: 36,900m2 & Ph 2: 45,100m2	m2	216,046	15GCS	\$1.81	\$391,108	100%	\$391,108	\$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).										

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	
Hazardous waste berm		m2	4,417	15GCLS	\$5.31	\$23,449	100%	\$23,449	\$0	
Weatherhaven genset fuel bladder berm		m2	500	15GCLS	\$5.31	\$2,654	100%	\$2,654	\$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). 2017 Work Plan add 3500 m of cable.	m	14,600	15ECS	\$26.49	\$386,774	100%	\$386,774	\$0	
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	
LANDFILL FOR DEMOLITION WASTE										
Place fill material over demoitment waste		m2	-	15PFS	\$44.37	\$0	100%	\$0	\$0	
Total						\$5,945,190		\$5,886,991	\$58,199	
% of Total								99%	1%	

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
Total						\$1,563,082

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 stabilization	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
Environmental 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, Re

1 Post-Closure Monitoring & Maintenance:

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
MONITORING & INSPECTIONS						
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
COVER MAINTENANCE						
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
SPILLWAY MAINTENANCE						
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	
Present Value of payment stream						\$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		2,180,000	\$2,180,000
Mobilization and Demobilization of Equipment and Materials for 2017 Work Plan	Assumed 10% of marginal 2017 Work Plan Direct costs(minus Soil and Water management and ICM components) i.e., \$1,308,348 from RECLAIM 2017 Marginal Summary Worksheet.	\$	1		130,835	\$130,835
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
Consumables (2017 Work Plan marginal increase)	Cost to remove additional 49 bed spaces delivered to site in 2017 Work Plan.	Ea	49	15CONS	700.8	\$34,339
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, 2017 Work Plan)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1).	person-days	155	15NWS	75.00	\$11,625
Mobilization of Workers Required for Reclamation (from southern communities, 2017 Work Plan)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1).	person-days	362	15SWS	85.45	\$30,933
Mobilization of Workers Required for Reclamation (from northern communities, 2016 Work Plan)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1).	person-days	937	15NWS	75.00	\$70,275
Mobilization of Workers Required for Reclamation (from southern communities, 2016 Work Plan)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1).	person-days	2,185	15SWS	85.45	\$186,708
Mobilization of Workers Required for Reclamation (2014 Work Plan)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1). Based on a blended unit rate of \$82.315, which assumes 70% of hires from southern communities at a rate of \$85.45/ person-day, and 30% from northern communities at \$75/ person-day.	manhours	7,921	#N/A	82.32	\$652,000
Mobilization of Workers Required for Reclamation (2015 Work Plan)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1). Based on a blended unit rate of \$82.315, which assumes 70% of hires from southern communities at a rate of \$85.45/ person-day, and 30% from northern communities at \$75/ person-day.	each	559	#N/A	82.32	\$46,000

1 Mobilization/Demobilization:

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
Mobilization of Workers Required for Reclamation (2015 A Work Plan)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1). Based on a blended unit rate of \$82.315, which assumes 70% of hires from southern communities at a rate of \$85.45/ person-day, and 30% from northern communities at \$75/ person-day.	each	207	#N/A	82.32	\$17,000
WORKER ACCOMMODATIONS						
Worker Accommodation & Camp Operation		person-days	11,186	15WACS	225	\$2,516,850
Worker Accommodation & Camp Operation	For the Post-Closure Monitoring and Reporting System (from 2016 Work Plan)	person-days	216	15WACS	225	\$48,600
Worker Accommodation & Camp Operation (2017 Work Plan)	For marginal reclamation activities (517 person-days) associated with 2017 Work Plan. Includes maintenance, catering, housekeeping & fuel costs.	person-days	517	15WACS	225	\$116,325
				#N/A	0	\$0
Long term reclamation activities (eg pump flooding)						
manmonths						
MOBILIZE FUEL						
Demobilization of Existing Fuel and/or Fuel Required for Reclamation	Represents the fuel mobilization cost associated with the 2014 Work Plan as provided in Oct 30, 2015 EBS	\$	2,888,000	#N/A	1	\$2,888,000
Demobilization of Existing Fuel and/or Fuel Required for Reclamation	Represents marginal increase in fuel for 2015 provided in Oct 30, 2015 EBS	\$	30,000	#N/A	1	\$30,000
Demobilization of Existing Fuel and/or Fuel Required for Reclamation	Represents marginal increase in fuel for the 2015 Addendum provided in September 23rd, 2015 EBS	\$	9,000	#N/A	1	\$9,000
Demobilization of Existing Fuel and/or Fuel Required for Reclamation	Represents marginal increase in fuel for 2015 R provided in September 23rd, 2015 EBS	\$	203,000	#N/A	1	\$203,000
Fuel Required for Reclamation (2016 Work Plan)	Ref 1, pg 61	litre	35,435	15MF1S	0.4	\$14,174
Fuel Required for Reclamation (2017 Work Plan)	2017 Work Plan, Appendix B, pg 9. Mobilize 50% of fuel required. Reclamation activities in Nov. 24, 2016 EBS = 90,987L. Heat & power = 116L per 517 person days x \$0.40/L for mobilization. Fuel cost bcaptured under Worker Accom. & Camp Operation.	litre	74,480	15MF1S	0.4	\$29,792
DEMOBILIZE HEAVY EQUIPMENT						
Excavators		km		#N/A	0	\$0
Dump trucks		km		#N/A	0	\$0
Dozers		km		#N/A	0	\$0
DEMOBILIZE CAMP						
		allow		#N/A	0	\$0
DEMOBILIZE WORKERS						
crew travel time		mandays		#N/A	0	\$0
crew transportation		each		#N/A	0	\$0
Total						\$11,569,896

