

# Rio Algom Mining LLC

June 29, 2015

Mr. Tom McLaughlin  
United States Nuclear Regulatory Commission  
Mail Stop T-8F5  
Washington, DC 20555

## VIA Federal Express

Subject: Rio Algom Mining LLC – Ambrosia Lake Facility  
License No. SUA-1473, Docket No. 40-8905  
2015 Surety Update – License Condition #22

Dear Mr. McLaughlin:

Rio Algom Mining LLC is pleased to submit the 2015 annual surety update for the above referenced source material license. The surety calculations are consistent with 10CFR40, Appendix A, Criteria 9 and 10.

The work over the last fiscal year consisted of demolition and reclamation at the mill site and supplemental soils removal from the former Section 4 ponds. Specifically, the ion exchange building, water treatment plant building, the former office building, the former maintenance building, and the water tower were demolished within the last year. In addition to Section 4 soils removal activities, soils have been removed Mill Yard, Mill Pond and Swamp. Both demolition material and contaminated soils have been placed into Impoundment 2. Currently, final grading, revegetation of disturbed soils, and construction of the Impoundment 2 cover is underway. The estimated completion date is December 1, 2015. The work completed within the last year resulted in a decrease in the anticipated completion costs of the direct activity costs to \$7,735,941.08 compared against the 2012 surety calculated amount of \$9,952,003.

The indirect costs in this submittal were revised following the previously received NRC guidance. The 2015 estimate of indirect plus total contingency is \$4,820,891.43.

The total estimated cost to complete the work by a third-party is approximately \$12,556,832.51. The enclosed tables summarize the revisions 2015 surety calculations. Rio Algom Mining LLC currently retains a financial surety instrument in the amount of \$16,000,000. Rio Algom Mining LLC requests approval to retain the current financial surety instrument in place.

The attached tables provide supporting information to justify cost estimates (10CFR Part 40, Appendix A, Criterion 9 and Appendix C, NUREG-1620). A summary table is included as well as calculations for the Tailings Reclamation, Groundwater, Mill Decommissioning, Lined Pond Closure, Monitor Well Closure and Radiological Surveying and Monitoring.

The work represented in the tables is merely a repackaging of a portion of the remaining construction activities required to fully close the site. The document "Design for Construction Mill Site Reclamation, Amendment 1" did not include any new engineering designs or any new reclamation plans. All items included in the current amendment, and pending future

amendments, have been previously reviewed by the NRC and incorporated in the site's Radioactive Material License and there are no changes to the established closure plan.

If you have any questions on this matter or require additional information, please contact Theresa Ballaine at (209)736-4803 or by email at [Theresa.Ballaine@bhpbilliton.com](mailto:Theresa.Ballaine@bhpbilliton.com).

Respectfully submitted,  
**Rio Algom Mining LLC**



Anthony Baus  
Site Manager

cc: Document Control (FedEx)

Attachments

# Rio Algom Mining LLC

## Transmittal

Date: June 29, 2015

To: NRC Document Control  
11555 Rockville Pike  
Rockville, MD 20852

FedEx Tracking No.

From: Theresa Ballaine, Superintendent, Rio Algom Mining LLC

Subject: Rio Algom Mining LLC – Ambrosia Lake Facility  
License No. SUA-1473  
2015 Surety Update

Please find enclosed the referenced update that has been submitted to Mr. Tom McLaughlin.

Activity	Real Dollars as of April 1, 2015
Tailings Reclamation	351,512
Groundwater	837,089
Mill Decommissioning	0
Lined Pond Closure	6,547,340
<b>Activity Total</b>	<b>7,735,941.08</b>

**RIO ALGOM MINING LLC - AMBROSIA LAKE OPERATION**  
**FINANCIAL ASSURANCE COST ALLOCATION**  
**Tailings Reclamation**

June 30, 2015

Activity	Unit/Quantity	Unit Rate	Task Estimate	Source	Date of Estimate	Real Dollars as of April 1, 2015
<u>Cleanup Hot Spots</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>			
Contaminated Soil Removal	0	3.99	0	Complete - June 2013	--	--
Clean Soil Backfill	0	4.09	0	Complete - June 2013	--	--
<u>Site Wide Revegetation</u>	<u>Acres</u>	<u>\$/Acre</u>	<u>\$</u>			
Seeding and Mulch	350	1,004.32	351,512	Contractor Estimate	6/18/2015	351,512
<u>100 Year Channel</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>			
Channel Excavation	0	9.80	0	Complete - June 2013	--	--
Backfill and Embankment	0	3.60	0	Complete - June 2013	--	--
1" Rock Placement	0	4.41	0	Complete - June 2014	--	--
7.8" Rock Placement	0	11.59	0	Complete - June 2014	--	--
<u>Borrow Site Reclamation</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>			
Overburden Excavation and Fill	0	0.85	0	Complete - June 2014	--	--
<u>Pond 7 &amp; 8 Erosion and Diversion</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>			
Backfill	0	4.56	0	Complete - June 2014	--	--
Channel Excavation	0	13.44	0	Complete - June 2014	--	--
Channel Fill	0	3.32	0	Complete - June 2014	--	--
1" Rock Placement	0	5.28	0	Complete - June 2014	--	--
9.2" Rock Placement	0	10.27	0	Complete - June 2014	--	--
<b>Total</b>			<b><u>351,512.00</u></b>			<b><u>351,512.00</u></b>

