

2798  
NM.2-1



NM.2  
~~4/22/86~~  
Report on file

APR 22 1986

NE-23

Elimination of the Chupadera Mesa and Los Alamos County Industrial Waste Line Sites from Further Consideration for FUSRAP Inclusion

Carlos E. Garcia, Director  
Environmental Safety and Health Division  
Albuquerque Operations Office

The enclosed material is being provided to you to document the final actions taken under the Department's Formerly Utilized Sites Remedial Action Program (FUSRAP) for the Chupadera Mesa area and the Los Alamos County Industrial Waste Lines, New Mexico. Copies of designation/elimination reviews for each of the sites are enclosed for your records. We have determined that neither site warrants inclusion in the remedial action program. Primary sources of data for this determination were two survey reports prepared through your Division, LA-10256-MS, "Radiological Survey and Evaluation of the Fallout Area from the Trinity Test," and DOE/EV-0005/14, "FUSRAP - Removal of a Contaminated Industrial Waste Line, Los Alamos, New Mexico."

The Chupadera Mesa and Near-by Areas were eliminated from the program because the radiological data collected by Los Alamos National Laboratory indicates DOE guidelines for remedial action are not exceeded in the areas. The review of the Los Alamos County Industrial Waste Line site indicates that Albuquerque Operations Office has the authority for the remedial action in these areas and, through the Los Alamos Area Office, is adequately carrying out all necessary actions. Therefore, the site is being eliminated from further consideration under FUSRAP.

*15/ W. Murphy*

*for* Edward G. DeLaney, Director  
Division of Facility and Site  
Decommissioning Projects  
Office of Nuclear Energy

2 Enclosures

bcc:  
Aerospace

NE-20 RF  
DeLaney RF  
NEG (4)

NE-23:EDeLaney:ph:353-4716:4/22/86:IBM:112/23:

CONCURRENCES	
RTG SYMBOL	NE-23
INITIALS/SIG	<i>W. DeLaney</i>
DATE	4/21/86
RTG SYMBOL	
INITIALS/SIG	
DATE	
RTG SYMBOL	
INITIALS/SIG	
DATE	
RTG SYMBOL	
INITIALS/SIG	
DATE	
RTG SYMBOL	
INITIALS/SIG	
DATE	
RTG SYMBOL	
INITIALS/SIG	
DATE	
RTG SYMBOL	
INITIALS/SIG	
DATE	

FORMERLY UTILIZED SITES  
REMEDIAL ACTION PROGRAM

INCLUSION/ELIMINATION REVIEW  
LOS ALAMOS COUNTY  
INDUSTRIAL WASTE LINES  
LOS ALAMOS, NEW MEXICO

Department of Energy  
Office of Nuclear Waste  
Office of Terminal Waste Disposal and Remedial Action  
Division of Remedial Action Projects

## CONTENTS

	<u>Page</u>
INTRODUCTION	1
BACKGROUND	1
Site Function	1
Site Description	2
Owner History	2
Radiological History and Status	2
INCLUSION/ELIMINATION ANALYSIS	5
REFERENCES	7

INCLUSION/ELIMINATION REVIEW  
LOS ALAMOS COUNTY  
INDUSTRIAL WASTE LINE  
LOS ALAMOS, NEW MEXICO

## INTRODUCTION

The Department of Energy (DOE), Office of Nuclear Energy, Office of Terminal Waste Disposal and Remedial Action, Division of Remedial Action Projects (DRAP) has reviewed the past activities of the Atomic Energy Commission (AEC) and Manhattan Engineer District (MED) with respect to the industrial waste lines (acid sewers) north of Los Alamos Canyon. DRAP has determined that the Los Alamos Area Office is continuing remedial action in areas where the pipeline runs under land excessed to the Incorporated County of Los Alamos and others. This waste line is adequately controlled by another remedial action program administered by the Los Alamos Area Office of the Department of Energy's Albuquerque Operations Office; it does not qualify for inclusion in the DOE Formerly Utilized Sites Remedial Action Program (FUSRAP).

This report consists of a summary of information and documents supporting the inclusion/elimination review process for this site.

