

Appendix B

Management Plan for Investigation-Derived Waste

B-1.0 MANAGEMENT OF INVESTIGATION-DERIVED WASTE

This appendix to the work plan describes how investigation-derived waste (IDW) generated during the investigation of the Upper Los Alamos Canyon Aggregate Area will be managed. IDW is solid waste generated as a result of field-investigation activities and may include, but is not limited to, drill cuttings, contaminated personal protective equipment (PPE), sampling supplies, plastic, and all other wastes potentially contacting contaminants.

IDW generated during the investigations at these sites will be managed in a way that is protective of human health and the environment, compliant with applicable regulatory requirements, and consistent with the waste-minimization goals of Los Alamos National Laboratory (the Laboratory or LANL).

All IDW generated during field investigation activities will be managed in accordance with applicable Environmental Stewardship–Environmental Characterization and Remediation (ENV-ECR) Group standard operating procedures (SOPs). These SOPs incorporate the requirements of all applicable U.S. Environmental Protection Agency (EPA) and New Mexico Environment Department (NMED) regulations, U.S. Department of Energy (DOE) orders, and Laboratory Implementation Requirements (LIRs). ENV-ECR SOPs applicable to the characterization and management of IDW are

- SOP-1.06, Management of Environmental Restoration Project Waste and
- SOP-1.10, Waste Characterization.

These SOPs are among those applicable to the Upper Los Alamos Canyon Aggregate Area investigation and are available at the following URL: <http://erproject.lanl.gov/documents/procedures.html>.

Waste minimization is accomplished by implementing the requirements of the Laboratory's 2005 "Los Alamos National Laboratory Hazardous Waste Minimization Report" (LANL 2005, 91291). This document is updated annually as a requirement of Module VIII of the Laboratory's Hazardous Waste Facility Permit.

Before the start of field investigation activities, a waste characterization strategy form (WCSF) will be prepared and approved per requirements of SOP-01.10. The WCSF will provide detailed information on the IDW characterization and management described in this plan. IDW characterization will be completed by using existing data and/or documentation, site-characterization data from samples of the media being investigated (i.e., surface soil, subsurface soil), and/or by direct sampling of the IDW, if needed. If direct waste characterization sampling is necessary, it will be described in the WCSF

The selection of waste containers will be based on the appropriate U.S. Department of Transportation requirements, waste types, and estimated volumes of IDW to be generated. Each waste container will be individually labeled as to the waste classification, item identification number, and date of generation. Waste containers will be managed in clearly marked and appropriately constructed waste accumulation areas. Waste accumulation area postings, labeling, storage duration, and inspection requirements will be based on IDW type and classification, and regulatory and Laboratory requirements. Container and storage requirements are described in this plan and will be detailed in the WCSF and approved before the waste is generated.

The anticipated waste streams that will be generated and managed during work plan implementation at the Upper Los Alamos Canyon Aggregate Area investigation sites are described in the following paragraphs and summarized in Table B-1.0-1

Drill cuttings. The drill-cuttings waste stream will consist of cuttings from all boreholes drilled during field activities. Drill cuttings will be collected and containerized at the point of generation (i.e., at the drill rig). The drill-cutting waste stream will be characterized with analytical results from core samples augmented by direct sampling of the containerized waste. The maximum detected concentrations of radionuclides will be compared with background/fallout values. If maximum concentrations exceed background/fallout values, the waste cuttings will be designated as low-level radioactive waste. Total concentrations of toxicity characteristic leaching procedure (TCLP) constituents will be compared with 20 times the TCLP regulatory level. If total concentrations are less than 20 times the TCLP regulatory level, the waste cuttings will be designated nonhazardous by characteristic. If total concentrations exceed 20 times the TCLP regulatory level, the waste cuttings will be sampled and analyzed using the TCLP to determine if it is hazardous by characteristic. If potential listed hazardous waste constituents are detected, the Laboratory will conduct a review of historical records and data to determine whether the source of each constituent was as a listed hazardous waste at its point of generation. If the source is determined to be a listed hazardous waste, the cuttings will be managed as hazardous or mixed waste (depending on the levels of radioactivity). Otherwise, the cuttings will be managed as nonhazardous solid waste or low-level waste (LLW) (depending on the levels of radioactivity). These wastes will be stored within 20 yd roll-off containers in secure, designated waste staging areas within the aggregate area boundary. Based on the results of previous investigations, the Laboratory expects these wastes to be designated as low-level radioactive waste that will be disposed of at Technical Area (TA) 54.

