

OFFICE MEMORANDUM

Margaret Anne Rogers

DATE: January 20, 1976

Val Lee/rjc

HISTORY AND ENVIRONMENTAL SETTING OF LASL NEAR-SURFACE LAND DISPOSAL FACILITIES FOR RADIOACTIVE WASTES (AREAS A,B,C,D,E, F,G, AND T): A Source Document

Per our meeting with LaMar today, the attached comprise the final draft mockup of this report, corrections to be made as noted; pasteup to be organized as shown. Please make any corrections and additions as they are to appear in the final report, DO NOT MAKE NOTES TO ME. Organizational changes, or changes covering a number of pages, should be noted in a listing on a separate sheet of paper.

Please return a copy of this cover memo when you resubmit the mockup. Initial and date the memo to serve as your authorization for the report to be issued with corrections as noted in the mockup.

If you wish to see any of the final tables and art, they are in my office.

cc: LaMar Johnson

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HISTORY AND ENVIRONMENTAL SETTING OF LASL NEAR-SURFACE LAND
DISPOSAL FACILITIES FOR (AREAS A,B,C,D,E,F,G, AND T) FOR
(RADIOACTIVE WASTES)

INTRODUCTION

Purpose

The Atomic Energy Commission's increased emphasis on determination of the environmental impact of solid waste disposal led to the reexamination of the concept of land burial as a means of permanent disposal. An evaluation of site monitoring practices, both past and present, is in progress or planned for all major AEC sites. The United States Geological Survey under contract to the AEC is performing the evaluation in cooperation with AEC Contractors.

LASL's evaluation began in September, 1973, and included Materials Disposal Areas A, B, C, D, E, F, and G, ^{and T} Fig. 1. T. E. (Tim) Kelly of the U.S.G.S. Water Resources Division, Albuquerque and Margaret Anne Rogers, LASL, H-8, are the investigators.

During the Fall of 1973 as the data were collected for the evaluation, it became apparent through discussion with LASL personnel that LASL had a need for a report which would parallel the one done by Kelly for the AEC but would include much more detail than Kelly's report would be expected to have.

This report is designed to be a readily available source of accurate, in-depth information for LASL employees.

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ORGANIZATION OF THE REPORT

not all cases

This report is as comprehensive as time and information sources allowed. In many cases, the report may offer the reader more than he may want to know about a particular subject. The report was not designed to be an easily read summary but to be a source document.

In compiling the information presented in this report, conclusions as to the accuracy of any particular source were avoided. That is to say that all sources on any subject are presented even when this leads to obvious contradictions. The reader is asked to draw his own conclusions as to which source or sources may have the greater validity. By presenting all sources bias is prevented.

The reader should not consider this report as final. Publication may produce additional sources of information which will make revision (in order to provide clarification) possible.

General information on Areas A, (T), B, C, D, E, F, and G can be found in the Summary; comprehensive information can be found under each individual area title.

HISTORY OF LOS ALAMOS

From 1918 until late 1942¹⁶³ Los Alamos was the site of a boys ranch school. Because of its isolated location it was acquired by the Army, November 25, 1942, for the Manhattan Engineer District. As a patriotic gesture¹⁶³ the University of California accepted the contract to operate the new laboratory January 1, 1943. After the war Los Alamos continued as a site of government sponsored scientific research operated by the University.

Location

Los Alamos and the Los Alamos Scientific Laboratory are located on the Pajarito Plateau, which flanks the eastern side of the volcanic Jemez Mountains in north-central New Mexico. The plateau is 16-24 km (10-15 miles) wide and more than 48 km (30 miles) long. It is bounded on the west by the Sierra de los Valles, on the east by the Rio Grande, on the northeast by the Puye Escarpment, and on the southwest by Cañada de Cochiti. Fig. 2.

The plateau slopes eastward from an elevation of 7800 feet abutting the Sierra de los Valles to an elevation of 6200 feet adjacent to the Rio Grande. It is cut [200-400 feet deep (61-122 m)] by numerous southeast trending intermittent streams. The dissected eastern margin of the plateau rises 300-1000 feet above the Rio Grande.

Los Alamos is 38.6 km (23 miles) northwest of Santa Fe and 92.8 km (58 miles) north-northeast of Albuquerque.

Radioactive Wastes Generated by the LASL

LASL radioactive wastes are categorized as routine or non-routine. Most of the waste is routine consisting of Laboratory trash (mostly combustible), equipment, chemicals, oil, animal tissue, chemical treatment sludge, cement paste, hot cell waste, and classified materials. Nonroutine waste, generated during facility renovation and decommissioning projects, consists of building debris, ^{large equipment items,} and soil or rock removed during site cleanup.

The wastes may be contaminated by the transuranic radionuclides (^{239}Pu , ^{238}Pu , or ^{241}Am); uranium (enriched, depleted, normal or ^{233}U); fission products; induced activities; or tritium. Wastes contaminated by fission products, induced activities, and tritium are small in volume; 1-3% of the whole, but high in total curies disposed of by LASL.

Over the past 20 years waste volume has averaged 5200 m^3 (6797 yd^3) per fiscal year. (See Figure 3.) During the past 10 years the volume has varied from 7792 m^3 ($10,185 \text{ yd}^3$) in 1964 to 4250 m^3 (5556 yd^3) in 1972. For the period 1965-1975 approximately 3542 m^3 (4630 yd^3) to 4250 m^3 (5556 yd^3) of the waste volume per fiscal year is due to routine waste.

Fig 3

LASL ANNUAL RADIOACTIVE WASTE VOLUME

