



# **BAFFINLAND IRON MINES CORPORATION, MARY RIVER PROJECT, QIA 2017 COMPREHESIVE SECURITY ESTIMATE ADDENDUM**

December 5, 2016

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QIKIQTANI INUIT ASSOCIATION

Baffinland Iron Mines Corporation, Mary River Project,  
QIA 2017 Comprehensive Security Estimate  
Addendum



December 5, 2016

Qikiqtani Inuit Association  
P.O. Box 1340  
Iqaluit, NU, X0A 0H0

**ATTENTION: Stephen Williamson Bathory**

**RE: BAFFINLAND IRON MINES CORPORATION, MARY RIVER PROJECT, QIA 2017  
COMPREHENSIVE SECURITY ESTIMATE ADDENDUM**

Following discussions with Baffinland Iron Mines Corporation, ARKTIS Solutions Inc. has made minor revisions to the Baffinland Iron Mines Corporation, Mary River Project, QIA 2017 Comprehensive Security Estimate. This revisions are outlined in this Addendum, and are still consistent with the terms of the land lease (Commercial Lease No.: Q13C301) with Baffinland Iron Mines Corporation.

Please do not hesitate to contact the undersigned if there are any questions or comments regarding this report.

Sincerely,

ARKTIS Solutions Inc.

Jamie VanGulck, Ph.D., P.Eng.  
Chief Technical Officer

## 1.0 UPDATES

After the December 2, 2016 submittal of the 2017 Comprehensive Security Estimate Report (2017 Report), a line item has been discussed with Baffinland Iron Mines Corporation (Baffinland) and a revision related to the truck wash building has been made.

In 2014, a financial security line item was included for a truck wash building which was not constructed. However, the line item was not removed. The 2017 Report added a line item for the 2016 truck wash building, but Baffinland did not include it in their respective report, keeping the line item from 2014.

In this Addendum, the 2014 items have been removed and the new 2017 Report items remain. In short, changes of approximately \$144,000 in direct costs and approximately \$83,000 in indirect costs have been made. The revised **Table 8** Direct Costs and **Table 9** Indirect Costs and a revised **Table 10** Summary of the Total Costs are therefore included herein.

## 2.0 SUMMARY AND RECOMMENDATIONS

ARKTIS recommends that the reclamation security held by QIA (currently **\$48,845,500<sup>1</sup>** pursuant to Q13C301 Commercial Lease) for Inuit Owned Land be adjusted by an increase of **\$1,977,000** from the revised 2016 estimate of **\$52,719,000** and an inflation adjustment multiplier of 1.0254 be applied to result in an aggregate reclamation security of **\$56,085,000** for all activities up to the end of 2017 (**Table 10**). This excludes the activities associated with the Type 'B' Exploration Water License (2BE-MRY1421).

It is also recommended that Baffinland update the entry in the Estimate Breakdown Structure to reflect the year the building was constructed to avoid future confusion.

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<sup>1</sup> QIA BIMC (2016) Joint Submission to the Nunavut Water Board, January 11, 2016

**Table 8.** Summary of marginal increases in Direct Costs for the 2017 ASR

Direct Costs										
Area	Item	BIMC		QIA		BIMC	QIA	BIMC	QIA	Difference
		Qty	Unit	Qty	Unit	Unit Cost	Unit Cost	Direct Cost	Direct Cost	Direct Cost
Site Works	Fill Application	1,095	m <sup>2</sup>	1,095	m <sup>2</sup>	\$44.37	\$43.31	\$52,900	\$47,400	\$5,500
	Grade and Recontour	20,650	m <sup>2</sup>	20,569	m <sup>2</sup>	\$1.81	\$1.93	\$37,400	\$39,800	-\$2,400
	Grade and Recontour of Building Footprints	-	-	-	-	-	-	-	-	-
	Liner Removal	-	-	-	-	-	-	-	-	-
	Grade and Recontour Significant Disturbed Areas	1,000	m <sup>2</sup>	1,000	m <sup>2</sup>	\$2.72	\$2.90	\$2,700	\$2,900	-\$200
	Culvert Removal	-	-	-	-	-	-	-	-	-
	Bridge Removal	-	-	-	-	-	-	-	-	-
	Timber Cribbing	-	-	-	-	-	-	-	-	-
	Precast Foundations	1500	m <sup>2</sup>	650	m <sup>3</sup>	\$38.47	\$140.52	\$57,700	\$91,300	-\$33,600
	Slab on Grade	-	-	-	-	-	-	-	-	-
Mobile Equipment	Light Mobile Equipment	9	ea.	9	ea.	\$941.09	\$938.16	\$8,500	\$8,400	\$100
	Medium Mobile Equipment	61	ea.	69	ea.	\$1,494.13	\$1,559.26	\$91,100	\$107,600	-\$16,500
	Heavy Mobile Equipment	-30	ea.	-30	ea.	\$2,618.87	\$2,251.31	-\$78,600	-\$67,500	-\$11,100
Buildings (Contaminated)	Modular Buildings		m <sup>2</sup>		m <sup>2</sup>	\$143.42	\$184.43			-
	Fold Away Building	1500	m <sup>2</sup>	1500	m <sup>2</sup>	\$142.41	\$143.71	\$213,600	\$215,600	-\$2,000
	Soft Walled Building (Tent)	-	-	-	-	-	-	-	-	-

