
Fact Sheet / Statements of Basis

**Kirtland Air Force Base
Request for Approval of No Further Action
for
16 Solid Waste Management Units and Areas
of Concern**

(RCRA Permit No. 9570024423)

April 11, 2007

TABLE OF CONTENTS

Section	Page
A. Statements of Basis	1
B. Facility Description.....	1
C. History of Investigation	1
D. Investigation Results.....	1
E. Permit Modification.....	3
F. Selected Remedy.....	3
G. Public Participation.....	4
H. Next Steps	4
I. Contact Person for Additional Information	4
J. Description of SWMUs and AOCs Proposed for NFA	4
1. SWMU 6-11, Fill Area Southeast of Old Sewage Lagoons (Former LF-044) ..	4
Location and Current Land Use	4
Projected Future Land Use.....	5
History.....	5
Evaluation of Relevant Information.....	5
Basis for Determination	7
References	8
2. SWMU ST-64, Corps of Engineers (COE) Vehicle Maintenance Yard (Former ST-337).....	9
Location and Current Land Use	9
Projected Future Land Use.....	9
History.....	9
Evaluation of Relevant Information.....	9
Basis for Determination	11
References	12
3. SWMU ST-108, Abandoned JP-4 Fuel Line (ST-108).....	13
Location and Current Land Use	13
Projected Future Land Use.....	13
History.....	13
Evaluation of Relevant Information.....	15
Basis for Determination	15
References	16
4. SWMU SS-77, Abandoned Railroad Spur	17
Location and Current Land Use	17
Projected Future Land Use.....	17
History.....	17
Evaluation of Relevant Information.....	17
Basis for Determination	19
References	20
5. SWMU 6-32, Manzano Fire Training Area (Former FT-14)	21
Location and Current Land Use	21
Projected Future Land Use.....	21
History.....	21
Evaluation of Relevant Information.....	21

	Basis for Determination	24
	References	24
6.	SWMU 8-35, Waste Oil Storage Tank, Building 471 (Former ST-214)	25
	Location and Current Land Use	25
	Projected Future Land Use.....	25
	History.....	25
	Evaluation of Relevant Information.....	25
	Basis for Determination	27
	References	28
7.	SWMU 10-21-B, Site ST-348, Building 610 Septic Tank	29
	Location and Current Land Use	29
	Projected Future Land Use.....	29
	History.....	29
	Evaluation of Relevant Information.....	29
	Basis for Determination	31
	References	32
8.	SWMU 10-21-B, Site ST-349, Building 626 Septic Tank	33
	Location and Current Land Use	33
	Projected Future Land Use.....	33
	History.....	33
	Evaluation of Relevant Information.....	33
	Basis for Determination	35
	References	36
9.	Area of Concern ST-350, 600 Area Field Office Septic Tank.....	37
	Location and Current Land Use	37
	Projected Future Land Use.....	37
	History.....	37
	Evaluation of Relevant Information.....	37
	Basis for Determination	37
	References	39
10.	Area of Concern ST-356, Skeet Range Septic Tank	40
	Location and Current Land Use	40
	Projected Future Land Use.....	40
	History.....	40
	Evaluation of Relevant Information.....	40
	Basis for Determination	40
	References	42
11.	SWMU 10-2-E, Jet Engine Test Cell (SS-063, Former ST-336)	43
	Location and Current Land Use	43
	Projected Future Land Use.....	43
	History.....	43
	Evaluation of Relevant Information.....	43
	Basis for Determination	45
	References	45
12.	SWMU 6-22, Lake Christian (OT-46).....	46
	Location and Current Land Use	46
	Projected Future Land Use.....	46

	History.....	46
	Evaluation of Relevant Information.....	46
	Basis for Determination	49
	References.....	49
13.	SWMU LF-107, Veterans Administration Hospital Demolition Debris Landfill (Former LF-107).....	50
	Location and Current Land Use	50
	Projected Future Land Use.....	50
	History.....	50
	Evaluation of Relevant Information.....	50
	Basis for Determination	52
	References.....	52
14	SWMU SS-078-B, Water Tower (WT) Soils – WT-21871.....	53
	Location and Current Land Use	53
	Projected Future Land Use.....	53
	History.....	53
	Evaluation of Relevant Information.....	53
	Basis for Determination	55
	References.....	56
15	SWMU SS-078-C, Water Tower Soils (WT-2474).....	57
	Location and Current Land Use	57
	Projected Future Land Use.....	57
	History.....	57
	Evaluation of Relevant Information.....	57
	Basis for Determination	59
	References.....	59
16	SWMU SS-078-D, Water Tower Soils (ITRI WTs).....	60
	Location and Current Land Use	60
	Projected Future Land Use.....	60
	History.....	60
	Evaluation of Relevant Information.....	60
	Basis for Determination	62
	References.....	62

LIST OF FIGURES

Figure	Description	Page
1	NFA SWMU Site Locations	2
2	SWMU 6-11, Fill Area Southeast of Old Sewage Lagoons (Former LF-044)	6
3	SWMU ST-64, Corps of Engineers (COE) Vehicle Maintenance Yard (Former ST-337)	10
4	SWMU ST-108, Abandoned JP-4 Fuel Line (ST-108)	14
5	SWMU SS-77, Abandoned Railroad Spur	18
6	SWMU 6-32, Manzano Fire Training Area (Former FT-14)	22
7	SWMU 8-35, Waste Oil Storage Tank, Building 471 (Former ST-214)	26
8	SWMU 10-21-B, Site ST-348, Building 610 Septic Tank	30
9	SWMU 10-21-B, ST-349, Building 626 Septic Tank	34
10	AOC ST-350, 600 Area Field Office Septic Tank	38
11	AOC ST-356, Skeet Range Septic Tank	41
12	SWMU 10-2-E, Jet Engine Test Cell (SS-063, Former ST-336)	44
13	SWMU 6-22, Lake Christian (OT-046)	47
14	SWMU LF-107, VA Hospital Demolition Debris Landfill (LF-107)	51
15	SWMU SS-78-B, Water Tower (WT) Soils (WT-21871)	54
16	SWMU SS-78-C, Water Tower (WT) Soils (WT-2474)	58
17	SWMU SS-78-D, Water Tower (WT) Soils (ITRI WTs)	61

ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AOC	Area of Concern
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CoCs	constituents of concern
EPA/USEPA	U.S. Environmental Protection Agency
ft	feet
HE	high explosives
HSWA	Hazardous and Solid Waste Amendments
ICM	Interim Corrective Measures
NFA	no further action
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMEID	New Mexico Environmental Improvement Division
NOD	Notice of Deficiency
PCBs	polychlorinated biphenyls
PID	photoionization detector
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RSI	Request for Supplemental Information
SAR	SWMU Assessment Report
SNL	Sandia National Laboratories
SSL(s)	soil screening level(s)
SVOC(s)	semivolatile organic compound(s)
SWMU(s)	solid waste management unit(s)
TPH	total petroleum hydrocarbons
USAF	U.S. Air Force
UST	underground storage tank
VOC(s)	volatile organic compound(s)

A. Statements of Basis

Approval of No Further Action for 16 Solid Waste Management Units and Areas of Concern (RCRA Permit No. NM9570024423).

