2020 Marginal Closure and Reclamation

Financial Security Estimate

22 January 2020

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1. Introduction

1.1 Purpose

The purpose of this 2020 Marginal Closure and Reclamation Financial Security Estimate ('2020 Estimate') is to provide a summary of the closure and reclamation security estimated to be required for the Mary River Project (the Project) to meet reclamation objectives as outlined in the Interim Mine Closure and Reclamation Plan (BAF-PH1-830-P16-0012). The total 'global' closure and reclamation security estimated to be required takes into consideration planned work in 2020 being conducted under Type "A" Water Licence 2AM-MRY1325, Amendment No. 1 and the Qikiqtani Inuit Association's (QIA) Commercial Lease No. Q13C301 in addition to previous Project closure and reclamation security.

~~This estimate also includes work proposed for 2020 to be completed following the issuance of the amended Project Certificate for the Phase 2 Project (Phase 2), however irrespective of securities these works may not proceed until the amended Project Certificate is issued. Additional reclamation security will be required to complete works in 2020 that require an amended Type 'A' Water Licence for Phase 2 to be issued. As a separate marginal increase for Phase 2 was submitted and will be reviewed under the amendment process for the Type A Water Licence, these works have not be included in this estimate.~~

The 2020 Estimate is intended to be inclusive of all closure and reclamation costs estimated to be required for a 3rd Party Contractor to perform the work in a 'worst-case' scenario for all disturbed areas, project components and project activities existing on the Mary River Project site upon conclusion of the 2020 Work Plan. For the purpose of this document, the material changes associated to security from the 2020 Work Plan are termed, '202- Work Plan Security Estimate'.

In order for the 2020 Estimate to accurately reflect the total 'global' closure and reclamation security estimated to be required for the Project in 2020, this document also provides a summary of the identified Project components and activities that have materially changed from the position presented by Baffinland Iron Mines Corporation (Baffinland) during the 2019 Annual Security Review (ASR)[1] and subsequent adjustments based on the volume of material that arrived on the 2019 sealift. Based on these identified material changes, the resulting associated security impacts (+/- $) are also presented for incorporation into the 2020 Estimate to ensure accurate representation of the Project based on current planning.

1.2 Regulatory Context

An annual adjustment to reclamation security is required under Section 9.2 of the Commercial Lease, No. Q13C301, agreed to between Baffinland and the QIA, as well as a requirement under the Type 'A' Water Licence 2AM-MRY1325, Amendment No. 1 (Part J, Item 3), and in consideration of the QIA Abandonment and Reclamation (A&R) Policy (QIA, 2013). Additionally, Part C, Item 3 of the Type 'A' Water Licence 2 AM-MRY1325 and Section 9.2, Part

[1] As described in 2017 Marginal Closure and Reclamation Financial Security Estimate (November 2, 2016), 2017 Marginal Closure and Reclamation Security Estimate Memo – Revisions to Reflect Interested Parties Feedback (November 24, 2016) and NWB Letter on January 20, 2017 Re: Licence No. 2AM-MRY1325, Baffinland Iron Mines Corporation Type "A" Water Licence, Mary River Mine Project: Direction from Nunavut Water Board Under the Annual Security Review Process Established Under Part C and Schedule C of the Water Licence.

i) of the Commercial Lease, No. Q13C301 allows for Baffinland (the Licensee) to request a change to the total amount of security outside of the ASR process. The 2020 Estimate therefore represents Baffinland's proposed adjustment to reclamation security to account for work conducted on site to date and planned work to be completed as described in the 2020 Work Plan. The amount of security estimated to be required is based on an estimate of the highest reclamation liability in the upcoming year[2] or 'worst case' scenario.

1.3 Applied Rates

In 2019, Baffinland and QIA entered into a Reclamation Security Arbitration Agreement. Both parties have committed to arbitrate in good faith in order to determine the appropriate amount of reclamation security for the 2019 ASR, and to establish the appropriate methodology to be adopted in future years for determining the elements of the calculation of reclamation security in dispute between the parties. As the arbitration process has yet to yield a determination on the 2019 ASR or the methodology used by both parties, Baffinland has continued to utilize the established methodology from the 2014 Complete Project Financial Security Assessment[3].

The 2020 Estimate was developed by applying the direct cost unit rates established in the 2014 Complete Project Financial Security Assessment and updated in the 2019 ASR to quantities of functional units of each activity or project component proposed/changed under the 2020 Estimate, unless indicated otherwise.

Based on the direct cost estimate, indirect costs required to support direct cost work were accounted for proportional to assumptions and considerations applied in the 2014 Complete Project Financial Security Assessment and the update to unit rates completed in 2019. Indirect costs are additional costs outside of costs required for direct reclamation activities that are required to ensure reclamation objectives are met. The sum of direct and indirect estimated costs for the 2020 Estimate was then differentiated based on geographic liability allocation (IOL vs. Crown land) and relation to land or water liability. Appendix A presents the Mary River Project Estimate Breakdown Structure (EBS) which demonstrates the results of this process for all activities or project components proposed under the 2020 Estimate and all previous project financial security liabilities as described in previous ASR submissions.

All costs are in Canadian Dollars (CAD). All monetary totals are rounded to the nearest '000.

1.4 Document Structure

The following outlines the structure of the 2020 Estimate document:

- Section 1 presents the purpose, regulatory context, applied rates used, and document structure applicable to the 2020 Estimate;
- Section 2 describes the '2019 Reconciliation' process, and its resulting impacts to the 2020 Estimate;

[2] As per Type 'A' Water Licence 2AM-MRY1325, Amendment No. 1, Schedule C, Part 6, Item c.

[3] As described in 2014 Complete Project Financial Security Assessment, H349000-1000-07-126-0018, Rev.1. Hatch. Submitted to parties October 31, 2014.

- Section 3 provides a summary of the financial security estimated to be required for marginal closure and reclamation liability increase associated with the Mary River Project 2020 Work Plan ('2020 Work Plan Security Estimate');
- Section 4 summarizes net impacts to the 2020 Estimate; and
- Section 5 lists supporting documentation that was available to determine costs and quantities for the purpose of the 2020 Estimate.

2. 2019 Reconciliation

In order for the 2020 Estimate to accurately reflect the total 'global' closure and reclamation security estimated to be required for the Project in 2020, the previous year's project estimates need to reconciled to ensure applicability. Activities previously proposed that require reconciliation fall into the following categories:

a) Activities that have had security allocated to them that are no longer planned to be conducted;

b) Activities that have been conducted but have no security explicitly allocated to them; and

c) Materials and equipment that have arrived at the Project on the 2019 sealift, and were under or over estimated in 2019.

The activities that fall into the above categories and their corresponding reconciliation action are described in the sub sections below.

2.1 Disturbed Areas Reconciliation

2.1.1 Grade and Re-Contour

The position presented by Baffinland during the 2019 ASR has not substantially changed, subject to further discussion with QIA on the integration of satellite imagery surveys for the assessment of disturbed areas. It should be noted that the location and orientation of Laydown R3 in the 2018 Work Plan was modified in 2019 during construction, and was added to the footprint of Laydown L2. However, there is no material change to the reclamation security holding required as the footprint allocated remained the same. Use of satellite imagery to reconcile actual disturbed areas is still being evaluated by Baffinland and QIA, with the intent that it may be utilized for future security estimates.