Direct Costs										
Area	Item	BIMC		QIA		BIMC	QIA	BIMC	QIA	Difference
		Qty	Unit	Qty	Unit	Unit Cost	Unit Cost	Direct Cost	Direct Cost	Direct Cost
	ISO Shipping Containers	-	-	-	-	-	-	-	-	-
	Other Buildings	500	m2	1	ea	-	-	\$71,700	\$27,000	\$44,700
Buildings (Not Contaminated)	Modular Buildings	950	m <sup>2</sup>	986	m <sup>2</sup>	\$59.38	\$61.47	\$54,400	\$60,700	-\$6,300
	Fold Away Building	-	-	-	-	-	-	-	-	-
	Soft Walled Building (Tent)	-	-	-	-	-	-	-	-	-
	Temporary Construction Warehouses and Office Allowances	-	-	-	-	-	-	-	-	-
	ISO Shipping Containers	-	-	-	-	-	-	-	-	-
	Other Buildings									
Bulks	Piping	-	-	-	-	-	-	-	-	-
	Cable	-	-	-	-	-	-	-	-	-
Packaged Facilities	Incinerator	-	-	-	-	-	-	-	-	-
	Potable Water									
	Sewage Treatment Plant									
	Truck Wash Facility	-	-	-	-	-	-	-	-	-
Mechanical Equipment	Light Equipment	40	ea.	40	ea.	\$1,980.80	\$1,784.11	\$79,200	\$71,400	\$7,800
	Medium Equipment	18	ea.	18	ea.	\$4,261.34	\$4,276.14	\$76,700	\$81,200	-\$4,500
	Heavy Equipment	2	ea.	2	ea.	\$41,205.45	\$41,937.03	\$82,400	\$83,900	-\$1,500

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Direct Costs										
Area	Item	BIMC		QIA		BIMC	QIA	BIMC	QIA	Difference
		Qty	Unit	Qty	Unit	Unit Cost	Unit Cost	Direct Cost	Direct Cost	Direct Cost
	Light Tanks		ea.	-	-	-	-	-	-	-
	Medium Tanks		ea.	-	-	-	-	-	-	-
	Light Diesel Tanks			-	-	-	-	-	-	-
	Medium Mobile Diesel Tanks									
	Medium Diesel Tanks	-	-	-	-	-	-	-	-	-
	Large Diesel Tanks	-	-	-	-	-	-	-	-	-
	Largest Diesel Tanks	-	-	-	-	-	-	-	-	-
	Miscellaneous Items									
	Reclaim Conveyor	0.17	ea.	0.17	ea.	-	-	\$221,600	\$226,000	-\$4,400
	Consumables	49	beds	49	beds	\$700.80	\$700.80	\$34,300	\$34,300	\$0
	Contaminated Soil (Excavate)									
	Lighting	7000	m	7000	m	\$26.50	\$27.78	\$185,400	\$194,500	-\$9,100
	Camp Mats (Size 1)	-	-	-	-	-	-	-	-	-
	Camp Mats (Size 2)	-	-	-	-	-	-	-	-	-
	Container Water Crossings	-	-	-	-	-	-	-	-	-
	Sea Containers	-	-	-	-	-	-	-	-	-
SUB-TOTAL DIRECT COSTS								\$1,263,800	\$1,225,000	\$38,800