The New Mexico Environment Department (NMED) has determined that sixteen (16) Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) currently listed on the Hazardous and Solid Waste Amendments (HSWA) Permit, Module IV, Section E of the Kirtland Air Force Base (AFB) Resource Conservation and Recovery Act (RCRA) Hazardous Waste Management Facility Permit (9570024423) issued to Kirtland AFB on 10 October 1990 (U.S. Environmental Protection Agency [EPA], 1990) are suitable for No Further Action (NFA) status. Kirtland AFB has submitted an August 3, 2006, request to the NMED for a Class 3 Permit Modification to officially designate the 16 SWMUs and AOCs as suitable for NFA. These Statements of Basis provide a summary of the 16 sites that are included in the Permit Modification request. Additionally, Kirtland AFB is requesting that NMED administratively remove the Active Explosive Ordnance Disposal (EOD) Range (OT-29) from Table A and place it on Table B as a “SWMU not requiring corrective action at this time”. Site OT-29 is the active Base EOD range and is regulated under Subpart X of the Kirtland AFB RCRA permit. A Statement of Basis for this administrative action is not provided for OT-29.

B. Facility Description

Kirtland AFB is located in Albuquerque, Bernalillo County, New Mexico (Figure 1). The facility lands cover 52,223 acres in the old floodplain approximately 5 miles east of the Rio Grande.

C. History of Investigation

The EPA and the NMED (formerly known as the NMEID) jointly issued Kirtland AFB’s Hazardous Waste Permit in October 1990. One module of the permit, Module IV, Special Conditions Pursuant to the 1984 HSWA to RCRA, concerns the investigation of SWMUs. The HSWA Module requires Kirtland AFB to determine whether or not there have been any releases of hazardous waste from any SWMU and to take appropriate corrective measures for any such releases. On January 2, 1996, the NMED received authorization for corrective action under the HSWA and became the administrative authority for this action. These Statements of Basis describe 16 of the sites that were identified as “suitable for NFA status.” In summary, if Kirtland AFB’s request for a permit modification is approved by NMED, these 16 sites will be listed in Module IV as being approved for NFA.

D. Investigation Results

The NFA determinations have been based upon the five NFA Criteria provided by NMED (Section II.B.4.a (4)(b), Page 1, 3 March 1998). These criteria are:

1. The SWMU cannot be located, does not exist, or is a duplicate SWMU.

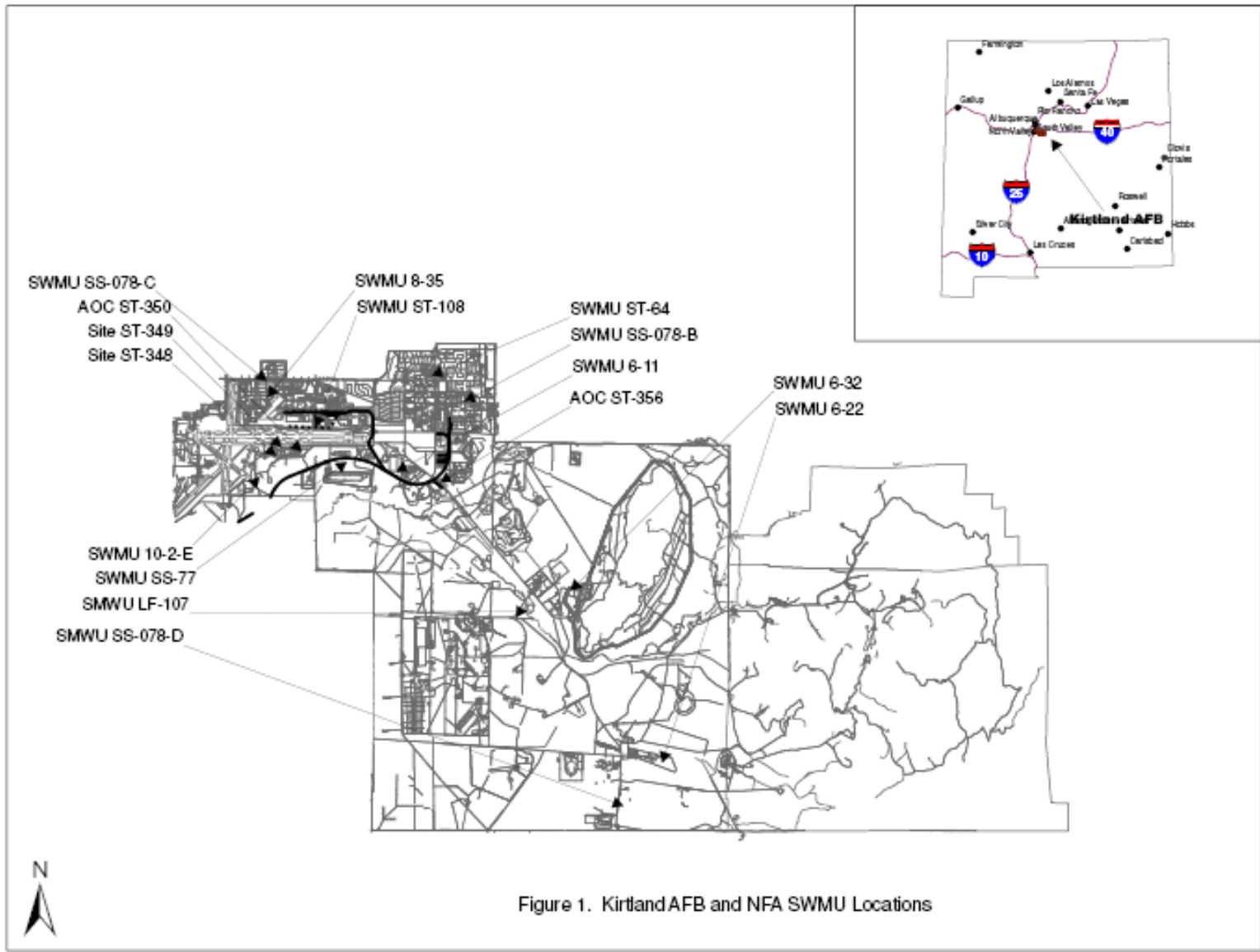


Figure 1. Kirtland AFB and NFA SWMU Locations

2. The SWMU has never been used for the management (i.e., generation, treatment, storage, and/or disposal) of RCRA solid waste or hazardous wastes and/or constituents or other Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances.
3. No release to the environment has occurred or is likely to occur in the future from the SWMU.
4. A release from the SWMU to the environment occurred, but the SWMU was characterized and/or remediated under another authority (such as the NMED's Underground Storage Tank [UST] or Groundwater Quality Bureaus), which adequately addressed RCRA corrective action, and documentation, such as a closure letter, is available.
5. The SWMU has been characterized or remediated in accordance with current applicable state or federal regulations, and the available data indicate that contaminants pose an acceptable level of risk under current and projected future land use.

