

# Rio Algom Mining LLC

August 27, 2014

ADDRESSEE ONLY

Mr. Tom McLaughlin, Project Manager  
U.S. Nuclear Regulatory Commission  
Mail Stop T-8F5  
Washington, DC 20555

CERTIFIED MAIL

Re: **License SUA-1473, Docket No. 40-8905**  
**Semiannual Effluent Report – 1<sup>st</sup> Half 2014**

Dear Mr. McLaughlin,

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 1<sup>st</sup> Half 2014 Semiannual Report for the Ambrosia Lake facility.

As stated in the last submittal dated February 24, 2013, this presentation format does not include three items/actions that are completed or no longer performed. These include (1) Crushing Circuit Stack Emission, (2) Yellowcake Dryer Stack Emission, and (3) Treated Mine Discharge Water. Also, vegetation samples are not taken during winter months so there is no data for the first quarter of 2014.

We have been in contact with our outside lab (ACZ) in regard to the lower limits of detection (LLD's) for vegetation, soil, and sediment samples, as referenced in the NRC Regulatory Guidance Document 4.14 (April, 1980). We will be moving forward with contacting our NRC inspector and proposing alternate LLD's based on the capabilities of our laboratory.

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

Regards,



Digitally signed by Brad Squibb  
DN: cn=Brad Squibb, o=Solutient  
Technologies, ou=RISO, email=b-s-  
s@att.net, c=US  
Date: 2014.08.27 14:52:46 -0400

Brad Squibb  
Radiation Safety Officer

Attachment

cc: **NRC (document control)**  
**File**

## Environmental Gamma Radiation 2014

| 1st Quarter                |                    | 2nd Quarter                |                    |
|----------------------------|--------------------|----------------------------|--------------------|
| Sample Media: Gamma        |                    | Sample Media: Gamma        |                    |
| Date: 1/1/2014 - 3/31/2014 |                    | Date: 4/1/2014 - 6/30/2014 |                    |
| Location:                  | Rate<br>(mRem/qtr) | Location:                  | Rate<br>(mRem/qtr) |
| Substation                 | 0.0                | Substation                 | 0.0                |
| Mill Diversion             | 0.0                | Mill Diversion             | 0.0                |
| Section 30W VH6            | 18.3               | Section 30W VH6            | 8.9                |
| North Fence                | 0.9                | North Fence                | 0.0                |
| Section 17 VH4             | 0.0                | Section 17 VH4             | 0.0                |
| Section 4 - #1             | 0.0                | Section 4 - #1             | 0.0                |
| Section 4 - #2             | 1.0                | Section 4 - #2             | 0.0                |
| Section 4 - #3             | 0.0                | Section 4 - #3             | 0.0                |

**Notes:**

Values are net after subtraction of control value

## Environmental Radon 2014

### 1st Quarter Sample Media: Track Etch

| Location:       | Rate<br>pCi/L | Error<br>pCi/L |
|-----------------|---------------|----------------|
| Substation      | 0.3           | 0.0            |
| Mill Diversion  | 1.7           | 0.1            |
| Section 30W VH6 | 2.4           | 0.1            |
| North Fence     | 2.4           | 0.1            |
| Section 17 VH4  | 1.0           | 0.1            |
| KGL - North     | 1.6           | 0.1            |
| KGL - South     | 1.8           | 0.1            |

### 2nd Quarter Sample Media: Track Etch

| Location:       | Rate<br>pCi/L | Error<br>pCi/L |
|-----------------|---------------|----------------|
| Substation      | 0.4           | 0.0            |
| Mill Diversion  | 1.3           | 0.1            |
| Section 30W VH6 | 1.6           | 0.1            |
| North Fence     | 1.8           | 0.1            |
| Section 17 VH4  | 0.3           | 0.0            |
| KGL - North     | 1.3           | 0.1            |
| KGL - South     | 1.4           | 0.1            |

Notes:

