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Memorandum
Molycorp, Inc.

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December 8, 1994

Mr. LeRoy Person
US Nuclear Regulatory Commission
Project Manager
Low Level Waste and Decommissioning
Projects Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards
Washington, DC 20555-0001

US NRC License No. SMB-1393

Dear Mr. Person:

I have misread the extent of the problem, particularly with Radiation Surveillance Associates, Inc (RSA), reported in my letter dated November 18, 1994. Following is a status of our site characterization report by section

- Section 1 **Introduction** - Objectives of the Site Characterization and Relevant US NRC Guidance
  This section is currently being written. The draft completion date is projected to be December 14, 1994.

- Section 2 **General Information**
  Section 2.1 Site Background - This section has been written and is being reviewed for accuracy and content.

  Section 2.2 General Physical and Demographic Setting - This section has been written and is being reviewed for accuracy and content

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Section 2.3 Contamination Overview - This section needs surficial gamma readings and the results from the subsurface gamma down hole logging converted to thorium concentrations from RSA before it can be completed. These gamma readings are due to us from RSA no later than December 14, 1994. We have contracted another company to audit the results. This audit will be completed by December 20, 1994.

We also need the analytical results from sediment samples from Chartiers Creek. These samples were originally to have been completed by RSA. Due to problems at their facility we had to direct these samples to another laboratory. The Th-232 analyses are being completed by alpha spectrometry and are expected to be completed by December 28, 1994.

- Section 3 **Dose Assessment**

  Section 3.1 Source Terms

  - Air filter sample data were received today and are being interpreted.
  - Surficial gamma and subsurface thorium concentrations based on gamma logging are due December 14, 1994. This includes field tests requested by NRC (December 1993) to provide justification for technique
  - Gamma spectrometry of 20% of all soil borings (thorium concentrations) are completed and being entered into a data base.
  - Emanation studies (radon-220) are due to be completed December 28, 1994.
  - Results of five day leach studies are expected December 28, 1994. These samples were transferred from RSA to another lab to expedite results.
  - The majority of surface work and groundwater data are being interpreted.

Considering the above, preliminary source terms for RESRAD will be completed by December 22, 1994.

Modifications to the source term, e.g. radionucleides from sediment (December 28, 1994), leachate (December 28, 1994), and radon-220 (December 28, 1994) will be incorporated as soon as data

becomes available. Based on experience, however, we do not believe these are major contributors to on-site or off site doses

Section 3.2 Identification of Pathways - RESRAD modeling is in progress. Primary pathways, sensitive populations, etc are being reviewed based on current and past data.

Section 3.3 Potentially Exposed Populations - This section is being prepared now. It will be completed on or before December 16, 1994 and inputted to the RESRAD code.

Section 3.4 Estimation of Radiological Dose - Preliminary dose calculations will be completed by December 23, 1994 This includes establishing the input files for RESRAD. These calculations will be based on current demographic data, prior radiological data (Applied Health Physics, 1972; ORISE 1985), and available current data. This will expedite final estimation of dose when all data is available. This section will be complete by January 6, 1995.

- Section 4 **Physical and Demographic Site Characteristics** - Subsections on Surface Features and Vegetation, Meteorology and Climatology, and Regional Geology are nearly completed The draft is expected to be ready for review by Molycorp on December 16, 1994 The subsection on Surface Water Hydrology and Regional Hydrogeology is also nearly complete.

Section 4.5 Site Hydrogeology -The completion and calibration of the hydrologic model (MODFLOW) has been delayed due to minor discrepancies in location of test borings, monitoring wells, and stream gauging stations noted during a QA review Steps have been initiated to correct these discrepancies by December 16, 1994 Calibration of the model will be completed by December 23, 1994 Production runs will commence immediately thereafter A draft of this section will be completed by January 6, 1995

Section 4.6 Land Use - This section is completed except for a reply from the Pennsylvania Historical and Museum Commission Bureau for Historic Preservation concerning buildings on the site that are over fifty years old.