This report will be included in an Annual FUSRAP report documenting the status of program investigations. That report will be archived by DOE through the Assistant Secretary for Management and Administration. A copy of this report will be maintained by the Department at the Public Reading Room located in Room 1F048 of the Forrestal Building located at 1000 Independence Avenue, S.W., Washington, D.C., so that it will be accessible to the general public.

## BACKGROUND

### Site Function

From 1952 to 1965, underground pipelines or industrial waste lines were used at the Los Alamos Scientific Laboratory to transport liquid wastes from Technical Area 1, Technical Area 3, Technical Area 48, and Technical Area 43 to a chemical waste treatment plant (Technical Area 45). Starting in 1963, liquid wastes from Technical Area 3 and Technical Area 48 were diverted through new underground pipes to an improved and currently operating facility at Technical Area 50 located south of Los Alamos Canyon on the Laboratory site. The wastes from Technical Area 43 were so dilute that they could be directed to a sanitary sewer system. Technical Area 1 was decommissioned in 1965. Thus, the need for the industrial waste lines connecting these facilities to Technical Area 45 was eliminated. The Technical Area 45 treatment plant and much of the piping were decommissioned in 1966 and 1967.

## Site Description

In response to county and private construction plans, major portions of the industrial waste line were removed between 1964 and 1967 (Figure 1). Road improvement projects in 1977 allowed the removal of additional portions of the line (Figure 2). In 1984, the Department of Energy authorized the removal of the remaining contaminated sections under the roads and on the north wall of Los Alamos Canyon. At the completion of this project in 1985, all that will remain is a section of 6-inch vitrified clay pipe, believed to be clean or only lightly contaminated, running from the Health Research Laboratory (Technical Area 43), under the northwest wing of the Los Alamos Medical Center to within 7 feet of where manhole URL-60 was removed. The pipe is capped at this end (near its former inlet into URL-60) and at both the inlet and outlet in manhole URL-61, located on DOE property. The line is plugged with concrete at the Health Research Laboratory. Records indicate that the concrete base of either manhole URL-36 or URL-62 was stabilized with cement and left in place during the 1964-67 removal effort.

## Owner History

The property, originally transferred from the War Department to the Atomic Energy Commission in 1947, was transferred to the Incorporated County of Los Alamos and other parties (mostly commercial ventures) by quitclaim deed on July 1, 1967, pursuant to the Community Disposal Act. The small section of land containing the industrial waste line under the Los Alamos Medical Center is now owned by Lutheran Hospitals and Homes Society, Inc.

## Radiological History and Status

With the exception of the small section of vitrified clay pipe and the manhole base noted above, all sections of the abandoned industrial waste line outside of DOE property will have been removed by the end of 1985. Soil surrounding the pipe was monitored and, if contaminated, removed to Los Alamos National Laboratory contaminated waste sites.

The pipe remaining under the west wing of the Medical Center is approximately 20 to 30 feet under the surface. When the west wing addition was built (approximately 1969), it was decided to leave this section of pipe because it was not highly contaminated and construction work on the addition did not extend to the waste line. A survey of the interior of this pipe where it entered Manhole URL-60 revealed no contamination. When construction plans require the removal of this pipe, the Los Alamos Area Office intends to provide health physics coverage.





## INCLUSION/ELIMINATION ANALYSIS

In order to determine whether a site should be considered for remedial action, the Department of Energy assesses each site on the basis of five questions. The following is a summary of the Department's review of these issues:

1. Was the site or operation owned by a DOE predecessor or did a DOE predecessor have significant control over the operation?

The site, originally owned by the U.S. Army Manhattan Engineer District Project Y, was turned over to the Atomic Energy Commission upon its formation on 1 January 1947. The site was transferred to the Incorporated County of Los Alamos and several private companies on 1 July 1967, pursuant to the Community Disposal Act. Until that time, the AEC exercised complete control over the site through its contractor, Los Alamos Scientific Laboratory (now Los Alamos National Laboratory).

2. Was a DOE predecessor responsible for maintaining or ensuring the environmental integrity of the site?

Yes. The Los Alamos Area Office relied on the H Division of Los Alamos to maintain the environmental integrity of the site.