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

Attachment B

Marginal 2017 RECLAIM Model

SUMMARY OF COSTS

CAPITAL COSTS	COMPONENT NAME	COST	LAND LIABILITY	WATER LIABILITY	IOL LIABILITY	CROWN LIABILITY
OPEN PIT	Mary River Mine Pit	-\$147,776	-\$147,776	\$0	-\$151,397	\$3,621
UNDERGROUND MINE		\$0	\$0	\$0	\$0	\$0
TAILINGS FACILITY		\$0	\$0	\$0	\$0	\$0
ROCK PILE	Mine Site Waste Rock Pile	\$0	\$0	\$0	\$0	\$0
BUILDINGS AND EQUIPMENT	Mine Site	\$647,196	\$644,723	\$2,473	\$647,196	\$0
	Milne Port	\$684,322	\$684,209	\$113	\$684,322	\$0
	Tote Road	\$0	\$0	\$0	\$0	\$0
	Project Wide/ Other	\$52,888	\$52,888	\$0	\$52,888	\$0
CHEMICALS AND CONTAMINATED SOIL MANAGEMENT		\$62,549	\$62,549	\$0	\$62,366	\$183
SURFACE AND GROUNDWATER MANAGEMENT		\$0	-	\$0	\$0	\$0
INTERIM CARE AND MAINTENANCE		\$0	-	\$0	\$0	\$0
SUBTOTAL: Capital Costs		\$1,299,179	\$1,296,592	\$2,586	\$1,295,375	\$3,804
PERCENT OF SUBTOTAL			99.8%	0.2%	99.7%	0.3%

OVERALL INDIRECT COSTS		COST	LAND LIABILITY	WATER LIABILITY	IOL LIABILITY	CROWN LIABILITY
MOBILIZATION/DEMobilIZATION		\$353,849	\$353,145	\$704	\$352,813	\$1,036
POST-CLOSURE MONITORING AND MAINTENANCE		\$0	\$0	\$0	\$0	\$0
ENGINEERING	3.9%	\$50,668	\$50,567	\$101	\$50,520	\$148
PROJECT MANAGEMENT	9.4%	\$122,123	\$121,880	\$243	\$121,765	\$358
HEALTH AND SAFETY PLANS/MONITORING & QA/QC	0%	\$0	\$0	\$0	\$0	\$0
BONDING/INSURANCE	2%	\$25,984	\$25,932	\$52	\$25,908	\$76
CONTINGENCY	15%	\$194,877	\$194,489	\$388	\$194,306	\$571
MARKET PRICE FACTOR ADJUSTMENT	0%	\$0	\$0	\$0	\$0	\$0
SUBTOTAL: Overall Indirect Costs		\$747,500	\$746,012	\$1,488	\$745,312	\$2,189

TOTAL COSTS		\$2,046,679	\$2,042,605	\$4,074	\$2,040,687	\$5,992
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Open Pit Name: *Mary River Mine Pit*Pit # 1