Section I below briefly describes the locations, history, evaluations of relevant information, and the bases for determination for each of the 16 sites proposed for NFA. More detailed descriptions of the particulars for each site can be found in the original referenced documents.

E. Permit Modification

A copy of the public notice, the Statement of Basis for each site, and the applicable supporting documents can be reviewed at either of the following locations during the 60-day comment period beginning Wednesday, April 11, 2007.

New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505
(505) 476-6000
Monday - Friday from 8:00 a.m. to 5:00 p.m.
Contact: Pam Allen

F. Selected Remedy

The NMED's determination that NFA status is considered appropriate at these sites is based upon one or more of the following: field surveys, historical records, aerial photographs, employee interviews, and/or confirmatory sampling activities. The results of these activities indicate that these SWMUs do not pose a threat to human health or the environment. Each site proposed for NFA is described under the applicable NFA criteria discussed in Section D above.

G. Public Participation

Kirtland AFB issued a Public Notice on August 3, 2006, informing the public that a petition has been submitted to NMED requesting NFA status for 16 SWMUs and AOCs. The Public Notice specified that Kirtland AFB will accept comments on the petition during the 60-day comment period, ending October 2, 2006. The Notice also stated that information on each of the 16 SWMUs and AOCs would be presented in a public presentation on August 24, 2006.

H. Next Steps

On September 25, 2006, NMED issued a Public Notice of a 60-day comment period during which NMED accepted comments on the proposed changes to the status of the 16 sites through November 8, 2006.

Due to a mistake in the listing for the person to contact in Section I below, NMED is reissuing a second Public Notice for a 60-day comment period during which NMED will accept comments on the proposed changes to the status of the 16 sites. After the close of this second 60-day comment period on June 11, 2007, NMED will make a final decision, which will become effective 30 days after service of the decision unless a later date is specified or unless review is requested under the New Mexico Hazardous Waste Management Regulations, 20 New Mexico Administrative Code (NMAC) 4.1, Subpart IX.

I. Contact Person for Additional Information

For additional information, contact the following individual:

Mr. John Kieling, Program Manager
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Dr. East, Bldg 1
Santa Fe, NM 87505-6303
E-mail: john.kieling@state.nm.us
Telephone: (505) 476-6000
Fax: (505) 476-6030

J. Description of SWMUs and AOCs Proposed for NFA

The descriptions for each of the 16 sites being proposed for NFA are presented in the following sections.

1. SWMU 6-11, Fill Area Southeast of Old Sewage Lagoons (Former LF-044)

Location and Current Land Use

SWMU 6-11, Fill Area Southeast of Sewage Lagoons (Formerly LF-044) is a 10 acre area that was used for disposal of construction materials. The types of materials deposited at the landfill included concrete, asphalt, roofing shingles, sheet metal, and bottles.

The SWMU is located in the northwest portion of Kirtland Air Force Base (AFB), approximately one-quarter mile north of Tijeras Arroyo and immediately southeast of the former Kirtland AFB sewage lagoons (Figure 2).

The land use near SWMU 6-11 is urban/industrial in an active portion of the base. There is one water supply well, KAFB-4, located nearby roughly 500 feet (ft) east of SWMU 6-11.

Projected Future Land Use

There are no proposed changes for the land use at SWMU 6-11; however, a residential land use scenario was used for all risk-based screening assessments to consider the most restrictive possible land use.

History

The site was used for placement of construction rubble until 1988 (United States Air Force [USAF], 1996). It is not known when concrete rubble and debris began to be placed in the area although debris can be seen within the SWMU 6-11 area on aerial photographs as early as 1954. Concrete rubble disposal stopped in 1988, after a site inspection concluded that the area was not an actual designated landfill (USAF, 1988). The visual site inspection report (USAF, 1988) concluded that concrete debris began to be placed in that area originally for erosion control, which was common practice in the past. No records were kept on the specific type or amount of debris placed at SWMU 6-11.

Soil was not excavated to allow for placement of debris; rather, the debris was placed into natural drainage depressions and gullies (USAF, 1997). Between late 1992 and early 1993, the debris was characterized and removed from the area, impacted underlying soils were excavated and removed from the site, and the area was then covered with clean fill and compacted. Currently, the area is covered with clean fill and is no longer used for any activities.

Evaluation of Relevant Information

The SWMU 6-11 site was investigated during the Phase II Stage 2A RCRA Facility Investigation (RFI) in 1993 (USAF, 1993). The objective of the investigation was to determine if contamination was present in the surface soils adjacent to the landfill material and to determine whether any contamination had migrated away from the landfill area. Six boreholes were drilled and sampled within SWMU 6-11 with a hand-auger. Four boreholes were drilled in areas with substantial amounts of debris, and two boreholes were drilled in areas within surface drainage channels that drained away from the SWMU 6-11 area. Seven soils samples, including one replicate sample, were collected at depths of 3 ft below ground surface (bgs).

