

Rio Algom Mining LLC

March 1, 2022

Document Control Desk
Director
Office of Nuclear Material Safety and Safeguards
United States Nuclear Regulatory Commission
Washington, DC
20555-0001

Re: **Rio Algom Mining LLC – Ambrosia Lake West Mill**
License SUA-1473, Docket No. 40-8905
Semiannual Effluent Report – Second Half 2021

Dear Director,

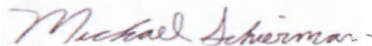
In accordance with license condition #19 of source material license SUA-1473 and the Rio Algom Mining LLC (RAML) *Radiation Protection and Environmental Monitoring Program Manual*, RAML is providing the second half of 2021 Semiannual Effluent Report for its Ambrosia Lake West mill.

In a letter dated December 14, 2016 ([ML16344A027](#)), the Nuclear Regulatory Commission (NRC) agreed in part with a RAML request to terminate certain routine environmental monitoring tasks since the site has been mostly reclaimed. As a result, routine monitoring for environmental external dose, sediment, vegetation, and surface soil has been discontinued and data for these media are no longer being reported. Likewise, in a letter dated December 20, 2017 ([ML17293A342](#)), the NRC agreed with RAML's proposal to terminate environmental monitoring for radioactive particulates in air. RAML terminated this monitoring on December 31, 2017.

[Figure 1](#) depicts monitoring locations, and [Table 1](#) provides the second half of 2021 environmental monitoring results for radon-222 in ambient air.

If you have any questions or need additional information, please do not hesitate to call me at (505) 317-4416.

Respectfully,



Michael Schierman
Radiation Safety Officer
H3 Environmental, LLC

cc: Ms. Sandra Ross (RAML)
Mr. Thomas Lancaster (NRC)
NRC Region IV Division of Nuclear Materials Safety

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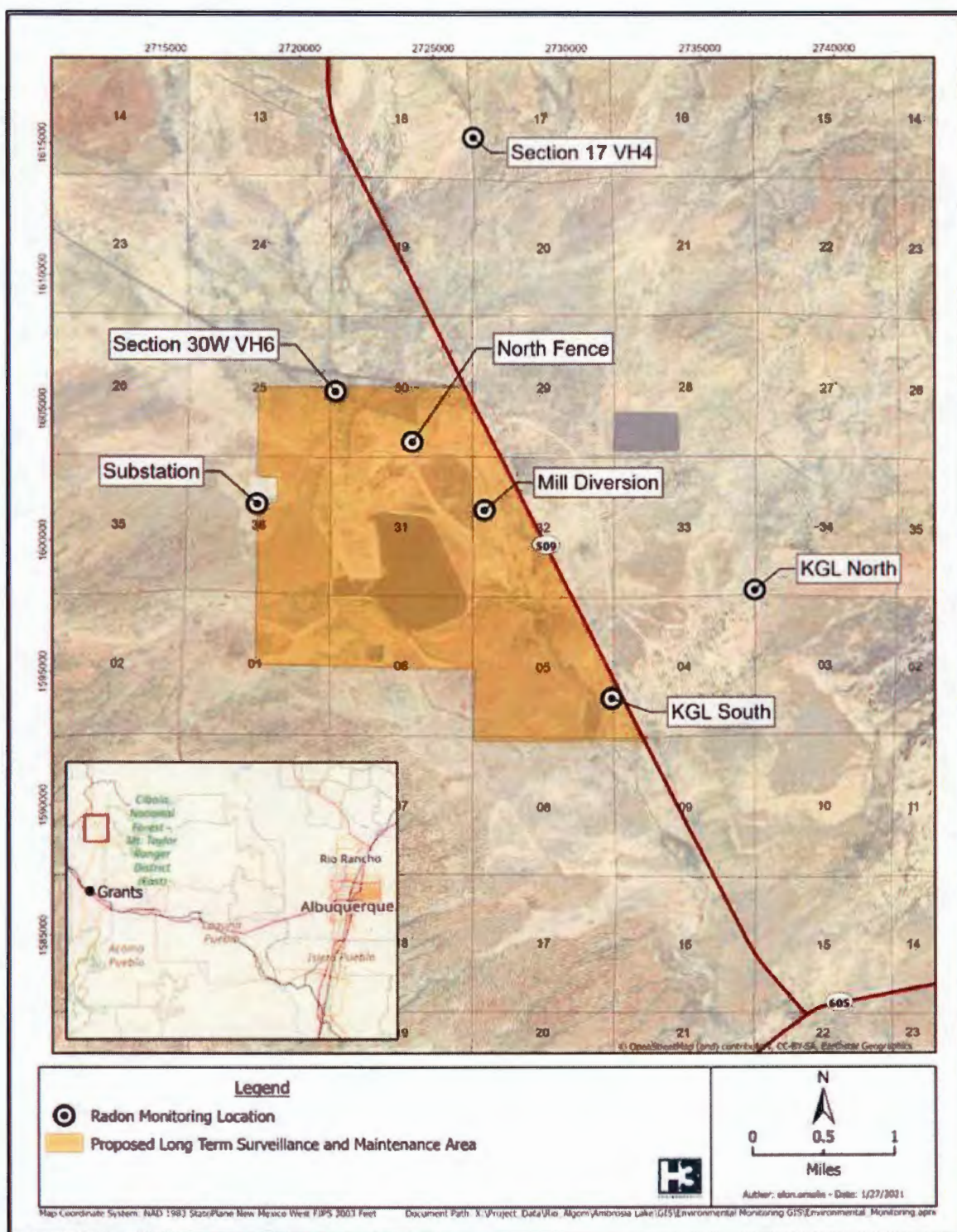