Metal, concrete, gravel, boulder, and clay pipe debris. This waste stream will consist of inactive drain lines and structures that may be removed during the site investigations. These wastes will be collected and containerized at the point of generation (i.e., at the excavation). These wastes will be characterized based on acceptable knowledge of processes associated with the debris, acceptable knowledge from site characterization sampling and, if necessary, direct sampling of the waste. These wastes will be stored in secure, designated waste staging areas within the aggregate area boundary. The Laboratory expects these wastes to be designated as low-level radioactive waste that will be disposed of at TA-54.

Spent PPE. The spent PPE waste stream will consist of PPE that has potentially contacted contaminated environmental media (i.e., core and/or drill cuttings) and that cannot be decontaminated. The bulk of this waste stream will consist of protective clothing such as coveralls, gloves, and shoe covers. Spent PPE will be collected in containers at personnel decontamination stations. Characterization of this waste stream will be performed through acceptable knowledge of the waste materials, the methods of generation, and the analytical results from the sampling of the environmental media with which the materials were in contact. These wastes will be stored in secure, designated waste staging areas within the aggregate area boundary. The Laboratory expects these wastes to be designated as low-level radioactive waste that will be disposed of at TA-54.

Disposable sampling supplies. The disposable sampling supplies waste stream will consist of all equipment and materials necessary for collecting samples that come into direct contact with contaminated environmental media and that cannot be decontaminated. This waste stream also includes wastes associated with dry decontamination activities. This waste stream will consist primarily of paper and plastic items collected in bags at the sampling location and transferred to accumulation drums. Characterization of this waste stream will be performed through acceptable knowledge of the waste materials, the methods of generation, and the analytical results from the sampling of the environmental media with which the materials were in contact. These wastes will be stored in secure, designated waste staging areas within the aggregate area boundary. The Laboratory expects these wastes to be designated as low-level radioactive waste that will be disposed of at TA-54.

B-2.0 REFERENCE

The following list includes all documents cited in this appendix. Parenthetical information following each reference provides the author, publication date, and ER identification (ID) number. This information is also included in text citations. ER ID numbers are assigned by the Environmental Stewardship–Environmental Remediation and Surveillance (ENV-ERS) Program Records Processing Facility (RPF) and are used to locate the document at the RPF and, where applicable, in the ENV-ERS Program master reference set.

Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau, the U.S. Department of Energy–Los Alamos Site Office, EPA Region 6, and the ENV-ERS Program. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.

LANL (Los Alamos National Laboratory), November 2005. “Los Alamos National Laboratory Hazardous Waste Minimization Report,” Los Alamos National Laboratory document LA-UR-05-8650, Los Alamos, New Mexico. (LANL 2005, 91291)

**Table B-1.0-1
Summary of Anticipated Investigation-Derived Waste Generation and Management**

Waste Stream	Expected Waste Type	Estimated Volumes	Characterization Method	On-Site Management	Expected Disposition
Drill cuttings	LLW	20 yd ³	AK and direct waste sampling results	20 yd ³ roll-off containers	Disposal at TA-54
Metal, concrete, gravel, boulders, and clay pipe debris	LLW	20 yd ³	AK and direct waste sampling results	20 yd ³ roll-off containers	Disposal at TA-54
Spent PPE	LLW	Less than 55 gal.	AK obtained from investigation samples.	Accumulation in 55-gal. drum	Disposal at TA-54
Disposable sampling supplies	LLW	Less than 55 gal.	AK obtained from investigation samples.	Accumulation in 55-gal. drum	Disposal at TA-54