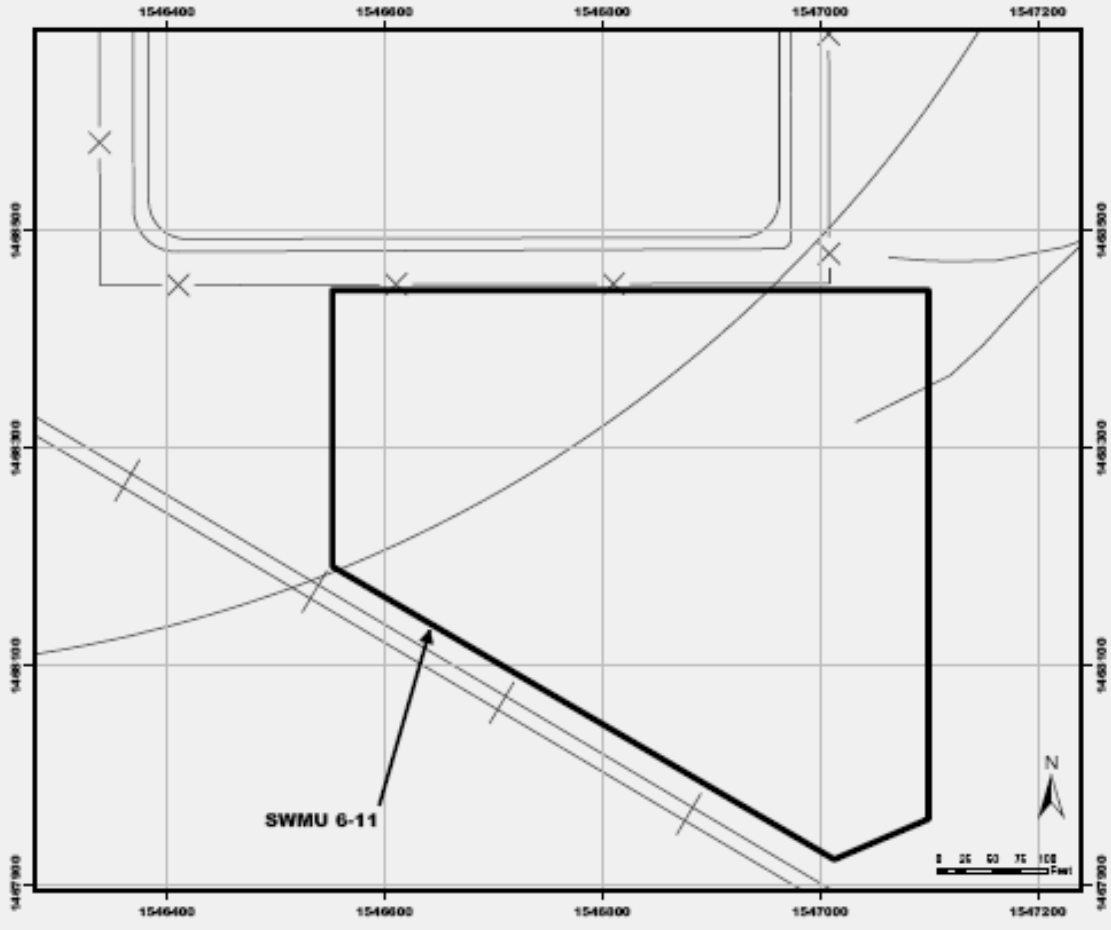


Figure 2. SWMU 6-11 Fill Area Southeast of Sewage Lagoons (Former LF-044) Site Location Map

Samples from the Phase II Stage 2A RFI were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and metals. During the Phase II Stage 2A RFI, only beryllium was detected at concentration above screening levels in the soil samples. However, similar beryllium concentrations were also detected in background samples.

In response to a Request for Supplemental Information (RSI) received from the NMED on April 18, 2000, additional field investigation activities were performed to further characterize the soils at SWMU 6-11 (NMED, 2000). A Supplemental Landfill Assessment (USAF, 2002) was conducted to complete the characterization of soils within SWMU 6-11. Phase 1 of the Supplemental Landfill Assessment consisted of soil gas testing for the presence of organic compounds. Forty soil gas samples were collected and analyzed. Based on the soil gas results of Phase 1, a Phase 2 assessment was implemented to collect soil samples and further investigate areas of soil based on the soil gas testing. Six test pits were excavated and sampled at depths of 18 to 20 ft bgs and 40 ft bgs. Twenty-five soil samples, including field replicates, were collected.

During the Supplemental Landfill Assessment Phase 1, soil gas samples were analyzed for VOCs. Twelve volatile organic compounds that are associated with petroleum hydrocarbons and chlorinated solvents were detected at six locations. During the Supplemental Landfill Assessment Phase 2, soil samples were analyzed for VOCs, SVOCs, total petroleum hydrocarbons (TPH), metals, and high explosives (HE). Analytical results indicated the presence of TPH-related VOCs and SVOCs. Soil samples collected during the Phase 2 investigation were also screened using field instruments for detectable radiation. The field-screening instruments did not detect radiation above background levels.

A Voluntary Corrective Measure was performed (USAF, 2005), during which Kirtland AFB removed TPH-contaminated soils from SWMU 6-11. During removal activities, asbestos-containing materials (ACM) and larger amounts of asphalt than originally thought present were discovered. The corrective measure effort was expanded to remove the ACM, asphalt, and TPH-contaminated soils from SWMU 6-11 and properly dispose of those materials offsite. SWMU 6-11 was then re-graded, backfilled, and landscaped. Soil sampling showed that remaining detectable compound concentrations were below the screening guidelines and the site did not pose an unacceptable level of risk to human health or the environment.

Basis for Determination

In a letter dated March 16, 2006, the NMED's Hazardous Waste Bureau agreed that SWMU 6-11 was appropriate for NFA (NMED, 2006). This NFA proposal is based upon NMED's NFA Criterion 5: The SWMU has been characterized or remediated in accordance with current applicable State or Federal regulations, and the available data indicate that contaminants at the SWMU 6-11 pose an acceptable level of risk under current and projected future land use.

References

NMED, 2006. Correspondence with Mr. Carl Lanz, Environmental Management Branch, 377 MSG/CEVR, March 16.

USAF, 2005. Voluntary Corrective Measures Implementation Report for Solid Waste Management Unit 6-11, Fill Area Southeast of Sewage Lagoons (LF-044). United States Air Force Kirtland Air Force Base, New Mexico. September.

USAF, 2002. Supplemental Assessment of Multiple Landfills. United States Air Force Kirtland Air Force Base, New Mexico. December.

NMED, 2000. Correspondence with Mr. Christopher DeWitt, Environmental Management Branch, 377 ABW/EMR, April 18.

USAF, 1997. Phase II RCRA Facility Investigation Report. United States Air Force Kirtland Air Force Base, New Mexico. August.

USAF, 1993. Preliminary RCRA Facility Investigation (RFI) Stage 2A Soils. United States Air Force Kirtland Air Force Base, New Mexico. March

USAF, 1988. Preliminary Review/ Visual Site Inspection Kearney Report. United States Air Force Kirtland Air Force Base, New Mexico. August 4.

2. SWMU ST-64, Corps of Engineers (COE) Vehicle Maintenance Yard (Former ST-337)

Location and Current Land Use

SWMU ST-64, US Army Corps of Engineers (COE) Vehicle Maintenance Yard (Formerly ST-377) was a fenced, graveled area west of Building 20212, which was demolished in 1995. The area was used for outdoor storage of liquid wastes generated by the vehicle maintenance facility formerly located in Building 20211. The area is now an asphalt parking area.

The SWMU was located in the northeastern portion of Kirtland AFB near the intersection of 4th Street and G Avenue (Figure 3).

The land use near SWMU ST-64 is urban/industrial in an active portion of the base. The SWMU ST-64 area is currently used as a parking lot. Three water supply wells are located in the vicinity of ST-64: KAFB-3 located roughly 5,400 feet (ft) northwest, KAFB-16 located roughly 5,400 ft southwest, and KAFB-1 located roughly 2,700 ft southwest of the site.

Projected Future Land Use

There are no proposed changes for the land use at SWMU ST-64; however, a residential land use scenario was used for all risk-based screening assessments to consider the most restrictive possible land use.

History

Prior to being condemned and demolished in 1995, Building 20212 operated as a maintenance garage for the US Army Corps of Engineers vehicles. The Site Grading Plan for original construction at the site identified the building as a Troop Housing Motor Pool. Based on this information, the building appears to have always operated primarily as a motor vehicle maintenance facility until it was demolished.