Section 4 7 Demography - This section is completed

- Section 5 **Extent and Concentration of Contamination**

Section 5 1 Characterization of Source - As previously stated, RSA's data are needed to complete this section The chemical analysis of the slag is expected to be completed by December 19, 1994. Radiochemical composition of the slag is expected to be completed by RSA no later than December 13, 1994 Emanating properties of the slag are to be reported to us by RSA on December 28, 1994. Leaching (five day) and TCLP results of the slag are expected on or before December 28, 1994, these are being completed by another laboratory. Some of the physical attributes of the slag have been characterized and will be completed by December 16, 1994.

Since there was no historic ore sample found, archived analytical data from the 1960's has been located and will be presented No production logs or mix records have yet been located. The search for these records will continue until the end of the year. Literature records of slag and metal compositions have been located and will be included in this section.

Section 5.2 External Radiation and Contamination Survey Results Surface and subsurface reports are needed from RSA to complete this section Analyses of soil borings have been completed and are being entered into a data base.

Section 5.3 Surface Water and Sediments - Chartiers Creek water samples are in progress. Results have been reported for July, August, and September samples. October results should be in the mail to us November results are due to us by December 20, 1994 December results will be received on January 15, 1995. Sediment samples were originally to be completed by RSA but have been sent to another lab to expedite return of results These are expected by December 20, 1994. This section cannot be completed until January 15, 1995.

Section 5 4 Soils and Vadose Zones - Samples needed to discuss these sections are due from the analytic lab on December 16 1994. Soil data is being tabulated. This section can be completed by December 27, 1994.

Section 5.5 Groundwater - This section is being written. It will be completed by December 21, 1994.

Section 5.6 Buildings and Equipment - RSA is to report the results of their investigation to us by December 16, 1994. This section will be completed by December 22, 1994.

Section 5.7 Air Sampling - The air filter analyses were received today. This section will have its draft completed by December 22, 1994.

- Section 6 **Conclusions** - The closing comments cannot be drafted until January 15, 1994 after all the other sections are completed

- Appendix A **Legal Land Description and Verification** - Completed

- Appendix B **Surveyor's Topographic Map** - This section will be completed by December 16, 1994.

- Appendix C **Streamflow Data** - Completed but it needs to be reviewed.

- Appendix D **Infiltration Testing** - Completed but it needs to be reviewed

- Appendix E **Aquifer Testing of Fill Material** - This is in progress. The draft will be ready for review on December 16, 1994

- Appendix F **Storm Sewer Base Flow Measurements** - This is in progress. The draft is expected for review by December 23, 1994.

- Appendix G **Soil Borings Logs Data** - Completed

- Appendix H **Gamma Logging Verification** - Results and analyses are due December 14, 1994. Audits will be completed by December 20, 1994. A final draft is due December 28, 1994

- Appendix I **Surface Dose vs. Thorium Concentration** - Surface soil samples have been analyzed. RSA is expected to complete this section by December 28, 1994.

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- Appendix J **On-Site Gamma Spectrometry** - This is currently being entered into a data base. This appendix will be completed by December 6, 1994

- Appendix K **Water Quality Data** - This is being worked on now. It is expected to be complete by December 22, 1994.

The report can be reviewed for continuity and completeness the week of January 15, 1994 Our legal department will also be able to complete its review by that week.

As is evident, the critical path data are the thorium concentrations and surficial gamma survey results. These are being finalized by RSA with as much input from Dr Wrenn as his physicians will allow Dr. Wrenn's health is still a serious concern. We are trying to find alternative means to complete certain sections of the report without his assistance. We have asked our contractors to use overtime to meet deadlines and to expedite wherever possible.

I will continue to keep you appraised of our progress.

Sincerely,

Barbara K Dankmyer
Resident Manager

xc: L. Skoski, Foster Wheeler
D Shoemaker, Questa
M. Smith, Los Angeles