

Kurian, Varughese

From: Repetto, John on behalf of DocProcessing Center
Sent: Thursday, March 31, 2016 9:08 AM
To: Kurian, Varughese
Cc: Woods, Sylvia; Buffington, Carmen; Broadnax, Tawanna
Subject: RE: Rio Algom Mining LLC

Varughese,

I checked the DPC area and we do not have the document in house for processing. Since it is a month old now, if you have a copy, please write "Designate as Original, per (pm)" on the bottom of first page and send the document down to DPC at OWFN P1-B36 so that we can scan it into ADAMS.

Thanks

John (Rick) Repetto
NRC Document Processing Center (DPC)
Profile QC Manager

From: Kurian, Varughese
Sent: Wednesday, March 30, 2016 4:22 PM
To: DocProcessing Center <DocProcessing.Center@nrc.gov>
Cc: Woods, Sylvia <Sylvia.Woods@nrc.gov>; Buffington, Carmen <Carmen.Buffington@nrc.gov>
Subject: Rio Algom Mining LLC

Good evening,

Could you please verify that the Document Control Desk received "2nd Half 2015 Semiannual Report for the Ambrosia Lake Facility" form Rio Algom Mining LLC dated February 26, 2016?

I did not find it during a search conducted using License # SUA-1473 and Docket No. 40-8905.

Thank you,

Varughese

Varughese Kurian
Project Manger
Materials Decommissioning Branch
Mail Stop T8F5
Phone: (301) 415-7426

Rio Algom Mining LLC

February 26, 2016

ADDRESSEE ONLY

Mr. Varughese Kurian, Project Manager
U.S. Nuclear Regulatory Commission
Two White Flint Mail Stop T-8F5
11545 Rockville Pike
Rockville, MD 20852

CERTIFIED MAIL

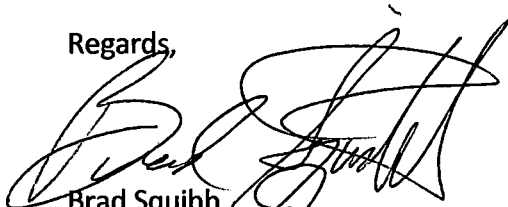
Re: **License SUA-1473, Docket No. 40-8905**
Semiannual Effluent Report – 2nd Half 2015

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 2nd Half 2015 Semiannual Report for the Ambrosia Lake facility.

If you have any questions or need additional information, please do not hesitate to call me at (865) 220-7193.

Regards,



Brad Squibb
Radiation Safety Officer

Attachment

cc: NRC (document control)
File

Rio Algom Mining LLC

February 26, 2016

ADDRESSEE ONLY

Mr. Varughese Kurian, Project Manager
U.S. Nuclear Regulatory Commission
Two White Flint Mail Stop T-8F5
11545 Rockville Pike
Rockville, MD 20852

CERTIFIED MAIL

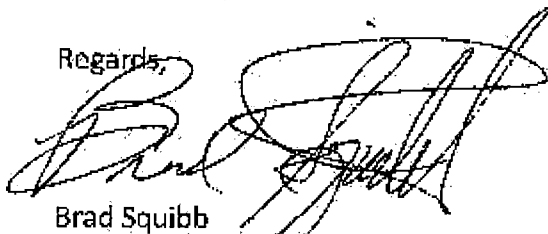
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Semiannual Effluent Report – 2nd Half 2015

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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 2nd Half 2015 Semiannual Report for the Ambrosia Lake facility.

If you have any questions or need additional information, please do not hesitate to call me at (865) 220-7193.

Regards,



Brad Squibb
Radiation Safety Officer

Attachment

cc: NRC (document control)
File

Environmental Gamma Radiation
2015

3rd Quarter		4th Quarter	
Sample Media: Gamma		Sample Media: Gamma	
Date: 7/1/2015 - 9/30/2015		Date: 10/1/2015 - 12/31/2015	
Location:	Rate (mRem/qtr)	Location:	Rate (mRem/qtr)
Substation	0.6	Substation	5.1
Mill Diversion	6.6	Mill Diversion	8.7
Section 30W VH6	51.3	Section 30W VH6	54.8
North Fence	6.4	North Fence	9.5
Section 17 VH4	9.2	Section 17 VH4	8.7
Section 4 - #1	8.0	Section 4 - #1	14.2
Section 4 - #2	11.6	Section 4 - #2	11.6
Section 4 - #3	6.9	Section 4 - #3	8.4

Notes:
Values are net after subtraction of control value

Environmental Radon
2015

3rd Quarter
Sample Media: Track Etch

Location:	Rate pCi/L	Error pCi/L
Substation	0.4	0.0
Mill Diversion	1.8	0.1
Section 30W VH6	2.8	0.2
North Fence	2.5	0.1
Section 17 VH4	0.8	0.1
KGL - North	1.7	0.1
KGL - South	1.9	0.1

4th Quarter
Sample Media: Track Etch

Location:	Rate pCi/L	Error pCi/L
Substation	0.7	0.1
Mill Diversion	2.1	0.1
Section 30W VH6	2.9	0.2
North Fence	2.7	0.1
Section 17 VH4	0.7	0.1
KGL - North	1.9	0.1
KGL - South	1.8	0.1

