

Rio Algom Mining LLC

August 23, 2017

ADDRESSEE ONLY

Mr. Varughese Kurian, Project Manager
Materials Decommissioning Branch
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Two White Flint North, Mailstop T8F5
11545 Rockville Pike
Rockville, MD 20852

CERTIFIED MAIL

Re: **License SUA-1473, Docket No. 40-8905**
Semiannual Effluent Report – 1st Half 2017

Dear Mr. Kurian,

In accordance with license condition #19 of the above referenced source material license and the NRC approved *Health Physics and Environmental Programs Manual*, please find attached the first half of 2017 Semiannual Report for the Ambrosia Lake facility.

In a letter dated December 14, 2017 (ML16344A027), the Nuclear Regulatory Commission (NRC) agreed in part with a Rio Algom Mining LLC (RAML) proposal to terminated routine environmental monitoring tasks since the site has been mostly reclaimed. As a result, routine monitoring for sediment, vegetation, and surface soil has been discontinued and data for these media will no longer be reported. Monitoring for airborne radionuclides in particulate matter, radon-222, and external dose rate continues and results are reported herein.

The environmental airborne radionuclide sample results in this semiannual report are less than 1% of their effluent concentration in 10 CFR 20 Appendix B for each isotope, with the exception radon-222. No discernable trends from first to second quarter are apparent.

The quarterly dose rates at each monitoring location remained relatively consistent from first to second quarter 2017. This is expected since to reclamation of existing soil occurred and the sources of windblown radioactivity are covered.

If you have any questions or need additional information, please do not hesitate to call me at (505) 298-4224.

Regards,

A handwritten signature in cursive script that reads "Michael Schierman".

Michael Schierman
Radiation Safety Officer

Attachment

cc: NRC (document control)
File

Environmental Gamma Radiation
2017

1st Quarter		2nd Quarter	
Sample Media: Gamma		Sample Media: Gamma	
Date: 1/1/2017 - 3/31/2017		Date: 4/1/2017 - 6/30/2017	
Location:	Rate (mrem/qtr)	Location:	Rate (mrem/qtr)
Substation	1.8	Substation	2.6
Mill Diversion	4.7	Mill Diversion	3.7
Section 30W VH6	54.1	Section 30W VH6	47.4
North Fence	3.9	North Fence	5.0
Section 17 VH4	5.6	Section 17 VH4	6.3
Section 4 - #1	5.3	Section 4 - #1	6.5
Section 4 - #2	7.3	Section 4 - #2	13.0
Section 4 - #3	3.4	Section 4 - #3	10.6

Notes:
Values are net after subtraction of control value

Environmental Radon
 2017

1st Quarter Sample Media: Track Etch			2nd Quarter Sample Media: Track Etch		
Location:	Conc. pCi/L	Error pCi/L	Location:	Conc. pCi/L	Error pCi/L
Substation	0.46	0.09	Substation	0.41	0.06
Mill Diversion	1.40	0.17	Mill Diversion	1.30	0.17
Section 30W VH6	2.20	0.30	Section 30W VH6	1.95	0.27
North Fence	1.85	0.24	North Fence	1.65	0.23
Section 17 VH4	0.38	0.09	Section 17 VH4	0.38	0.06
KGL - North	1.50	0.19	KGL - North	1.05	0.16
KGL - South	1.40	0.17	KGL - South	1.10	0.14

Notes: Results at Sec 30, North fence, and KGL North are averages of duplicate results.

High Volume Environmental Air Samples
2017

1st Quarter					2nd Quarter				
Substation									
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit
U-nat	2.3E-18	2.8E-16	2.3E-18	<1%	U-nat	2.6E-18	1.5E-19	2.6E-18	<1%
Th-230	3.7E-18	4.4E-18	6.6E-18	<1%	Th-230	-2.4E-18	5.8E-18	7.2E-18	<1%
Ra-226	1.8E-18	1.9E-18	3.6E-18	<1%	Ra-226	2.5E-18	2.5E-18	3.8E-18	<1%
Pb-210	4.0E-16	3.5E-17	4.1E-17	<1%	Pb-210	8.4E-16	3.1E-17	6.1E-17	<1%