According to investigation reports, six 55-gallon drums, placed on wooden pallets, were used to store liquid wastes from vehicle maintenance including motor oil, hydraulic fluid, and antifreeze. A 500-gallon UST also stored used oil. The UST was removed in 1995, with the surrounding buildings. Following building demolition in 1995, the site remained unused until it later began to be used as a dirt parking area, and then later a paved parking area.

Evaluation of Relevant Information

The SWMU ST-64 site was investigated as part of the Appendix III, Phase I RFI in 1995 (United States Air Force [USAF], 1995). The objective of the investigation was to determine the presence or absence of contaminants in soil below the storage area. Four boreholes were drilled and sampled in the storage area. One borehole was drilled outside the SWMU ST-64 area to collect background concentration data for constituents of concern (CoCs). Two depth intervals were sampled in the background borehole, at depths of 5 to 7 ft bgs and 10 to 12 ft bgs.

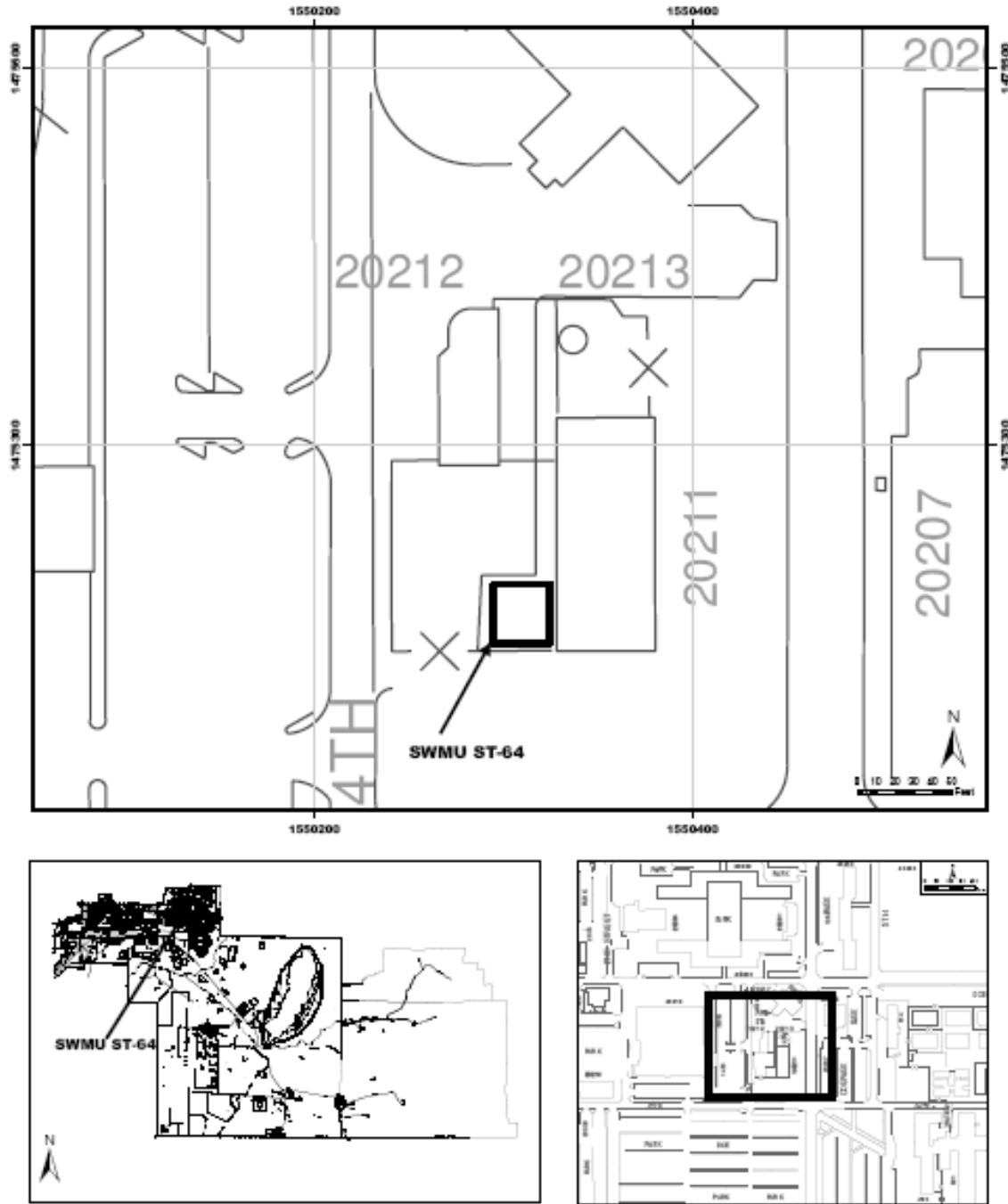


Figure 3. SWMU ST-64 Former U.S. Army Corps of Engineers Vehicle Maintenance Yard (ST-64) Site Location Map

Three depth intervals were sampled in each storage area borehole; intervals were 0 to 2 ft bgs, 5 to 8 ft bgs, and 10-12 ft bgs. In one borehole, an additional sample was collected at a depth of 30 to 32 ft bgs.

Additional field investigation activities were performed at the site during the Appendix III Phase 2 RFI (USAF, 1997) with the objective of delineating the extent of TPH and SVOCs detected during the Appendix III Phase I RFI in the waste storage area. Forty-two soil samples and three replicates, for a total of 45 samples, were collected from eight boreholes for laboratory analysis.

Samples from the both the Appendix III Phase 1 and the Appendix III Phase 2 investigations were analyzed by a laboratory for the expected chemicals of potential concern associated with normal operations at this building, including VOCs, SVOCs, TPH, metals, and mercury, as well as soil pH and soil moisture. Samples also were screened using field instruments for detectable radiation and VOCs.

Diesel and hydraulic range TPH and SVOCs, were found in the soils at the storage area; an Interim Corrective Measure (ICM), which involved removal of contaminated soils, was conducted in 1997 (USAF, 1998). Approximately 457 cy of contaminated soil were initially removed. Samples were collected from the base of the excavation to evaluate whether impacted soil remained. Based on analysis results, the excavation was expanded. Confirmation samples were collected -- detected CoCs in the remaining soil were below the applicable residential SSLs.

Site characterization adequately determined the horizontal and vertical extent of any chemical release and addressed the presence of expected chemicals of potential concern. Furthermore, those soils containing elevated petroleum hydrocarbons were removed during the ICM; CoCs in the remaining soil are at levels below current NMED screening guidelines. As discussed in the Corrective Measures Study report (USAF, 1999), the remaining chemical concentrations do not pose an unacceptable level of risk to human health or the environment.

In a December 14, 2004, letter, the NMED requested additional information based on review of the Voluntary Corrective Measures (VCM) report (USAF, 2003). On February 14, 2005, Kirtland AFB submitted the requested supplemental information confirming that the detectable concentrations were below the current SSLs and that the site did not pose an unacceptable level of risk to human health or the environment (USAF, 2005).