## High Volume Environmental Air Samples 2014

| 1st Quarter |                   |                   |                 |         | 2nd Quarter |                   |                   |                 |         |
|-------------|-------------------|-------------------|-----------------|---------|-------------|-------------------|-------------------|-----------------|---------|
| Substation  |                   |                   |                 |         |             |                   |                   |                 |         |
| Nuclide     | Conc.<br>(uCi/ml) | Error<br>(uCi/ml) | LLD<br>(uCi/ml) | % Limit | Nuclide     | Conc.<br>(uCi/ml) | Error<br>(uCi/ml) | LLD<br>(uCi/ml) | % Limit |
| U-nat       | 0.0E+00           | 2.1E-16           | 2.6E-18         | < 1.0   | U-nat       | 0.0E+00           | 5.3E+12           | 8.7E+10         | < 1.0   |
| Th-230      | 3.5E-18           | 5.1E-18           | 4.4E-18         | < 1.0   | Th-230      | 5.3E-18           | 9.3E-18           | 8.5E-18         | < 1.0   |
| Ra-226      | 2.9E-18           | 2.3E-18           | 3.2E-18         | < 1.0   | Ra-226      | 1.6E-18           | 3.2E-18           | 1.2E-17         | < 1.0   |
| Pb-210      | 7.3E-16           | 1.0E-16           | 3.3E-17         | < 1.0   | Pb-210      | 4.8E-16           | 7.5E-17           | 1.0E-16         | < 1.0   |

| 1st Quarter    |                   |                   |                 |         | 2nd Quarter |                   |                   |                 |         |
|----------------|-------------------|-------------------|-----------------|---------|-------------|-------------------|-------------------|-----------------|---------|
| Section 17 VH4 |                   |                   |                 |         |             |                   |                   |                 |         |
| Nuclide        | Conc.<br>(uCi/ml) | Error<br>(uCi/ml) | LLD<br>(uCi/ml) | % Limit | Nuclide     | Conc.<br>(uCi/ml) | Error<br>(uCi/ml) | LLD<br>(uCi/ml) | % Limit |
| U-nat          | 0.0E+00           | 2.1E-16           | 2.7E-18         | < 1.0   | U-nat       | 3.1E-18           | 4.9E+12           | 8.1E+10         | < 1.0   |
| Th-230         | -1.0E-18          | 5.4E-18           | 3.7E-18         | < 1.0   | Th-230      | 9.2E-18           | 1.3E-17           | 1.8E-17         | < 1.0   |
| Ra-226         | 5.5E-18           | 3.2E-18           | 2.5E-18         | < 1.0   | Ra-226      | 6.0E-18           | 2.4E-18           | 5.1E-18         | < 1.0   |
| Pb-210         | 6.9E-16           | 7.8E-17           | 3.8E-17         | < 1.0   | Pb-210      | 3.1E-16           | 6.1E-17           | 1.3E-16         | < 1.0   |

| 1st Quarter |                   |                   |                 |         | 2nd Quarter |                   |                   |                 |         |
|-------------|-------------------|-------------------|-----------------|---------|-------------|-------------------|-------------------|-----------------|---------|
|             |                   | Mill Diversion    |                 |         |             |                   |                   |                 |         |
| Nuclide     | Conc.<br>(uCi/ml) | Error<br>(uCi/ml) | LLD<br>(uCi/ml) | % Limit | Nuclide     | Conc.<br>(uCi/ml) | Error<br>(uCi/ml) | LLD<br>(uCi/ml) | % Limit |
| U-nat       | 1.3E-17           | 2.1E-16           | 2.6E-18         | < 1.0   | U-nat       | 1.0E-17           | 5.2E+12           | 8.6E+10         | < 1.0   |
| Th-230      | 1.3E-16           | 1.0E-17           | 1.5E-17         | < 1.0   | Th-230      | 1.1E-16           | 3.8E-17           | 1.1E-17         | < 1.0   |
| Ra-226      | 1.0E-17           | 3.6E-18           | 2.7E-18         | < 1.0   | Ra-226      | 1.2E-17           | 4.6E-18           | 2.1E-18         | < 1.0   |
| Pb-210      | 9.3E-16           | 1.1E-16           | 3.7E-17         | < 1.0   | Pb-210      | 5.6E-16           | 7.0E-17           | 1.0E-16         | < 1.0   |

