UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 20, 2017

Ms. Theresa Ballaine
Rio Algom Mining, LLC
P.O. Box 218
Grants, NM 87020

SUBJECT: PROPSED FINAL SURVEY SAMPLING FOR 2017 IN THE ALTERNATE RELEASE CRITERION AREAS OF THE AMBROSIA LAKE NM FACILITY, LICENSE SUA-1473, DOCKET NO. 40-8905

Dear Ms. Ballaine:

By letter dated May 11, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17146A659), Rio Algom Mining LLC (RAML) proposed a modification to the soil sampling program intended to meet the soil sampling requirements discussed in Section 8 of the Soil Decommissioning Plan (Plan), dated January 19, 2005 (ADAMS Accession No. ML050400566), and approved by the NRC on August 11, 2006 (ADAMS Accession No. ML17178A361). Section 8.2.1 of the Plan defines the soil characterization requirements for areas of deeper contamination that are subject to the Alternate Release Criteria (ARC). As written, these requirements dictate that "for areas where no data are available, 30 samples are initially required for characterization purposes." As discussed in the RAML letter and during the public meeting on June 16, 2017 (ADAMS Accession No. ML061940224), no specific definition of "area" was provided in the Plan.

As it is currently defined in the Plan, RAML is required to collect the same number of samples from each of the 12 non-contiguous ARC areas of land, which range from 0.10 to 20 acres in size, in order to satisfy the characterization requirements. RAML's proposed alternate approach for characterizing the site involves combining individual ARC areas into larger ARC locations and basing the number of samples on the size of these ARC locations (i.e., approximately 3 to 4 samples per acre).

The NRC staff agrees that the current approach of collecting 30 samples for each of the current ARC areas is not practical or feasible for all ARC areas and that combining individual ARC areas into larger ARC locations would be an acceptable approach for satisfying this requirement.

MODIFIED SAMPLING APPROACH

The NRC staff reviewed the proposed sampling plan and has the following observations and suggestions. The NRC staff considered the size of the individual ARC areas and their vicinity to each other and other facilities formerly located on the site to develop a sampling approach that would satisfy the requirement to collect 30 samples in each "area" while sufficiently characterizing the site. This approach further consolidates the RAML-proposed plan of 5 ARC locations into 3 different ARC locations, described below and summarized in Table 1. It is important to note that, as discussed in the Plan, sample locations within each ARC location may be chosen randomly or

placed on a systematic grid with a random starting location and that professional judgement via visual and/or empirical examination of borehole logs should be used to identify the vertical extent of contamination.

ARC Location #1

ARC Location #1 incorporates the 2 RAML-proposed ARC locations containing ARC areas 2, 3, 4, 5, and 6 from the map included with the letter that are adjacent to historical characterization data. This ARC location encompasses approximately 1.1 acres of ARC areas surrounding former evaporation ponds 4, 5, 6, 9, and 10. The NRC staff does not consider the use of adjacent area historical characterization data to meet the intent of areas where no data are available. At least 30 samples should be collected within ARC Location #1 to confirm that any existing contamination meets the same characterization requirements as the nearby ponds that were already reclaimed using the ARC remedy as allowed in the Plan. In addition, at least 5 samples should be collected from each of the former ARC areas to provide a statistical basis for comparing each of these areas to each other and the previous data collected from the ponds.

ARC Location #2

ARC Location #2 incorporates the 2 RAML-proposed ARC locations containing ARC areas 7, 8, 9, 11, and 12. This ARC location encompasses approximately 4.6 acres to the north and east of the former fuel processing facility, treatment pond, and mill area. Since this area has not yet been characterized sufficient soil sampling will be required to determine whether the location meets the requirements discussed in the Plan. NRC staff suggest that a total of 60 samples be collected in ARC Location #2 with a minimum of 5 samples being collected in each of the original ARC areas.

ARC Location #3

ARC Location #3 is consistent with the RAML-proposed ARC location containing ARC areas 1 and 10, making up approximately 20 acres of land to the north and west of the former fuel processing facility, treatment pond, and mill area. Since this area has not yet been characterized sufficient soil sampling will be required to determine whether the location meets the requirements discussed in the Plan. To adequately assess this 20 acre area a total of 75 samples should be collected with at least 5 samples being collected from the original ARC area #1 to provide a statistical basis for confirming that it can be characterized in combination with ARC area #10.

Table 1. Summary of ARC Locations and Associated Samples

ARC Location #	Former ARC Areas Included	Area (Acres)	Total # of Sample Locations	Comments
1	2 3 4 5 6	1.1	30	At least 5 samples should be collected from each of the former ARC areas
2	7 8 9 11 12	4.6	60	At least 5 samples should be collected from each of the former ARC areas
3	1 10	20	75	At least 5 samples should be collected from former ARC area #1

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRCWeb site at http://www.nrc.gov/reading-rm/adams.html

If you have any questions concerning this letter, please contact Varughese Kurian, Project Manager, Materials Decommissioning Branch, Division of Decommissioning, Uranium Recovery and Waste Programs, Office of Nuclear Materials Safety and Safeguards, at (301) 415-7426.

Sincerely,

/RA/

Stephen Koenick, Chief
Materials Decommissioining Branch
Division of Decommissioning, Uranium Recovery
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket No.: 04008905

T. Ballaine

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ADAMS Accession Number: ML17178A390

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