2.2 Buildings

2.2.1 Buildings and Foundations

The position presented by Baffinland during the 2019 ASR has increased by $90,000, based on the erection of four (4) buildings for equipment storage at Milne Port in fall 2020. These include three (3) soft walled buildings on LP3 known as the Aecon Workshops with a footprint of 505 m^2 each, and one (1) modular building on L2 with a footprint of 500 m^2 identified as the Sana Workshop. Additionally, during the 2019 QIA Audit the construction of a Carpenter Workshop at Milne Port was identified for which securities were not in place. The Carpenter Workshop has an estimated footprint of 100 m^2. This marginal increase of buildings and foundations is itemized in the EBS as presented in Appendix A, and summarized in Table 2-1.

Table 2-1: Summary of Marginal Increase of Buildings and Foundation Areas

Description	Unit Rate Type	Unit Rate ($/$m^2$)	Quantity (m^2)	Cost ($)[1]
Milne Port				
Aecon Workshops	Soft Walled Building Not Contaminated	38.11	1,650	62,882
Sana Workshop	Modular Building Not Contaminated	47.64	500	23,820
Carpenter Workshop	Fold Away Building Not Contaminated	33.34	100	3,334
		Total	**2250**	**90,000**

2.2.2 *Desalination Plant*

The position presented by Baffinland during the 2019 ASR has decreased by $7,925 based on removal of the proposed desalination plant at Milne Port from the proposed scope of work. This cost allocation was based on the unit rate buildup for a potable water plant.

2.3 20198 Sea Lift Materials

The position presented by Baffinland during previous security estimates was based on the forecasted equipment expected to be delivered to site in 2019. As a result of updated planning, contractor scheduling, and operational needs arising following the Work Plan preparation there were additional materials and equipment mobilized to the Project not considered in the previous security estimates, as well as equipment forecasted that did not arrive and equipment that was backhauled and removed from the Project.

2.3.1 Mechanical and Mobile Equipment

The position presented by Baffinland during previous security estimates was based on the forecasted equipment expected to be delivered to site in 2019. The actual type and quantity of equipment delivered to site in 2019 varied from the forecasted estimate and therefore during the 2019 Reconciliation process Baffinland adjusted the EBS, as itemized in Table 2-4 below, to ensure the 2020 Estimate reflects the most up to date information. Additionally, items in the table identified as Backhauled in 2019 were removed from the site in 2019 on the backhaul sealift. Items with a negative value were the result of less equipment arriving than what was forecast in 2019, and a positive value represent additional equipment to what was represented in the 2019 Work Plan.

Table 2-24. Mechanical and Mobile Equipment Reconciliation

Description	Unit Rate Type	Unit Rate ($/pcs)	Quantity (pcs)	Cost ($)[1]
Inbound in 2019				
Generator	Heavy Equipment	32,950.00	1	32,950
Bucket Wheel Stacker Reclaimer	Heavy Equipment	32,950.00	-2	-65,900
Screen Metso FS353	Heavy Equipment	32,950.00	-1	-32,950
30,000 L Fuel Tanker Truck	Heavy Mobile Equipment	2,075.00	-11	-22,825
745C Rock Truck	Heavy Mobile Equipment	2,075.00	4	8,300
950M Loader	Heavy Mobile Equipment	2,075.00	1	2,075
Heavy Duty Shunt Truck	Heavy Mobile Equipment	2,075.00	-1	-2,075
Feeder Dolly	Heavy Mobile Equipment	2,075.00	-1	-2,075
Fines Mobile Stacker	Heavy Mobile Equipment	2,075.00	-1	-2,075
CONVEYING - Jump Conveyor	Heavy Mobile Equipment	2,075.00	-1	-2,075
CONVEYING - Conveyor Feeder	Heavy Mobile Equipment	2,075.00	-1	-2,075
Pumper fire truck	Heavy Mobile Equipment	2,075.00	-1	-2,075
MOBILE EQUIPMENT - MINE SITE WHEEL DOZER - CAT 824H	Heavy Mobile Equipment	2,075.00	-1	-2,075
922K Wheel Loader	Heavy Mobile Equipment	2,075.00	-1	-2,075
Jet A Truck	Heavy Mobile Equipment	2,075.00	-1	-2,075
D10 Dozer	Heavy Mobile Equipment	2,075.00	-1	-2,075
D8T Dozer	Medium Mobile Equipment	1,162.50	13	3,4881,163
Tri-Trombone flat trailer	Medium Mobile Equipment	1,162.50	-1	-1,163
Zoom Boom 12,000 lbs	Medium Mobile Equipment	1,162.50	-1	-1,163

Description	Unit Rate Type	Unit Rate ($/pcs)	Quantity (pcs)	Cost ($)[1]
4x4 hotseating bus	Medium Mobile Equipment	1,162.50	-1	-1,163
Boom Truck	Medium Mobile Equipment	1,162.50	-1	-1,163
Pressure washing truck	Medium Mobile Equipment	1,162.50	-1	-1,163
Kalamar DRT450	Medium Mobile Equipment	1,162.50	1	1,163
Tower Trailer	Medium Mobile Equipment	1,162.50	3	3,488
Light ERT utility vehicle	Light Mobile Equipment	729.2	-1	-729
Portable water pump	Light Mobile Equipment	730.2	-2	-1,460
Pickup truck (F350 or similar)	Light Mobile Equipment	731.2	-7	-5,118
Genie Manlift z60	Light Mobile Equipment	732.2	-2	-1,464
Genie Manlift s135x	Light Mobile Equipment	733.2	-3	-2,200
Frost Fighter Heater	Light Mobile Equipment	734.2	-6	-4,405
Rescue Boat and Trailer	Light Mobile Equipment	734.2	1	734
Light Plant	Light Equipment	1,583.80	-21	-33,260
Generator/Air Compressor	Light Equipment	1,583.80	-1	-1,584
3rd Party Heavy Mobile Equipment (make up for typical fleet)	Heavy Mobile Equipment	2,075.00	60	124,500
3rd Party Medium Mobile Equipment (make up for typical fleet)	Medium Mobile Equipment	1,162.50	67	77,888
3rd Party Light Mobile Equipment (make up for typical fleet)	Light Mobile Equipment	729.2	65	47,398
Backhauled in 2019				
Decommissioned Drill	Heavy Mobile Equipment	2,075.00	-1	-2,075
Decommissioned Vehicles	Light Mobile Equipment	729.2	-3	-2,188
Hagglunds Snow Vehicle	Light Mobile Equipment	729.2	-1	-729
3rd Party Heavy Mobile Equipment (make up for typical fleet)	Heavy Mobile Equipment	2,075.00	-11	-22,825
3rd Party Medium Mobile Equipment (make up for typical fleet)	Medium Mobile Equipment	1,162.50	-6	-6,975
3rd Party Light Mobile Equipment (make up for typical fleet)	Light Mobile Equipment	729.2	-31	-22,605
		TOTAL	~~81~~79	~~46,000~~44,000

NOTES:
1) Grand total rounded to nearest '000

It was noted during the 2019 ASR process that the quantities of mechanical and mobile equipment characterized in the EBS are not consistent with the quantities in the preliminary inventories provided to QIA by Baffinland during the 2018 Audit, and the quantities the QIA stated were present in their reclamation security model. As copies of the QIA model are not provided as part of the reclamation security estimate, these values cannot be validated by Baffinland, however it is understood that QIA has utilized quantities provided by Baffinland for mechanical and mobile equipment since 2014. As the inventories and the quantities in the respective models vary considerably, the total quantities of equipment should be further validated through evaluation of the available preliminary inventories and the arbitration process entered into between QIA and Baffinland. In the interim, review of the available preliminary inventories with respect to the quantities in the EBS indicate that Baffinland is over-bonded by approximately $606,000. This value has not been taken into account in reconciling costs for 2020, under the expectation that the validation of inventories will be assessed in the arbitration process and the EBS can up updated accordingly to be consistent with actual quantities on site and a consistent methodology agreed to by both parties.

