



Rio Algom Mining LLC

March 15, 2005

Certified Letter
Return Receipt (7004 1350 0000 8065 8003)

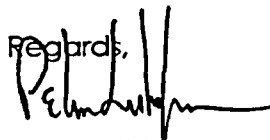
ATTN: Document Control Desk
Mr. Gary Janosko, Chief
Fuel Cycle Licensing Branch, NMSS
Mail Stop T-8-A-33
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

Re: **License SUA-1473, Docket No. 40-8905**
Semiannual Effluent Report -2nd Half 2004

Dear Mr. Janosko,

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 second half 2004 Semiannual Report for the Ambrosia Lake facility.

If you have any questions or need additional information, please do not hesitate to call me at (505) 287-8851, extension 205.

Regards,


Peter Luthiger
Manager, Radiation Safety
and Environmental Affairs

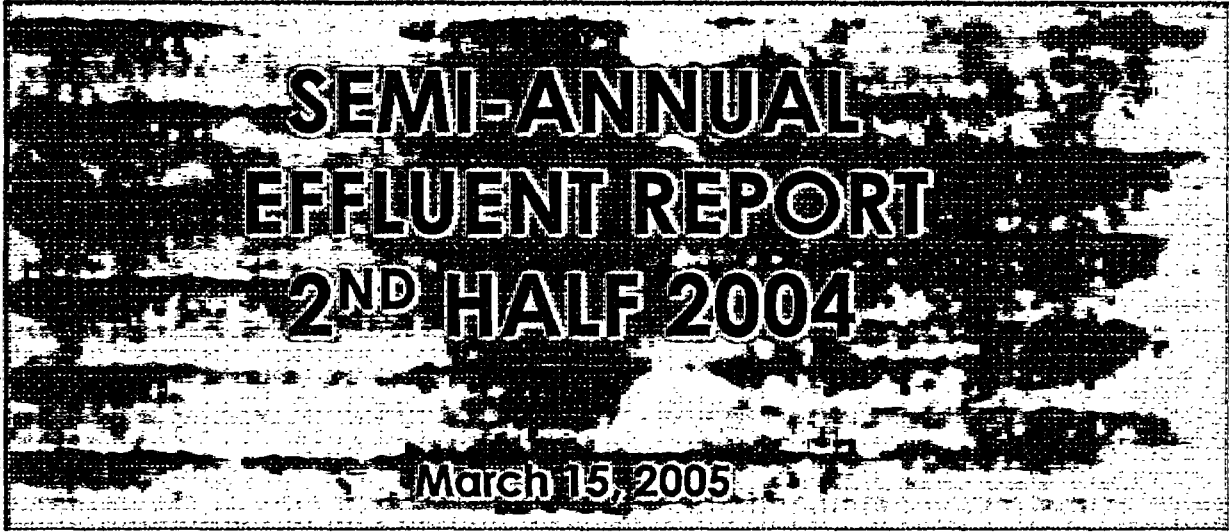
Attachment

xc: T. Fletcher
J. Caverly (NRC-MD-License SUA-1473 Docket No. 40-8905)
file

IE17

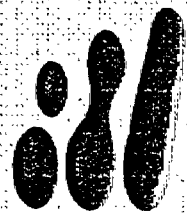
RIO ALGOM MINING LLC AMBROSIA LAKE FACILITY

License SUA-1473 Docket No. 40-8905



SEMI-ANNUAL EFFLUENT REPORT 2ND HALF 2004

March 15, 2005



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Rio Algom Mining LLC
Ambrosia Lake Facility

License SUA-1473
Docket Number 40-8905

Crushing Circuit Stack Emissions

Since mill demolition activities were completed in February 2004, there was no discharge of effluents during the second half of 2004.

Rio Algom Mining LLC
Ambrosia Lake Facility

License SUA-1473
Docket Number 40-8905

Yellowcake Dryer Stack Emissions

Since mill demolition activities were completed in February 2004, there was no discharge of effluents during the second half of 2004.