**Table 9.** Summary of marginal increases in Indirect Costs for the 2017 ASR

Indirect Costs										
Area	Item	BIMC		QIA		BIMC	QIA	BIMC	QIA	Difference
		Qty	Unit	Qty	Unit	Unit Cost	Unit Cost	Indirect Cost	Indirect Cost	Indirect Cost
Off-site Disposal	Waste & Material	-	-	-	-	-	-	-	-	-
	Fuel		L	50,000	L	\$0.10	\$0.10	\$30,000	\$0	\$30,000
	Ammonium Nitrate & Explosives		kg		kg	\$2.37	\$2.37	\$0	\$0	
Soil	Contaminated Soil Treatment	4232	m <sup>3</sup>	4,500	m <sup>3</sup>	\$14.78	\$13.45	\$63,000	\$60,500	\$2,500 <sup>a,d</sup>
Mob. & Demob.	Mobilization of Workers Required for Reclamation	-	-	-	-	-	-	\$43,000	\$57,900	-\$14,900
	Worker Accommodation & Camp Operations	-	-	-	-	-	-	\$117,000	\$179,300	-\$62,300
	Mobilization and Demobilization of Equipment and Materials by Sealift	-	-	-	-	10.0%	10.0%	\$126,000	\$122,500	\$3,500
	Backhaul Light Mobile Equipment (3rd party)	0	ea.		ea.	\$0.00	\$2,801.52	\$0	\$0	\$0 <sup>f</sup>
	Backhaul Medium Mobile Equipment (3rd party)	0	ea.		ea.	\$0.00	\$8,206.97	\$0	\$0	\$0 <sup>f</sup>
	Backhaul Heavy Mobile Equipment (3rd party)	0	ea.	-4	ea.	\$0.00	\$21,314.42	\$0	-\$63,900	\$63,900 <sup>f</sup>

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Indirect Costs										
Area	Item	BIMC		QIA		BIMC	QIA	BIMC	QIA	Difference
		Qty	Unit	Qty	Unit	Unit Cost	Unit Cost	Indirect Cost	Indirect Cost	Indirect Cost
	Fuel for Reclamation Mobile Equipment	0	L	127,632	L	\$0.40	\$0.38	\$	\$48,500	-\$48,500
Monitoring and Reporting	Geotechnical Inspections	-	-	-	-	-	-			
	Project Environmental Site Assessment	-	-	-	-	-	-			
	Closure & Post Closure Monitoring	-	-	-	-	-	-			
	Short Term Care & Maintenance, Closure Monitoring & Reporting	-	-	-	-	-	-			
Other	Engineering Fees					3.9%	3.9%	\$49,000	\$47,800	\$1,200
	Supervision, Project Management & Contract Administration					9.4%	9.4%	\$125,000	\$115,200	\$9,800
	Contingency					12.5%	15.0%	\$202,000	\$183,800	\$18,200
SUB-TOTAL INDIRECT COSTS								\$755,000	\$752,000	\$3,000

**Notes:** Differences greater than \$100,000 are highlighted yellow.

<sup>a</sup> Not impacted by Direct Costs.

<sup>b</sup> Quantity updated based on 50% of increased fuel storage capacity.

<sup>c</sup> Quantity updated based on inventory provided by BIMC during 2016 Audit.

<sup>d</sup> Contaminated soil treatment for the Milne Port Fuel Bladder Farm has already been included in the security estimate.

<sup>e</sup> Impacted by Direct Costs, particularly Grade & Recontour and Heavy Equipment.

<sup>f</sup> Difference in opinion of reclamation activity for 3rd Party Owned Equipment. Additionally, BIMC's opinion is that the Indirect Cost for Mobilization and Demobilization of Equipment and Materials by Sealift would also cover 3rd Party Equipment already at site.



**Table 10.** Summary of Total Costs for the complete 2017 ASR

Total Costs			
	BIMC <sup>a</sup>	QIA	Difference
<b>2017 ASR SUB-TOTAL DIRECT COSTS</b>	\$1,263,800	\$1,225,000	\$38,800
<b>2017 ASR SUB-TOTAL INDIRECT COSTS</b>	\$755,000	\$752,000	\$3,000
<b>2017 ASR TOTAL ADJUSTMENT</b>	\$2,018,800	\$1,977,000	\$41,800
<b>2016 TOTAL RECLAMATION SECURITY ESTIMATE (WITHOUT INFLATION)</b>	\$46,053,000	\$52,719,000	-\$6,666,000
<b>2017 TOTAL RECLAMATION SECURITY ESTIMATE (WITHOUT INFLATION)</b>	\$48,072,000	\$54,696,000	-\$6,624,000
<b>INFLATION ADJUSTED 2017 TOTAL RECLAMATION SECURITY ESTIMATE <sup>b</sup></b>	-	\$56,085,000	-\$8,013,000

**Notes:**

<sup>a</sup> BIMC values may differ slightly from BIMC's 2016 Marginal Closure and Reclamation Financial Security Estimate due to rounding.

<sup>b</sup> ARKTIS has applied an inflation adjustment multiplier of 1.0254 as described in Section 4.5. BIMC has not applied an inflation adjustment.



### 3.0 CLOSURE

This report has been prepared exclusively for the use of the QIA for the specific application described within this report. The details provided in this report are for general information purposes only. The information and recommendations contained in this report should not be used for any other purpose, at another location, or by any other parties. Any use of, or reliance on this report by any third party is at that party's sole risk. ARKTIS assumes no responsibility for inappropriate use of the contents of this report, and disclaims all liability arising from negligence or otherwise. General terms and conditions were provided in Appendix E of the original report.

#### **ARKTIS SOLUTIONS INC.**

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