Los Alamos
NATIONAL LABORATORY

ENVIRONMENTAL RESTORATION PROGRAM

0049
TA-21

Fact Sheet for Operable Unit 1106 Resource Conservation and Recovery Act Facility Investigation Work Plan

September 1993

The Resource Conservation and Recovery Act (RCRA) facility investigation (RFI) work plan is a document that addresses the site characterization activities for all potential release sites (PRSs). The work plan for Operable Unit (OU) 1106 (TA-21) was submitted to the Environmental Protection Agency (EPA) in May 1991 and was approved in January 1992. The primary purpose of this work plan is to describe the site characterization activities that address potential contaminant releases from OU 1106. The work plan for OU 1106 is available for public review at the environmental restoration reading room located at 1450 Central Avenue, Suite 101, in Los Alamos and at the repositories (public libraries) in Los Alamos, Española, and Santa Fe.

Acronyms

EPA
US Environmental Protection Agency

ER
Environmental Restoration (Program)

OU
Operable unit

PRS
Potential release site

RCRA
Resource Conservation and Recovery Act

RFI
RCRA facility investigation

TA
Technical area

This fact sheet provides information specific to OU 1106. General information on the environmental setting of the Laboratory, past cleanup efforts, and ER Program requirements is provided in a separate fact sheet.

Background

OU 1106 (TA-21) is centered on DP Mesa immediately east-southeast of the Los Alamos townsite and extends to the stream channels of DP Canyon to the north and Los Alamos Canyon to the south. This area lies entirely within the jurisdiction of the Department of Energy. OU 1106 comprises approximately 320 acres and includes about 140 PRSs. Between 1945 and 1978, TA-21 was used for research on and production of plutonium metal and other radioactive materials. Subsequently, other research activities were conducted at this site. Because the major industrial activity was related to radioactive materials, the major wastes disposed at this site contained radioactive contaminants. The PRSs at TA-21 fall into four categories:

- seepage pits and absorption beds into which plutonium-bearing liquids were discharged, which may have subsequently resulted in subsurface liquid releases;
- septic systems from which near-surface releases of liquid industrial wastes may have occurred;
- subsurface solid waste disposal sites, such as material disposal areas, where contaminated industrial materials, stabilized process residues, and other solid or hazardous wastes were buried; and
- contaminated surface areas, where limited quantities of contaminants, such as fallout from stack releases and surface spills, may have occurred.

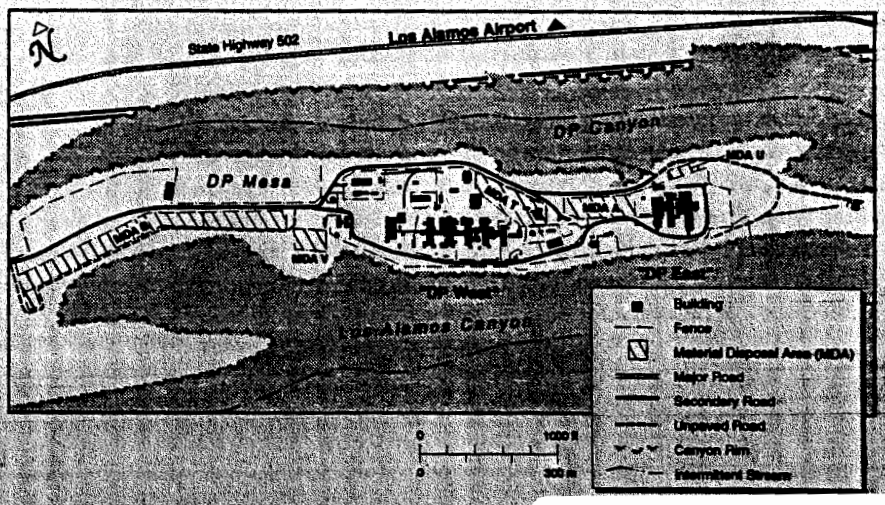

Figure 1. Location of Operable Unit 1106.

September 1993
LALP-93-12

10166

Past Cleanup Activities

In 1945, at the close of the Manhattan Project, plutonium purification activities were transferred to TA-21. Operations continued at that location until the new plutonium facility at TA-55 was opened in 1977. Shortly thereafter, cleanup of the old process lines began. Contaminated equipment and materials from several buildings were removed. The filter houses at DP West and DP East were decontaminated and decommissioned between 1970 and 1972, and the interiors of many buildings were extensively decontaminated in the 1970s.

Contaminants and Pathways of Concern

The principal contaminants of concern at OU 1106 are radiological; however, sampling that occurred before the beginning of the ER Program was not adequate to fully assess the site. Known contaminants are plutonium, tritium, uranium, metals, organic compounds (at a limited number of sites), and polychlorinated biphenyls (at one site). Consequently, relatively broad-spectrum analyses are being conducted for samples across TA-21.

Potential environmental pathways include surface run-off, sediment transport, and resuspension. Under current land use patterns, no significant exposures to site workers or offsite receptors are expected from these pathways. If current access restrictions are removed, allowing parts of TA-21 to be developed for non-Laboratory purposes, additional pathways related to intrusion in buried wastes will be needed. Because of the great depth to the water table, neither transport in the unsaturated zone nor the groundwater pathway is of immediate concern.

Site-Specific Approach to Characterization

The approximately 140 PRSs in TA-21 are grouped as surface units, outfalls and associated septic systems, material disposal areas, subsurface units, and units to be investigated during building decontamination and decommissioning. Characterization of the PRSs focuses on identifying contaminants and the nature and extent of contaminant migration.

In addition to investigating individual PRSs, broader surface and subsurface investigations are being conducted throughout the operable unit. These investigations address general environmental characteristics related to potential contaminant transport and background levels of contaminants. The studies yield data that provide a context within which PRS-specific contaminant data can be evaluated.

Schedule

During 1992, surface sampling was completed following a regular grid pattern. Samples were also taken at the sites of former filter buildings and outfalls. Approximately 700 samples from 400 locations were collected for analysis. In addition, extensive geologic characterization of the operable unit was conducted. In the summer of 1993, Phase Report IB on site hydrogeological investigations was submitted to EPA. In addition, about 270 additional samples were collected, and drilling of investigation boreholes LADP 3 and LADP 4 began in September 1993. The results of these investigations are being evaluated and will be reported in subsequent reports. Preliminary assessment of the raw data available to date shows no significant departures from the expectations on which the work plan was based.

Site characterization is expected to continue through 1999. The initial investigation involves drilling about 7,800 linear feet and collecting a total of 3,400 samples. For subsequent investigations that may be required, it is estimated that equivalent amounts of drilling and sampling will be needed.

Investigation of the surface soil is the first priority because this source presents the greatest potential for dispersal of contaminants in the near term. Second priority is given to characterizing subsurface locations at which sources of contamination are known to be present. Although investigations at these sites are likely to require subsequent investigations, potential health risks from these PRSs are considered to be limited.

Interim corrective measures will be started at any time that a short-term solution is considered necessary to protect human health and the environment.

Additional information on OU 1106 and on the entire ER Program may be obtained from

Environmental Restoration Program
Los Alamos National Laboratory
Box 1663, Mail Stop M773
Los Alamos, NM 87545
(505) 665-7112