

Sandia National Laboratories / New Mexico

**PROPOSAL FOR NO FURTHER ACTION
ENVIRONMENTAL RESTORATION PROJECT
SITE 67, FRUSTRATION SITE
OPERABLE UNIT 1332**

FY 1995

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**Environmental
Restoration
Project**



**United States Department of Energy
Albuquerque Operations Office**

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**Site 67, Frustration Site
OU 1332**

Prepared by
Sandia National Laboratories/New Mexico
Environmental Restoration Project
Albuquerque, New Mexico

Prepared for the
United States Department of Energy

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1. Introduction

1.1 ER Site 67, Frustration Site

Sandia National Laboratories/New Mexico (SNL/NM) is proposing an administrative no further action (NFA) decision for Environmental Restoration (ER) Site 67, Frustration Site, Operable Unit (OU) 1332. ER Site 67, formerly included in OU 1272, was identified in the Hazardous and Solid Waste Amendment (HSWA) Module IV (Ref. 1) of the SNL/NM Resource Conservation and Recovery Act (RCRA) Hazardous Waste Management Facility Permit (NM5890110518) (Ref. 2).

1.2 SNL/NM Administrative NFA Process

This proposal for a determination of an administrative NFA decision has been prepared using the criteria presented in Section 4.5.3 of the SNL/NM Program Implementation Plan (PIP) (Ref. 3). Specifically, this proposal will "contain information demonstrating that there are no releases of hazardous waste (including hazardous constituents) from solid waste management units (SWMUs) at the facility that may pose a threat to human health or the environment" (as proposed in the Code of Federal Regulations [CFR], Section 40 Part 264.514[a] [2]) (Ref. 4). The HSWA Module IV contains the same requirements for an NFA demonstration:

Based on the results of the RFI [RCRA Facility Investigation] and other relevant information, the Permittee may submit an application to the Administrative Authority for a Class III permit modification under 40 CFR 270.42(c) to terminate the RFI/CMS [corrective measures study] process for a specific unit. This permit modification application must contain information demonstrating that there are no releases of hazardous waste including hazardous constituents from a particular SWMU at the facility that pose threats to human health and/or the environment, as well as additional information required in 40 CFR 270.42(c) (Ref. 1).

In requesting an administrative NFA decision for ER Site 67, this proposal utilizes existing administrative/archival information and survey data to satisfy the permit requirements. This unit is eligible for an administrative NFA proposal based on one or more of the following criteria taken from the RCRA Facility Assessment Guidance (Ref. 5):

- Criterion A: The unit has never contained constituents of concern.
- Criterion B: The unit has design and/or operating characteristics that effectively prevent releases to the environment.
- Criterion C: The unit clearly has not released hazardous waste or constituents into the environment.

Specifically, ER Site 67 is being proposed for an administrative NFA decision because the SWMU never contained hazardous waste or constituents (Criterion A).

1.3 Local Setting

The Frustration Site is located in the southeastern part of the Coyote Test Field. A dirt road leads directly to the door of the Frustration Seismic Station (Figure 1). Although there are numerous old mineshafts in the area, only the seismic station is defined as ER Site 67. The other mineshafts in the area of ER Site 67 are included in ER Site 28 (Mineshafts) which is also being proposed for NFA.

ER Site 67 is comprised of an old mine adit which was used to house an experimental seismic station during the 1960s and 1970s. The abandoned Frustration Seismic Station is located in the old Frustration Mine, a horizontal adit approximately 50 feet deep.

The military has conducted maneuvers in an area covering several hundred acres around the Frustration Site, as evidenced by the profusion of ordnance debris present. No ordnance or ordnance debris was found within the ER site boundary. It is not known who deposited the ordnance and ordnance debris in the area around Frustration Site, or exactly when they were deposited, but the material is not considered a SNL/NM responsibility.

The surrounding area was also used by the military during World War II for ordnance testing. Numerous shells, some of which may still be live, and pieces of shrapnel are scattered over much of the area. Personnel at Kirtland Air Force Base (KAFB) determined that removal and/or disposal of the shells would be too costly. The shells are considered to be a United States Air Force (USAF) responsibility (Ref. 6).

