

July 21, 2005

Peter Luthiger, Manager  
Radiation Safety  
and Environmental Affairs  
Rio Algom Mining, LLC  
P.O. Box 218  
Grants, NM 87020

SUBJECT: RESPONSE CONCERNING THE SOIL DECOMMISSIONING PLAN AND THE  
CLOSURE PLAN - LINED EVAPORATION PONDS FOR RIO ALGOM MINING  
LLC'S AMBROSIA LAKE FACILITY (TAC NO. LU0078)

Dear Mr. Luthiger:

By letter dated June 15, 2005, you partially responded to the U.S. Nuclear Regulatory Commission (NRC) staff's request for additional information (RAI) on the Soil Decommissioning Plan and the Lined Ponds Closure Plan. The staff's technical evaluation for the partial response is enclosed along with a supplemental RAI. If you have any questions, please contact me at (301) 415-8512 or by e-mail to [jam4@nrc.gov](mailto:jam4@nrc.gov).

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Julia M. Barto, Project Manager  
Fuel Cycle Facilities Branch  
Division of Fuel Cycle Safety  
and Safeguards  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: 40-8905  
License No.: SUA-1473

Enclosure: Technical Evaluation

cc: B. Law, Rio Algom, LLC  
Kevin Meyers, NMED

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<b>DATE</b>	07/20/05		07/21 /05		07/21/05

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TECHNICAL EVALUATION OF THE JUNE 15, 2005 RESPONSE FROM  
RIO ALGOM MINING, LLC, CONCERNING THE AMBROSIA LAKE  
SOIL DECOMMISSIONING PLAN AND THE LINED PONDS CLOSURE PLAN

The U.S. Nuclear Regulatory Commission staff issued a request for additional information to Rio Algom Mining, LLC, (RAM) on May 5, 2005, concerning both the Decommission Plan (DP) and the Lined Ponds Closure Plan. The RAM response was dated June 15, 2005, and stated that responses to Comments 6, 9, and 13 would be provided within thirty days. With exception to the items discussed below, the staff has determined that the responses provided to date are acceptable.

**Response 1 - Pond 3 Cover**

RAM adequately addressed surety, erosion protection, and measured radon flux measurements with respect to Pond 3. However, RAM stated that only four soil samples were analyzed for radium (Ra-226). More representative gamma and soil sample data (surface and subsurface) is needed for the staff to confirm that the estimated long-term radon flux for the cover is provided, as required by 10 CFR Part 40, Appendix A, Criterion 6. Thorium (Th-230) analyses are also needed, such that the 1000-year Ra-226 level can be calculated if the Th-230 concentration is higher than the Ra-226 level in the same sample.

REQUEST: Provide a sampling plan for Pond 3, and indicate the size of the contaminated portion of Pond 3.

**Response 2 - Pond 10**

RAM discussed assessment of Pond 10 cleanup performed in 1994 that included Ra-226 analysis of 31 surface and 26 subsurface samples and a gamma survey. RAM committed to analyze archived soil samples for uranium and Th-230 to complete the characterization. However, in 1994 the gamma survey was based on an inappropriate gamma-radium correlation and the Ra-226 on-site lab results were questionable.

REQUEST: Analyze at least 15 of the archived surface samples for Ra-226. Also, indicate which of the 1994 sample data are for surface samples (table on pages 8-11 of the response).

**Response 7 - Site Characterization and Alternate Criteria**

RAM assumes that the DP can be approved before all the characterization data is provided, including approval of alternate criteria for soil cleanup that would leave deep contamination no matter the concentration or size of the area. If this occurs, RAM would face the possibility of NRC staff not accepting the Final Status Survey Report if it was determined that the characterization data was inadequate or not representative. Also, if alternate criteria were not justified in the extent or fault was found with implementation of the methods outlined in the DP, termination of the license would be delayed. The RAM proposal to submit separate characterization and closure report for several areas will also cause delays.

Enclosure

REQUEST: This issue should be discussed in a telephone call with RAM after staff has reviewed the RAM response to Comment 6.

### **Response 13 - Sampling in Trenches and Section 4 Ponds**

RAM stated that the sampling plan for remediated pipe trenches would be provided later. RAM also stated that the Section 4 Ponds will utilize the same sampling protocol as in the windblown areas. However, the windblown areas will have very little soil sampling and rely on gamma scans to document Ra-226 cleanup. The Section 4 Ponds have mine drainage radioactive residue. Therefore, gamma surveys cannot be used for verification of byproduct cleanup. Without the gamma scan, justification is needed for the proposal of sampling 2 percent of grids. RAM provided some information in this regard (i.e., the clay seems to retain the byproduct material such that little or no licensed material is expected to remain after excavation).

REQUEST: Provide additional justification for the number of soil samples and types of analyses (ratios examined) to be performed for the Section 4 Ponds.

### **Response 14 - Quality Assurance Plan**

RAM stated that it is premature to develop a description of quality assurance/quality control activities for the final status survey until the DP is approved. The NRC staff does not understand this position so additional discussion with RAM is necessary.

REQUEST: Arrange for a telephone call with NRC staff to discuss this issue.

### **Response 16 - Earlier Requests for Information**

Concerning the response to Comment 12 (January 2001): RAM provided a partial response with respect to the U. S. Department of Energy (DOE) accepting the long-term surveillance boundary for the site. RAM did not address item (4) of the comment concerning DOE's awareness of the amount of contamination that will remain if the requested alternate criteria are approved.

REQUEST: Involve the appropriate DOE and NRC staff in a telephone call to discuss this issue.