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Asbestos Containing Materials Work Plan Addendum

During Correction Action of Solid Waste Management Unit (SWMU) 73-002

Los Alamos National Laboratory
Los Alamos, New Mexico

Contract No. DACA05-99-D-0014
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Prepared for:
US Army Corps of Engineers, Sacramento District
1325 J Street
Sacramento, CA 95814
and
Los Alamos National Laboratory
National Nuclear Security Administration, US Department of Energy
PO Box 1663 MS-A316
Los Alamos, NM 87544

Prepared by:
Innovative Technical Solutions, Inc.
2730 Shadelands Drive, Suite #100
Walnut Creek, California 94598

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1.0 INTRODUCTION

This Work Plan Addendum has been developed by Innovative Technical Solutions, Incorporated (ITSI) to describe changes in the corrective actions for Solid Waste Management Unit (SWMU) 73-002, Los Alamos National Laboratory (LANL), Los Alamos, New Mexico based on the identification of asbestos debris in the ash pile. SWMU 73-002 consists of an ash pile associated with a former incinerator. The changes in procedures outlined in this Addendum are modifications to the following activities presented in the *Work Plan for Corrective Action of SWMU 73 and Investigation of Consolidated Unit 73-002-99, Los Alamos National Laboratory, New Mexico* (Work Plan) for the following activities:

- Removal of ash pile
- Disposal of ash materials
- Collection of soil samples beneath and surrounding the ash pile

The incinerator operated at the site for a short time beginning in 1947. The second floor of the incinerator structure is level with the current parking lot. Immediately north of the building and extending over the edge of Pueblo Canyon are two concrete landings which were used to dump ash and unconsumed metal and glass generated by the incinerator operations into the canyon. The incinerator's original function was the destruction of classified documents; however, it did not function properly and was removed from service shortly after completion. In 1948, the facility was acquired by Zia Company and was used for the destruction of municipal trash from the town site until 1973.

The ash pile generated by the incinerator operations is located on the north slope of Pueblo Canyon immediately north of the building. The ash and debris covers an area of approximately 30,000 square feet. The ash and debris pile is between one and eight feet deep and contains metal debris, cans, and broken glass. The area is steep; some sections of the canyon wall are greater than a 70-degree slope.

On October 9, 2006, site personnel observed materials which were considered to be potentially asbestos-containing in the ash. Ash removal work was suspended until the materials could be assessed and the appropriate health and safety provisions implemented. On October 12, samples of the ash and debris were collected by an AHERA-accredited Building Inspector, and analyzed by Assaigai Analytical Laboratories of Albuquerque, New Mexico. The analytical results revealed the presence of chrysotile asbestos in asbestos cement (transite) and insulation debris,

and trace levels of chrysotile asbestos in the ash. The regulated asbestos containing materials (ACM) was identified in the ash in the form of pieces of transite and insulation and is distributed irregularly throughout the area and can not be segregated for management as a separate waste stream.

This addendum outlines the necessary modifications to the ongoing work practices based on the presence of ACM. The ash removal process will follow the overall approach outlined in the Work Plan, but the removal of ACM will be performed by a licensed asbestos abatement contractor, in accordance with the OSHA Asbestos in Construction Standard (29 CFR 1926.1101). ACM removed from the site will be disposed of in accordance with applicable federal, state, and local regulations by a LANL contractor.

2.0 PROJECT ORGANIZATION

The key project personnel were presented in the *Revised UXO Construction Support Work Plan Addendum*. The Site Health and Safety Officer (SHSO) will be responsible for health and safety oversight during the work activities as outlined in the Work Plan as well as enforcement of work rules related to asbestos exposure control. The SHSO's responsibilities related to asbestos exposure control will include the following:

- Perform site-specific asbestos awareness
- Conduct and document daily site safety inspections.
- Provide regular pre-task health and safety briefings with site personnel.
- Ensure that all employees follow proper hygiene procedures.
- Prepare safety-related documentation.
- Perform personal exposure and perimeter air monitoring as required.

ITSI anticipates hiring MARCOR Remediation, a licensed asbestos abatement contractor in New Mexico, to handle excavation and management of the ash and associated ACM. The skyline yarder, and spyder excavator presented in the Work Plan will be contracted through MARCOR to ensure all ACM is handled by a licensed asbestos abatement contractor. The Site Supervisors will serve as their employers' Competent Persons for asbestos-related work, and as such will have the necessary training to recognize health and safety hazards related to asbestos-related work, and the necessary authority to correct any deficiencies or hazards noted during routine job site inspections. Subcontractor Site Supervisors will have the following responsibilities with respect to their employed personnel:

- Conducting daily heath and safety inspections of the subcontractor's work areas.