2.3.2 Storage Tanks

In 2019 Baffinland demobilized four (4) water tanks, and three (3) light diesel tanks, as demonstrated in the backhaul summary provided in Appendix C. Baffinland adjusted the EBS, as itemized in Table 2-5 below, to ensure the 2020 Estimate reflects the most up to date information.

Table 2-3: Storage Tanks Reconciliation

Description	Unit Rate Type	Unit Rate ($/ea)	Quantity (ea)	Cost ($)[1]
Water Tanks	Light Tank	1,170.40	-4	-4,682
Fuel Tanks	Light Diesel Tank	2,950.00	-3	-8,850
		TOTAL	**-7**	**-14,000**

NOTES:

1) Grand total rounded to nearest '000

3. 2020 Work Plan

3.1 Introduction

The purpose of this section of the document is to provide a summary of the additional financial security estimated to be required for work items described in the Mary River Project 2020 Work Plan (1 November 2019). The estimated marginal closure and reclamation financial security required to account for 2020 planned work (aka. The '2020 Work Plan Security Estimate') is intended to be aggregated with the changes to the 2019 Work Plan reconciled in the above Section 2 and previous Project closure and reclamation security bonding. The combination of the reconciliation in Section 2 and the estimate presented in this Section 3 will provide a comprehensive update to the 'global' estimate and the marginal increase required for 2020. The result of this approach, the estimated project-wide or 'global' closure and reclamation security bonding totals for the Mary River Project to-date, are presented in Section 4.

A detailed description of the work activities captured in the 2020 Work Plan Security Estimate are described in the Baffinland 2020 Work Plan, and are summarized in Section 3.2 below.

3.1.1 Closure Scenario

The 2020 Work Plan Security Estimate is based on a scenario that assumes all planned activities for 2020 Work Plan have taken place on site and all material/consumables (excluding fuel) that are mobilized to site in 2020 are in full inventory. All other assumptions relating to the estimation of direct and indirect costs, including fuel, associated with the 2020 Work Plan Security Estimate are consistent with the assumptions established in the 2014 Complete Project Financial Security Assessment and previous ASR documentation unless noted otherwise.

3.2 2020 Planned Activities

As described in the 2020 Work Plan, planned work in 2020 is being conducted under the amended Project Certificate No. 005 Amendment No. 2, QIA Commercial Lease No. Q13C301, Type 'A' Water Licence 2AM-MRY1325, Amendment No. 1 and Type 'B' Water Licence 8BC-MRY1416. Additionally, the 2020 Work Plan considers works that are planned based on the anticipated approval of the Phase 2 proposal at a point in 2020. While the 2020 Work Plan considers the scope of the Phase 2 proposal activities planned for 2020 following the issuance of the amended Project Certificate, activities that require the amendment to the Type 'A' Water Licence have not been considered. This approach ensures that adequate securities are considered for each stage of the approval process and reduces the administrative burden of subsequent Work Plan amendments and review following the issuance of the amended Project Certificate.

The following list represents the activities from the 2020 Work Plan planned for implementation in 2020, but will only proceed following the applicable regulatory approvals where required, and approval from QIA including the posting of any relevant marginal security adjustments or adjustments to the Commercial Lease (e.g. OEN, TRAN). This planned work includes:

1. Development and operation of the mine, ore crushing and land transportation, stockpiling and marine shipment of ore;
2. The continued development and construction of infrastructure required at Milne Port and the Mary River Mine Site (Mine Site) and along the Tote Road for the Mary River Project;
3. Continued operation of Mine Site and Milne Port Camps to support ongoing operations and construction activities which will include the use of water and deposition of waste as authorized under existing permits;
4. On-going operation and expansion of permitted quarry and borrow sources; ~~additionally, fifteen (15) new quarries have been identified along the Northern Transportation Corridor to support ongoing maintenance and construction;~~
5. At Milne Port, vessels carrying fuel, equipment and supplies for use at the Mine Site and Milne Port will arrive during open water. Material, fuel and supplies required for operational and construction activities will be transported to the Mine Site year round via the Tote Road;
6. Ongoing environmental effects studies and baseline data collection will continue to support the construction and operation of the Project as well as for future engineering requirements;
7. Continued environmental monitoring in accordance with the approved Project Certificate, licenses, authorizations, management plans and environmental effects monitoring plans;
8. On-going exploration activities including drilling, mapping, prospecting, sampling, and geophysics. Planning of the details of the summer drilling and/or trenching program is not yet finalized;
9. Tote Road improvements to address safety concerns, freshet runoff issues and poor road conditions during the spring and summer periods;
10. Continued construction of additional fuel storage at the project;
11. Site grading and laydown construction for supplies and equipment to support future construction activities and remove ponding and permafrost degradation issues around current infrastructure.
12. Erection of additional maintenance facilities to safely service equipment.

A detailed description of these work activities is provided in the Baffinland 2020 Work Plan.

3.3 2020 Work Plan Security Estimate Assumptions

3.3.1 Direct Cost Assumptions

The following sub-sections describe the assumptions used to establish the direct costs allocated in the 2020 Work Plan Estimate based on the 2020 Work Plan. Please refer to Appendix A for details of this cost allocation based on the Estimate Breakdown Structure (EBS), Appendix B for locations of below noted facilities, and Appendix C for supporting

documentation relating to estimated unit quantities (where available). Direct cost allocations were applied to quantities as indicated in the 2020 Work Plan and consistent with the direct cost assumptions described in the 2014 Complete Project Financial Security Assessment.

3.3.1.1 *Buildings and Foundations*

The 2020 Work Plan Security Estimate allocates $71,000~~429,000~~ plus proportional cover material application costs, in direct costs to account for a marginal increase of buildings and foundations associated with the 2020 Work Plan. This marginal increase of buildings and foundations is itemized in the EBS as presented in Appendix A. This additional cost allocation is based on:

- Mobilization of various trailers, offices and washcars; and
- ~~New slab on grade areas outside the Mine Truck shop and at the KM110 Laydown~~;
- Installation of the Sailivik Camp mine dry~~; and~~.
- ~~Heated storage and welding shop at the KM110 laydown area for maintenance of mine operations equipment.~~

A summary of security costs associated with the marginal increase of buildings and foundations associated with the 2020 Work Plan is shown in Table 3-1~~Table 3-1~~.

