Rio Algom Mining LLC

March 1, 2021

ADDRESSEE ONLY Document Control Desk Director Office of Nuclear Material Safety and Safeguards U.S. Nuclear Regulatory Commission Washington, DC 20555-0001

Re: License SUA-1473, Docket No. 40-8905 Semiannual Effluent Report – 2nd Half 2020

Dear Director:

In accordance with license condition #19 of radioactive 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 2020 Semiannual Effluent Report for its Ambrosia Lake facility.

In a letter dated December 14, 2016 (ML16344A027), the Nuclear Regulatory Commission (NRC) agreed in part with a RAML proposal 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 be reported. Likewise, in a letter dated December 20, 2017 (ML17293A342), the NRC agreed with RAML's proposal to terminate environmental monitoring for radioactive particulates. RAML terminated this monitoring on December 31, 2017.

Monitoring locations for the facility are depicted on Figure 1. Table 1 provides second-half 2020 monitoring results for radon-222 in ambient air. Formatting for Table 1 follows the format of Regulatory Guide 4.14 Revision 1 (April 1980) Table 3, consistent with license condition 19 of SUA-1473 and an NRC staff request made during RAML's September 2019 license inspection.

If you have any questions or need additional information, please do not hesitate to call me at (505) 312-6401.

Respectfully,

Measured Scherman

Michael Schlerman Radiation Safety Officer H3 Environmental, LLC.

cc: Ms. Sandra Ross (RAML) Mr. Tom Lancaster (USNRC) NRC Region IV Division of Nuclear Materials Safety IE48 NM5520 NM55

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

Table 1. Results of second half 2020 monitoring for radon-222 in ambient air.

Environmental Radon Second Half of 2020									
3rd Quarter 7/7/20 - 9/29/20 Sample Media: Ambient Air					4th Quarter 9/29/20 -1/5/2021 Sample Media: Ambient Air				
Location:	Conc. ¹ µCi ml ⁻¹	Error ² µCi ml¹	MDC ³ µCi m⊦¹	% EC ⁴	Location:	Conc. ¹ µCi ml ⁻¹	Error ² µCi ml ⁻¹	MDC ³ µCi mŀ¹	% EC ⁴
Substation	4.6E-10	1.4E-10	1.5E-10	5	Substation	6.2E-10	1.1E-10	1.5E-10	6
MIII Diversion	1.9E-09	3.0E-10	1.5E-10	19	Mill Diversion	2.9E-09	4.1E-10	1.5E-10	29
Section 30W VH6	2.9E-09	4.1E-10	1.5E-10	29	Section 30W VH6	5.0E-09	6.8E-10	1.5E-10	50
Section 30W VH6-Duplicate	2.7E-09	4.1E-10	1.5E-10	27	Section 30W VH6-Duplicate	4.4E-09	6.0E-10	1.5E-10	44
North Fence	2.1E-09	3.3E-10	1.5E-10	21	North Fence	3.7E-09	5.2E-10	1.5E-10	37
North Fence-Duplicate	1.9E-09	3.0E-10	1.5E-10	19	North Fence -Duplicate	3.7E-09	4.9E-10	1.5E-10	37
Section 17 VH4	3.8E-10	1.4E-10	1.5E-10	4	Section 17 VH4	5.1E-10	1.1E-10	1.5E-10	5
KGL - North	1.6E-09	2.8E-10	1.5E-10	16	KGL - North	2.5E-09	3.6E-10	1.5E-10	25
KGL - North- Duplicate	1.8E-09	2.8E-10	1.5E-10	18	KGL - North- Duplicate	2.5E-09	3.6E-10	1.5E-10	25
KGL - South	1.5E-09	2.5E-10	1.5E-10	15	KGL - South	2.5E-09	3.6E-10	1.5E-10	25

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 Minimal detectable concentration (MDC) is level reported by the manufacturer technical specifications.
⁴ Effluent concentration (EC) from 10 CFR 20 Appendix B for radon-222 without its decay products (1E-08 µCi ml⁻¹).

Concentration (Conc.) Microcurie per milliliter (µCi ml-1)