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	2016/17 ASR Reconciliation	m2	- 19,344	15GCS	\$1.81	-\$35,018 100%	-\$35,018	\$0
P13 Borrow Source	2016/17 ASR Reconciliation	m2	- 8,456	15GCS	\$1.81	-\$15,308 100%	-\$15,308	\$0
P14 Borrow Source	2016/17 ASR Reconciliation	m2	- 3,160	15GCS	\$1.81	-\$5,721 100%	-\$5,721	\$0
P15 Borrow Source	2016/17 ASR Reconciliation	m2	- 3,300	15GCS	\$1.81	-\$5,974 100%	-\$5,974	\$0
P5 Borrow Source	2016/17 ASR Reconciliation	m2	- 4,600	15GCS	\$1.81	-\$8,327 100%	-\$8,327	\$0
P6 Borrow Source	2016/17 ASR Reconciliation	m2	- 7,500	15GCS	\$1.81	-\$13,577 100%	-\$13,577	\$0
P7 Borrow Source	2016/17 ASR Reconciliation	m2	- 8,100	15GCS	\$1.81	-\$14,663 100%	-\$14,663	\$0
P8 Borrow Source	2016/17 ASR Reconciliation	m2	- 8,385	15GCS	\$1.81	-\$15,179 100%	-\$15,179	\$0
Q13 Quarry	In 2016 Work Plan but deferred to 2017	m2		15GCS	\$1.81	\$0 100%	\$0	\$0
Q14 Quarry	2016/17 ASR Reconciliation	m2	- 13,440	15GCS	\$1.81	-\$24,330 100%	-\$24,330	\$0
Q15 Quarry	2016/17 ASR Reconciliation	m2	- 10,680	15GCS	\$1.81	-\$19,334 100%	-\$19,334	\$0
Q16A Quarry	In 2016 Work Plan but deferred to 2017	m2		15GCS	\$1.81	\$0 100%	\$0	\$0
Q9 Quarry	2016/17 ASR Reconciliation	m2	- 15,166	15GCS	\$1.81	-\$27,455 100%	-\$27,455	\$0
D1Q2 Quarry	2016 Work Plan	m2		15GCS	\$1.81	\$0 100%	\$0	\$0
Q1 Quarry	2017 Work Plan Marginal increase Add 6000m2.	m2	6,000	15GCS	\$1.81	\$10,862 100%	\$10,862	\$0
Q11 Quarry	2017 Work Plan Marginal increase Add 2000m2.	m2	2,000	15GCS	\$1.81	\$3,621 100%	\$3,621	\$0
Q18 Quarry (On CROWN LAND)	2017 Work Plan new quarry. Add 2000m2. (100% on CROWN LAND)	m2	2,000	15GCS	\$1.81	\$3,621 100%	\$3,621	\$0
Q19 Quarry		m2		15GCS	\$1.81	\$0 100%	\$0	\$0
Q7 Quarry	2017 Work Plan Marginal increase Add 2000m2.	m2	2,000	15GCS	\$1.81	\$3,621 100%	\$3,621	\$0
QMR2 Quarry	2017 Work Plan Marginal increase Add 6000m2.	m2	6,000	15GCS	\$1.81	\$10,862 100%	\$10,862	\$0
Pit 1		m2		15GCS	\$1.81	\$0 100%	\$0	\$0
Pit 1 - Marginal increase		m2		15GCS	\$1.81	\$0 100%	\$0	\$0
P1 Borrow Source (on CROWN LAND)	(100% on CROWN LAND)	m2		15GCS	\$1.81	\$0 100%	\$0	\$0
Km 2 Borrow source	2017 Work Plan Marginal increase Add 1000m2.	m2	1,000	15GCS	\$1.81	\$1,810 100%	\$1,810	\$0
Borrow development areas		m2		15GCS	\$1.81	\$0 100%	\$0	\$0
Unidentified Borrow Sources		m2		15GCS	\$1.81	\$0 100%	\$0	\$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	2017 Work Plan Marginal increase Add 1000m2.	m2	1,000	15GCDS	\$2.72	\$2,715 100%	\$2,715	\$0
Type A Quarry		m2		15GCDS	\$2.72	\$0 100%	\$0	\$0