Table 3-1: Summary of Marginal Increase of Buildings and Foundation Areas

Description	Unit Rate Type	Unit Rate ($/m²)	Quantity (m²)	Cost ($)[1]
Milne Port				
~~Heated explosive storage building~~	~~Fold Away Building Contaminated~~	~~114.04~~	~~400~~	~~45,616~~
~~Thaw and Wash Bay~~	~~Fold Away Building Contaminated~~	~~114.04~~	~~1250~~	~~142,550~~
~~Warehouse staging area facilty~~	~~Fold Away Building Contaminated~~	~~114.04~~	~~540~~	~~61,582~~
Crusher services trailer (2 x 36 m2)	Modular Building Not Contaminated	47.64	72	3,427
Tote Road				
Washroom facilities at KM26 and KM80 IT Towers (2 x 36 m2)	Modular Building Not Contaminated	47.64	72	3,427
~~Contractor Offices and Garages on KM58 Laydown (4 x 36 m2)~~	~~Modular Building Not Contaminated~~	~~47.6~~	~~144~~	~~6,854~~
Mine Site				
~~Concrete Apron for Mine Truck Shop~~	~~Slab on Grade~~	~~30.0~~	~~1020~~	~~30,600~~
~~Concrete Pad at 110 Laydown for Tire Maintenance~~	~~Slab on Grade~~	~~30.0~~	~~60~~	~~1,800~~
~~Heated explosive storage building~~	~~Fold Away Building Contaminated~~	~~114.04~~	~~400~~	~~45,616~~
~~Welding Shop at KM110 Laydown~~	~~Fold Away Building Not Contaminated~~	~~33.34~~	~~540~~	~~18,004~~
~~Heated building for equipment storage at KM110 laydown~~	~~Fold Away Building Not Contaminated~~	~~33.34~~	~~60~~	~~2,000~~
~~Heated building for equipment storage at KM110 laydown~~	~~Fold Away Building Not Contaminated~~	~~33.34~~	~~120~~	~~4,001~~
Sailivik Camp Mine Dry	Modular Building Not Contaminated	47.64	1,200	57,120
Office trailers for Environment (2 x 36 m2)	Modular Building Not Contaminated	47.64	72	3,427
Office trailers for Crushing (2 x 36 m2)	Modular Building Not Contaminated	47.64	72	3,427

Description	Unit Rate Type	Unit Rate ($/m²)	Quantity (m²)	Cost ($)[1]
		TOTAL	~~6,022~~1,488	~~429,000~~71,000

NOTES:
1) Grand total rounded to nearest '000

~~Additionally, the 2020 Work Plan includes an additional $167,000 for the construction of concrete foundations for bulk material handling infrastructure at Milne Port (Car Dumper and Conical Stockpile), as well as four (4) explosives magazines in the Northern Transportation Corridor. A summary of security costs associated with the marginal increase of buildings and foundations associated with the 2020 Work Plan following the issuance of the Project Certificate for Phase 2, and is shown in Table 3-2.~~

~~Table 3-2: Summary of Marginal Increase of Buildings and Foundation Areas~~

Description	Unit Rate Type	Unit Rate ($/m²)	Quantity (m²)	Cost ($)[1]
		~~Milne Port~~		
~~Car Dumper and Reclaim Tunnel Basement Foundation~~	~~Precast Concrete Foundation~~	~~30.9~~	~~2,235~~	~~68,972~~
~~Conical Stockpile Tunnel foundation~~	~~Precast Concrete Foundation~~	~~30.9~~	~~1040~~	~~32,094~~
		~~Tote Road~~		
~~Four (4) Pre-fabricated Explosives Magazines (144 m2 ea)~~	~~Modular Building Contaminated~~	~~114.9~~	~~576~~	~~66,182~~
		~~TOTAL~~	~~3,851~~	~~167,000~~

~~NOTES:~~
~~1) Grand total rounded to nearest '000~~

3.3.1.2 *Mechanical and Mobile Equipment*

The 2020 Work Plan Security Estimate allocates $~~1,488,000~~318,000, plus cover material application costs, in direct costs to account for a marginal increase of mechanical and mobile equipment as itemized in the 2020 Work Plan. This cost allocation is based on an additional ~~57~~56 pieces of Baffinland owned mechanical or mobile equipment top be mobilized to site in 2020. ~~This is in addition to 265 pieces of 3rd Party 'Heavy Mobile Equipment', 230 pieces of 3rd Party 'Medium Mobile Equipment', and 109 pieces of 3rd Party Light Mobile Equipment', to update the 'Typical' 3rd Party equipment fleet adopted in the 2017 ASR Process to 2020 expectations.~~

A summary of the marginal increase of costs associated with mechanical or mobile equipment and associated unit rates is shown in Table 3-~~23~~.

Table 3-~~23~~: Summary of Marginal Increase of Mechanical and Mobile Equipment

Description	Unit Rate Type	Unit Rate ($/pcs)	Quantity (pcs)	Cost ($)[1]
Feed Convyor	Heavy Equipment	32,950.00	1	32,950
~~GE 16V250 Genset 3500 kw~~	~~Heavy Equipment~~	~~32,950.00~~	~~5~~	~~164,750~~
Generator 1000 kW	Heavy Equipment	32,950.00	1	32,950
Conveyors	Heavy Equipment	32,950.00~~32,951.00~~	~~3~~3	98,850~~98,853~~

Description	Unit Rate Type	Unit Rate ($/pcs)	Quantity (pcs)	Cost ($)[1]
Jaw crusher unit	Heavy Equipment	32,950.00~~32,952.00~~	1~~1~~	32,950~~32,952~~
Screener + Cone crusher unit	Heavy Equipment	32,950.00~~32,953.00~~	1~~1~~	32,950~~32,953~~
~~349 Excavator~~	~~Heavy Mobile Equipment~~	~~2,075.00~~	~~1~~	~~2,075~~
908 Loader	Heavy Mobile Equipment	2,075.00	2	4,150
950 Loader	Heavy Mobile Equipment	2,075.00	2	4,150
~~345 Excavator~~	~~Heavy Mobile Equipment~~	~~2,075.00~~	~~1~~	~~2,075~~
~~988 loader with forks~~	~~Heavy Mobile Equipment~~	~~2,075.00~~	~~1~~	~~2,075~~
~~Western Star Tractor~~	~~Heavy Mobile Equipment~~	~~2,075.00~~	~~2~~	~~4,150~~
~~6060 Shovel~~	~~Heavy Mobile Equipment~~	~~2,075.00~~	~~1~~	~~2,075~~
~~793 Haul Truck~~	~~Heavy Mobile Equipment~~	~~2,075.00~~	~~3~~	~~6,225~~
~~992 Loader~~	~~Heavy Mobile Equipment~~	~~2,075.00~~	~~1~~	~~2,075~~
~~16M Grader~~	~~Heavy Mobile Equipment~~	~~2,075.00~~	~~1~~	~~2,075~~
D10 Dozer	Heavy Mobile Equipment	2,075.00	1	2,075
~~374 Excavator~~	~~Heavy Mobile Equipment~~	~~2,075.00~~	~~2~~	~~4,150~~
374F Excavator	Heavy Mobile Equipment	2,075.00	4	8,300
~~745C truck~~	~~Heavy Mobile Equipment~~	~~2,075.00~~	~~5~~	~~10,375~~
600kw Generators	Medium Equipment	3,392.50	2	6,785
60kw Generator	Medium Equipment	3,392.50~~3,393.50~~	3~~3~~	10,178~~10,181~~
Atlas 1000 mVA Transformers	Medium Equipment	3,392.50~~3,394.50~~	4~~4~~	13,570~~13,578~~
~~24p Passenger Bus~~	~~Medium Mobile Equipment~~	~~1,162.50~~	~~1~~	~~1,163~~
~~Fire Truck (4x4)~~	~~Medium Mobile Equipment~~	~~1,162.50~~	~~1~~	~~1,163~~
740B Water Truck	Medium Mobile Equipment	1,162.50	1	1,163
~~F550 Snow Plow~~	~~Medium Mobile Equipment~~	~~1,162.50~~	~~2~~	~~2,325~~
14M Grader	Medium Mobile Equipment	1,162.50	1	1,163
Fuel Tanker	Medium Mobile Equipment	1,162.50	1	1,163
~~Service/Fuel Truck (F550)~~	~~Medium Mobile Equipment~~	~~1,162.50~~	~~8~~	~~9,300~~
Jet A Truck	Medium Mobile Equipment	1,162.50	1	1,163
Cube truck	Medium Mobile Equipment	1,162.50	2	2,325
~~740 water truck~~	~~Medium Mobile Equipment~~	~~1,162.50~~	~~1~~	~~1,163~~
~~Vac Truck~~	~~Medium Mobile Equipment~~	~~1,162.50~~	~~2~~	~~2,325~~
48p School Bus	Medium Mobile Equipment	1,162.50	2	2,325
Steam truck	Medium Mobile Equipment	1,162.50	1	1,163
~~Telehandler~~	~~Medium Mobile Equipment~~	~~1,162.50~~	~~1~~	~~1,163~~
~~D65 Dozer~~	~~Medium Mobile Equipment~~	~~1,162.50~~	~~1~~	~~1,163~~
Track Mounted Drill Rig	Medium Mobile Equipment	1,162.50	2	2,325
4x4 hotseating bus	Medium Mobile Equipment	1,162.50	2	2,325
Flat bed boom truck	Medium Mobile Equipment	1,162.50	1	1,163
CCM200E Concrete Mixer	Medium Mobile Equipment	1,162.50	1	1,163
Pressure Washing Truck	Medium Mobile Equipment	1,162.50	1	1,163
~~D6T Dozer~~	~~Medium Mobile Equipment~~	~~1,162.50~~	~~1~~	~~1,163~~
~~Portable C130 Jaw Crusher~~	~~Medium Mobile Equipment~~	~~1,162.50~~	~~3~~	~~3,488~~
Light Plant	Light Equipment	1,583.80	~~19~~10	~~30,092~~15,838
~~Light Vehicles (F250 or equiv.)~~	~~Light Mobile Equipment~~	~~729.2~~	~~1~~	~~729~~
~~Kubota Side by Side~~	~~Light Mobile Equipment~~	~~729.2~~	~~1~~	~~729~~
~~259B Skid Steer~~	~~Light Mobile Equipment~~	~~730.2~~	~~1~~	~~730~~
~~Light Vehicles (F350 or equiv.)~~	~~Light Mobile Equipment~~	~~731.2~~	~~28~~	~~20,474~~
Larue Snow Blower	Light Mobile Equipment	729.2~~732.2~~	1~~1~~	729~~732~~
~~Skid steer snow blower~~	~~Light Mobile Equipment~~	~~733.2~~	~~2~~	~~1,466~~