2. History of the SWMU

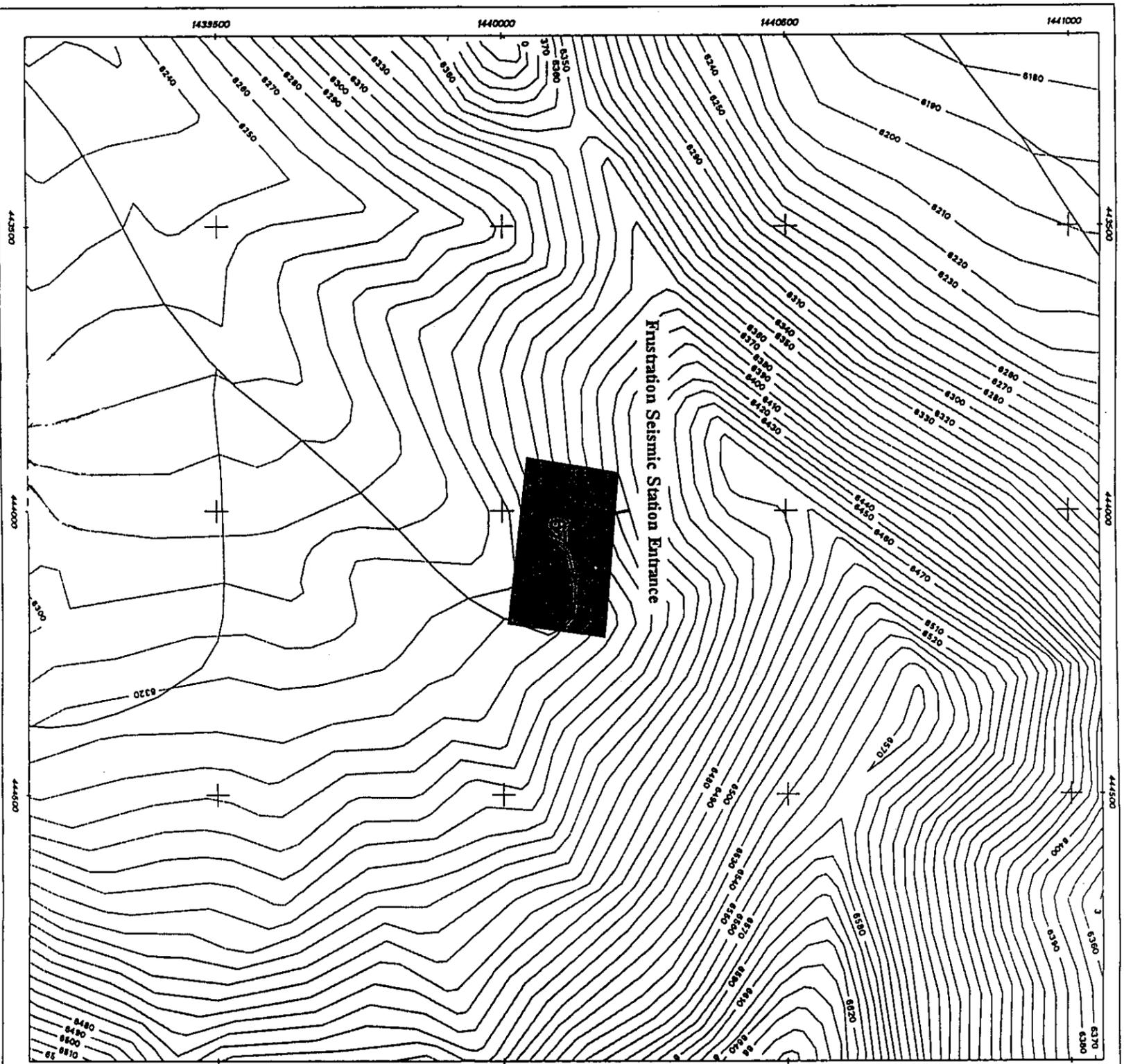
2.1 Sources of Information

The following sources of information on the Frustration Site were used:

- Interviews with personnel who operated the Frustration Seismic Station
- Aerial photographs of the area
- Results of the unexploded ordnance/high explosives (UXO/HE) survey
- Results of a visual inspection of the inside of the Frustration Seismic Station mine
- Results of two radiation surveys

2.2 Previous Audits, Inspections, and Findings

Information contained in the Comprehensive Environmental Assessment and Response Program (CEARP) Phase 1: Installation Assessment states that, near the Frustration Site, there is another horizontal mine shaft that SNL/NM reportedly used to burn old