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
RECLAIM QUARRIES								
Number of years of pump flooding		years						
Total pumping costs						\$0	\$0	\$0
Total						-\$147,776	-\$147,776	\$0
% of Total							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
HAZARDOUS MATERIALS AUDIT								
Hazardous materials audit		mandays		#N/A	\$0.00	\$0	\$0	\$0
BUILDING DECONTAMINATION & CONSOLIDATION OF HAZARDOUS MATERIALS								
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
HAZARDOUS MATERIALS REMOVAL								
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
HAZARDOUS MATERIALS								
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
CONTAMINATED SOILS								
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
CONTAMINATED SOIL REMOVAL								
Contaminated soil treatment		m3		15CSTS	\$14.78	\$0	100%	\$0
Contaminated soil treatment (2017 Work Plan)	Marginal increase associated with 2017 Work Plan. Spill 16-283 a tMline Port Bulk Fuel Steel Tank Farm.	m3	4,232	15CSTS	\$14.78	\$62,549	100%	\$62,549
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
Other		-		#N/A	\$0.00	\$0	\$0	\$0
OTHER								
Ammonium nitrate (explosive material)		m3		16AN1S	\$358.00	\$0	100%	\$0
Pre-packaged explosives		kg		16AN2S	\$2.37	\$0	100%	\$0
Total						\$62,549	\$62,549	\$0
% of Total							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	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Includes forklifts, picks up, vehicles around five (5) tonnes and under, scissor lift, man lifts, and small garbage bins (Ref 1, pg 24-25). 2017 Work Plan add 6 units.	Ea	6	15MOLS	\$941.09	\$5,647	95%	\$5,364	\$282	
Medium Mobile Equipment	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Includes vehicles around 10 tonnes, trailers, buses, tow trucks, large garbage bins and water trucks (Ref 1, pg 24-25). 2017 Work Plan add 10 units.	Ea	10	15MOMS	\$1,494.13	\$14,941	98%	\$14,643	\$299	
Heavy Mobile Equipment	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Includes vehicles over 10 tonnes, boom trucks, large front end loaders, dump trucks, graders and cranes (Ref 1, pg 24-25). 2017 Work Plan add 21 units.	Ea	21	15MOHS	\$2,618.87	\$54,996	98%	\$53,896	\$1,100	
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	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Light equipment includes pumps, fuel dispenser, laboratory equipment, and sample bins (Ref 1, pg 23). 2017 Work Plan add 20 units.	Ea	20	15LMES	\$1,980.80	\$39,616	98%	\$38,824	\$792	
Medium mechanical equipment - Decontaminate and dispose on-site	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Medium equipment includes aerodrome equipment, generators, shop / maintenance equipment, screens, and chutes (Ref 1, pg 23). 2017 Work Plan add 2 units.	Ea	2	15MMES	\$4,261.34	\$8,523	100%	\$8,523	\$0	
Heavy mechanical equipment - Decontaminate and dispose on-site	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Heavy equipment includes crusher, feeder, power plant generators, large screens, conveyors, and stackers (Ref 2, pg 23). 2017 Work Plan add 1 unit (Truck Wash system).	Ea	1	15MEHS	\$41,205.45	\$41,205	100%	\$41,205	\$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		15TLS	\$2,148.33	\$0	0%	\$0	\$0	
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		15MTS	\$7,387.31	\$0	0%	\$0	\$0	
Light Diesel Tanks	Small fuel tanks (10,000-20,000L) (Ref 1, pg 27)	Ea		15LIDS	\$3,693.66	\$0	100%	\$0	\$0	
Medium Diesel Tanks	Medium fuel tanks (200,000-750,000L). The cleaning, plugging, disassembly and removal of all associated pipeline infrastructure is included (Ref 1, pg 27).	Ea		15MDTS	\$16,166.40	\$0	100%	\$0	\$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		15MMFTS	\$10,481.05	\$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		15RBMS	\$59.38	\$0	89%	\$0	\$0	
Fold Away Building		m2		15RBFS	\$41.57	\$0	100%	\$0	\$0	
Soft-walled		m2		15RBSS	\$47.51	\$0	100%	\$0	\$0	
ISO Shipping Containers (shelters, comm. Facilities)		m2		15RBIS	\$29.69	\$0	100%	\$0	\$0	
Wastewater Treatment Facilities	(2015 Security Assessment, pg 39).	Ea		15WWTS	\$11,035.58	\$0	0%	\$0	\$0	
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		15RCBMS	\$143.42	\$0	100%	\$0	\$0	
Fold Away Building	2017 Work Plan add 1500 m2 Truck wash Building	m2	1,500	15RCBFS	\$142.41	\$213,614	100%	\$213,614	\$0	
ISO Shipping Containers	2017 Work Plan add 500 m2 Tire Shop	m2	500	15RCBIS	\$143.42	\$71,709	100%	\$71,709	\$0	
Temporary construction warehouses and offices Allowance		m2		15RCBTS	\$25,000	\$0	100%	\$0	\$0	
BREAK FOUNDATIONS										
Precast foundations	Includes load and transport of precast concrete foundations (Ref 1, pg 34). Add 2017 Work Plan Truck Wash Building foundation of 1500 m2.	m2	1,500	15FCS	\$38.47	\$57,701	100%	\$57,701	\$0	
Slab on grade	Includes perforating the concrete slabs on grade (Ref 1, pg 35).	m2		15FSS	\$33.11	\$0	100%	\$0	\$0	
Timber Cribbing	Includes disassembly, load and transport of the timber cribbing (Ref 1, pg 33).	m2		15TCS	\$20.78	\$0	100%	\$0	\$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		15GCS	\$1.81	\$0	100%	\$0	\$0	
Grade and contour building footprints		m3		15GCS	\$1.81	\$0	100%	\$0	\$0	
Grade and contour infrastructure pads		m2		15GCS	\$1.81	\$0	100%	\$0	\$0	
Aerodrome Facilities		m2		15GCS	\$1.81	\$0	100%	\$0	\$0	
Roads		m2		15GCS	\$1.81	\$0	100%	\$0	\$0	