**RIO ALGOM MINING LLC - AMBROSIA LAKE OPERATION**  
**FINANCIAL ASSURANCE COST ALLOCATION**  
**Groundwater**

June 30, 2015

Activity	Task Estimate	Source	Date of Estimate	Estimate Date CPI	March 31, 2015 CPI	Inflation	Real Dollars as of April 1, 2015
Monitor Well Replacement	0	Complete - January 2013	--				--
Monitor Well Closure <i>(see Monitor Well Closure tab)</i>	134,301	Consultant Estimate	10/12/2012	231.32	236.12	1.02	137,089
Stability Monitoring Reporting Program	300,000	Consultant Estimate	6/24/2015				300,000
Groundwater Monitoring within LTSM	400,000	Consultant Estimate	6/24/2015				400,000
<b>Total</b>	<b><u>834,301.43</u></b>						<b><u>837,089.44</u></b>

*Notes*

*CPI - Consumer Price Index*

**RIO ALGOM MINING LLC - AMBROSIA LAKE OPERATION**  
**FINANCIAL ASSURANCE COST ALLOCATION**  
**Mill Decommissioning**

June 30, 2015

Activity	Unit/Quantity	Unit Rate	Task Estimate	Source	Date of Estimate	Real Dollars as of April 1, 2015
<u>Mill Yard Soils Clean-Up &amp; Pond Closure</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>			
Contaminated Soil Consolidation	0	4.27	0	Complete - May 2013	--	--
Contaminated Soil Removal	0	5.52	0	Complete - May 2013	--	--
Clean Backfill and Regrading	0	5.11	0	Complete - May 2015	--	--
Radon Barrier Placement	0	16.14	0	Complete - June 2014	--	--
1" Rock Placement	0	5.41	0	Complete - June 2014	--	--
7.8" Rock Placement	0	7.67	0	Complete - June 2014	--	--
<u>Building Demolition</u>			<u>\$</u>			
Asbestos Disposal	Lump Sum		0	Complete - March 2015	--	--
Haz Waste Disposal	Lump Sum		0	Complete - March 2015	--	--
Building Demolition	Lump Sum		0	Complete - March 2015	--	--
Substation Fencing (powerline relocation)	Lump Sum		0	Complete - June 2015	--	--
<b>Total</b>			<u>0</u>			<u>0</u>

**RIO ALGOM MINING LLC - AMBROSIA LAKE OPERATION**  
**FINANCIAL ASSURANCE COST ALLOCATION**  
**Lined Pond Closure**

June 30, 2015

Activity	Unit/Quantity	Unit Rate	Task Estimate	Source	Date of Estimate	Estimate Date CPI	March 31, 2015 CPI	Inflation	Real Dollars as of April 1, 2015
<u>Pond 2 Cover Rock Purchase</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>						
Pond 2 - Cover Rock Purchase - 1"	74,682	19.92	1,487,665	Contract w/ C&E Concrete	6/8/2015				1,487,665
Pond 2 - Cover Rock Purchase - 3.2"	29,459	20.42	601,553	Contract w/ C&E Concrete	6/8/2015				601,553
Pond 2 - Cover Rock Purchase - 7.8"	18,929	22.38	423,631	Contract w/ C&E Concrete	6/8/2015				423,631
Pond 2 - Cover Rock Purchase - 9.2"	7,176	22.38	160,599	Contract w/ C&E Concrete	6/8/2015				160,599
<u>Pond 2 Cover Placement</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>						
Pond 2 - Cover Clay Placement	376,000	5.00	1,880,001	Contractor Estimate	2/26/2013	232.17	236.12	1.02	1,912,011
Pond 2 - Regrade	0	2.76	0	Complete - May 2015	--				-
Pond 2 - Cover Rock Placement - 1" (Includes Apron)	42,410	4.07	172,608	Contractor Estimate	2/26/2013	232.17	236.12	1.02	175,547
Pond 2 - Cover RockPlacement - 3.2"	12,299	12.31	151,404	Contractor Estimate	2/26/2013	232.17	236.12	1.02	153,982
Pond 2 - Apron/Channel Rock Placement - 7.8"	7,515	11.56	86,873	Contractor Estimate	2/26/2013	232.17	236.12	1.02	88,353
Pond 2 - Apron/Channel Rock Placement - 9.2"	4,748	11.02	52,317	Contractor Estimate	2/26/2013	232.17	236.12	1.02	53,208
<u>Section 4 Hot Spot Removal</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>						
Remaining Contaminated Soil	0	17.60	0	Complete - October 2014	--				-
Scanning and Survey (from Rad Survey & Monitor sheet)	Lump Sum		300,060	Consultant Estimate	2/3/2010	216.74	236.12	1.09	326,887
Dose Assessment (from Rad Survey & Monitor sheet)	Lump Sum		275,000	Consultant Estimate	2/3/2010	216.74	236.12	1.09	299,587
<u>Section 4 Final Contour</u>	<u>Acres</u>	<u>\$/Acre</u>	<u>\$</u>						
Regrade	300	256.00	76,800	Contractor Estimate	2/26/2013	232.17	236.12	1.02	78,108
Reseed	300	1,004.32	301,296	Contractor Estimate	2/26/2013	232.17	236.12	1.02	306,426
<u>Borrow Site Reclamation</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>						
Overburden Excavation and Fill	555,000	0.85	471,750	Contractor Estimate	2/26/2013	232.17	236.12	1.02	479,782
<u>Highway Overcrossing Removal</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>						
Bridge Removal and Demolition	Lump Sum		0	Complete- January 2015					-
Total			6,441,558.85	6,547,339.63					

