

Rio Algom Mining LLC

February 28, 2006

ATTN: Document Control Desk
Mr. Gary Janosko, Chief
Fuel Cycle Licensing Branch, NMSS
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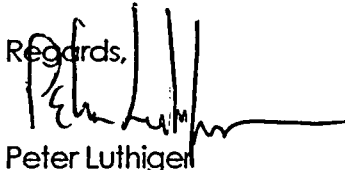
Re: **License SUA-1473, Docket No. 40-8905**
Semiannual Effluent Report – 2nd Half 2005

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 2005 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
Corporate Manager, Radiation
Safety and Environmental Affairs

Attachment

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

RIO ALGOM MINING LLC AMBROSIA LAKE FACILITY

License SUA-1473 Docket 40-8905

Semi-Annual Effluent Report

2nd Half 2005

February 28, 2006

Rio Algom Mining LLC
Ambrosia Lake Facility

License SUA-1473
Docket Number 40-8905

Crushing Circuit Stack Emissions

Mill building demolition of the conventional mill circuit was successfully completed in February 2004.

Rio Algom Mining LLC
Ambrosia Lake Facility

License SUA-1473
Docket Number 40-8905

Yellowcake Dryer Stack Emissions

Mill building demolition of the conventional mill circuit was successfully completed in February 2004.

High Volume Environmental Air Samples
2nd Half 2005

3rd Quarter 2005					Substation	4th Quarter 2005				
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	2.6E-19	3.4E-18	< 1.0	U-nat	8.7E-18	7.0E-19	3.1E-18	< 1.0	
Th-230	3.1E-17	1.3E-17	1.4E-17	< 1.0	Th-230	4.8E-17	1.5E-17	1.5E-17	< 1.0	
Ra-226	6.3E-18	1.1E-17	3.5E-17	< 1.0	Ra-226	9.2E-18	7.3E-18	2.0E-17	< 1.0	
Pb-210	1.2E-15	7.0E-17	1.6E-16	< 1.0	Pb-210	1.7E-15	9.2E-17	1.3E-16	< 1.0	

3rd Quarter 2005					Section 17 VH 4	4th Quarter 2005				
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	
U-nat	3.7E-18	1.1E-19	2.6E-18	< 1.0	U-nat	3.2E-18	2.6E-19	2.7E-18	< 1.0	
Th-230	6.8E-18	5.4E-18	7.8E-18	< 1.0	Th-230	6.4E-18	7.1E-18	1.0E-17	< 1.0	
Ra-226	1.4E-17	1.1E-17	3.1E-17	< 1.0	Ra-226	5.0E-18	6.2E-18	1.9E-17	< 1.0	
Pb-210	1.0E-15	5.5E-17	1.2E-16	< 1.0	Pb-210	1.5E-15	7.9E-17	1.0E-16	< 1.0	

High Volume Environmental Air Samples
2nd Half 2005

3rd Quarter 2005					Section 30 West VH 6				
					4th Quarter 2005				
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit
U-nat	1.1E-17	3.3E-19	2.4E-18	< 1.0	U-nat	9.8E-18	7.8E-19	2.3E-18	< 1.0
Th-230	2.7E-17	9.2E-18	9.2E-18	< 1.0	Th-230	2.6E-17	9.7E-18	9.7E-18	< 1.0
Ra-226	2.1E-17	1.1E-17	2.7E-17	< 1.0	Ra-226	5.0E-18	6.2E-18	1.9E-17	< 1.0
Pb-210	1.3E-15	5.9E-17	1.3E-16	< 1.0	Pb-210	1.5E-15	7.9E-17	1.0E-16	< 1.0

3rd Quarter 2005					North Fence				
					4th Quarter 2005				
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit
U-nat	1.3E-17	4.0E-19	2.9E-18	< 1.0	U-nat	1.1E-17	9.0E-19	2.8E-18	< 1.0
Th-230	7.8E-17	1.1E-17	6.8E-18	< 1.0	Th-230	7.2E-17	1.5E-17	1.2E-17	< 1.0
Ra-226	2.3E-17	1.3E-17	3.3E-17	< 1.0	Ra-226	2.8E-17	9.2E-18	1.9E-17	< 1.0
Pb-210	1.4E-15	6.6E-17	1.4E-16	< 1.0	Pb-210	1.7E-15	9.2E-17	1.3E-16	< 1.0