Notes:

High Volume Environmental Air Samples
2015

3rd Quarter					4th 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	3.0E-18	1.3E-16	2.5E-18	< 1.0	U-nat	0.0E+00	1.0E+13	1.0E+11	< 1.0
Th-230	9.6E-18	6.1E-18	9.6E-18	< 1.0	Th-230	1.1E-17	4.7E-18	6.1E-18	< 1.0
Ra-226	2.7E-18	2.3E-18	2.3E-18	< 1.0	Ra-226	4.5E-18	2.6E-18	7.2E-18	< 1.0
Pb-210	6.6E-16	3.3E-17	7.3E-17	< 1.0	Pb-210	8.8E-16	3.1E-17	5.6E-17	< 1.0

3rd Quarter					4th 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	0.0E+00	1.3E-16	2.5E-18	< 1.0	U-nat	0.0E+00	1.0E+13	1.0E+11	< 1.0
Th-230	4.4E-18	5.0E-18	8.2E-18	< 1.0	Th-230	-7.9E-19	3.2E-18	6.2E-18	< 1.0
Ra-226	7.5E-19	2.8E-18	2.1E-18	< 1.0	Ra-226	3.2E-18	2.2E-18	1.5E-18	< 1.0
Pb-210	9.7E-16	3.6E-17	6.3E-17	< 1.0	Pb-210	8.6E-16	3.5E-17	6.3E-17	< 1.0

3rd Quarter					4th 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	3.9E-18	1.4E-16	3.3E-18	< 1.0	U-nat	3.0E-18	1.0E+13	1.0E+11	< 1.0
Th-230	6.3E-18	6.4E-18	1.1E-17	< 1.0	Th-230	3.9E-18	3.9E-18	6.2E-18	< 1.0
Ra-226	7.0E-18	3.1E-18	2.0E-18	< 1.0	Ra-226	4.8E-18	2.7E-18	5.2E-18	< 1.0
Pb-210	7.5E-16	3.9E-17	8.2E-17	< 1.0	Pb-210	1.2E-15	3.4E-17	4.8E-17	< 1.0

3rd Quarter					4th 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	0.0E+00	2.4E-15	9.1E-18	< 1.0	U-nat	0.0E+00	5.5E+11	1.1E+09	< 1.0
Th-230	2.7E-18	1.9E-17	3.4E-17	< 1.0	Th-230	2.6E-17	1.8E-17	2.3E-17	< 1.0
Ra-226	3.1E-17	1.2E-17	1.2E-17	< 1.0	Ra-226	6.8E-18	8.1E-18	1.6E-17	< 1.0
Pb-210	1.0E-15	9.8E-17	2.6E-16	< 1.0	Pb-210	1.0E-15	8.1E-17	2.0E-16	< 1.0

High Volume Environmental Air Samples
2015

3rd Quarter					4th 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	0.0E+00	3.6E-15	1.4E-17	< 1.0	U-nat	9.2E-18	5.5E+11	1.1E+09	< 1.0
Th-230	3.9E-17	4.7E-17	7.1E-17	< 1.0	Th-230	1.5E-17	1.8E-17	2.4E-17	< 1.0
Ra-226	5.5E-17	2.2E-17	2.8E-17	< 1.0	Ra-226	2.4E-17	1.2E-17	2.0E-17	< 1.0
Pb-210	8.3E-16	2.2E-16	6.7E-16	< 1.0	Pb-210	1.1E-15	8.5E-17	2.2E-16	< 1.0

3rd Quarter					4th 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	0.0E+00	1.5E-16	3.4E-18	< 1.0	U-nat	0.0E+00	9.3E+12	1.1E+11	< 1.0
Th-230	-3.3E-19	4.8E-18	9.2E-18	< 1.0	Th-230	7.8E-18	5.0E-18	8.7E-18	< 1.0
Ra-226	6.2E-18	3.3E-18	4.0E-18	< 1.0	Ra-226	4.2E-18	3.4E-18	2.4E-18	< 1.0
Pb-210	1.1E-15	4.4E-17	8.3E-17	< 1.0	Pb-210	7.4E-16	3.1E-17	5.5E-17	< 1.0

3rd Quarter					4th 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	0.0E+00	1.3E-16	2.5E-18	< 1.0	U-nat	0.0E+00	1.0E+13	1.0E+11	< 1.0
Th-230	4.8E-18	5.6E-18	9.8E-18	< 1.0	Th-230	2.3E-18	4.6E-18	5.8E-18	< 1.0
Ra-226	9.0E-18	2.8E-18	4.2E-18	< 1.0	Ra-226	2.4E-18	1.9E-18	1.8E-18	< 1.0
Pb-210	1.3E-15	3.9E-17	6.9E-17	< 1.0	Pb-210	9.5E-16	3.4E-17	5.7E-17	< 1.0