4

Building / Equip Name: *Mine Site*Bldg / Equip #: *1*

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
Stockpiles	Add 2017 Work Plan Increase in Crusher Pad Storage Area - Ph 1: 8,200m2 & Ph 2: 17,500m2	m2	25,700	15GCS	\$1.81	\$46,525	100%	\$46,525	\$0
Truck weigh facility disturbed area		m2		15GCS	\$1.81	\$0	100%	\$0	\$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		15GCLS	\$5.31	\$0	100%	\$0	\$0
Fuel tank farm dyke		m2		15GCLS	\$5.31	\$0	100%	\$0	\$0
Hazardous waste berm		m2		15GCLS	\$5.31	\$0	100%	\$0	\$0
Bulk Fuel Storage facility (Bladder Farm)		m2		15GCLS	\$5.31	\$0	100%	\$0	\$0
Other		m2		15GCLS	\$5.31	\$0	100%	\$0	\$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		15PFS	\$44.37	\$0	100%	\$0	\$0
SPECIALIZED ITEMS									
Electrical Cable	Includes the removal, loading, hauling and disposal of cable (Ref 1, pg 41). 2017 Work Plan add 3500 m of cable.	m	3,500	15ECS	\$26.49	\$92,720	100%	\$92,720	\$0
Incinerator	Waste Incinerator. Includes disassembly, decontamination (if required), load and transport (2015 Security Assessment, pg 37).	Ea		15FIS	\$9,975.93	\$0	100%	\$0	\$0
Potable Water	Includes disassembly, decontamination (if required), load and transport (2015 Security Assessment, pg 38).	Ea		15PWS	\$9,975.93	\$0	0%	\$0	\$0
Total						\$647,196		\$644,723	\$2,473
% of Total								100%	0%