| 1st Quarter |                   |                     |                 | 2nd Quarter |         |                   |                   |                 |         |
|-------------|-------------------|---------------------|-----------------|-------------|---------|-------------------|-------------------|-----------------|---------|
|             |                   | Section 30 West VH6 |                 |             |         |                   |                   |                 |         |
| Nuclide     | Conc.<br>(uCi/ml) | Error<br>(uCi/ml)   | LLD<br>(uCi/ml) | % Limit     | Nuclide | Conc.<br>(uCi/ml) | Error<br>(uCi/ml) | LLD<br>(uCi/ml) | % Limit |
| U-nat       | 3.2E-18           | 2.1E-16             | 2.7E-18         | < 1.0       | U-nat   | 4.7E-18           | 5.1E+12           | 8.5E+10         | < 1.0   |
| Th-230      | 8.7E-18           | 5.8E-18             | 4.9E-18         | < 1.0       | Th-230  | 9.6E-18           | 8.5E-18           | 8.5E-18         | < 1.0   |
| Ra-226      | 3.5E-18           | 3.1E-18             | 2.5E-18         | < 1.0       | Ra-226  | 8.0E-18           | 3.6E-18           | 5.2E-18         | < 1.0   |
| Pb-210      | 8.7E-16           | 1.0E-16             | 4.3E-17         | < 1.0       | Pb-210  | 4.9E-16           | 7.6E-17           | 1.0E-16         | < 1.0   |

# High Volume Environmental Air Samples 2014

| 1st Quarter |                   |                   |                 |         | 2nd Quarter |                   |                   |                 |         |
|-------------|-------------------|-------------------|-----------------|---------|-------------|-------------------|-------------------|-----------------|---------|
| North Fence |                   |                   |                 |         |             |                   |                   |                 |         |
| Nuclide     | Conc.<br>(uCi/ml) | Error<br>(uCi/ml) | LLD<br>(uCi/ml) | % Limit | Nuclide     | Conc.<br>(uCi/ml) | Error<br>(uCi/ml) | LLD<br>(uCi/ml) | % Limit |
| U-nat       | 3.7E-18           | 2.1E-16           | 2.6E-18         | < 1.0   | U-nat       | 1.1E-17           | 5.1E+12           | 8.5E+10         | < 1.0   |
| Th-230      | 6.3E-18           | 7.4E-18           | 6.3E-18         | < 1.0   | Th-230      | 5.1E-17           | 1.5E-17           | 9.6E-18         | < 1.0   |
| Ra-226      | 8.6E-18           | 3.0E-18           | 3.3E-18         | < 1.0   | Ra-226      | 1.4E-17           | 5.3E-18           | 8.3E-18         | < 1.0   |
| Pb-210      | 7.8E-16           | 8.6E-17           | 4.3E-17         | < 1.0   | Pb-210      | 3.5E-16           | 7.1E-17           | 1.2E-16         | < 1.0   |

| 1st Quarter |                   |                   |                 |         | 2nd Quarter |                   |                   |                 |         |
|-------------|-------------------|-------------------|-----------------|---------|-------------|-------------------|-------------------|-----------------|---------|
| KGL - North |                   |                   |                 |         |             |                   |                   |                 |         |
| Nuclide     | Conc.<br>(uCi/ml) | Error<br>(uCi/ml) | LLD<br>(uCi/ml) | % Limit | Nuclide     | Conc.<br>(uCi/ml) | Error<br>(uCi/ml) | LLD<br>(uCi/ml) | % Limit |
| U-nat       | 3.7E-18           | 2.1E-16           | 2.7E-18         | < 1.0   | U-nat       | 2.0E-17           | 4.6E+12           | 7.7E+10         | < 1.0   |
| Th-230      | 3.3E-17           | 6.2E-18           | 1.4E-17         | < 1.0   | Th-230      | 1.8E-16           | 2.9E-17           | 1.1E-17         | < 1.0   |
| Ra-226      | 2.3E-17           | 3.6E-18           | 2.1E-18         | < 1.0   | Ra-226      | 2.1E-17           | 9.2E-18           | 4.4E-18         | < 1.0   |
| Pb-210      | 7.2E-16           | 1.1E-16           | 3.4E-17         | < 1.0   | Pb-210      | 3.6E-16           | 7.7E-17           | 9.4E-17         | < 1.0   |