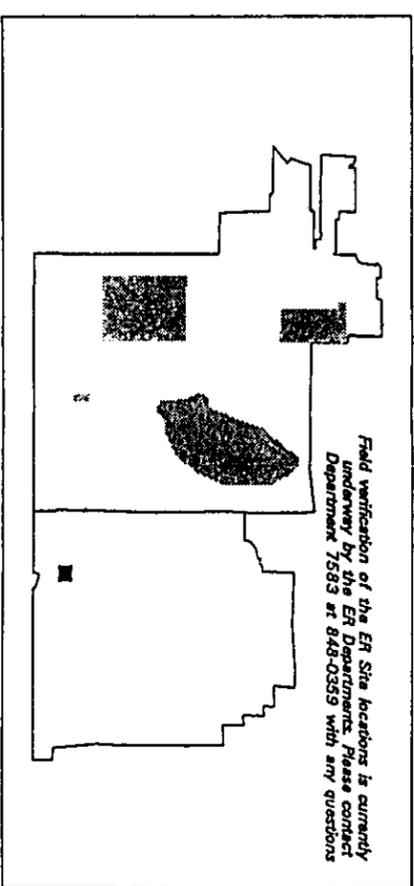


LEGEND

- KAFB Boundary
- Road
- Fence
- Contour
- Building
- Technical Area
- ER Site 67
- UXO Survey Area

Scale in Feet: 0, 200, 400

Scale in Meters: 0, 40, 80



Sandia National Laboratories, New Mexico
 Environmental Operations Geographic Information System

Figure 1
Environmental Restoration Site Atlas
ER Site No. 67
Frustration Site

Compiled by photogrammetric methods from aerial photography dated March 1989, March 1990, September 1991 and July 1992
 Transverse Mercator Projection, New Mexico State Plane Coordinate System, Central Zone
 1927 North American Horizontal Datum, 1929 North American Vertical Datum

GIS MAP-ID = 940604-67 SNL EOC GIS DEPT 7512 Map By: ephewy Atlas Mapsheet ERS-67 18-JAN-1995

aluminum-cased rocket motors (Ref. 6). The mineshaft where burning possibly took place has been identified as SNL ER Site 28-2 and will be investigated as part of ER Site 28.

A UXO/HE survey of the vicinity was conducted in 1994. No ordnance or ordnance debris was found within the boundary of Frustration Site; however, significant ordnance and debris was found in the area surrounding the site. An inspection of the mine that comprises Frustration Site, conducted in July of 1995, did not find any ordnance or ordnance debris within the ER Site (Ref. 7).

There is no interview account of any leaks from the transformer (formerly located in front of the Frustration Site adit) and no visible evidence that any oil leaked onto the ground surface (Figure 2).

Approximately in 1985, SNL/NM Safety Engineering staff conducted a radiometric survey of many mine shafts, including the Frustration Seismic Station. No radiation significantly above background levels was detected in the Frustration Seismic Station (Ref. 8). In 1994, the Frustration Site vicinity was also surveyed for areas of elevated surface gamma radiation (Ref. 9). No radiation above background levels was detected.

2.3 Historical Operations

Old mine adits in this area are the remnants of mineral mining activities (fluorite, etc.) conducted by homesteaders around the turn of the century. A portion of the old Frustration Mine was used by SNL/NM to house an experimental seismic station during the 1960s and 1970s. The station was used to record seismic disturbances produced by testing at the Nevada Test Site. The abandoned Frustration Seismic Station is located in a horizontal adit approximately 50 feet deep. Figure 3 is a portion of a 1959 SNL/NM engineering drawing which shows the layout of the mine adit and the electrical circuitry which was installed to run the seismic instrumentation. A sturdy metal door, with the faded words, "Frustration Site" and an Atomic Energy Commission (AEC) warning sign on it, seals the entrance (Figure 4). Inside are the remains of the seismic instrumentation attached to the rock walls, along with the remains of some office furniture.

In front of the adit that housed the seismic station, a fence which has since been removed enclosed an approximately 8-foot by 10-foot area where an electric transformer had been located. This transformer powered the seismic equipment and lighting inside the site. There is no interview account of any leaks from the transformer and no visible evidence that any oil leaked onto the ground surface (Figure 2).