High Volume Environmental Air Samples
2nd Half 2004

3rd Quarter 2004					Substation	4th Quarter 2004				
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	
U-nat	8.0E-18	4.0E-19	1.8E-18	< 1.0	U-nat	5.3E-18	2.2E-19	1.6E-18	< 1.0	
Th-230	1.0E-17	6.4E-18	8.2E-18	< 1.0	Th-230	-2.8E-18	2.1E-17	3.5E-17	< 1.0	
Ra-226	3.0E-18	2.7E-18	6.4E-18	< 1.0	Ra-226	4.3E-18	5.5E-18	1.5E-17	< 1.0	
Pb-210	1.2E-15	5.5E-17	8.7E-17	< 1.0	Pb-210	1.9E-15	6.9E-17	8.7E-17	< 1.0	

3rd Quarter 2004					Section 17 VH 4	4th Quarter 2004				
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	
U-nat	7.3E-18	3.6E-19	1.6E-18	< 1.0	U-nat	1.3E-18	5.2E-20	1.3E-18	< 1.0	
Th-230	2.1E-18	4.6E-18	6.9E-18	< 1.0	Th-230	1.6E-18	3.7E-18	5.0E-18	< 1.0	
Ra-226	3.1E-18	2.3E-18	6.2E-18	< 1.0	Ra-226	1.2E-19	4.3E-18	1.4E-17	< 1.0	
Pb-210	6.8E-16	4.1E-17	8.5E-17	< 1.0	Pb-210	1.4E-15	5.1E-17	6.8E-17	< 1.0	

High Volume Environmental Air Samples
2nd Half 2004

3rd Quarter 2004					Section 30 West VH 6					4th Quarter 2004				
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	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	4.4E-19	1.3E-18	< 1.0	U-nat	6.7E-18	2.7E-19	1.3E-18	< 1.0	U-nat	6.7E-18	2.7E-19	1.3E-18	< 1.0
Th-230	1.4E-17	5.2E-18	5.8E-18	< 1.0	Th-230	7.4E-18	8.6E-18	1.2E-17	< 1.0	Th-230	7.4E-18	8.6E-18	1.2E-17	< 1.0
Ra-226	5.1E-18	2.6E-18	5.2E-18	< 1.0	Ra-226	1.9E-17	5.6E-18	9.9E-18	< 1.0	Ra-226	1.9E-17	5.6E-18	9.9E-18	< 1.0
Pb-210	1.3E-15	4.1E-17	4.8E-17	< 1.0	Pb-210	2.3E-15	5.2E-17	5.1E-17	< 1.0	Pb-210	2.3E-15	5.2E-17	5.1E-17	< 1.0

3rd Quarter 2004					North Fence					4th Quarter 2004				
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit
U-nat	1.4E-17	6.8E-19	1.8E-18	< 1.0	U-nat	1.3E-17	5.2E-19	1.6E-18	< 1.0	U-nat	1.3E-17	5.2E-19	1.6E-18	< 1.0
Th-230	5.2E-17	9.6E-18	7.0E-18	< 1.0	Th-230	4.0E-17	9.4E-18	7.9E-18	< 1.0	Th-230	4.0E-17	9.4E-18	7.9E-18	< 1.0
Ra-226	1.5E-17	4.4E-18	8.8E-18	< 1.0	Ra-226	4.3E-17	1.2E-17	1.7E-17	< 1.0	Ra-226	4.3E-17	1.2E-17	1.7E-17	< 1.0
Pb-210	2.4E-15	1.1E-16	1.8E-16	< 1.0	Pb-210	3.8E-15	7.1E-17	6.3E-17	< 1.0	Pb-210	3.8E-15	7.1E-17	6.3E-17	< 1.0

High Volume Environmental Air Samples
 2nd Half 2004

3rd Quarter 2004					Mill Diversion	4th Quarter 2004				
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	
U-nat	7.4E-17	3.7E-18	1.8E-18	< 1.0	U-nat	1.3E-17	5.4E-19	1.6E-18	< 1.0	
Th-230	6.4E-16	3.2E-17	8.0E-18	3.2	Th-230	1.6E-16	1.6E-17	7.8E-18	< 1.0	
Ra-226	8.3E-17	8.8E-18	8.0E-18	< 1.0	Ra-226	3.7E-17	7.8E-18	1.1E-17	< 1.0	
Pb-210	1.5E-15	5.3E-17	6.8E-17	< 1.0	Pb-210	3.0E-15	7.8E-17	7.8E-17	< 1.0	

Vegetation

Location: Substation Date: August 2004 Sample Media: Vegetation				Location: Mill Diversion Date: August 2004 Sample Media: Vegetation			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)	Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat	4.7E-05	1.7E-07	2.0E-05	U-nat	5.9E-04	2.1E-06	2.0E-05
Th-230	-8.5E-04	6.0E-04	1.3E-03	Th-230	1.9E-04	9.0E-04	1.4E-03
Ra-226	3.0E-03	1.9E-03	4.6E-03	Ra-226	4.2E-03	1.9E-03	4.3E-03
Pb-210	7.1E-03	4.4E-03	1.0E-02	Pb-210	5.3E-02	1.3E-02	3.0E-02