| 1st Quarter |                   |                   |                 |         | 2nd Quarter |                   |                   |                 |         |
|-------------|-------------------|-------------------|-----------------|---------|-------------|-------------------|-------------------|-----------------|---------|
| KGL - South |                   |                   |                 |         |             |                   |                   |                 |         |
| Nuclide     | Conc.<br>(uCi/ml) | Error<br>(uCi/ml) | LLD<br>(uCi/ml) | % Limit | Nuclide     | Conc.<br>(uCi/ml) | Error<br>(uCi/ml) | LLD<br>(uCi/ml) | % Limit |
| U-nat       | 1.4E-17           | 2.2E-16           | 2.7E-18         | < 1.0   | U-nat       | 3.7E-17           | 4.7E+12           | 7.8E+10         | < 1.0   |
| Th-230      | 4.8E-17           | 7.3E-18           | 2.1E-17         | < 1.0   | Th-230      | 9.0E-17           | 2.3E-17           | 1.0E-17         | < 1.0   |
| Ra-226      | 1.9E-17           | 3.6E-18           | 3.1E-18         | < 1.0   | Ra-226      | 4.4E-17           | 4.2E-18           | 4.3E-18         | < 1.0   |
| Pb-210      | 9.7E-16           | 1.0E-16           | 4.1E-17         | < 1.0   | Pb-210      | 3.7E-16           | 8.2E-17           | 1.1E-16         | < 1.0   |

Vegetation  
2014

1st Quarter

| Nuclide | Location: Substation                               |          |          |
|---------|--|----------|----------|
|         | Date:  | Conc.    | LLD      |
|         |  | (uCi/kg) | (uCi/kg) |
| U-nat   | Vegetation Samples not taken during Winter months. |          |          |
| Th-230  |  |          |          |
| Ra-226  |  |          |          |
| Pb-210  |  |          |          |

Location: Mill Diversion

| Nuclide | Date:  |          |          |
|---------|--|----------|----------|
|         | Conc.  | Error    | LLD      |
|         | (uCi/kg)   | (uCi/kg) | (uCi/kg) |
| U-nat   | Vegetation Samples not taken during Winter months. |          |          |
| Th-230  |  |          |          |
| Ra-226  |  |          |          |
| Pb-210  |  |          |          |

Location: Section 30 West VH6

| Nuclide | Date:  |          |          |
|---------|--|----------|----------|
|         | Conc.  | Error    | LLD      |
|         | (uCi/kg)   | (uCi/kg) | (uCi/kg) |
| U-nat   | Vegetation Samples not taken during Winter months. |          |          |
| Th-230  |  |          |          |
| Ra-226  |  |          |          |
| Pb-210  |  |          |          |

Location: North Fence

| Nuclide | Date:  |          |          |
|---------|--|----------|----------|
|         | Conc.  | Error    | LLD      |
|         | (uCi/kg)   | (uCi/kg) | (uCi/kg) |
| U-nat   | Vegetation Samples not taken during Winter months. |          |          |
| Th-230  |  |          |          |
| Ra-226  |  |          |          |
| Pb-210  |  |          |          |

2nd Quarter

| Nuclide | Location: Substation |          |          |
|---------|----------------------|----------|----------|
|         | Date:                | Conc.    | LLD      |
|         |                      | (uCi/kg) | (uCi/kg) |
| U-nat   | 1.6E-04              | 7.9E-06  | 3.4E-05  |
| Th-230  | 1.5E-03              | 8.9E-04  | 1.6E-03  |
| Ra-226  | 1.1E-03              | 8.7E-04  | 3.4E-03  |
| Pb-210  | -1.6E-02             | 4.9E-03  | 2.0E-02  |

Location: Mill Diversion

| Nuclide | Date:    |          |          |
|---------|----------|----------|----------|
|         | Conc.    | Error    | LLD      |
|         | (uCi/kg) | (uCi/kg) | (uCi/kg) |
| U-nat   | 1.3E-04  | 6.3E-06  | 4.1E-05  |
| Th-230  | 1.2E-03  | 1.1E-03  | 1.8E-03  |
| Ra-226  | 2.2E-04  | 7.6E-04  | 3.6E-03  |
| Pb-210  | -6.1E-03 | 5.6E-03  | 2.2E-02  |