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

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

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	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Includes forklifts, picks up, vehicles around five (5) tonnes and under, scissor lift, man lifts, and small garbage bins (Ref 1, pg 24-25). 2017 Work Plan add 6 units.	Ea	6	15MOLS	\$941.09	\$5,647	98%	\$5,534	\$113
Medium Mobile Equipment	Includes vehicles around 10 tonnes, trailers, buses, tow trucks, large garbage bins and water trucks (Ref 1, pg 24-25).	Ea	0	15MOMS	\$1,494.13	\$0	95%	\$0	\$0
Heavy Mobile Equipment	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Includes vehicles over 10 tonnes, boom trucks, large front end loaders, dump trucks, graders and cranes (Ref 1, pg 24-25). 2017 Work Plan add 4 units.	Ea	4	15MOHS	\$2,618.87	\$10,475	100%	\$10,475	\$0
Other (reclaim conveyor)	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Conveyors have been classified as large mobile equipment, with the exception of the reclaim conveyor (850m in length), (Ref 1, pg 40). For 2017 Work Plan add 0.1667 units for for cross conveyor which is 1.6th of Reclaim Conveyor length.	Ea	0.1667	15MORS	\$1,329,441.31	\$221,618	100%	\$221,618	\$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	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Light equipment includes pumps, fuel dispenser, laboratory equipment, and sample bins (Ref 1, pg 23). 2017 Work Plan add 20 units.	Ea	20	15LMES	\$1,980.80	\$39,616	100%	\$39,616	\$0
Medium mechanical equipment - Decontaminate and dispose on-site	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Medium equipment includes aerodrome equipment, generators, shop / maintenance equipment, screens, and chutes (Ref 1, pg 23). 2017 Work Plan add 16 units.	Ea	16	15MMES	\$4,261.34	\$68,181	100%	\$68,181	\$0
Heavy mechanical equipment - Decontaminate and dispose on-site	Equipment quantities updated to reflect BIMC Nov. 24 EBS revisions. Heavy equipment includes crusher, feeder, power plant generators, large screens, conveyors, and stackers (Ref 2, pg 23). 2017 Work Plan add 1 unit (Cone Crusher).	Ea	1	15MEHS	\$41,205.45	\$41,205	100%	\$41,205	\$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		15TLS	\$2,148.33	\$0	0%	\$0	\$0
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		15MTS	\$7,387.31	\$0	100%	\$0	\$0
Light Diesel Tanks	Small fuel tanks (10,000-20,000L) (Ref 1, pg 27)	Ea		15LIDTS	\$3,693.66	\$0	100%	\$0	\$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		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		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		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, pg 42).	Ea		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). Add 2017 Work Plan 49-person Camp (ATCO, not soft-walled, 950 m2)	m2	950	15RBMS	\$59.38	\$56,416	100%	\$56,416	\$0
Fold Away Building		m2		15RBFS	\$41.57	\$0	100%	\$0	\$0
Soft-walled		m2		15RBSS	\$47.51	\$0	100%	\$0	\$0
ISO Shipping Containers (shelters, comm. Facilities)		m2		15RBIS	\$29.69	\$0	100%	\$0	\$0
Wastewater Treatment Facilities	(2015 Security Assessment, pg 39).	Ea		15WWTS	\$11,035.58	\$0	0%	\$0	\$0
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		15RCBMS	\$143.42	\$0	85%	\$0	\$0
Fold Away Building		m2		15RCBFS	\$142.41	\$0	100%	\$0	\$0
Soft walled		m2		15RCBSS	\$148.35	\$0	100%	\$0	\$0
ISO Shipping Containers (shelters, comm. facilities)		m2		15RCBIS	\$143.42	\$0	100%	\$0	\$0
Temporary construction warehouses and offices Allowance		m2		15RCBTS	\$25,000.00	\$0	100%	\$0	\$0
BREAK FOUNDATIONS									
Precast foundations	Includes load and transport of precast concrete foundations (Ref 1, pg 34).	m2		15FCS	\$38.47	\$0	100%	\$0	\$0
Slab on grade	Includes perforating the concrete slabs on grade (Ref 1, pg 35).	m2		15FSS	\$33.11	\$0	100%	\$0	\$0