Basis for Determination

In a letter dated October 21, 2005, the NMED's Hazardous Waste Bureau agreed that SWMU ST-64 is appropriate for NFA (NMED, 2005). This NFA proposal is based upon NMED's NFA Criterion 5: The SWMU has been characterized or remediated in accordance with current applicable State or Federal regulations, and the available data indicate that contaminants at the SWMU ST-64 (Former ST-337) pose an acceptable level of risk under current and projected future land use.

References

NMED, 2005. Correspondence with Mr. Carl Lanz, Environmental Management Branch, 377 MSG/CEVR, October 21, 2005.

USAF, 2005. Kirtland AFB Response to NMED's December 14, 2004 Request for Supplemental Information. United States Air Force Kirtland Air Force Base (AFB), NM.

USAF, 2003. Voluntary Corrective Measures Report for Corrective Action Units 10-3, Building 20205, Waste Oil Storage Tank (ST-249); 6-16, Fire Training Area (FT-13); and ST-64, U.S. Army Corps of Engineers Vehicle Maintenance Yard (ST-64). United States Air Force Kirtland AFB, New Mexico. April.

USAF, 1999. Corrective Measures Study Report for Inactive SWMUs 8-13, Buildings 1001/1002 OWS (ST-71); WP-58, Building 20451, East Laundry (WP-58; and ST-64, Former U.S. Army Corps of Engineers Vehicle Maintenance Yard (ST-64) United States Air Force Kirtland AFB, New Mexico. November 11.

USAF, 1998. *Interim Corrective Measure Report for SWMU ST-64*, United States Air Force Kirtland AFB, New Mexico. March.

USAF, 1997. *RCRA Facility Investigation Report, Appendix II, Phase 2(HNUS)*. United States Air Force Kirtland AFB, New Mexico, Draft Final. July.

USAF, 1995. RCRA Facility Investigation Report, Appendix III Nonwasteline Sites Report. United States Air Force Kirtland AFB, New Mexico. October.

3. SWMU ST-108, Abandoned JP-4 Fuel Line (ST-108)

Location and Current Land Use

SWMU ST-108, Abandoned JP-4 Fuel Line, an abandoned, buried, fuel distribution line which supplied JP-4 fuel for military aircraft, was abandoned in place in 1993. The SWMU pipeline is located in the western portion of Kirtland AFB and passes beneath several facilities, parking areas, and flight line sections of the base (Figure 4).

The land use near SWMU ST-108 is urban/industrial in an active portion of the base. There are three water supply wells located in this area of Kirtland AFB: KAFB-2 is located roughly 1,500 feet (ft) southeast of a portion of the pipeline, KAFB-14 is located roughly 1,100 ft northwest of a portion of the pipeline, and KAFB-15 is located roughly 1,500 ft northwest of a portion of the line. Additionally, a water production well owned by the Veteran's Administration Hospital is located roughly 1,250 ft northwest of the eastern end of SWMU ST-108.

Projected Future Land Use

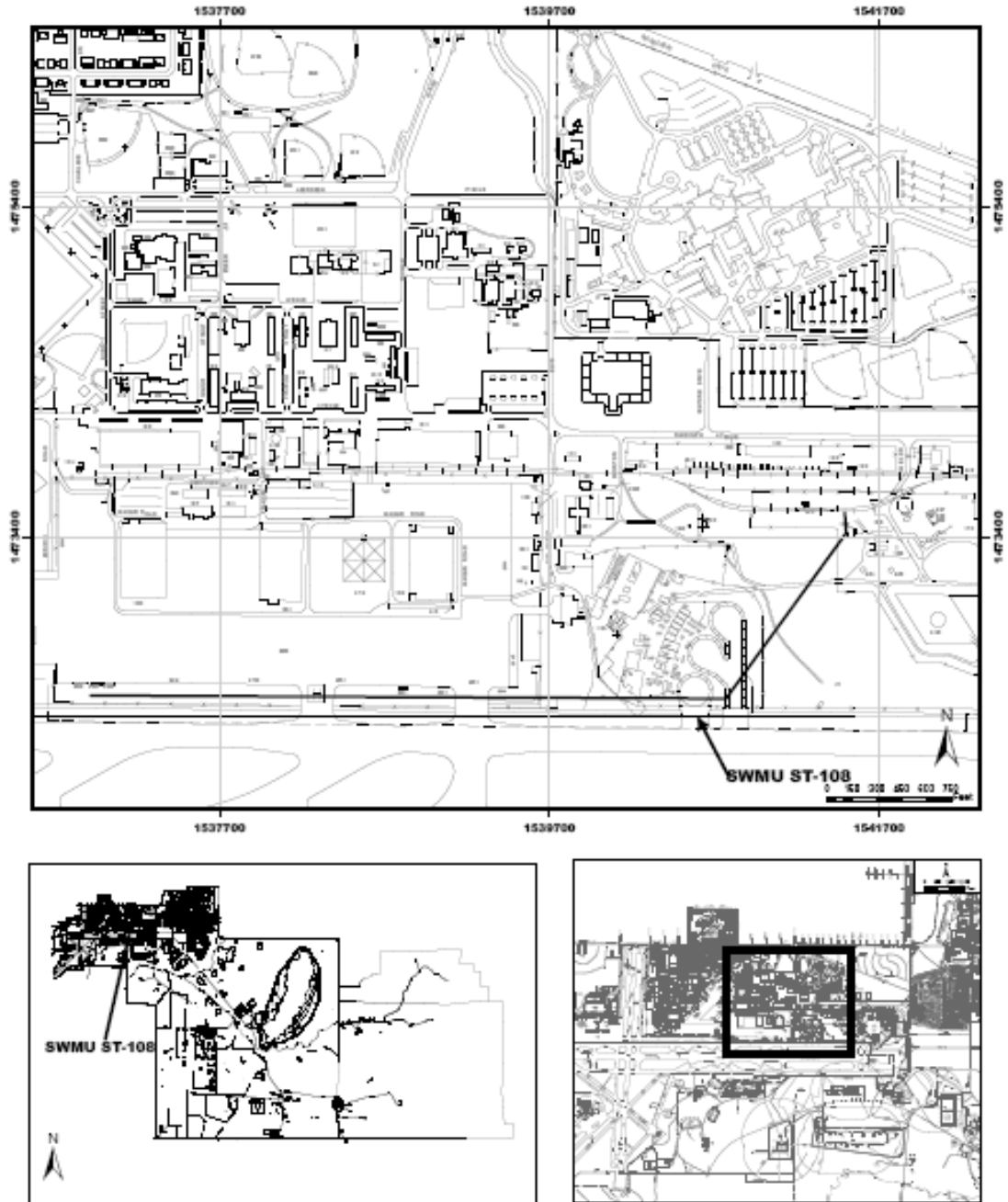
There are no proposed changes for the land use at SWMU ST-108; however, a residential land use scenario was used for all risk-based screening assessments to consider the most restrictive possible land use.