Location: Section 30 West VH6

| Nuclide | Date:    |          |          |
|---------|----------|----------|----------|
|         | Conc.    | Error    | LLD      |
|         | (uCi/kg) | (uCi/kg) | (uCi/kg) |
| U-nat   | 1.9E-03  | 9.1E-05  | 3.4E-05  |
| Th-230  | 9.7E-04  | 8.2E-04  | 1.5E-03  |
| Ra-226  | 4.2E-03  | 1.5E-03  | 3.5E-03  |
| Pb-210  | -2.2E-02 | 5.1E-03  | 2.1E-02  |

Location: North Fence

| Nuclide | Date:    |          |          |
|---------|----------|----------|----------|
|         | Conc.    | Error    | LLD      |
|         | (uCi/kg) | (uCi/kg) | (uCi/kg) |
| U-nat   | 1.7E-04  | 8.2E-06  | 4.1E-05  |
| Th-230  | 1.6E-03  | 1.1E-03  | 1.8E-03  |
| Ra-226  | 7.5E-04  | 9.2E-04  | 4.0E-03  |
| Pb-210  | -2.1E-02 | 5.8E-03  | 2.4E-02  |

Vegetation  
2014

1st Quarter

| Location: Section 17 VH4 |   |                   |                 |
|--------------------------|---|-------------------|-----------------|
| Date: 21-Aug-12          |   |                   |                 |
| Nuclide                  | Conc.<br>(uCi/kg)                                     | Error<br>(uCi/kg) | LLD<br>(uCi/kg) |
| U-nat                    | Vegetation Samples not taken during<br>Winter months. |                   |                 |
| Th-230                   |   |                   |                 |
| Ra-226                   |   |                   |                 |
| Pb-210                   |   |                   |                 |

| Location: KGL - North |   |                   |                 |
|-----------------------|---|-------------------|-----------------|
| Date: 21-Aug-12       |   |                   |                 |
| Nuclide               | Conc.<br>(uCi/kg)                                     | Error<br>(uCi/kg) | LLD<br>(uCi/kg) |
| U-nat                 | Vegetation Samples not taken during<br>Winter months. |                   |                 |
| Th-230                |   |                   |                 |
| Ra-226                |   |                   |                 |
| Pb-210                |   |                   |                 |

| Location: KGL - South |   |                   |                 |
|-----------------------|---|-------------------|-----------------|
| Date: 21-Aug-12       |   |                   |                 |
| Nuclide               | Conc.<br>(uCi/kg)                                     | Error<br>(uCi/kg) | LLD<br>(uCi/kg) |
| U-nat                 | Vegetation Samples not taken during<br>Winter months. |                   |                 |
| Th-230                |   |                   |                 |
| Ra-226                |   |                   |                 |
| Pb-210                |   |                   |                 |

2nd Quarter

| Location: Section 17 VH4 |                   |                   |                 |
|--------------------------|-------------------|-------------------|-----------------|
| Date:                    |                   |                   |                 |
| Nuclide                  | Conc.<br>(uCi/kg) | Error<br>(uCi/kg) | LLD<br>(uCi/kg) |
| U-nat                    | 1.6E-04           | 7.9E-06           | 3.4E-05         |
| Th-230                   | 3.6E-04           | 7.9E-04           | 1.6E-03         |
| Ra-226                   | 4.6E-04           | 7.6E-04           | 3.4E-03         |
| Pb-210                   | -6.9E-03          | 4.7E-03           | 1.8E-02         |

| Location: KGL - North |                   |                   |                 |
|-----------------------|-------------------|-------------------|-----------------|
| Date:                 |                   |                   |                 |
| Nuclide               | Conc.<br>(uCi/kg) | Error<br>(uCi/kg) | LLD<br>(uCi/kg) |
| U-nat                 | 1.1E-04           | 5.3E-06           | 4.1E-05         |
| Th-230                | 1.3E-03           | 9.4E-04           | 1.7E-03         |
| Ra-226                | 4.8E-04           | 7.4E-04           | 3.6E-03         |
| Pb-210                | -2.4E-02          | 5.7E-03           | 2.4E-02         |