High Volume Environmental Air Samples
 2nd Half 2005

3rd Quarter 2005					KGL - North		4th Quarter 2005		
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit
U-nat					U-nat	9.8E-18	7.9E-19	2.9E-18	< 1.0
Th-230					Th-230	1.0E-16	1.7E-17	1.2E-17	< 1.0
Ra-226					Ra-226	1.5E-17	7.4E-18	1.8E-17	< 1.0
Pb-210					Pb-210	2.5E-15	9.4E-17	9.4E-17	< 1.0

3rd Quarter 2005					KGL - South		4th Quarter 2005		
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit
U-nat					U-nat	1.3E-17	1.1E-18	2.9E-18	< 1.0
Th-230					Th-230	1.5E-16	1.9E-17	1.1E-17	< 1.0
Ra-226					Ra-226	2.2E-17	7.3E-18	1.5E-17	< 1.0
Pb-210					Pb-210	2.7E-15	1.0E-16	1.1E-16	< 1.0

Note: Two additional sampling locations were added in the 4th quarter of 2005 to monitor the Lined Pond relocation project.

High Volume Environmental Air Samples
 2nd Half 2005

3rd Quarter 2005					Mill Diversion	4th Quarter 2005				
Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	% Limit	
U-nat	1.6E-17	4.9E-19	3.2E-18	< 1.0	U-nat	2.3E-17	1.8E-18	2.9E-18	< 1.0	
Th-230	6.8E-17	1.3E-17	1.0E-17	< 1.0	Th-230	2.6E-16	2.6E-17	1.2E-17	1.3	
Ra-226	1.8E-17	1.2E-17	3.3E-17	< 1.0	Ra-226	6.9E-17	4.4E-17	1.2E-16	< 1.0	
Pb-210	1.2E-15	6.6E-17	1.6E-16	< 1.0	Pb-210	1.9E-15	9.6E-17	1.1E-16	< 1.0	

Vegetation

Location: Substation Date: August 2005 Sample Media: Vegetation				Location: Mill Diversion Date: August 2005 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	6.1E-05	1.5E-06	3.4E-05	U-nat	1.0E-03	2.4E-05	3.4E-05
Th-230	0.0E+00	1.0E-03	1.7E-03	Th-230	1.8E-03	1.0E-03	1.3E-03
Ra-226	4.8E-04	1.0E-03	3.3E-03	Ra-226	2.3E-03	9.0E-04	1.9E-03
Pb-210	2.4E-02	5.5E-03	1.5E-02	Pb-210	1.4E-02	5.0E-03	1.5E-02

Location: Section 30 West VH6 Date: August 2005 Sample Media: Vegetation				Location: North Fence Date: August 2005 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	5.1E-04	1.2E-05	3.4E-05	U-nat	1.1E-03	2.6E-05	3.4E-05
Th-230	1.4E-03	1.2E-03	1.4E-03	Th-230	1.0E-03	1.0E-03	1.4E-03
Ra-226	1.5E-03	9.0E-04	2.2E-03	Ra-226	3.1E-03	1.0E-03	1.9E-03
Pb-210	5.6E-03	5.3E-03	1.7E-02	Pb-210	4.0E-03	5.2E-03	1.8E-02

Vegetation

Location: Section 17 VH 4
Date: August 2005
Sample Media: Vegetation

Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat	1.4E-03	3.4E-05	3.4E-05
Th-230	1.2E-03	8.0E-04	1.0E-03
Ra-226	2.2E-03	9.0E-04	2.0E-03
Pb-210	6.1E-03	3.9E-03	1.3E-02

Vegetation

Location: Substation Date: October 2005 Sample Media: Vegetation				Location: Mill Diversion Date: October 2005 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	0.0E+00	0.0E+00	3.4E-05	U-nat	3.4E-05	2.3E-06	3.4E-05
Th-230	5.8E-04	1.2E-03	1.8E-03	Th-230	0.0E+00	1.1E-03	1.8E-03
Ra-226	2.6E-04	5.0E-04	1.6E-03	Ra-226	9.6E-04	6.0E-04	1.6E-03
Pb-210	8.2E-04	5.6E-03	1.7E-02	Pb-210	1.2E-02	5.6E-03	1.6E-02