Interviews with SNL/NM personnel who worked at the seismic station indicate that the unit was used for monitoring seismic events only, and the work conducted was not of a nature to generate any hazardous wastes (Ref. 10 through 20). Explosive or other destructive testing would not have been conducted in the vicinity because it would have damaged the sensitive seismic instrumentation.

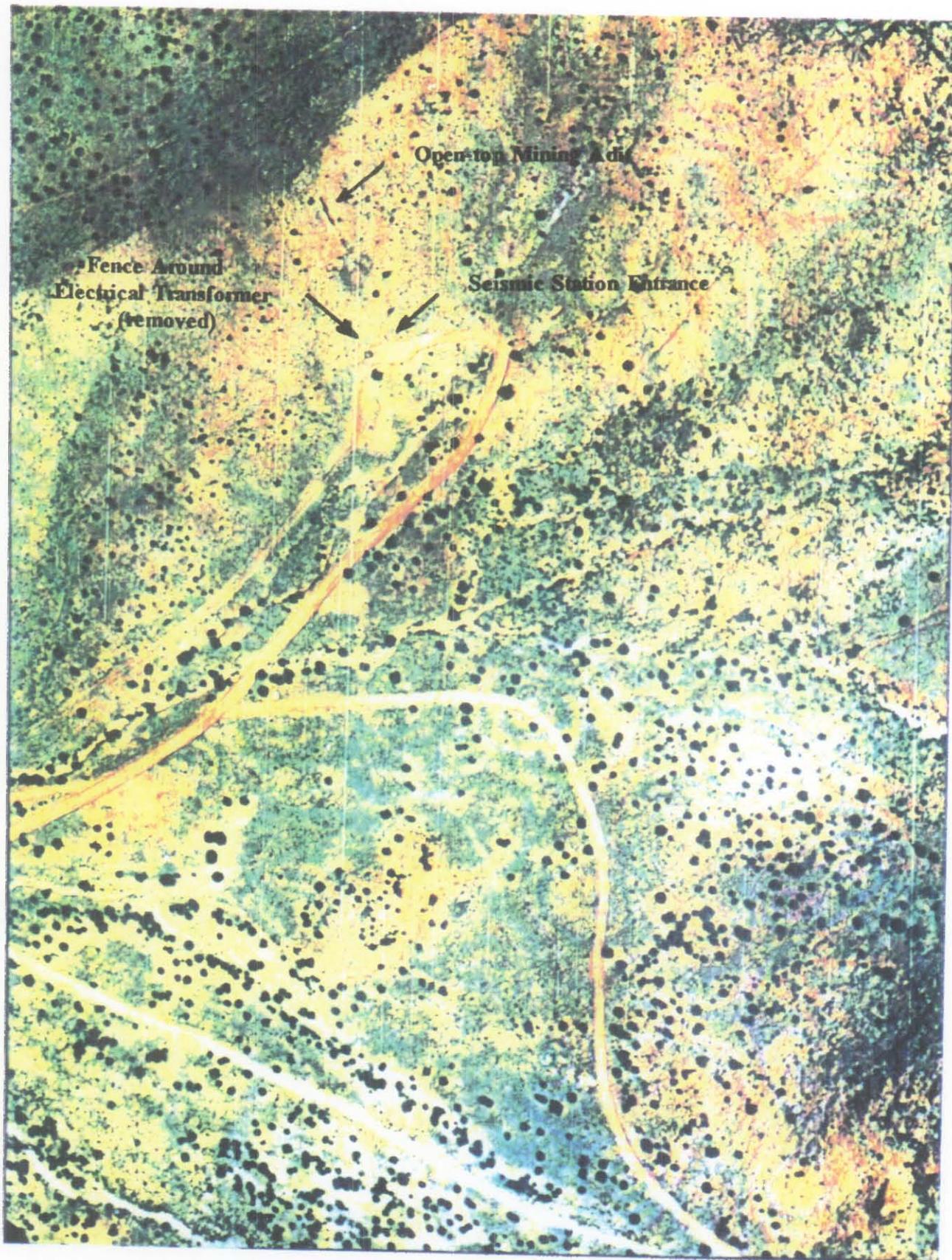


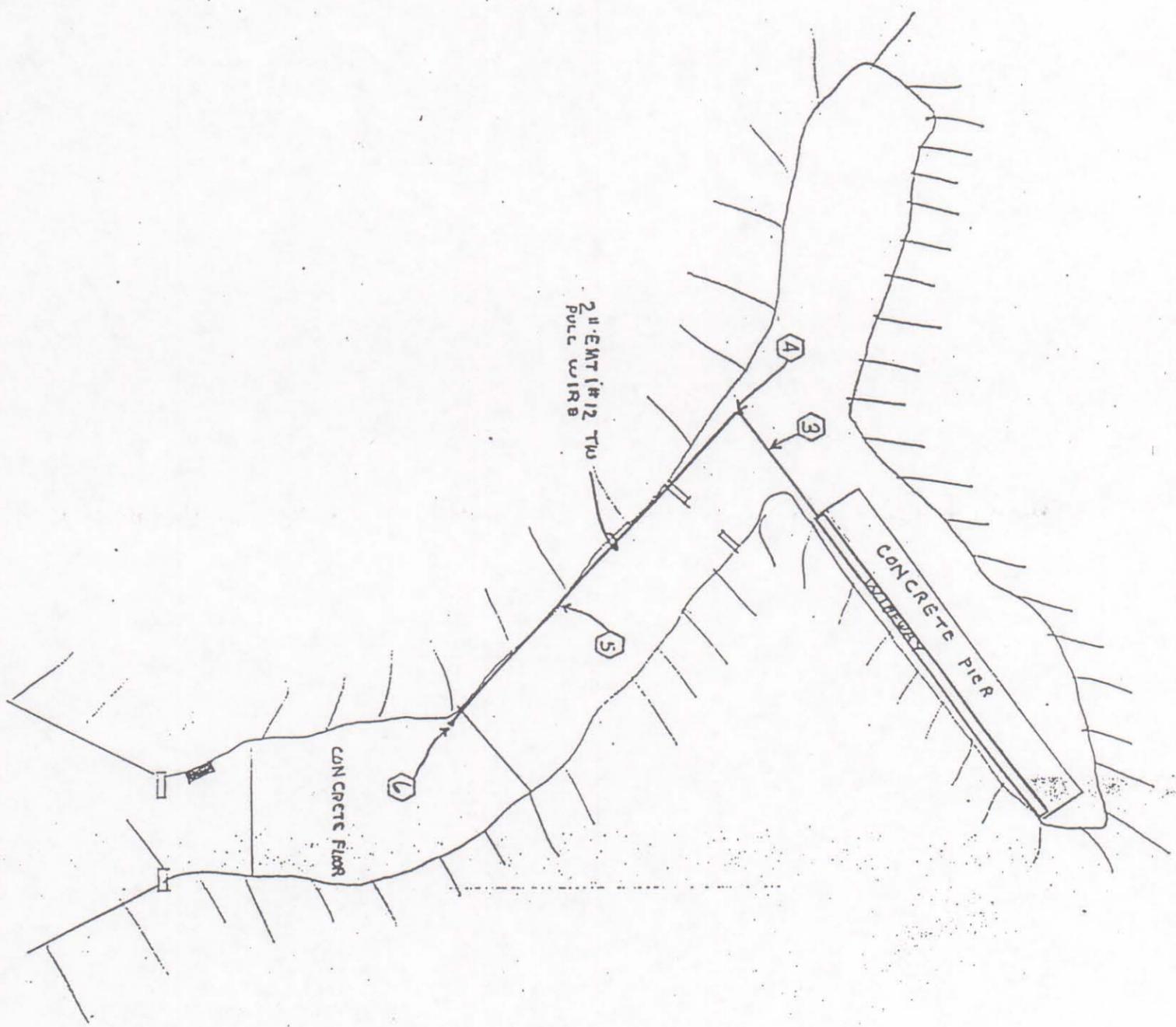
Figure 2. 1971 Aerial Photograph of Frustration Mine Area

PANEL "A"

CHARACTERISTICS: 120/208V, 3Φ 4W SN. 100A. PANELBOARD "E" FRAME BKRS. FED BY 3#2-2" C FROM JSKVA. SUBSTATION: ... Φ B AND Φ C CONNECTED TOGETHER