| Location: KGL - South |                   |                   |                 |
|-----------------------|-------------------|-------------------|-----------------|
| Date:                 |                   |                   |                 |
| Nuclide               | Conc.<br>(uCi/kg) | Error<br>(uCi/kg) | LLD<br>(uCi/kg) |
| U-nat                 | 2.3E-04           | 1.1E-05           | 3.4E-05         |
| Th-230                | 2.8E-04           | 1.7E-03           | 1.7E-03         |
| Ra-226                | 7.1E-04           | 8.2E-04           | 3.5E-03         |
| Pb-210                | -1.1E-02          | 4.5E-03           | 1.8E-02         |

Soil  
2014

| Location: Substation |                  |                  |                |  |
|----------------------|------------------|------------------|----------------|--|
| Date: 5/16/2014      |                  |                  |                |  |
| Nuclide              | Conc.<br>(uCi/g) | Error<br>(uCi/g) | LLD<br>(uCi/g) |  |
| U-nat                | 6.4E-07          | 8.8E-09          | 3.4E-08        |  |
| Th-230               | 1.3E-06          | 4.4E-07          | 5.6E-07        |  |
| Ra-226               | 1.6E-06          | 5.3E-07          | 1.3E-06        |  |
| Pb-210               | 3.7E-07          | 1.6E-06          | 5.9E-06        |  |

| Location: Mill Diversion |                  |                  |                |  |
|--------------------------|------------------|------------------|----------------|--|
| Date: 5/16/2014          |                  |                  |                |  |
| Nuclide                  | Conc.<br>(uCi/g) | Error<br>(uCi/g) | LLD<br>(uCi/g) |  |
| U-nat                    | 7.0E-07          | 9.7E-09          | 3.4E-08        |  |
| Th-230                   | 8.3E-06          | 1.2E-06          | 7.5E-07        |  |
| Ra-226                   | 2.3E-06          | 6.3E-07          | 1.3E-06        |  |
| Pb-210                   | 6.1E-06          | 1.8E-06          | 6.2E-06        |  |

| Location: Section 30 West VH6 |                  |                  |                |  |
|-------------------------------|------------------|------------------|----------------|--|
| Date: 5/16/2014               |                  |                  |                |  |
| Nuclide                       | Conc.<br>(uCi/g) | Error<br>(uCi/g) | LLD<br>(uCi/g) |  |
| U-nat                         | 1.1E-05          | 1.5E-07          | 3.4E-08        |  |
| Th-230                        | 6.1E-06          | 8.7E-07          | 5.8E-07        |  |
| Ra-226                        | 4.6E-06          | 8.5E-07          | 1.3E-06        |  |
| Pb-210                        | 5.8E-06          | 2.0E-06          | 7.0E-06        |  |

| Location: North Fence |                  |                  |                |  |
|-----------------------|------------------|------------------|----------------|--|
| Date: 5/16/2014       |                  |                  |                |  |
| Nuclide               | Conc.<br>(uCi/g) | Error<br>(uCi/g) | LLD<br>(uCi/g) |  |
| U-nat                 | 6.2E-07          | 8.5E-09          | 3.4E-08        |  |
| Th-230                | 1.1E-06          | 4.1E-07          | 5.2E-07        |  |
| Ra-226                | 1.8E-06          | 5.9E-07          | 1.3E-06        |  |
| Pb-210                | -2.2E-07         | 2.1E-06          | 7.8E-06        |  |

| Location: Section 17 VH4 |                  |                  |                |  |
|--------------------------|------------------|------------------|----------------|--|
| Date: 5/16/2014          |                  |                  |                |  |
| Nuclide                  | Conc.<br>(uCi/g) | Error<br>(uCi/g) | LLD<br>(uCi/g) |  |
| U-nat                    | 6.6E-07          | 9.2E-09          | 3.4E-08        |  |
| Th-230                   | 5.9E-07          | 3.4E-07          | 5.4E-07        |  |
| Ra-226                   | 1.7E-06          | 5.7E-07          | 1.3E-06        |  |
| Pb-210                   | 2.2E-06          | 1.7E-06          | 6.3E-06        |  |