Location: Section 30 West VH6 Date: October 2005 Sample Media: Vegetation				Location: North Fence Date: October 2005 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	4.1E-05	2.8E-06	3.4E-05	U-nat	0.0E+00	0.0E+00	3.4E-05
Th-230	0.0E+00	1.3E-03	2.1E-03	Th-230	0.0E+00	8.0E-04	1.6E-03
Ra-226	1.3E-03	7.0E-04	1.7E-03	Ra-226	7.4E-04	7.0E-04	2.1E-03
Pb-210	4.4E-03	6.5E-03	2.1E-02	Pb-210	0.0E+00	9.0E-04	2.1E-02

Vegetation

Location: Section 17 VH 4
Date: October 2005
Sample Media: Vegetation

Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat	6.1E-05	4.2E-06	2.0E-05
Th-230	7.0E-05	9.0E-04	1.4E-03
Ra-226	3.0E-03	8.0E-04	1.4E-03
Pb-210	6.1E-03	4.5E-03	1.4E-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	Please see 1st half 2005 report			Ra-226	Please see 1st half 2005 report		
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	Please see 1st half 2005 report			Ra-226	Please see 1st half 2005 report		
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	Please see 1st half 2005 report		
Pb-210	for 2005 sediment data.		

Sediment

Location: P-0				Location: P-1			
Date:				Date:			
Sample Media: Sediment				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:			U-nat	Note:		
Th-230	Sediment is sampled annually.			Th-230	Sediment is sampled annually.		
Ra-226	Please see 1st half 2005 report			Ra-226	Please see 1st half 2005 report		
Pb-210	for 2005 sediment data.			Pb-210	for 2005 sediment data.		

Location: P-2				Location: P-3			
Date:				Date:			
Sample Media: Sediment				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:			U-nat	Note:		
Th-230	Sediment is sampled annually.			Th-230	Sediment is sampled annually.		
Ra-226	Please see 1st half 2005 report			Ra-226	Please see 1st half 2005 report		
Pb-210	for 2005 sediment data.			Pb-210	for 2005 sediment data.		

Environmental Gamma Radiation

Date: 3rd Quarter 2005
Sample Media: Gamma

Date: 4th Quarter 2005
Sample Media: Gamma

<u>Location</u>	<u>Rate (mRem/qtr)</u>	<u>Error (mRem/qtr)</u>	<u>Location</u>	<u>Rate (mRem/qtr)</u>	<u>Error (mRem/qtr)</u>
Substation	0	1.6	Substation	0	1.9
Mill Diversion	13	2	Mill Diversion	15	3.4
Section 30W VH6	1	3.6	Section 30W VH6	3	2.8
North Fence	0	1.6	North Fence	0	5
Section 17 VH4	0	1.6	Section 17 VH4	0	1.8
			KGL South	1	5.9
			KGL North	0	2.7

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.
- 3 - Two additional sampling locations were added in the 4th quarter of 2005 to monitor the Lined Pond relocation project.

Environmental Radon Monitoring

Date: 3rd Quarter 2005
Sample Media: Radon - Track Etch

Location	Concentration (pCi/L)	Error (pCi/L)
Substation	1.1	0.1
Mill Diversion	7.6	0.3
Section 30W VH6	3.5	0.2
North Fence	3.3	0.2
Section 17 VH4	1.3	0.1

Date: 4th Quarter 2005
Sample Media: Radon - Track Etch

Location	Concentration (pCi/L)	Error (pCi/L)
Substation	1.1	0.1
Mill Diversion	4.1	0.2
Section 30W VH6	4.6	0.2
North Fence	4.7	0.2
Section 17 VH4	1.4	0.1
KGL South	3.5	0.2
KGL North	3.6	0.2

Note: Two additional sampling locations were added in the 4th quarter of 2005 to monitor the Lined Pond relocation project.

Treated Mine Discharge Water

Sample: Treated Mine Water

Date: 3rd Quarter 2005

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 2005

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

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)

RIO ALGOM MINING LLC
DISCHARGE PERMIT - DP-71
MONITORING RESULTS - 3rd QUARTER 2005

Date	Location	Depth to Water (ft)	Total Depth (ft)	WELL STATUS	pH (s.u.)	Temp. (C)	Spec. Cond. (uS)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Arsenic (mg/L)	Selenium (mg/L)	Uranium (mg/L)
9/9/2005	MW-12		18.40	NS										
9/12/2005	MW-13		29.55	NS										
9/12/2005	MW-22	34.60	36.42		7.9	15.2	4220	136	2860	5230	107	0.005	0.542	0.0402
9/9/2005	MW-23	41.65	42.00	NS										
9/9/2005	MW-24	50.28	50.30	NS										
9/9/2005	MW-25		29.83	NS										
9/9/2005	MW-26	35.40	35.45	NS										
9/9/2005	MW-27		28.03	NS										
9/9/2005	MW-28		32.63	NS										
9/9/2005	MW-29	29.32	29.52	NS										
9/12/2005	MW-30		41.66	NS										
9/9/2005	MW-31		51.10	NS										

Notes

- 1 - Well status listed as "NS" indicates the well was either dry or contained insufficient water for sample collection.