CIRCUIT LOCATION	AMPS. BR. CT. TR. W. Φ			CT. BR. AMPS. TR. W. Φ			CIRCUIT LOCATION
	A	B	C	A	B	C	
LIGHTS	13	20	1	4	20	12	OUTLETS CONCRETE PIER
PLUG. IN STRIP	13	20	2	8	5	20	SPARE
PLUG. IN STRIP	16	20	3	6	20		SPARE
OUTLETS CONCRETE PIER	12	20	8	11	106		MAIN BREAKER
SPARE: CONCRETE PIER	12	20	9	12			
TOTAL CONN. LOAD	29	25	16				
X 80 % DEMAND = FEEDER LOAD IN AMPS	Φ A = 32	Φ B = 32	Φ C = 22				

CONNECT Φ B AND Φ C BUSBARS TOGETHER WITH #2 WIRE
RE-CIRCUIT OUTLETS ON CRT. 9 TO CRT. 4



INSTRUMENTATION PLAN
SCALE: 1/8" = 1'-0"

PROJECT No. 523-33-60

PROJ. & W. O.	REV. LET.	CHANGED ITEM WAS	DATE	CHG. BY	CHK. BY	APP. BY
523-33-60	A	RE-CIRCUIT PANEL AND CONNECT Φ B AND Φ C TOGETHER. REMOVE APPLETON RECEPTACLE AND EXTEND FEEDER TO SUBSTATION FOR PANEL A	1-20-90	ELS		BRL 3/24/98

TITLE ELECTRICAL
"FRUSTRATION" SITE

Figure 3

LOCATION CT 1 - AREA "A"

DATE	SIGNATURE	DATE	DATE	DRAWING NO.
12-30	<i>[Signature]</i>	12-31		76112
APPROVED		APPROVED	DATE DEC 5 9	
APPROVED		APPROVED	SCALE 1/8" = 1'-0"	
APPROVED				

SANDIA CORPORATION
PLANT ENGINEERING
DEPT.



Figure 4. Frustration Seismic Station Entrance

3. Evaluation of Relevant Evidence

3.1 Unit Characteristics

The site has no units that could be considered as SWMUs.

3.2 Operating Practices

All interviews of personnel who worked at the site indicated that the Frustration Site was only used for experimental seismic work, and that no radioactive or hazardous materials were used.

3.3 Presence or Absence of Visual Evidence

There is no anecdotal evidence that the electric transformer formerly located in front of the seismic station ever leaked, nor is there visible evidence of any oil leakage.

No evidence of UXO/HE contamination or use was found during visual site surveys.

3.4 Results of Previous Sampling/Surveys

To address unsubstantiated claims of radioactive waste disposal in some of the mine shafts, SNL/NM Safety Engineering staff conducted a radiometric survey (approximately in 1985) of many mine shafts, including the Frustration Seismic Station. No radiation above background levels was detected in the Frustration Seismic Station (Ref. 8). The Frustration Site vicinity was also surveyed for areas of elevated surface gamma radiation in 1994 by RUST-Geotech (Ref. 9). No radiation above background levels was detected.

3.5 Assessment of Gaps in Information

No gaps in the required information were present.

3.6 Rationale for Pursuing an Administrative NFA Decision

SNL/NM is proposing an administrative NFA decision for ER Site 67 because the unit has never contained constituents of concern (Criterion A). Interviews, UXO/HE surveys, radiation surveys, current site conditions, site drawings, and the nature of the activities conducted at the site, all support the conclusion that no hazardous materials were used at the site, and thus none were released. Section 5 contains the detailed references that support this conclusion.

4. Conclusion

Based on the evidence cited above, no potential remains for a release of hazardous waste (including hazardous constituents) which may pose a threat to human health or the environment. Therefore, ER Site 67 is recommended for an NFA determination.