3. Is the waste, residue, or radioactive material on the site the result of DOE predecessor-related operations?

Yes. Contamination in the pipelines resulted from radioactive material research and development projects carried out by LASL.

4. Is the site in need of further cleanup and was the site left in unacceptable condition as a result of DOE predecessor-related activity?

No. The site is in the process of decontamination under a local program under the jurisdiction of the Los Alamos Area Office.

5. Did the present owner(s) accept responsibility for the site with knowledge of its contaminated condition and that additional cleanup or remedial measures would be needed to make the site acceptable for nonrestricted use by the general public?

The present owner(s) accepted the property under conditions of a quitclaim deed. Records indicated that the future

owners expected radiation clearance of their properties during property development. Radiological surveys and pipe removal were conducted in conjunction with property development.

In summary, the Department has found that there is authority under the Atomic Energy Act of 1954, as amended, to conduct any needed remedial action. However, because the remedial action is being carried out adequately by the Los Alamos Area Office, the waste line will not be included in the Formerly Utilized Sites Remedial Action Program.

## REFERENCES

- o Bemis, Edwin, (LASL, Group H-1) to Carl G. Nottrott (AEC Community Operations and Disposal), "Buried Acid Sewer Line Under New Addition to Hospital," August 27, 1969.
- o Buckland, Carl, (LASL, Leader, General Monitoring Section, H-1) to Dean D. Meyer (LASL, Group Leader, H-1), "Summary of Records Search for Radioactivity Remaining in TA-1, Acid Waste Lines, TA-10, TA-45, and Acid Canyon Below TA-45," February 16, 1973.

The following published documents are included in this package by reference only:

- o A Background Report for the Formerly Utilized Manhattan Engineer District/Atomic Energy Commission Sites Program, September 1980, U.S. Department of Energy, DOE/EV-0097A.
- o Formerly Utilized MED/AEC Sites Remedial Action Program, Removal of a Contaminated Industrial Waste Line, Los Alamos, New Mexico, April 1979, U.S. Department of Energy.

OFFICE MEMORANDUM

DATE: August 27, 1959

Mr. Carl G. Nottrott  
AEC Community Operations and Disposal  
Branch

FROM : Edwin Bemis, LASL, Group H-1

SUBJECT: BURIED ACID SEWER LINE UNDER NEW ADDITION TO HOSPITAL

SYMBOL: H-1

The question has been raised as to whether there is any hazard from a length of abandoned acid sewer line lying under the new wing now under construction on the northwest side of the hospital. At the time we met at the site the information was that the west end was greater than 20 feet deep and the east end was greater than 30 feet deep and both ends were capped; the new construction did not include a basement. The best information I have found since then verifies the location and condition of the pipe. In addition, the amount of radioactivity inside the pipe is apparently fairly low.

The primary problem would occur if the pipe were opened up or broken into. Since there will be no basement, thus leaving many feet of dirt between any construction and the pipe, there is no hazard and the pipe can be ignored. If in the future a basement is to be added, we would need to make another evaluation at that time.

*Edwin Bemis*

Edwin Bemis

EB:elg

cc: Henry A. Standing  
File

# OFFICE MEMORANDUM

TO : Dean D. Meyer, Group Leader, H-1

DATE: February 16, 1973

FROM : Carl Buckland, Leader, General Monitoring Section, H-1

SUBJECT: SUMMARY OF RECORDS SEARCH FOR RADIOACTIVITY REMAINING IN TA-1,  
ACID WASTE LINES, TA-10, TA-45 AND ACID CANYON BELOW TA-45

SYMBOL : H-1

## TA-1 Structures and Acid Waste Lines

A 'notice of completion' was signed by C. Stallings on December 1, 1965, witnessed by A. Burch, D. Meyer, C. Princell, C. Blackwell and C. Buckland. This notice completed at least eight years of building removal and clearance in TA-1, starting sometime early in 1957. The files contain numerous status quo memoranda documenting conditions prior to, during, and subsequent to demolition of individual structures. In addition to this, there are letters of final clearance for about five different phases of demolition. Such letters were more comprehensive in nature and usually included several structures. Some of the early letters of clearance, such as a December 6, 1957 memorandum, had certain qualifying remarks that were not cleared or action taken until subsequent correspondence. In other words, the superstructure of many buildings was razed first. Contaminated floors, basements and acid waste lines were not removed in some cases until a year after razing the superstructure. All of the contaminated objects on top or under the surface of the ground were removed from the J-2 building area and the eastern sector of TA-1 located east of a north-south fence line located about 100 feet west of old H-Building by September 9, 1959. During this phase, acid waste lines read as follows:

J-2 line - 8.2 mr/hr. Leaks in the vicinity of Finch Street had occurred. The records show that this is the only place where soil surrounding the pipe was contaminated. Count was minimal. Soil removed to the contaminated dump.

Main acid line - Dirt at hub connection "D" Building to "Boiler House" - 500 c/m alpha.

ML to Q - 3.7 mr/hr

North of Q - 8 mr/hr and 1000 c/m

E-Vault to H-Bldg. manhole - 3.5 mr/hr and 2500 c/m

H- to main line - 2.5 mr/hr

Some sanitary lines - up to 4000 c/m

All of these pipes were removed, in addition to contaminated concrete floors and even the utility tunnel that ran from "D" to the boiler house.

TO: Dean D. Meyer

DATE: February 10, 1970

No contamination could be detected in this tunnel, although insulation on the steam pipes leading from the boiler house to Q basement was contaminated from an old radium spill. All of this was removed. The final clearance letter (9/15/69) on this phase read, "I would like to repeat the statement that to the best of our knowledge, no radioactive contamination remains in TA-1 north or south of Trinity, east of the north-south exclusion fence or within the J-2 area". All detectable count was removed as measured with hand alpha and beta-gamma survey instruments. No soil samples exist, with the exception of "D" Building site. I have no records on "D" Building as my section was not involved.

Western area west of the north-south exclusion fence was completed as mentioned previously, by 12/1/65. Again, the superstructure was removed, followed by cement flooring and walls. Highly contaminated cement in excess of 2500 c/m was transported to the contaminated dump. Cement reading 2500 c/m or less was bulldozed or carried in trucks to a small draw dubbed "Bailey Canyon" (after the bridge was removed). Hundreds of truckloads were dumped into this canyon and then mostly covered with dirt. The majority of the concrete was not contaminated at all or was well below 2500 c/m (all normal and enriched uranium contamination).

On December 10, 1964, Zia commenced removing contaminated acid waste lines west of the north-south exclusion fence from manhole #235. The records show that this manhole and lines extending from it were all removed. A few pipes were found that read up to 15,000 c/m. In the vicinity of manhole #174, many pipes, some of which were contaminated, were all removed. Most of these pipes were not on any map in existence then or now. All of the lines leading to old Sigma Building were removed. By 9/28/65, all of the TA-1 acid waste lines had been removed, including the abandoned line that ran under the concrete slab south of "C" Shop. By 11/23/65, a sanitary sewer leading from "C" Shop to the intersection of Finch and 29th Street was removed since 2000 to 5000 c/m alpha was found in this pipe. Forty more feet of line beyond this point was excavated and monitored and found free from contamination.

In summary, all of the TA-1 acid lines were removed by 1967, with the exception of a plugged strip under Central, Rose and Canyon Road. All of the line from TA-45 back of the Catholic Church property and around south of the high school was removed up to Canyon Road. There is a plugged strip under Canyon and Trinity. All pipe under the Episcopal Church property was removed. John Enders has data on what remains in the vicinity of the hospital and HRL. Pipe down stream in the vicinity of the high school read up to 2500 c/m (dried residue) alpha and .2  $\mu\text{Ci}/\text{m}^2$ , to give you some idea of the activity in the line under Trinity and Canyon.