- Ensuring that all site personnel receive the necessary training prior to working on site.
- Providing regular pre-task health and safety briefings.
- Ensuring that employees follow proper hygiene procedures.
- Reporting accidents and incidents.
- Preparing safety-related documentation and work logs.

3.0 REMOVAL ACTIVITIES

The removal of ash and associated debris will follow the overall procedures outlined in the Work Plan with the modifications outlined in the following sections.

3.1 SITE LAYOUT AND SECURITY

Work zones will be established and enforced in accordance with the Site Specific Health and Safety Plan (SSHSP). The Exclusion Zone, known as a Regulated Area for asbestos-related work, will consist of the active work area where ash materials are handled. Access to the Exclusion Zone will be limited to authorized personnel with the appropriate protective equipment and respirators, who have met the training and medical requirements appropriate for their level of work effort. Handling of ash materials will stop if unauthorized personnel enter the area, and work will not resume until those individuals have exited the area.

A Decontamination Zone for personnel decontamination will be set up adjacent to the Exclusion Zone. Containers or trash bags for used personnel protective equipment (PPE) will be located in this area. Personnel will also be required to shower when leaving the Regulated Area. Hand washing facilities shall also be available for personnel use. A second trailer will be setup at the edge of the Decontamination Zone to store PPE and allow for showers during personnel decontamination.

3.2 DAILY WORK SCHEDULE

On-site work hours will be from 7:00 AM to 6:00 PM to allow for a 10 hour work day. During day light savings, the work hours will be changed to 6:30 AM to 5:30 PM, but no equipment operation will occur prior to 7:00 AM. The typical work week will be Monday through Saturday.

3.3 REMOVAL AND PACKAGING OF ASH MATERIALS

Dust suppressants, specifically water spray, will be utilized during all work involving ash materials. In addition to the site air monitoring, visible dust will be used as an indicator of the

need to increase water application. Dust control on site will be accomplished through water spray. Water application will be increased and work slowed down as necessary during higher wind conditions. Water spray will be applied in advance of the work activities wherever possible, to allow the water to soak into the ash as a means of avoiding muddy conditions. Water will be applied carefully in order to avoid slick conditions.

All waste containers will be covered and sealed prior to moving. All trucks loaded with ash will be cleaned and covered so that materials will not be released or spilled in transit. Active work areas and equipment must be cleaned daily to prevent the accumulation of dust and asbestos containing debris. Heavy equipment decontamination is expected to require only gross removal of ash materials from buckets, which will be disposed of with the rest of the ash materials. Equipment will be washed off prior to being removed from the site.

All asbestos waste materials will be contained in plastic-lined bins. The bins will be labeled in accordance with the OSHA Asbestos Standard while on site. All hazardous waste must be labeled, packaged, and manifested in accordance with federal and state requirements. Disposable personal protective equipment and miscellaneous materials such as rags and plastic that are potentially contaminated with asbestos will be disposed of with the ash materials. Water generated from the showers will be filtered, and will be discharged after gaining the appropriate permissions, and in accordance with applicable requirements.

The lined bins will be transported to TA-54 Area G for disposal by a LANL contractor. The lined bins will be stored in a fenced storage yard after generation.

3.4 PERSONAL PROTECTIVE EQUIPMENT

During work in the Exclusion Zone, personnel will wear Tyvek coveralls and respiratory protection as outlined in the SSHSP and SSHSP Addendum. In addition, climbing gear and climbing hats will be worn as required by the SSHSP and SSHSP Addendum

3.5 AIR SAMPLING DURING ASH REMOVAL

In addition to the real-time dust monitoring outlined in the Work Plan, personal and perimeter air sampling for asbestos will be conducted. Personal exposure and perimeter air sampling will be performed by the SHSO or qualified designee. Personal and perimeter air sampling for asbestos will be performed in compliance with the OSHA Asbestos in Construction Standard as outlined in the SSHSP Addendum.

Personal monitoring will occur on a daily basis for a at least two employees. Additional samples may be collected if there are several employees with varied levels of potential exposure. If excessive dust loading occurs such that fiber counts are unobtainable, the number of samples may be increased in order to reduce the loading on individual filters. Perimeter sampling for asbestos will be conducted during all ash removal/handling activities. These samples will be collected utilizing the same methods as the personal exposure samples. The sampling intake will be located between four and six feet above ground surface. These samples will be collected at two locations on the south side of the work area perimeter. Exact sampling locations will be determined each day by the SHSO prior to the work.