**Notes**

CPI - Consumer Price Index



**RIO ALGOM MINING LLC - AMBROSIA LAKE OPERATION**  
**FINANCIAL ASSURANCE COST ALLOCATION**  
**Monitor Well Closure**

June 30, 2015

Well ID	Total Depth (ft)	Cost Breakdown - Based on 2013 project for NMED		Date of Estimate	Estimate Date CPI	March 31, 2015 CPI	Inflation	Real Dollars as of April 1, 2015
<b>Alluvial Wells:</b>		Linear Feet Abandoned in 2013	1,534.39					
5-03 R	56.25	Total Plug and Abandon Cost	55,659.00					
5-04	64.05	Cost per foot	\$36.27					
5-08 R	76.52	Future Linear Feet to Abandon	3,702.38					
5-73 R	35.69							
31-61	29.32	<b>Estimated Cost</b>	<b>\$134,301.43</b>	10/12/2012	231.32	236.12	1.02	<b><u>137,089.44</u></b>
31-65	41.47							
32-59	28.26	Nominal 6" wells						
<b>TRB Wells:</b>		Plugged and abandoned in accordance with						
19-77 TRB	288.22	New Mexico Environment Department Ground Water Quality						
31-02 TRB R	128.33	Bureau, Monitoring Well Construction and Abandonment						
31-67 TRB	97.52	Guidelines, 2011.						
36-01 TRB	58.41							
36-02 TRB	57.51	Work estimated based on:						
<b>TRA Wells:</b>		The reaming of the wells						
30-01 TRA	207.35	Grout backfill						
31-01 TRA R	213.58	Surface reclamation						
33-01 TRA	181.31	Reseeding						
<b>Dakota Wells:</b>								
5-02 KD	190.54							
17-01 KD	807.90							
30-02 KD	313.38							
30-48 KD R	358.59							
32-45 KD R	269.91							
36-06 KD	198.27							
<b>Total Linear Feet</b>	<b>3,702.38</b>							
Data from 1st Half 2013 semi-annual NRC report								

**Notes**

CPI - Consumer Price Index

\*Estimate included in Line 8 of "Groundwater" Table

**RIO ALGOM MINING LLC - AMBROSIA LAKE OPERATION**  
**FINANCIAL ASSURANCE COST ALLOCATION**  
**Radiological Survey and Monitoring**

June 30, 2015

Gamma Scanning and Survey		Date of Estimate	Estimate Date CPI	March 31, 2015 CPI	Inflation	Real Dollars as of April 1, 2015
Area	220 Acres	--				220 Acres
Initial Survey Spacing	10m Grid	--				10m Grid
Estimated Contractor Hours	540	--				540
\$/hour	200	--				200
Cost for Initial Survey	108,000	2/3/2010	216.74	236.12	1	117,656

Additional Environmental Monitoring		Date of Estimate				Real Dollars as of April 1, 2015
Estimated Contractor (weeks)	6	--				6
\$/week	9,100	--				9,100
Cost for Additional Environmental Monitoring	54,600	2/3/2010	216.74	236.12	1	59,482

Soil Sampling		Date of Estimate				Real Dollars as of April 1, 2015
Area	220 Acres	--				220 Acres
Number of Samples	580	--				580
Unit cost for gamma spec analysis for Ra-226, Th-230, U-238	90	--				90
Unit cost for alpha spec for Th-230	132	--				132
Analytical Costs	128,760	--				128,760
Shipping (\$15/sample)	8,700	--				8,700
Total Soil Sampling Costs	137,460	2/3/2010	216.74	236.12	1.09	149,750

<b>Total Scanning and Survey</b>	<b>300,060</b>					<b>326,887</b>
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Dose Assessment		Date of Estimate				Real Dollars as of April 1, 2015
Estimated consultant hours	1000	--				1000
Hourly Rate	275					275
Total Dose Assessment	275,000	2/3/2010	216.74	236.12	1.09	299,587

**Total** **\$575,060.00** **\$626,473.96**

*Notes*

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*\* Estimates included in Lines 23 & 24 of "Lined Pond Closure" worksheet*