## TA-10 Bayo Canyon

Some of the first structures to be cleared in Bayo were released on February 8, 1960. On March 13, 1960, seven structures were burned at four different locations in the canyon. Building 6 residue read 1 to 12  $\mu\text{r}/\text{hr}$  (burned in place). Building 4 residue read 8  $\mu\text{r}/\text{hr}$  (burned about 25 yards north of original location). Recommendation of 3/14/60 stated that residue should be removed for burial. Although I find no subsequent mention of this suggestion, I feel certain that the recommendation was followed in the final clearance of the canyon. (Finally found mention of removal in 8/19/63 correspondence)

The first structure (TA-10-48) to be dismantled in place was started on 3/25/63 and provides our first ghost. TA-10-48 was a burial pit. A high point of radiation was located at 16 feet in depth. At 26 feet, the level dropped to 1.5  $\text{mrad}/\text{hr}$  at contact with the dirt. A core sample one foot deeper than the 26-foot level read 600 d/m/dry gram of soil (.27 nanocuries/gram). Samples taken at 4 feet read 0 to 40 d/m of  $^{90}\text{Sr}$ /dry gram of soil. No alpha. Pit was refilled with clean dirt at the levels reported here.

Pit 44 was dug to 15 feet and 1.5  $\text{mrad}/\text{hr}$ . Core samples at 2.5 feet read 4500 d/m  $^{90}\text{Sr}$ /dry gram. Pit was refilled at this point.

Five large pine trees and their roots, reading up to 6  $\text{mrad}/\text{hr}$  on the ground by the base, were removed from the vicinity of the tank farm. Numerous leach beds and plumbing occupied this tank farm. Complete excavation was apparently impossible or at least impractical. At 20 feet, 1.5  $\text{mrad}/\text{hr}$  was still found. At this point, the pit was filled with uncontaminated concrete taken from the dismantled firing bunkers.

A specific mention was made concerning a thorough excavation search around Building 1 for hidden pipes. It was also mentioned that the area in the firing pads was dug out to a point that only background radiation could be detected on a GM instrument. Twenty-five Indians were then hired to search for debris in a 2500-foot radius from the firing sites. They picked up 90 truck loads of debris.

The final report, dated 8/19/63, stated that the area was free of significant radioactive contamination and did not present a health hazard.

A typical post-cleanup survey of the site on 7/22/66 turned up the following after weathering:

Lead chunk - 20  $\mu\text{r}/\text{hr}$  beta  $^{90}\text{Sr}$ . Lead was subsequently melted. Air activity above the lead during melting read  $1.4 \times 10^{-12}$   $\mu\text{Ci}/\text{cc}$ . (Limit of  $3 \times 10^{-11}$   $\mu\text{Ci}/\text{cc}$  soluble for uncontrolled area) Residue left in pan after melting still read 20  $\mu\text{r}/\text{hr}$ .

TO: Dean D. Meyer

4

DATE: February 16, 1973

TA-45 and Acid Canyon

The first survey of acid canyon, for purposes of cleanup, was made on August 31, 1965.

On October 4, 1966, work commenced towards removing TA-45 structures in what was called Phase A of the cleanup. All of the superstructure and concrete foundations were removed by 1/5/67 when operations were terminated due to weather. Excerpts from a 1/11/67 memorandum state that "The entire building and concrete slab (TA-45-1) were removed to the dump, as was the dirt from the end of the building where waste water had drained on the ground for several years". Also, "The surface south and west of the lab. building (TA-45-2) was removed to a depth of one foot and placed in the dump because of earlier spills in this area. The remaining soil shows no detectable radioactive material". Also, "The drain lines within the fenced area were removed and packaged and manholes dug out and removed". Some work of removing the cliff face below TA-45 had started (2000 c/m mentioned). 94 loads of debris from Acid Canyon were placed in pit 4 of area C as fill dirt. Phase A was completed as signified by a letter of completion dated 4/12/67, 10 AM, as initiated by C. Stallings and accepted by B. Wingfield, B. Penland and D. Zarecor.

In letters dated 6/21/67 and 7/11/67, completion of Phase B is reported. This included the removal of all old acid drain pipes, wiers, rocks, tuff and other debris found contaminated in all of Acid and Pueblo Canyon. It was reported that a small amount of contamination (less than 500 c/m alpha) remains in inaccessible places. This is probably an estimate. As I remember, every surface that had accessible detectable alpha count by hand survey instrument was removed.

  
Carl Buckland

CE:ed

Xc: Leo Chelius  
File