Description	Unit Rate Type	Unit Rate ($/pcs)	Quantity (pcs)	Cost ($)[1]
~~Skid Steer~~	~~Light Mobile Equipment~~	~~734.2~~	~~3~~	~~2,203~~
~~Powertraxx Tracked Vehicle~~	~~Light Mobile Equipment~~	~~735.2~~	~~1~~	~~735~~
257 Skid steer	Light Mobile Equipment	729.2~~736.2~~	2~~2~~	1,458~~1,472~~
Blaze Cube Frost Fighters	Light Mobile Equipment	729.2~~737.2~~	2~~2~~	1,458~~1,474~~
~~Light Vehicles (F350 or equiv.)~~	~~Light Mobile Equipment~~	~~738.2~~	~~8~~	~~5,906~~
~~3rd Party Heavy Mobile Equipment (make up for 'typical' fleet)~~	~~Heavy Mobile Equipment~~	~~2,075.0~~	~~265~~	~~549,875~~
~~3rd Party Medium Mobile Equipment (make up for 'typical' fleet)~~	~~Medium Mobile Equipment~~	~~1,162.5~~	~~230~~	~~267,375~~
~~3rd Party Light Mobile Equipment (make up for 'typical' fleet)~~	~~Light Mobile Equipment~~	~~729.2~~	~~109~~	~~79,483~~
		TOTAL	~~75856~~	$~~1,488,000~~318,000

NOTES:
1) Grand total rounded to nearest '000

3.3.1.3 *Site Works*

The 2020 Work Plan Security Estimate allocates $~~5,980,000~~61,000, in direct costs to account for a marginal increase of disturbed areas that would have to graded and re-contoured associated with the 2020 Work Plan. This additional cost allocation is based on:

- ~~Development of nineteen (19) new quarries with a total footprint of 3,000,000 m².~~
- ~~Construction of twenty six (26) laydowns totaling a footprint of 546,000 m².~~
- New Hazardous Waste Containment facilities at Milne Port with a lined footprint of 72 m^2.
- New Hazardous Waste Containment facilities at the Mine Site with a lined footprint of 456 m^2.
- Expansion of the warehouse laydown area at the Mine with a total footprint of 3,200 m^2.
- ~~Expansion of the mine workshop area and adjacent haul road with a total footprint of 18,000 m².~~
- ~~Expansion of the explosive magazine storage area at the Mine Site with a total footprint of 8,000 m².~~
- Addition of a second Geotube settling area at the Waste Rock Facility, with a lined footprint of 3,000 m^2.

This marginal increase is based on an additional ~~3,836,728~~16,278 m^2 of disturbed areas at a unit rate of $1.49/$m^2$ for unlined or $4.12/$m^2$ for lined, and is itemized in the EBS as presented in Appendix A and outlined in Table 3-~~43~~34.

Table 3-~~43~~34: Summary of Marginal Increase of Disturbed Areas Requiring Grade and Re-Contour

Description	Unit Rate Type	Unit Rate ($/$m^2$)	Quantity (m^2)	Cost ($)[1]
Milne Port				