Location: Section 30 West VH6 Date: August 2004 Sample Media: Vegetation				Location: North Fence Date: August 2004 Sample Media: Vegetation			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)	Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat	1.4E-04	5.0E-07	2.0E-04	U-nat	2.7E-05	9.5E-08	2.0E-05
Th-230	-5.0E-05	8.0E-04	1.3E-03	Th-230	5.4E-04	8.0E-04	1.2E-03
Ra-226	3.8E-03	2.3E-03	5.7E-03	Ra-226	2.7E-03	1.7E-03	4.3E-03
Pb-210	3.7E-03	4.8E-03	1.2E-02	Pb-210	1.1E-02	5.0E-03	1.1E-02

Vegetation

Location: Section 17 VH 4
Date: August 2004
Sample Media: Vegetation

Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat	5.8E-04	2.0E-06	2.0E-05
Th-230	-5.0E-05	7.0E-04	1.2E-03
Ra-226	3.6E-03	1.9E-03	4.6E-03
Pb-210	3.3E-03	4.1E-03	9.9E-03

Vegetation

Location: Substation Date: October 2004 Sample Media: Vegetation				Location: Mill Diversion Date: October 2004 Sample Media: Vegetation			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)	Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat	1.6E-04	1.1E-05	3.4E-05	U-nat	5.6E-04	3.8E-05	3.4E-05
Th-230	2.9E-04	1.0E-03	1.6E-03	Th-230	1.4E-03	1.2E-03	1.6E-03
Ra-226	1.0E-04	1.0E-04	3.0E-05	Ra-226	1.0E-04	1.0E-04	3.0E-04
Pb-210	0.0E+00	8.5E-03	2.6E-02	Pb-210	0.0E+00	9.0E-03	2.8E-02

Location: Section 30 West VH6 Date: October 2004 Sample Media: Vegetation				Location: North Fence Date: October 2004 Sample Media: Vegetation			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)	Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat	1.5E-04	1.0E-05	3.4E-05	U-nat	1.1E-04	7.5E-06	3.4E-05
Th-230	-3.8E-04	9.0E-04	1.5E-03	Th-230	7.6E-04	1.1E-03	1.6E-03
Ra-226	6.0E-05	1.0E-04	3.0E-05	Ra-226	9.0E-05	1.0E-04	4.0E-04
Pb-210	0.0E+00	8.6E-03	2.8E-02	Pb-210	0.0E+00	8.7E-03	2.6E-02

Vegetation

Location: Section 17 VH 4
Date: October 2004
Sample Media: Vegetation

Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat	2.0E-04	1.4E-05	3.4E-05
Th-230	-1.4E-03	9.0E-04	1.7E-03
Ra-226	1.1E-04	1.0E-04	4.0E-04
Pb-210	0.0E+00	7.2E-03	2.2E-02

Soil

Location: Substation				Location: Mill Diversion			
Date:				Date:			
Sample Media: Soil				Sample Media: Soil			
Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)	Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U-nat	Note:			U-nat	Note:		
Th-230	Soil is sampled annually. Please			Th-230	Soil is sampled annually. Please		
Ra-226	see 1st half 2004 report for 2004			Ra-226	see 1st half 2004 report for 2004		
Pb-210	soil sampling data.			Pb-210	soil sampling data.		

Location: Section 30 West VH6				Location: North Fence			
Date:				Date:			
Sample Media: Soil				Sample Media: Soil			
Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)	Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U-nat	Note:			U-nat	Note:		
Th-230	Soil is sampled annually. Please			Th-230	Soil is sampled annually. Please		
Ra-226	see 1st half 2004 report for 2004			Ra-226	see 1st half 2004 report for 2004		
Pb-210	soil sampling data.			Pb-210	soil sampling data.		

Rio Algom Mining LLC
Ambrosia Lake Facility

License SUA-1473
Docket Number 40-8905

Soil

Location: Substation
Date:
Sample Media: Soil

Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U-nat	Note:		
Th-230	Soil is sampled annually. Please		
Ra-226	see 1st half 2004 report for 2004		
Pb-210	soil sampling data.		