Vegetation
2015

3rd Quarter

4th Quarter

Location: Substation			
Date: 29-Sep-15			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat	8.1E-05	5.0E-06	4.7E-05
Th-230	5.7E-04	1.5E-03	2.4E-03
Ra-226	6.0E-04	5.5E-04	1.1E-03
Pb-210	2.5E-03	5.4E-03	2.0E-02

Location: Substation			
Date: 31-Dec-15			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat			
Th-230	There was no growth in the 4th Quarter		
Ra-226	so no samples were collected.		
Pb-210			

Location: Mill Diversion			
Date: 29-Sep-15			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat	1.2E-04	7.1E-06	3.4E-05
Th-230	2.0E-03	1.3E-03	2.2E-03
Ra-226	7.3E-04	4.9E-04	1.4E-03
Pb-210	9.6E-03	4.6E-04	1.7E-02

Location: Mill Diversion			
Date: 31-Dec-15			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat			
Th-230	There was no growth in the 4th Quarter		
Ra-226	so no samples were collected.		
Pb-210			

Location: Section 30 West VH6			
Date: 29-Sep-15			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat	5.6E-04	3.4E-05	4.1E-05
Th-230	8.5E-04	1.1E-03	1.8E-03
Ra-226	1.8E-03	6.6E-04	8.0E-04
Pb-210	1.5E-02	4.3E-03	1.5E-02

Location: Section 30 West VH6			
Date: 31-Dec-15			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat			
Th-230	There was no growth in the 4th Quarter		
Ra-226	so no samples were collected.		
Pb-210			

Location: North Fence			
Date: 29-Sep-15			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat	2.8E-04	1.7E-05	3.4E-05
Th-230	5.7E-04	9.4E-04	1.5E-03
Ra-226	1.7E-03	6.6E-04	1.1E-03
Pb-210	7.6E-03	3.7E-03	1.3E-02

Location: North Fence			
Date: 31-Dec-15			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat			
Th-230	There was no growth in the 4th Quarter		
Ra-226	so no samples were collected.		
Pb-210			

Vegetation
 2015

3rd Quarter

4th Quarter

Location: Section 17 VH4 Date: 29-Sep-15			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat	3.1E-04	1.9E-05	4.1E-05
Th-230	-1.7E-04	7.8E-04	1.6E-03
Ra-226	1.6E-03	5.9E-04	1.1E-03
Pb-210	1.4E-02	4.4E-03	1.6E-02

Location: Section 17 VH4 Date: 31-Dec-15			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat			
Th-230	There was no growth in the 4th Quarter so no samples were collected.		
Ra-226			
Pb-210			

Location: KGL - North Date: 29-Sep-15			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat	4.7E-05	2.9E-06	3.4E-05
Th-230	4.6E-04	1.4E-03	2.3E-03
Ra-226	4.6E-04	4.3E-04	4.3E-04
Pb-210	6.6E-03	3.9E-03	1.5E-02

Location: KGL - North Date: 31-Dec-15			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat			
Th-230	There was no growth in the 4th Quarter so no samples were collected.		
Ra-226			
Pb-210			

Location: KGL - South Date: 29-Sep-15			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat	3.4E-05	2.1E-06	3.4E-05
Th-230	1.1E-03	9.3E-04	1.6E-03
Ra-226	1.0E-03	4.2E-04	1.3E-03
Pb-210	1.1E-02	4.9E-03	1.8E-02

Location: KGL - South Date: 31-Dec-15			
Nuclide	Conc. (uCi/kg)	Error (uCi/kg)	LLD (uCi/kg)
U-nat			
Th-230	There was no growth in the 4th Quarter so no samples were collected.		
Ra-226			
Pb-210			

Soil
 2015

Location: Substation			
Date:			
Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U-nat	Completed in 1st half of 2015		
Th-230			
Ra-226			
Pb-210			

Location: Mill Diversion			
Date:			
Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U-nat	Completed in 1st half of 2015		
Th-230			
Ra-226			
Pb-210			

Location: Section 30 West VH6			
Date:			
Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U-nat	Completed in 1st half of 2015		
Th-230			
Ra-226			
Pb-210			

Location: North Fence			
Date:			
Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U-nat	Completed in 1st half of 2015		
Th-230			
Ra-226			
Pb-210			

Location: Section 17 VH4			
Date:			
Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U-nat	Completed in 1st half of 2015		
Th-230			
Ra-226			
Pb-210			

Location: KGL - North			
Date:			
Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U-nat	Completed in 1st half of 2015		
Th-230			
Ra-226			
Pb-210			

Location: KGL - South			
Date:			
Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U-nat	Completed in 1st half of 2015		
Th-230			
Ra-226			
Pb-210			

Sediment
 2015

Location: P-0			
Date:			
Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U-nat	Completed in 1st half of 2015		
Th-230			
Ra-226			
Pb-210			

Location: P-1			
Date:			
Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U-nat	Completed in 1st half of 2015		
Th-230			
Ra-226			
Pb-210			

Location: P-2			
Date:			
Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U-nat	Completed in 1st half of 2015		
Th-230			
Ra-226			
Pb-210			

Location: P-3			
Date:			
Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U-nat	Completed in 1st half of 2015		
Th-230			
Ra-226			
Pb-210			