Description	Unit Rate Type	Unit Rate ($/m²)	Quantity (m²)	Cost ($)[1]
~~Additional disturbed area for heated explosives storage area~~	~~Grade and Contour~~	~~1.49~~	~~27,700~~	~~41,273~~
New Hazardous Waste Containment Facilities	Grade and Re-Contour With Liner	4.12	72	297
		~~Tote Road~~		
~~Laydown LD-1~~	~~Grade and Contour~~	~~1.49~~	~~34,300~~	~~51,107~~
~~Laydown LD-5~~	~~Grade and Contour~~	~~1.49~~	~~11,700~~	~~17,433~~
~~Laydown LD-6~~	~~Grade and Contour~~	~~1.49~~	~~14,500~~	~~21,605~~
~~Laydown LD-7~~	~~Grade and Contour~~	~~1.49~~	~~10,500~~	~~15,645~~
~~Laydown LD-8~~	~~Grade and Contour~~	~~1.49~~	~~82,000~~	~~122,180~~
~~Laydown LD-9~~	~~Grade and Contour~~	~~1.49~~	~~16,300~~	~~24,287~~
~~Laydown LD-10~~	~~Grade and Contour~~	~~1.49~~	~~6,400~~	~~9,536~~
~~Laydown LD-11~~	~~Grade and Contour~~	~~1.49~~	~~3,900~~	~~5,811~~
~~Laydown LD-13~~	~~Grade and Contour~~	~~1.49~~	~~10,100~~	~~15,049~~
~~Laydown LD-14~~	~~Grade and Contour~~	~~1.49~~	~~9,600~~	~~14,304~~
~~Laydown LD-15~~	~~Grade and Contour~~	~~1.49~~	~~28,800~~	~~42,912~~
~~Laydown LD-17~~	~~Grade and Contour~~	~~1.49~~	~~37,200~~	~~55,428~~
~~Laydown LD-19~~	~~Grade and Contour~~	~~1.49~~	~~25,000~~	~~37,250~~
~~Laydown LD-20~~	~~Grade and Contour~~	~~1.49~~	~~35,300~~	~~52,597~~
~~Laydown LD-21~~	~~Grade and Contour~~	~~1.49~~	~~19,800~~	~~29,502~~
~~Laydown LD-22~~	~~Grade and Contour~~	~~1.49~~	~~24,700~~	~~36,803~~
~~Laydown LD-23~~	~~Grade and Contour~~	~~1.49~~	~~15,500~~	~~23,095~~
~~Laydown LD-24~~	~~Grade and Contour~~	~~1.49~~	~~3,400~~	~~5,066~~
~~Laydown LD-25~~	~~Grade and Contour~~	~~1.49~~	~~17,400~~	~~25,926~~
~~Laydown LD-26~~	~~Grade and Contour~~	~~1.49~~	~~25,000~~	~~37,250~~
~~Laydown LD-27~~	~~Grade and Contour~~	~~1.49~~	~~28,200~~	~~42,018~~
~~Laydown LD-28~~	~~Grade and Contour~~	~~1.49~~	~~17,400~~	~~25,926~~
~~Laydown LD-29~~	~~Grade and Contour~~	~~1.49~~	~~14,600~~	~~21,754~~
~~Laydown LD-30~~	~~Grade and Contour~~	~~1.49~~	~~23,300~~	~~34,717~~
~~Laydown LD-31~~	~~Grade and Contour~~	~~1.49~~	~~13,900~~	~~20,711~~
~~Laydown LD-32~~	~~Grade and Contour~~	~~1.49~~	~~17,200~~	~~25,628~~
~~Laydown R3 Expansion~~	~~Grade and Contour~~	~~1.49~~	~~73,275~~	~~109,180~~
~~Quarry PQ2~~	~~Grade and Contour~~	~~1.49~~	~~188,000~~	~~280,120~~
~~Quarry Q27~~	~~Grade and Contour~~	~~1.49~~	~~110,000~~	~~163,900~~
~~Quarry Q42~~	~~Grade and Contour~~	~~1.49~~	~~70,000~~	~~104,300~~
~~Quarry PQ5a~~	~~Grade and Contour~~	~~1.49~~	~~230,000~~	~~342,700~~
~~Quarry PQ9a~~	~~Grade and Contour~~	~~1.49~~	~~90,000~~	~~134,100~~
~~Quarry PQ9b~~	~~Grade and Contour~~	~~1.49~~	~~30,000~~	~~44,700~~
~~Quarry PQ10B~~	~~Grade and Contour~~	~~1.49~~	~~100,000~~	~~149,000~~
~~Quarry PQ13~~	~~Grade and Contour~~	~~1.49~~	~~460,000~~	~~685,400~~
~~Quarry PQ14B~~	~~Grade and Contour~~	~~1.49~~	~~110,000~~	~~163,900~~
~~Quarry PQ15A~~	~~Grade and Contour~~	~~1.49~~	~~90,000~~	~~134,100~~
~~Quarry PQ15B~~	~~Grade and Contour~~	~~1.49~~	~~70,000~~	~~104,300~~
~~Quarry PQ4B~~	~~Grade and Contour~~	~~1.49~~	~~130,000~~	~~193,700~~
~~Quarry PQ5B~~	~~Grade and Contour~~	~~1.49~~	~~580,000~~	~~864,200~~
~~Quarry PQ6B~~	~~Grade and Contour~~	~~1.49~~	~~230,000~~	~~342,700~~
~~Quarry PQ10A~~	~~Grade and Contour~~	~~1.49~~	~~130,000~~	~~193,700~~
~~Quarry PQ12B~~	~~Grade and Contour~~	~~1.49~~	~~200,000~~	~~298,000~~
~~Quarry PQ14A~~	~~Grade and Contour~~	~~1.49~~	~~50,000~~	~~74,500~~
~~Quarry PQ2B~~	~~Grade and Contour~~	~~1.49~~	~~240,000~~	~~357,600~~
~~Quarry P2~~	~~Grade and Contour~~	~~1.49~~	~~80,000~~	~~119,200~~
		Mine Site		
Warehouse Laydown Area	Grade and Contour	1.49	3,200	4,768

Description	Unit Rate Type	Unit Rate ($/m²)	Quantity (m²)	Cost ($)[1]
~~Expansion of the mine workshop area and haul road~~	~~Grade and Contour~~	~~1.49~~	~~18,000~~	~~26,820~~
~~Explosives Pad Expansion~~	~~Grade and Contour~~	~~1.49~~	~~8,000~~	~~11,920~~
Hazardous Waste Berm Containment facilities	Grade and Re-Contour With Liner	4.12	456	1,879
Geotube Settling Pond	Grade and Re-Contour With Liner	4.12	3,000	12,360
~~Waste Rack Facility Sedimentation Pond~~	~~Grade and Re-Contour With Liner~~	~~4.12~~	~~50,000~~	~~206,000~~
Mine Haul Road Sedimentation Pond	Grade and Re-Contour With Liner	4.12	10,000	41,200
		TOTAL	16,728~~3,901,603~~	61,000~~5,980,000~~

NOTES:
1) Grand total rounded to nearest '000

~~The 2020 Work Plan Security Estimate additionally allocates $826,000 in direct costs to account for additional disturbed area for activities that require the issuance of the amended Project Certificate for Phase 2. The additional cost allocation is based on:~~

- ~~Newly disturbed area for the construction of the Car Dumper Basement at Milne Port with a total area of 22,797 m²;~~
- ~~Construction of the rail service road at Milne Port with a total area of 21,500 m²;~~
- ~~Construction of laydown areas for the installation of explosives magazines on the Tote Road with a total area of 134,920 m²;~~
- ~~Construction of access roads between the Tote Road and the rail alignment, with a total area of 315,278 m²; and~~
- ~~Construction of eight (8) re-alignments of the Tote Road for rail corridor level crossings with a total area of 112,000 m².~~

~~A summary of the marginal increase of disturbed areas that would have to graded and re-contoured and their associated unit rates is shown in Table 3-5 and is itemized in the EBS as presented in Appendix A.~~

~~Table 3-5: Summary of Marginal Increase of Disturbed Areas Requiring Grade and Re-Contour~~

Description	Unit Rate Type	Unit Rate ($/m²)	Quantity (m²)	Cost ($)[1]
	Milne Port			
Car Dumper Basement Disturbed area	Grade and Contour	1.49	15,300	22,797
Service Access Road for Rail Alignment at KM 0	Grade and Contour	1.49	21,500	32,035
	Tote Road			
Rail Access Roads	Grade and Contour	1.49	315,278	469,764
Explosives magazines laydowns	Grade and Contour	1.49	90,550	134,920
Tote Road Level Crossing (KM1.9)	Grade and Contour	1.49	14,000	20,860
Tote Road Level Crossing (KM9)	Grade and Contour	1.49	14,000	20,860
Tote Road Level Crossing (KM12)	Grade and Contour	1.49	14,000	20,860
Tote Road Level Crossing (KM23)	Grade and Contour	1.49	14,000	20,860

Description	Unit Rate Type	Unit Rate ($/m²)	Quantity (m²)	Cost ($)[1]
Tote Road Level Crossing (KM55)	Grade and Contour	1.49	14,000	20,860
Tote Road Level Crossing (KM86)	Grade and Contour	1.49	14,000	20,860
Tote Road Level Crossing (KM91)	Grade and Contour	1.49	14,000	20,860
Tote Road Level Crossing (KM95)	Grade and Contour	1.49	14,000	20,860
		TOTAL	555,000	826,000

NOTES:
1) Grand total rounded to nearest '000

3.3.1.4 *Storage Tanks*

The 2020 Work Plan Security Estimate allocates $7,00043,000 in direct costs to account for the mobilization of additional water and fuel tanks to the Project Site in the 2020 Work Plan. A summary of the marginal increase of costs associated with water and fuel tanks and their associated unit rates is shown in Table 3-46 and is itemized in the EBS as presented in Appendix A.