RIO ALGOM MINING LLC
DISCHARGE PERMIT - DP-71
MONITORING RESULTS - 4TH QUARTER 2005

Date	Location	Depth to Water (ft)	Total Depth (ft)	WELL STATUS	pH (s.u.)	Temp. (C)	Spec. Cond. (uS)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Arsenic (mg/L)	Selenium (mg/L)	Uranium (mg/L)
12/20/2005	MW-12		18.35	NS										
12/20/2005	MW-13		29.48	NS										
11/15/2005	MW-22	34.00	36.99		7.73	11.5	6110	130	2950	5200	106	<.003	0.483	0.0392
12/20/2005	MW-23	41.63	42.00	NS										
12/20/2005	MW-24	50.30	50.36	NS										
12/20/2005	MW-25		29.80	NS										
12/20/2005	MW-26	35.28	35.43	NS										
12/20/2005	MW-27		28.10	NS										
12/20/2005	MW-28		32.60	NS										
12/20/2005	MW-29	29.26	29.52	NS										
12/20/2005	MW-30		41.69	NS										
12/20/2005	MW-31		50.78	NS										
11/15/2005	MW-32	67.97	72.10		7.54	12	6010	179	2890	5190	91	<.003	0.357	0.0693
12/20/2005	MW-33		59.48	NS										

Notes

- 1 - Well status listed as "NS" indicates the well was either dry or contained insufficient water for sample collection.

RIO ALGOM MINING LLC
DISCHARGE PERMIT - DP-71
MONITORING RESULTS - 4TH QUARTER 2005
SEMI-ANNUAL REPORT

Date	Location	WELL STATUS	HCO ₃ (mg/L)	CO ₃ (mg/L)	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	F (mg/L)	Al (mg/L)	Cd (mg/L)	Cr (mg/L)	Co (mg/L)	Cu (mg/L)
12/20/2005	MW-12	NS												
12/20/2005	MW-13	NS												
11/15/2005	MW-22		209.00	< 2	480.00	257	656	8	0.4	0.2	< 0.08	< 0.05	< 0.05	< 0.05
12/20/2005	MW-23	NS												
12/20/2005	MW-24	NS												
12/20/2005	MW-25	NS												
12/20/2005	MW-26	NS												
12/20/2005	MW-27	NS												
12/20/2005	MW-28	NS												
12/20/2005	MW-29	NS												
12/20/2005	MW-30	NS												
12/20/2005	MW-31	NS												
11/15/2005	MW-32		353.00	< 2	547.00	324	486	9	1	< 0.2	< 0.03	< 0.05	< 0.05	< 0.05
12/20/2005	MW-33	NS												

Notes

1 -

Well status listed as "NS" indicates the well was either dry or contained insufficient water for sample collection.

RIO ALGOM MINING LLC
DISCHARGE PERMIT - DP-71
MONITORING RESULTS - 4TH QUARTER 2005
SEMI-ANNUAL REPORT

Date	Location	Fe (mg/L)	Pb (mg/L)	Mn (mg/L)	Mo (mg/L)	Ni (mg/L)	TKN (mg/L)	Ag (mg/L)	Zn (mg/L)	Ra-226 & Ra-228 (pCi/L)
12/20/2005	MW-12									
12/20/2005	MW-13									
11/15/2005	MW-22	< 0.1	< 0.003	0.04	< 0.05	< 0.05	< 0.2	< 0.05	< 0.05	1.32
12/20/2005	MW-23									
12/20/2005	MW-24									
12/20/2005	MW-25									
12/20/2005	MW-26									
12/20/2005	MW-27									
12/20/2005	MW-28									
12/20/2005	MW-29									
12/20/2005	MW-30									
12/20/2005	MW-31									
11/15/2005	MW-32	< 0.1	0.0009	0.61	< 0.05	< 0.05	1.3	< 0.05	< 0.05	0.13
12/20/2005	MW-33									

Notes

1 -

Well status listed as "NS" indicates the well was either dry or contained insufficient water for sample collection.