History

SWMU ST-108, Abandoned JP-4 fuel line, was originally part of the Kirtland AFB Bulk Fuels Facility. Record drawings show most structures in this area of the base were built in 1953. Fuel was delivered via railcar to the pump house, Building 1033, and then to storage tanks. From the storage tanks, fuel was transferred through the pump house to the flight line where airplanes were fueled.

The SWMU ST-108 pipeline is roughly 4,500 ft in length and is composed of steel wrapped with an asphaltic coating to prevent corrosion. The pipeline ran from the Bulk Fuels Facility pump house to the transfer station on the flight line. One main line is 8-inches in diameter, and distribution lines are 6-inch and 8-inch diameters. The depth of the pipe varies from 3-ft to 5.5 ft bgs in different areas.

The pipeline was abandoned in place in 1993, at the same time the Air Force transitioned from the use of JP-4 fuel to the less volatile JP-8 fuel. In 1993, the City of Albuquerque replaced the runway section under which the western portion of SWMU ST-108 is located. During this construction, the transfer station on the flight line was removed. Kirtland AFB believed that the portion of the SWMU ST-108 fuel pipeline underneath the runway was also removed at the time of that construction. However, a line location investigation later proved that the original pipeline was left in place. The pipeline was cleaned out, capped, and abandoned in place in 2005.



**Figure 4. SWMU ST-108 Abandoned JP-4 Fuel Line (ST-108)
Site Location Map**

Evaluation of Relevant Information

A RFI was conducted in 2001 to assess the presence of contaminants in soil adjacent to certain sections of the pipeline (USAF, 2002). Thirty boreholes were drilled along the pipeline length and samples were collected at a depth equal to the pipeline and at a depth 5-ft below the pipeline in each borehole. Sixty samples and 6 replicate samples were collected for a total of 66 soil samples. During this investigation, the condition of the pipeline was checked and found to have no corrosion, but the presence of JP-4 was detected.

Samples from the 2001 RFI were analyzed by a laboratory for the chemicals of potential concern for this SWMU, including VOCs, SVOCs, TPH, and metals, as well as soil pH and soil moisture. Samples also were screened using field instruments for detectable VOCs. Field screening did not indicate any VOC vapors above background levels.

Diesel range TPH was found in one sample at a concentration of 6.6 milligrams per kilogram (mg/kg). This detected concentration is below the applicable NMED soil screening guidelines. Recommendations made in the 2001 RFI report (USAF, 2002) were to remove any residual fuel in the pipeline.

In 2004, a VCM was initiated to purge residual fuel from the pipeline (USAF, 2005a). A total of 915 gallons of JP-4 were removed from the pipeline. Compressed air was used to purge volatile vapors and a 3,200 ft section of pipe was capped and abandoned in place. In 2004, a follow-up VCM was conducted to purge residual fuel from the remaining main fuel line and the two distribution lines (USAF, 2005a). Twenty gallons of water were recovered from those sections of the pipeline and disposed of offsite. The pipeline sections were capped and abandoned in place.

Site characterization adequately determined the horizontal and vertical extent of any chemical release and addressed the presence of expected CoCs. Furthermore, the soil sample with detectable concentrations of chemicals had concentrations below current NMED screening guidelines. As discussed in the VCM report (USAF, 2005a), the remaining chemical concentrations do not pose an unacceptable level of risk to human health or the environment.

In a May 11, 2005 letter, the NMED requested additional information based on review of the VCM report (USAF, 2005a). On September 8, 2005, Kirtland AFB submitted the requested supplemental information confirming that the detectable concentrations were below the current SSLs and that the site did not pose an unacceptable level of risk to human health or the environment (USAF, 2005b).

Basis for Determination

In a letter dated November 1, 2005, the NMED's Hazardous Waste Bureau agreed that SWMU ST-108 is appropriate for NFA (NMED, 2005). This NFA proposal is based upon NMED's NFA Criterion 5: The SWMU has been characterized or remediated in accordance with current applicable State or Federal regulations, and the available data indicate that contaminants at SWMU ST-108 pose an acceptable level of risk under current and projected future land use.

References

NMED, 2005. Correspondence with Mr. Carl Lanz, Environmental Management Branch, 377 MSG/CEVR, November 1, 2005.

USAF, 2005b. Kirtland AFB Response to NMED's May 11, 2005 Request for Supplemental Information. Kirtland AFB, Albuquerque, NM. September 8.

USAF, 2005a. Supplemental RCRA Facility Investigation (RFI) Report for the Abandoned JP-4 Fuel Line ST-108 Kirtland AFB, Albuquerque, NM. January 21.

USAF, 2002. RCRA Facility Investigation Report; CAU DP-99, Building 29015, Disposal Pit; CAU ST-108, Abandoned JP-4 Fuel Line; and CAU SS-102, ARES Test Facility Kirtland AFB, Albuquerque, NM. December.

4. SWMU SS-77, Abandoned Railroad Spur

Location and Current Land Use

SWMU SS-77, Abandoned Railroad Spur (SS-77), consists of approximately 6 miles of former railroad tracks. The railroad spur was used to transport supplies and equipment to Kirtland AFB facilities beginning in the early 1940's. The actual rail lines were removed in the late 1990s and the site is now an abandoned railroad bed.

The former rail line sections that composed the SWMU were located in the northern portion of Kirtland AFB. The line entered the base from south of the east-west runway area and divided into two forks just west of the former Kirtland AFB sewage lagoons. One fork continued to the north and east ultimately paralleling Wyoming Boulevard. The second fork turned north and then back west paralleling Randolph Road (Figure 5).

SWMU SS-77 is located in an active portion of the base and land use along the length of the SWMU is urban/industrial. SWMU SS-77 rail lines are currently abandoned although there are a variety of active facilities along the length of the rail lines. There are three water supply wells located in this area of Kirtland AFB: KAFB-4 is located roughly 1,500 ft south of a portion of the rail line, KAFB-15 is located roughly 1,000 ft northwest of a portion of the rail line, and KAFB-16 is located roughly 300 ft north of a portion of the rail line.