Sediment

Location: P-0 Date: Sample Media: Sediment				Location: P-1 Date: Sample Media: Sediment			
Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)	Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U-nat	Note: Sediment is sampled annually.			U-nat	Note: Sediment is sampled annually.		
Th-230	Please see 1st half 2004 report for 2004 sediment data.			Th-230	Please see 1st half 2004 report for 2004 sediment data.		
Ra-226				Ra-226			
Pb-210				Pb-210			

Location: P-2 Date: Sample Media: Sediment				Location: P-3 Date: Sample Media: Sediment			
Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)	Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U-nat	Note: Sediment is sampled annually.			U-nat	Note: Sediment is sampled annually.		
Th-230	Please see 1st half 2004 report for 2004 sediment data.			Th-230	Please see 1st half 2004 report for 2004 sediment data.		
Ra-226				Ra-226			
Pb-210				Pb-210			

Environmental Gamma Radiation

Date: 3rd Quarter 2004
Sample Media: Gamma

Date: 4th Quarter 2004
Sample Media: Gamma

<u>Location</u>	<u>Rate (mRem/qtr)</u>	<u>Error (mRem/qtr)</u>
Substation	0	1.8
Mill Diversion	17	2.1
Section 30W VH6	7	0.9
North Fence	0	0.6
Section 17 VH4	0	1.0

<u>Location</u>	<u>Rate (mRem/qtr)</u>	<u>Error (mRem/qtr)</u>
Substation	0	5.0
Mill Diversion	20	4.9
Section 30W VH6	11	1.4
North Fence	4	1.1
Section 17 VH4	0	0.7

Notes:

- 1 - Values represent net values after subtraction of control dosimeter.
 - 2 - Errors represent the 95% confidence interval based on the standard error of the mean.
-

Environmental Radon Monitoring

Date: 3rd Quarter 2004
 Sample Media: Radon - Track Etch

Location	Concentration (pCi/L)	Error (pCi/L)
Substation	Damaged *	
Mill Diversion	2.7	0.3
Section 30W VH6	2.3	0.3
North Fence	6.2	0.5
Section 17 VH4	1.1	0.2

Date: 4th Quarter 2004
 Sample Media: Radon - Track Etch

Location	Concentration (pCi/L)	Error (pCi/L)
Substation	0.8	0.1
Mill Diversion	3.3	0.3
Section 30W VH6	3.4	0.3
North Fence	4.9	0.4
Section 17 VH4	0.9	0.1

* Substation Radon-Track Etch was found on the ground at sample site.
 Lab indicated that sample was too damaged to analyze. Historically,
 the previous four quarters have averaged 1.1pCi/L.

Treated Mine Discharge Water

Sample: Treated Mine Water

Date: 3rd Quarter 2004

Location	Uranium			Radium-226 (soluble)			Radium-226 (insoluble)		
	Conc. (mg/L)	Error (mg/L)	LLD (mg/L)	Conc. (pCi/L)	Error (pCi/L)	LLD (pCi/L)	Conc. (pCi/L)	Error (pCi/L)	LLD (pCi/L)
P-8	dry	dry	dry	dry	dry	dry	dry	dry	dry
P-10	dry	dry	dry	dry	dry	dry	dry	dry	dry
P-12	dry	dry	dry	dry	dry	dry	dry	dry	dry
P-14	dry	dry	dry	dry	dry	dry	dry	dry	dry
P-16	dry	dry	dry	dry	dry	dry	dry	dry	dry
P-18	dry	dry	dry	dry	dry	dry	dry	dry	dry

Sample: Treated Mine Water

Date: 4th Quarter 2004

Location	Uranium			Radium-226 (soluble)			Radium-226 (insoluble)		
	Conc. (mg/L)	Error (mg/L)	LLD (mg/L)	Conc. (pCi/L)	Error (pCi/L)	LLD (pCi/L)	Conc. (pCi/L)	Error (pCi/L)	LLD (pCi/L)
P-8	1.69	0.02	0.001	2.79	0.3	0.3	1.75	0.3	0.4
P-10	dry	dry	dry	dry	dry	dry	dry	dry	dry
P-12	dry	dry	dry	dry	dry	dry	dry	dry	dry
P-14	dry	dry	dry	dry	dry	dry	dry	dry	dry
P-16	dry	dry	dry	dry	dry	dry	dry	dry	dry
P-18	dry	dry	dry	dry	dry	dry	dry	dry	dry

Mine water treatment discharge subject to NPDES permit limitations at outfall location.

Limits: Total Uranium = 4 mg/L (max); soluble Ra-226 = 10 pCi/L (max); total Ra-226 = 30 pCi/L (max)