Table 3-46: Summary of Marginal Increase of Storage Tanks

Description	Unit Rate Type	Unit Rate ($/ea)	Quantity (ea)	Cost ($)[1]
Water Tanks	Light Tank	1,710.4	4	6,842
Fuel Tanks	Light Diesel Tank	2,950.0	1	2,950
	Medium Mobile Diesel Tank	8,381.3	4	33,525
		TOTAL	49	43,0007,000

NOTES:
1) Grand total rounded to nearest '000

The 2020 Work Plan Security Estimate additionally allocates $137,000 in direct costs to account for the construction of one (1) 15 million litre arctic diesel tanks at the Mine Site following the issuance of the amended Project Certificate for Phase 2. A summary of the marginal increase of costs associated with water and fuel tanks and their associated unit rates is shown in Table 3-7 and is itemized in the EBS as presented in Appendix A.

Table 3-7: Summary of Marginal Increase of Storage Tanks – Post Project Certificate

Description	Unit Rate Type	Unit Rate ($/ea)	Quantity (ea)	Cost ($)[1]
Fuel Tanks	Largest Diesel Tanks	137,277.5	1	137,278
		TOTAL	1	137,000

NOTES:
1) Grand total rounded to nearest '000

3.3.1.5 *Piping*

The 2020 Work Plan Security Estimate allocates $199,000 to account for the installation of 3,750 m of new piping in the Mine Site area. The cost allocation is based on a total of 250 m for a new fuel line to connect the bulk fuel storage facilities, and 3,500 m of piping to transfer water from Deposit 1 to the Waste Rock Facility. A summary of the marginal increase in costs

associated with the piping and the associated unit rate is show in Table 3-58, and itemized in the EBS presented in Appendix A.

Table 3-58: Summary of Marginal Increase for ~~Culvert Removal~~Piping

Description	Unit Rate Type	Unit Rate ($/m)	Quantity (m)	Cost ($)[1]
Mine Site				
Fuel Line - Bulk Fuel Storage Facility	Piping	53.13	250	13,283
Transfer Line for Deposit 1 to Waste Rock Facility	Piping	53.13	3,500	185,955
		TOTAL	**3,750**	**199,000**

NOTES:
1) Grand total rounded to nearest '000

3.3.1.6 *Cabling*

The 2020 Work Plan Security Estimate allocates $12,750 to account for the installation of 600 m of cabling at the Mine Site for the installation of additional permanent lighting at the warehouse area. This cost allocation is based the unit rate of $21.3 per metre, and a total length of 600 m of cable, and is itemized in the EBS presented in Appendix A.

3.3.1.7 *Incinerators*

The 2020 Work Plan Security Estimate allocates $16,000 to account for the installation of two (2) incinerator units; one (1) at the Mine Site and one (1) at Milne Port. This cost allocation is based the unit rate of $7,925 per vendor unit, and two (2) units total, and is itemized in the EBS presented in Appendix A.

~~3.3.1.7~~3.3.1.8 *Fill Application*

The 2020 Estimate allocates an additional $~~231,082~~61,000 to account for application of cover material due to the marginal increase of demolition materials to be disposed of on-site. This cost allocation is based on an additional ~~5,951~~1,559 m^2 of compacted material requiring fill application at an assumed disposal depth of six (6) meters. A summary of the marginal increase of fill application in the 2020 Security is shown in Table 3-69.

Table 3-69: Marginal Increase of Fill Application

Description	Unit Rate ($/m^2)	Quantity (m^2)	Cost ($)[1]
Mine Site			
Fill Application for 2020 Estimate	38.8	~~5,170~~1,559	~~200,750~~60,528
	TOTAL	**1,559~~5,170~~**	**~~200,750~~61,000**

NOTES:
1) Grand total rounded to nearest '000

3.3.2 Indirect Cost Assumptions

The following section describes the assumptions used to establish the indirect costs allocated for the purpose of the 2020 Work Plan Security Estimate. Unless noted otherwise, see the 2014 Complete Project Financial Security Assessment (H349000-1000-07-126-0018, Rev. 1)

for further supporting information on the specific indirect unit rates and multipliers used below. ~~For clarity, indirect costs for activities pre- and post-issuance of the amended Project Certificate for Phase 2 are herein combined.~~

3.3.2.1 *On-Site Fuel Demobilization and Reclamation Fuel Mobilization*

The 2020 Estimate allocates an additional $~~1,078,000~~21,000 to account for the demobilization of fuel stored on Site, and the mobilization of fuel required for the marginal increase in reclamation activities captured in the 2020 Estimate. ~~Based on the increased fuel capacity in 2020 of an additional 15,000,000 L at the Mine Site, it~~ It is assumed 50% of this fuel would need to be demobilized at closure. This is based both on the assumption that the tanks would be likely to be entirely full at closure, and that some fuel on Site would be available for reclamation activities. The fuel demobilization rate is assumed to be $0.10/L.

The additional $~~1,078,000~~21,000 allocation for fuel mobilization is based on the cost of mobilizing 50% of the fuel required for marginal reclamation and closure activities, including direct activities, power generation, and heat production. Reclamation for the marginal increase in activities in 2020 are estimated to require and additional ~~685,000~~45,000 L of Type-1 fuel (see Appendix A). Marginal increases in camp operation during reclamation is estimated to require an additional ~~6,722~~512 person-days on-site. Each person-day on site is assumed to consume 116L of Type-1 fuel for heat and power generation. This totals ~~776,000~~59,000 L of Type-1 fuel required to heat and power the camp. Fuel mobilization rate is assumed to be $0.40/L.

See Appendix A for itemized person-day and fuel consumption quantities per item in the ~~2019~~ 2020 Estimate.

~~*3.3.2.2 Off-Site Disposal of Hazardous and Non-Hazardous Waste*~~

~~The 2020 Estimate allocates a marginal increase of $2,858,000 to account for the demobilization of ammonium nitrate planned to be mobilized to Site in 2020. The previous volume of ammonium nitrate accounted for in the 2109 estimate was 12,142 m³. The 2020 Work Plan indicates an estimated total volume of ammonium nitrate required in 2020 at 20,125 m³, which is an increase of 7,983 m³, at a backhaul unit rate for dangerous goods of $358/m³.~~

~~3.3.2.3~~3.3.2.2 *Mobilization of Workers Required for Reclamation*

The 2019 Estimate allocates an additional $~~618,000~~42,000 for worker mobilization. Detailed assumptions for mobilization of workers required for marginal closure and reclamation activities are as follows.

Person-hours required to complete direct cost related on-site marginal reclamation activities is estimated to be ~~75,108~~5,117 hrs or ~~7,511~~512 person-days (based on 10hr/day productivity). See Appendix A for itemized person-day allocations per 2020 Estimate item.