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

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
Timber Cribbing	Includes disassembly, load and transport of the timber cribbing (Ref 1, pg 33).	m2		15TCS	\$20.78	\$0	100%	\$0	\$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		15GCS	\$1.81	\$0	100%	\$0	\$0
Grade and contour building footprints		m3		15GCS	\$1.81	\$0	100%	\$0	\$0
Grade and contour infrastructure pads	Camp	m2		15GCS	\$1.81	\$0	100%	\$0	\$0
Roads		m2		15GCS	\$1.81	\$0	100%	\$0	\$0
Stockpiles	Add 2017 Work Plan Increase in Ore Stockpile Storage Area - Ph 1: 36,900m2 & Ph 2: 45,100m2	m2	82,000	15GCS	\$1.81	\$148,444	100%	\$148,444	\$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		15GCLS	\$5.31	\$0	100%	\$0	\$0
Weatherhaven genset fuel bladder berm		m2		15GCLS	\$5.31	\$0	100%	\$0	\$0
Storage Area		m2		15GCLS	\$5.31	\$0	100%	\$0	\$0
Fuel tank farm dyke		m2		15GCLS	\$5.31	\$0	100%	\$0	\$0
Landfarm		m2		15GCLS	\$5.31	\$0	100%	\$0	\$0
SPECIALIZED ITEMS									
Electrical Cable	Includes the removal, loading, hauling and disposal of cable (Ref 1, pg 41). 2017 Work Plan add 3500 m of cable.	m	3,500	15ECS	\$26.49	\$92,720	100%	\$92,720	\$0
Incinerator	Includes disassembly, decontamination (if required),	Ea		15FIS	\$9,975.93	\$0	100%	\$0	\$0
Potable Water	Includes disassembly, decontamination (if required), load and transport (2015 Security Assessment, pg 38)	Ea		15PWS	\$9,975.93	\$0	0%	\$0	\$0
LANDFILL FOR DEMOLITION WASTE									
Place fill material over demolition waste		m2		15PFS	\$44.37	\$0	100%	\$0	\$0
Total						\$684,322		\$684,209	\$113
% of Total								100%	0%

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

Building / Equip Name: <i>Tote Road</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		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)	Assume 7% on CROWN LAND.	m2		15RBIS	\$29.69	\$0	100%	\$0	\$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	Mobile Maintenance Depot (100% on CROWN LAND)	m2		15RCBF	\$142.41	\$0	100%	\$0	\$0
Soft walled		m2		#N/A	\$0.00	\$0		\$0	\$0
BREAK FOUNDATIONS									
Slab on grade	Mobile Maintenance Depot (100% on CROWN LAND)	m2		15FSS	\$33.11	\$0	100%	\$0	\$0
Timber Cribbing	Includes disassembly, load and transport of the timber cribbing (Ref 1, pg 33). Assume 7% on CROWN LAND.	m2		15TCS	\$20.78	\$0	100%	\$0	\$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	Assume 7% on CROWN LAND.	m3		15GCS	\$1.81	\$0	100%	\$0	\$0
Grade and contour infrastructure pads	Assume 7% on CROWN LAND.	m2		15GCS	\$1.81	\$0	100%	\$0	\$0
Aerodrome Facilities		m2		#N/A	\$0.00	\$0		\$0	\$0
Roads	Assume 7% on CROWN LAND.	m2		15GCS	\$1.81	\$0	100%	\$0	\$0
Stockpiles		m2		#N/A	\$0.00	\$0		\$0	\$0
Remove liner	Mobile Maintenance Depot (100% on CROWN LAND)	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 3 bridges (IOL)	The unit cost is inclusive of the demolition and removal of a bridge. Assumed not contaminated (Ref 1, pg 36).	each		15BRS	\$201,838.77	\$0	0%	\$0	\$0
Remove 1 bridge (CROWN)	The unit cost is inclusive of the demolition and removal of a bridge. Assumed not contaminated (Ref 1, pg 36).	each		15BRS	\$201,838.77	\$0	0%	\$0	\$0
Remove 372 culverts (IOL)	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		15CRS	\$1,094.48	\$0	0%	\$0	\$0
Remove 11 culverts (CROWN)	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		15CRS	\$1,094.48	\$0	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
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						\$0		\$0	\$0
% of Total								0%	0%

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
DISPOSE MOBILE EQUIPMENT									
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
REMOVE 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
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		m2		#N/A	\$0.00	\$0		\$0	\$0
LANDFILL FOR DEMOLITION WASTE									
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). 2017 Work Plan and BIMC Nov. 24 EBS revision add 1192 m2 for disposal of 2017 mobile and mechanical equipment (107 units in total)	m2	1,192	15PFS	\$44.37	\$52,888	100%	\$52,888	\$0
RECLAIM ROADS									
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
SPECIALIZED ITEMS									
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						\$52,888		\$52,888	\$0
% of Total								100%	0%