Figure 1. Radon-222 monitoring locations at the Ambrosia Lake West mill

Table 1. Radon-222 monitoring in ambient air at the Ambrosia Lake West mill

Ambrosia Lake West Mill Environmental Radon 2021									
3rd Quarter (7/5/21 – 10/06/21)					4th Quarter (10/06/21 – 1/12/22)				
Sample Media: Ambient Air					Sample Media: Ambient Air				
Location:	Conc. ¹ μCi ml ⁻¹	Error ² μCi ml ⁻¹	MDC ³ μCi ml ⁻¹	% EC ⁴	Location:	Conc. ¹ μCi ml ⁻¹	Error ² μCi ml ⁻¹	MDC ³ μCi ml ⁻¹	% EC ⁴
Substation	4.9E-10	1.4E-10	1.5E-10	5%	Substation	6.8E-10	1.7E-10	1.5E-10	7%
Mill Diversion	1.9E-09	3.0E-10	1.5E-10	19%	Mill Diversion	3.2E-09	4.6E-10	1.5E-10	32%
Section 30W VH6	2.5E-09	4.1E-10	1.5E-10	25%	Section 30W VH6	4.5E-09	6.3E-10	1.5E-10	45%
Section 30W VH6-Duplicate	2.8E-09	4.4E-10	1.5E-10	28%	Section 30W VH6-Duplicate	4.2E-09	6.3E-10	1.5E-10	42%
North Fence	2.0E-09	3.0E-10	1.5E-10	20%	North Fence	3.2E-09	4.6E-10	1.5E-10	32%
North Fence-Duplicate	2.0E-09	3.0E-10	1.5E-10	20%	North Fence -Duplicate	3.3E-09	4.6E-10	1.5E-10	33%
Section 17 VH4	4.1E-10	1.4E-10	1.5E-10	4%	Section 17 VH4	5.1E-10	1.7E-10	1.5E-10	5%
KGL - North	1.1E-09	2.2E-10	1.5E-10	11%	KGL - North	2.5E-09	3.8E-10	1.5E-10	25%
KGL - North- Duplicate	1.4E-09	2.5E-10	1.5E-10	14%	KGL - North- Duplicate	2.6E-09	4.1E-10	1.5E-10	26%
KGL - South	1.5E-09	2.5E-10	1.5E-10	15%	KGL - South	2.5E-09	3.8E-10	1.5E-10	25%

Note: This table follows the format in Table 3 of [Regulatory Guide 4.14, Revision 1](#), consistent with license condition 19 of SUA-1473 and an NRC staff request made during RAML's September 2019 license inspection.

¹ All measurements were collected using a closed, high-sensitivity alpha-track detector.

² Error is the measurement uncertainty at a 95% confidence level.

³ MDC is reported by the manufacturer technical specifications.

⁴ % EC is based on effluent concentration limit in [10 CFR 20 Appendix B](#) for radon-222 without its decay products (1E-08 μCi ml⁻¹).

% EC – percent of effluent concentration

Conc. - concentration

μCi ml⁻¹ – microcuries per milliliter

MDC – minimum detectable concentration