- Assume 70% of hires (~~5,258~~359 person-days) are from southern communities and 30% (~~2,254~~154 person-days) are from northern communities.
- Cost per person-day on site for worker mobilization from southern communities is $85.45/person-day on-site.
- Cost per person-day on site for worker mobilization from northern communities is $75.00/person-day on-site

~~3.3.2.4~~3.3.2.3 *Worker Accommodation & Camp Operation*

The 2020 Estimate allocates an additional $~~1,694,000~~115,000 for worker accommodation and camp operation during marginal reclamation activities associated with the 2020 Estimate. Assumptions for worker accommodation and camp operation are:

- Person-hours required to complete direct cost related on-site marginal reclamation activities is estimated to be ~~75,108~~5,117 hrs or ~~7,511~~512 person-days (based on 10hr/day productivity). See Appendix A for itemized person-day allocations.
- Cost for accommodation and camp operation is assumed to be $225.50/person-day and includes camp maintenance, catering, housekeeping, and fuel costs.

~~3.3.2.5~~3.3.2.4 *Mobilization and Demobilization of Equipment and Materials*

The ~~2019~~ 2020 Estimate allocates an additional $~~948,000~~86,000 to account for mobilization and demobilization of equipment and materials. These are indirect costs for moving equipment and materials to and from the reclamation site. The amount is based the assumption that mobilization and demobilization cost are estimated as 10% of total direct costs.

~~3.3.2.6~~3.3.2.5 *Supervision, Project Management and Contract Administration*

The ~~2019~~2020 Estimate includes a project supervision, management and contract administration indirect cost allowance of $~~891,000~~81,000 or 9.4% of total direct costs, contaminated soil treatment costs, care and maintenance costs, and closure monitoring/reporting costs. Project supervision, management and contract administration indirect costs include, but are not limited to:

- Contract strategy, administration and expediting;
- Construction logistics, planning, scheduling, supervision and manpower forecasts;
- Labour relations, safety;
- Field office management, temporary facilities;
- Materials receiving and warehousing;
- Progress monitoring, trending and reporting;
- Cost performance monitoring, trending and claims processing; and
- Quality assurance.

~~3.3.2.7~~3.3.2.6 *Engineering Fees*

The ~~2019~~2020 Estimate includes an engineering, design and execution planning indirect cost allowance of $~~370,000~~33,000 or 3.9% of the total direct costs.

~~3.3.2.8~~3.3.2.7 *Contingency*

The ~~2019~~ 2020 Estimate includes an additional contingency of $~~1,593,000~~137,000 or 12.5% of the total of direct costs, mobilization and demobilization of equipment and materials costs, worker accommodation and camp operation costs, mobilization of workers costs, care and maintenance costs, and closure monitoring/reporting costs.

3.3.3 Exclusions

The listed activities below are recognized by Baffinland as being required to be conducted in an unforeseen closure and reclamation scenario, but additional costs have not been included

in the 2020 Work Plan Security Estimate on the basis that it is Baffinland's position that the 2020 Work Plan activities do not warrant additional cost allocations for these activities. Excluded activities from the 2020 Work Plan Security Estimate are:

- Post Closure Monitoring – No Changes to the Post Closure Monitoring required in 2020 and no updates to Post Closure Monitoring completed in the Interim Closure and Reclamation Plan in 2019.
- Contaminated Soil Treatment – the allocation for Contaminated Soil Treatment is sufficient based on the scope of the 2020 Work Plan.
- Off-Site Disposal of Hazardous and Non-Hazardous Waste – the allocation for off-Site disposal is sufficient based on the scope of the 2020 Work Plan.

4. 2020 Estimate Summary

The 2020 Estimate is inclusive of all closure and reclamation costs estimated to be required for a 3rd Party Contractor to perform the work in a 'worst-case' scenario for all disturbed areas, project components and project activities existing on the Mary River Project site upon conclusion of the 2020 Work Plan, including legacy exploration phase liabilities.

Table 4-1~~Table 4-1~~ presents the 'global' closure and reclamation security estimated to be required based on the 2019 ASR Estimate (Column C) and the 2020 Work Plan Estimate including reconciliation for 2019 (Column D), compared to the amount already posted (Column E).

Table 4-1: Mary River Project 'Global' Closure and Reclamation Security Summary[1] – 2020 Work Plan

	A	B	C	D	E	F	G
	Authorization	Liability	Global Estimate from 2019 Estimate ($)	2020 Estimate, Including 2019 Reconciliation ($)	Total 'Global' Estimated Security for 2020 ($)	Total Posted as of Dec. 31, 2010 ($)	Marginal Adjustment to be Posted ($)
					C + D		E - F
1	Type A 2AM-MRY1325	IOL[2]	96,438,000	1,372,000	97,810,000	104,687,658	-6,877,658
2		Crown	1,802,000	-	1,802,000	1,448,801	353,199
3		Water	1,387,000	-11,000	1,376,000	-	-
4		Land	96,852,878	1,383,000	98,235,878	-	-
5	*Subtotal Type A*		*98,240,000*	*1,372,000*	*99,612,000*	*106,136,459*	*-6,524,459*
6	Type B Exploration2BE-MRY1421 [3]	IOL	165,000	-	165,000	-	165,000
7		Crown	1,082,000	-	1,082,000	1,250,000	-168,000
8		Water	18,000	-	18,000	-	-
9		Land	1,229,000	-	1,229,000	-	-
10	*Subtotal Type B Exploration*		*1,247,000*	-	*1,247,000*	*1,250,000*	*-3,000*
11	DFO Security Associated with Ore Dock	IOL[2]	-	-	-	-	-
12		Crown	563,000	-	563,000	563,000	-
13		Water	563,000	-	563,000	563,000	-
14		Land	-	-	-	-	-
15	DFO Security Associated with Freight Dock	IOL[2]	-	-	-	-	-
16		Crown	4,250,000	-	4,250,000	4,250,000	-
17		Water	4,250,000	-	4,250,000	4,250,000	-
18		Land	-	-	-	-	-
19	*Subtotal DFO*		*4,813,000*	-	*4,813,000*	*4,813,000*	-
20	AANDC Land Lease 47H/16-1-2 [4]	IOL[2]	-	-	-	-	-
21		Crown	4,975,000	-	4,975,000	4,975,000	-
22		Water	-	-	-	-	-
23		Land	4,975,000	-	4,975,000	4,975,000	-
24	*Subtotal AANDC Land Lease*		*4,975,000*	-	*4,975,000*	*4,975,000*	-
25	**GRAND TOTAL**		**105,025,000**	**1,372,000**	**110,647,000**	**117,174,459**	-

NOTES:
1) Totals rounded to nearest '000 in CAD
2) Security relating to IOL held by Qikiqtani Inuit Association (QIA) under Commercial Lease No. Q13C301
3) As per Mary River Exploration Project Closure and Reclamation Plan (BAF-PH1-830-P16-0038, Rev 1)
4) As per Closure and Reclamation Strategy and Financial Security Estimate for Nunavut Lease #47H/16-1-2 (H349001-2000-07-126-0001, Rev.0)

5. Supporting Documents

In addition to information presented within this document, please refer to the following appendices for supporting information:

- Refer to Appendix A for the 2020 Estimate Breakdown Structure (EBS).
- Refer to Appendix B for updated 2020 Work Plan Layouts.
- Refer to Appendix C for Supporting Documentation

Appendix A:

2020 Estimate Breakdown Structure (EBS)

Appendix B

Updated Site Layouts

2020 Work Plan - Mine Site Layout

2020 Work Plan – Milne Port Layout

2020 Work Plan – Tote Road Layout

Appendix C

Supporting Documentation