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

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		\$			2,180,000	\$0
Mobilization and Demobilization of Equipment and Materials for 2017 Work Plan	Assumed 10% of marginal 2017 Work Plan Direct costs(minus Soil and Water management and ICM components) i.e., \$1,308,348 from RECLAIM Summary Worksheet.	\$	1		130,835	\$130,835
Off-site disposal of waste and material	Ref 1, pg. 59	m3		15ODS	358	\$0
Pump shipping		each		#N/A	0	\$0
Pipe shipping		m		#N/A	0	\$0
Minor tools and equipment		allow		#N/A	0	\$0
Consumables (2017 Work Plan marginal increase)	Cost to remove additional 49 bed spaces delivered to site in 2017 Work Plan.	Ea	49	15CONS	700.8	\$34,339
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		15CONS	\$701	\$0
MOBILIZE WORKERS						
Mobilization of Workers Required for Reclamation (from northern communities, 2017 Work Plan)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1).	person-days	155	15NWS	75.00	\$11,625
Mobilization of Workers Required for Reclamation (from southern communities, 2017 Work Plan)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1).	person-days	362	15SWS	85.45	\$30,933
Mobilization of Workers Required for Reclamation (from northern communities, 2016 Work Plan)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1).	person-days		15NWS	75.00	\$0
Mobilization of Workers Required for Reclamation (from southern communities, 2016 Work Plan)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1).	person-days		15SWS	85.45	\$0
Mobilization of Workers Required for Reclamation (2014 Work Plan)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1). Based on a blended unit rate of \$82.315, which assumes 70% of hires from southern communities at a rate of \$85.45/ person-day, and 30% from northern communities at \$75/ person-day.	manhours		#N/A	82.32	\$0
Mobilization of Workers Required for Reclamation (2015 Work Plan)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1). Based on a blended unit rate of \$82.315, which assumes 70% of hires from southern communities at a rate of \$85.45/ person-day, and 30% from northern communities at \$75/ person-day.	each		#N/A	82.32	\$0

1 Mobilization/Demobilization:

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
Mobilization of Workers Required for Reclamation (2015 A Work Plan)	Person-hours required to complete direct cost reclamation activities (10-h person-days) (pg 63, Ref 1). Based on a blended unit rate of \$82.315, which assumes 70% of hires from southern communities at a rate of \$85.45/ person-day, and 30% from northern communities at \$75/ person-day.	each		#N/A	82.32	\$0
WORKER ACCOMMODATIONS						
Worker Accommodation & Camp Operation		person-days		15WACS	225	\$0
Worker Accommodation & Camp Operation	For the Post-Closure Monitoring and Reporting System (from 2016 Work Plan)	person-days		15WACS	225	\$0
Worker Accommodation & Camp Operation (2017 Work Plan)	For marginal reclamation activities (517 person-days) associated with 2017 Work Plan. Includes maintenance, catering,, housekeeping & fuel costs.	person-days	517	15WACS	225	\$116,325
Long term reclamation activities (eg pump flooding)		manmonths		#N/A	0	\$0
MOBILIZE FUEL						
Demobilization of Existing Fuel and/or Fuel Required for Reclamation	Represents the fuel mobilization cost associated with the 2014 Work Plan as provided in Oct 30, 2015 EBS	\$		#N/A	1	\$0
Demobilization of Existing Fuel and/or Fuel Required for Reclamation	Represents marginal increase in fuel for 2015 provided in Oct 30, 2015 EBS	\$		#N/A	1	\$0
Demobilization of Existing Fuel and/or Fuel Required for Reclamation	Represents marginal increase in fuel for the 2015 Addendum provided in September 23rd, 2015 EBS	\$		#N/A	1	\$0
Demobilization of Existing Fuel and/or Fuel Required for Reclamation	Represents marginal increase in fuel for 2015 R provided in September 23rd, 2015 EBS	\$		#N/A	1	\$0
Fuel Required for Reclamation (2016 Work Plan)	Ref 1, pg 61	litre		15MF1S	0.4	\$0
Fuel Required for Reclamation (2017 Work Plan)	2017 Work Plan, Appendix B, pg 9. Mobilize 50% of fuel required. Reclamation activities in Nov. 24, 2016 EBS = 90,987L. Heat & power = 116L per 517 person days x \$0.40/L for mobilization. Fuel cost bcaptured under Worker Accom. & Camp Operation.	litre	74,480	15MF1S	0.4	\$29,792
DEMOBILIZE HEAVY EQUIPMENT						
Excavators		km		#N/A	0	\$0
Dump trucks		km		#N/A	0	\$0
Dozers		km		#N/A	0	\$0
DEMOBILIZE CAMP						
		allow		#N/A	0	\$0
DEMOBILIZE WORKERS						