1st Quarter					2nd Quarter				
Section 17 VH4									
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit
U-nat	2.3E-18	2.8E-16	2.3E-18	<1%	U-nat	2.6E-18	1.5E-19	2.6E-18	<1%
Th-230	-8.0E-18	4.0E-18	6.7E-18	<1%	Th-230	9.9E-19	5.2E-18	9.9E-18	<1%
Ra-226	1.5E-18	1.8E-18	3.3E-18	<1%	Ra-226	3.6E-18	2.3E-18	3.9E-18	<1%
Pb-210	3.8E-16	3.9E-17	5.4E-17	<1%	Pb-210	7.2E-16	2.8E-17	6.6E-17	<1%

1st Quarter					2nd Quarter				
Mill Diversion									
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit
U-nat	4.7E-18	4.1E-16	4.7E-18	<1%	U-nat	3.7E-18	2.1E-19	3.7E-18	<1%
Th-230	1.1E-17	7.2E-18	9.2E-18	<1%	Th-230	6.3E-18	6.7E-18	9.1E-18	<1%
Ra-226	6.9E-19	3.5E-18	7.7E-18	<1%	Ra-226	1.8E-18	2.6E-18	3.1E-18	<1%
Pb-210	8.8E-16	5.6E-17	6.1E-17	<1%	Pb-210	7.4E-16	3.6E-17	7.4E-17	<1%

1st Quarter					2nd Quarter				
Section 30 West VH6									
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit
U-nat	8.8E-18	5.4E-15	8.8E-18	<1%	U-nat	9.1E-18	5.3E-19	9.1E-18	<1%
Th-230	5.2E-18	1.4E-17	2.2E-17	<1%	Th-230	2.7E-18	2.3E-17	3.1E-17	<1%
Ra-226	7.8E-18	1.0E-17	1.2E-17	<1%	Ra-226	1.6E-17	1.1E-17	2.4E-17	<1%
Pb-210	6.4E-16	8.6E-17	1.4E-16	<1%	Pb-210	9.3E-16	9.1E-16	4.6E-16	<1%

High Volume Environmental Air Samples
2017

1st Quarter					2nd Quarter				
North Fence									
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit
U-nat	8.7E-18	5.3E-15	8.7E-18	<1%	U-nat	9.0E-18	5.2E-19	9.0E-18	<1%
Th-230	3.8E-18	1.9E-17	2.7E-17	<1%	Th-230	1.5E-17	1.6E-17	2.3E-17	<1%
Ra-226	6.4E-18	9.0E-18	1.4E-17	<1%	Ra-226	6.7E-18	6.7E-18	2.4E-17	<1%
Pb-210	5.6E-16	1.0E-16	1.8E-16	<1%	Pb-210	9.2E-16	8.4E-17	2.5E-16	<1%

1st Quarter					2nd Quarter				
KGL - North									
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit
U-nat	2.3E-18	2.8E-16	2.3E-18	<1%	U-nat	2.7E-18	1.5E-19	2.7E-18	<1%
Th-230	1.0E-18	5.3E-18	6.1E-18	<1%	Th-230	2.0E-18	6.4E-18	7.5E-18	<1%
Ra-226	2.2E-18	1.8E-18	1.7E-18	<1%	Ra-226	5.6E-18	2.6E-18	4.1E-18	<1%
Pb-210	4.9E-16	3.2E-17	4.1E-17	<1%	Pb-210	7.9E-16	3.2E-17	6.6E-17	<1%

1st Quarter					2nd Quarter				
KGL - South									
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit
U-nat	2.3E-18	2.8E-16	2.3E-18	<1%	U-nat	2.9E-17	1.7E-18	2.9E-18	<1%
Th-230	-5.3E-18	5.7E-18	6.8E-18	<1%	Th-230	1.9E-18	6.1E-18	8.1E-18	<1%
Ra-226	4.7E-18	2.2E-18	1.6E-18	<1%	Ra-226	3.7E-18	2.9E-18	4.2E-18	<1%
Pb-210	4.8E-16	3.8E-17	4.3E-17	<1%	Pb-210	1.1E-15	3.6E-17	6.7E-17	<1%