5. References

5.1 ER Site References

1. U.S. Environmental Protection Agency (EPA), August 1993, Module IV of RCRA Permit No. NM5890110518, EPA Region 6, issued to Sandia National Laboratories, Albuquerque, New Mexico.
2. U.S. Environmental Protection Agency (EPA), August 1992, Hazardous Waste Management Facility Permit No. NM5890110518, EPA Region 6, issued to Sandia National Laboratories, Albuquerque, New Mexico.
3. Sandia National Laboratories/New Mexico (SNL/NM), February 1995, draft. "Program Implementation Plan for Albuquerque Potential Release Sites," Sandia National Laboratories, Albuquerque, New Mexico.
4. U.S. Environmental Protection Agency (EPA), July 1990. "Corrective Action for Solid Waste Management Units (SWMU) at Hazardous Waste Management Facilities Proposed Rule," Federal Register, Vol. 55, Title 40, Parts 264, 265, 270, and 271.
5. U.S. Environmental Protection Agency (EPA), October 1986. "RCRA Facility Assessment Guidance," EPA/530-86-053, PB87-107769, Environmental Protection Agency, Washington, DC.
6. U.S. Department of Energy (DOE), September 1987. "Draft Comprehensive Environmental Assessment and Response Program (CEARP), Phase 1: Installation Assessment," Department of Energy, Washington, DC.
7. Young, M., Memorandum to C. Byrd, Subject: Site #67 - Mine Entry Inspection Report, July 6, 1995.
8. Sandia National Laboratories/New Mexico (SNL/NM), 1982. Environmental Operations Records Center Reference No. ER\7585\1332\67\82-041, Sandia National Laboratories, Albuquerque, New Mexico.*

*The SNL/NM reference numbers refer to a SNL/NM Records Center coding system intended to maintain the confidentiality of SNL/NM employees.

9. RUST Geotech, Inc., December 1994. "Final Report, Surface Gamma Radiation Surveys for Sandia National Laboratories/New Mexico Environmental Restoration Project," RUST Geotech, Inc., Grand Junction, Colorado.
10. Sandia National Laboratories/New Mexico (SNL/NM), 1994. Environmental Operations Records Center Reference No. ER\7585\1332\67\INT\94-011, Sandia National Laboratories, Albuquerque, New Mexico.*
11. Sandia National Laboratories/New Mexico (SNL/NM), 1993. Environmental Operations Records Center Reference No. ER\7585\1332\INT\93-013, Sandia National Laboratories, Albuquerque, New Mexico.*
12. Sandia National Laboratories/New Mexico (SNL/NM), 1993. Environmental Operations Records Center Reference No. ER\7585\1332\67\COR\93-040, Sandia National Laboratories, Albuquerque, New Mexico.*
13. Sandia National Laboratories/New Mexico (SNL/NM), 1985. Environmental Operations Records Center Reference No. ER\7585\1332\COR\85-037, Sandia National Laboratories, Albuquerque, New Mexico.*
14. Sandia National Laboratories/New Mexico (SNL/NM), 1993. Environmental Operations Records Center Reference No. ER\7585\1332\INT\93-034, Sandia National Laboratories, Albuquerque, New Mexico.*
15. Sandia National Laboratories/New Mexico (SNL/NM), 1985. Environmental Operations Records Center Reference No. ER\7585\1332\INT\85-030, Sandia National Laboratories, Albuquerque, New Mexico.*
16. Sandia National Laboratories/New Mexico (SNL/NM), 1985. Environmental Operations Records Center Reference No. ER\7585\1332\INT\85-035, Sandia National Laboratories, Albuquerque, New Mexico.*
17. Sandia National Laboratories/New Mexico (SNL/NM), 1985. Environmental Operations Records Center Reference No. ER\7585\1332\INT\85-034, Sandia National Laboratories, Albuquerque, New Mexico.*
18. Sandia National Laboratories/New Mexico (SNL/NM), 1993. Environmental Operations Records Center Reference No. ER\7585\1332\INT\93-013, Sandia National Laboratories, Albuquerque, New Mexico.*
19. Sandia National Laboratories/New Mexico (SNL/NM), 1993. Environmental Operations Records Center Reference No. ER\7585\1332\67\93-020, Sandia National Laboratories, Albuquerque, New Mexico.*

*The SNL/NM reference numbers refer to a SNL/NM Records Center coding system intended to maintain the confidentiality of SNL/NM employees.

20. Sandia National Laboratories/New Mexico (SNL/NM), 1990. Environmental Operations Records Center Reference No. ER\7585\1332\REP\90-018, Sandia National Laboratories, Albuquerque, New Mexico.*

5.2 Aerial Photographs

U.S. Forest Service, high altitude aerial photograph, 1971.

*The SNL/NM reference numbers refer to a SNL/NM Records Center coding system intended to maintain the confidentiality of SNL/NM employees.