| Location: KGL - North |                  |                  |                |  |
|-----------------------|------------------|------------------|----------------|--|
| Date: 5/16/2014       |                  |                  |                |  |
| Nuclide               | Conc.<br>(uCi/g) | Error<br>(uCi/g) | LLD<br>(uCi/g) |  |
| U-nat                 | 1.3E-06          | 1.8E-08          | 3.4E-08        |  |
| Th-230                | 4.1E-06          | 7.7E-07          | 5.8E-07        |  |
| Ra-226                | 2.3E-06          | 6.1E-07          | 1.2E-06        |  |
| Pb-210                | 4.0E-07          | 1.7E-06          | 6.4E-06        |  |

| Location: KGL - South |                  |                  |                |  |
|-----------------------|------------------|------------------|----------------|--|
| Date: 5/16/2014       |                  |                  |                |  |
| Nuclide               | Conc.<br>(uCi/g) | Error<br>(uCi/g) | LLD<br>(uCi/g) |  |
| U-nat                 | 1.7E-06          | 2.3E-08          | 3.4E-08        |  |
| Th-230                | 2.6E-06          | 5.6E-07          | 5.7E-07        |  |
| Ra-226                | 3.5E-06          | 7.5E-07          | 1.3E-06        |  |
| Pb-210                | 5.4E-06          | 1.8E-06          | 6.4E-06        |  |



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| Location: P-0   |                  |                  |                |  |
|-----------------|------------------|------------------|----------------|--|
| Date: 5/16/2014 |                  |                  |                |  |
| Nuclide         | Conc.<br>(uCi/g) | Error<br>(uCi/g) | LLD<br>(uCi/g) |  |
| U-nat           | 6.5E-06          | 9.0E-08          | 3.4E-08        |  |
| Th-230          | 2.9E-06          | 7.8E-07          | 5.5E-07        |  |
| Ra-226          | 6.0E-06          | 9.6E-07          | 1.3E-06        |  |
| Pb-210          | 4.1E-06          | 2.0E-06          | 7.3E-06        |  |

| Location: P-1   |                  |                  |                |  |
|-----------------|------------------|------------------|----------------|--|
| Date: 5/16/2014 |                  |                  |                |  |
| Nuclide         | Conc.<br>(uCi/g) | Error<br>(uCi/g) | LLD<br>(uCi/g) |  |
| U-nat           | 3.4E-06          | 4.7E-08          | 3.4E-08        |  |
| Th-230          | 4.5E-06          | 1.4E-06          | 6.5E-07        |  |
| Ra-226          | 6.0E-06          | 1.0E-06          | 1.4E-06        |  |
| Pb-210          | -1.7E-06         | 1.7E-06          | 6.5E-06        |  |

| Location: P-2   |                  |                  |                |  |
|-----------------|------------------|------------------|----------------|--|
| Date: 5/16/2014 |                  |                  |                |  |
| Nuclide         | Conc.<br>(uCi/g) | Error<br>(uCi/g) | LLD<br>(uCi/g) |  |
| U-nat           | 1.1E-05          | 1.5E-07          | 3.4E-08        |  |
| Th-230          | 8.5E-06          | 1.3E-06          | 6.0E-07        |  |
| Ra-226          | 1.3E-05          | 1.4E-06          | 1.3E-06        |  |
| Pb-210          | 1.1E-05          | 2.0E-06          | 6.5E-06        |  |

| Location: P-3   |                  |                  |                |  |
|-----------------|------------------|------------------|----------------|--|
| Date: 5/16/2014 |                  |                  |                |  |
| Nuclide         | Conc.<br>(uCi/g) | Error<br>(uCi/g) | LLD<br>(uCi/g) |  |
| U-nat           | 1.8E-07          | 2.5E-09          | 3.4E-08        |  |
| Th-230          | -7.0E-08         | 5.7E-07          | 7.7E-07        |  |
| Ra-226          | 6.3E-07          | 3.7E-07          | 1.3E-06        |  |
| Pb-210          | 0.0E+00          | 1.9E-06          | 7.1E-06        |  |