Sampling data will be reviewed on a regular basis. Reviews will include the sampling procedures followed, recordkeeping, and validity and accuracy of the data, as well as interpretation of the data. The reviews will also include any recommendations for changes in employee work practices or work activities, as appropriate, in light of the results obtained from the monitoring program.

4.0 POST-REMOVAL SAMPLING

Post-removal soil samples will be collected and analyzed using field screening and rapid turn around analysis for specific analytes prior to demobilizing the vacuum removal system to ensure that all ash has been removed. The post-removal sampling will not replace the confirmation sampling effort outlined in the Work Plan but provides additional assurance that the ash materials have been removed. The post-removal samples will be collected at similar locations as the ash characterization samples outlined in the Work Plan, which will result in the collection of 20 soil samples for field screening and laboratory analyses under rapid turn around times.

The mean concentrations of metals in the ash materials were calculated in the Work Plan as shown in Table 1. The mean concentration for several metals, such as beryllium and selenium, are below the background levels established for LANL. The metal concentrations in the ash materials for lead, zinc and copper are several orders of magnitude above the established background levels. The difference in concentrations for these three metals can be readily evaluated using a field portable x-ray fluorescence (XRF) machine.

Table 1. Metal Data from Characterization Sampling - 2005			
Metal	Mean Level in Ash (mg/kg)	Background Level (mg/kg) [1]	Number of Detects above Background
Antimony	69.43	0.83	20
Arsenic	44.66	8.17	20
Barium	2,171	295	20
Beryllium	0.44	1.83	1
Cadmium	20.1	0.4	20
Chromium	85.64	19.3	20
Cobalt	21.03	8.64	20
Copper	14,203	14.7	20
Lead	5,757	22.3	20
Manganese	2,623	671	20
Mercury	0.98	0.1	19
Nickel	212.1	15.4	20
Selenium	1.12	1.52	6
Silver	77.65	1	20
Thallium	0.43	0.73	0
Vanadium	14.03	39.6	0
Zinc	6,577	48.8	20

[1] Background values for metals at LANL from LANL, 1998, "Inorganic and Radionuclide Background Data for Soils, Canyon Sediments, and Bandelier Tuff at Los Alamos National Laboratory", document LA-UR-98-4847 (ER ID 59730).

Several radionuclides were detected in the ash materials at concentrations above the background levels (See Table 2). The most widespread radionuclide in the ash materials is Plutonium-239 relative to established background levels as presented in the Work Plan, and all of the samples collected to characterize the ash pile contained Plutonium-239 at concentrations above background levels. Uranium-234, Uranium-238 and Radium-236 were detected at concentrations above background levels. However, Plutonium-239 can also be analyzed at a rapid turn around at off-site laboratories by Method D3972-90m. As a result, the concentrations of Plutonium-239 in the post-removal sampling can be compared to the levels in the ash as an indicator that the ash materials have been removed prior to demobilization of the vacuum system.

Table 2. Radionuclide Data from Characterization Sampling - 2005

Radionuclide	Mean Level in Ash (pCi/g)	Background Level (pCi/g) [1]	Number of Detects above Background
Cesium 137	0.055	1.65	0
Radium 226	5.17	2.59	12
Uranium 234	7.91	2.59	13
Uranium 235	0.59	0.20	10
Uranium 238	6.25	2.29	13
Plutonium 238	0.013	0.023	0
Plutonium 239	0.588	0.054	18
Americium 241	0.018	0.013	6

[1] Background values for metals at LANL from LANL, 1998, "Inorganic and Radionuclide Background Data for Soils, Canyon Sediments, and Bandelier Tuff at Los Alamos National Laboratory", document LA-UR-98-4847 (ER ID 59730).

The ash materials contained trace levels of asbestos in two out of the 10 samples submitted for analysis. In addition, two types of ACM debris were encountered in the ash. Soil samples will be collected by an AHERA-accredited Building Inspector and tested for asbestos by Polarized Light Microscopy on a rapid turn around to ensure that ash materials have been removed. This will also allow the clearance of the area from an asbestsos stand point before the confirmation samples are collected.

If the XRF results or rapid turn around samples indicate ash materials are present, additional ash and soil materials will be removed with the vacuum system. Additional soil samples will be collected following the additional vacuum removal.