Projected Future Land Use

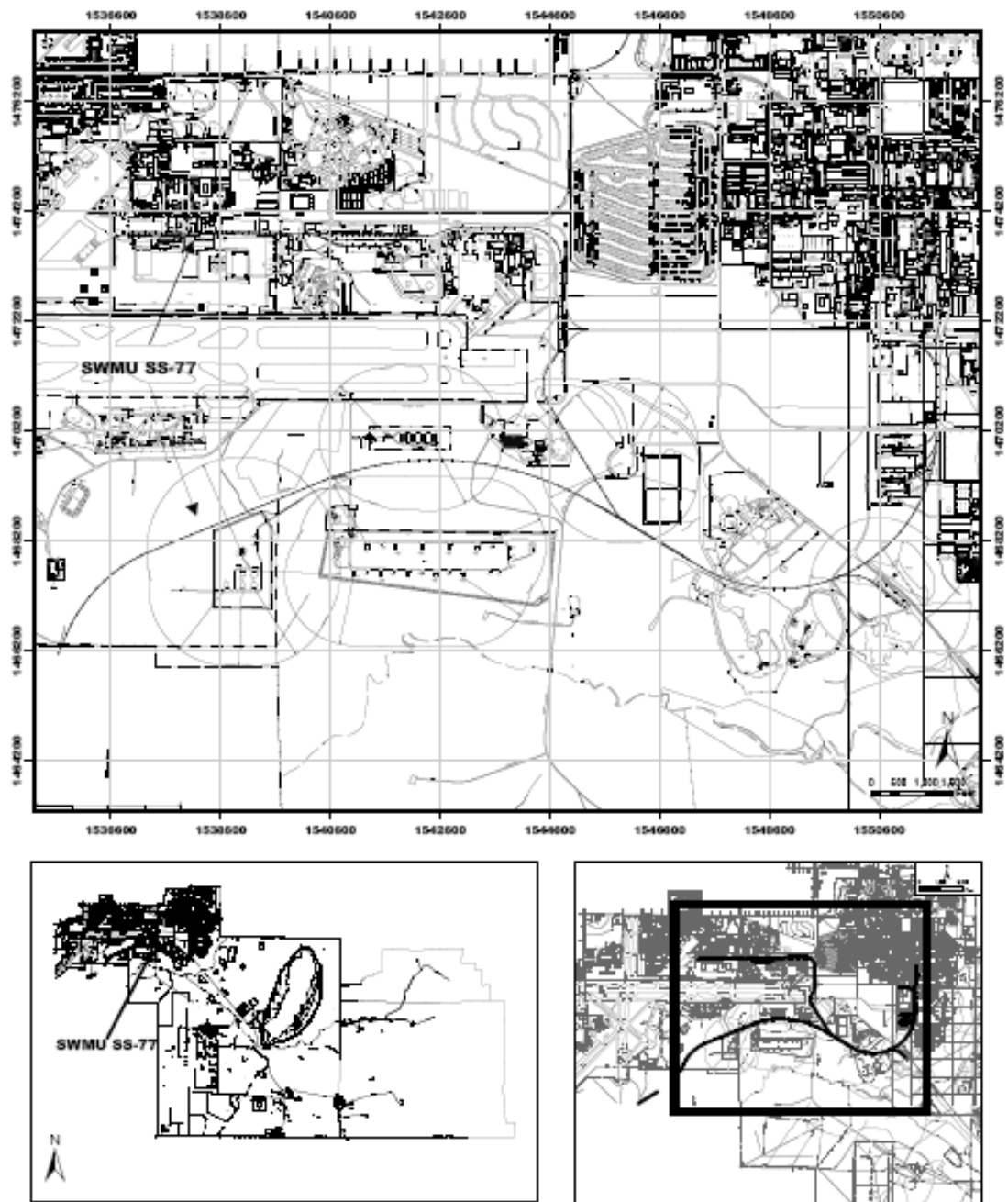
There are no proposed changes for the land use at SWMU SS-77; however, a residential land use scenario was used for all risk-based screening assessments to consider the most restrictive possible land use.

History

The buildings along the length of SMWU SS-77 and the rail lines were built starting in the 1940's. A site map of Kirtland AFB shows the railroad present in 1955. The railroad spur was used to transport supplies and equipment, and gasoline, diesel, and jet fuel. In the mid 1980s, the railroad spurs were abandoned. In the late 1990s, the tracks and railroad ties were removed. Currently, the rail bed is still in place but is generally not discernible in most areas.

Evaluation of Relevant Information

SWMU SS-77 was initially characterized during a Phase I SWMU Assessment in January 1997 (USAF, 1997). The objective of the investigation was to determine the presence or absence of contaminants in soil adjacent to five areas along the railroad spurs prior to removal of the railroad ties and ballasts. Fourteen boreholes were drilled and sampled at depths of 0 to 2 ft bgs, 2 to 4 ft bgs, and every 5 ft thereafter. Samples were screened with a photoionization detector (PID) to screen for volatile organic compounds and sampling was terminated when the PID no longer indicated concentrations above background. A total of forty-one soil samples were collected for analysis.



**Figure 5. SWMU SS-77 Abandoned Railroad Spur (SS-77)
Site Location Map**

Additional characterization was performed during a Phase II SWMU Assessment in 1997 (USAF, 1997). The objective of the investigation was to determine the presence or absence of contaminants in soil identified during the previous investigation and adjacent to known loading/unloading areas along the rail line. Nine boreholes were drilled and sampled at three depth intervals: 0 to 2 ft bgs, 2 to 4 ft bgs, and 18-20 ft bgs. Twenty-nine samples, including two field replicates, were collected for analysis.

Additional field investigation activities were performed during a RFI (USAF, 1999). The objective of the 1999 RFI was to delineate the extent of TPH detected in the Phase II Assessment. Soil samples were collected from sixteen boreholes. Seven boreholes were installed along the eastern portion of the rail line and samples were collected from 18 to 20-ft bgs and 28 to 30-ft bgs. Nine boreholes were installed along the western portion of the rail line and sampled at depths of 3 to 5-ft bgs and 23 to 25-ft bgs. Thirty-two soil samples, including three replicates were collected and analyzed for TPH only.

Samples from the SWMU Assessments were analyzed by a laboratory for the expected CoCs, including VOCs, SVOCs, TPH, and metals. Samples also were screened using field instruments for detectable VOCs. Soil samples from the 1999 RFI were analyzed for only TPH.

Elevated levels of diesel and gasoline range TPH were detected in a limited number of samples from only two boreholes during the Phase 2 SWMU Assessment; these detections were at known loading areas. Low levels of certain VOCs and SVOCs were also detected but at concentrations below applicable NMED residential SSLs. Additionally, some metals were detected in soil samples at concentrations above background levels, but below NMED SSLs. Site characterization adequately determined the horizontal and vertical extent of impacted soil and addressed the presence of expected chemicals of potential concern. All investigation information was presented in a NFA proposal submitted in 2001 (USAF, 2001).

In a March 10, 2004, letter, the NMED requested additional information based on review of the NFA proposal. On June 9, 2004, Kirtland AFB submitted the requested supplemental information confirming that the detectable VOC and SVOC concentrations were below applicable NMED SSLs and that the site did not pose an unacceptable level of risk to human health or the environment (USAF, 2004).

Basis for Determination

In a letter July 27, 2006, the NMED's Hazardous Waste Bureau agreed that SWMU SS-77 is appropriate for NFA. This NFA proposal is based upon NMED's NFA Criterion 5: The SWMU has been characterized or remediated in accordance with current applicable State or Federal regulations, and the available data indicate that contaminants at SWMU SS-77 pose an acceptable level of risk under current and projected future land use.

References

NMED, 2006. Correspondence with Mr. Carl Lanz, Environmental Management Branch, 377 MSG/CEVR. July 27.

USAF, 2004. Kirtland AFB Response to NMED's March 10, 2004 Request for Supplemental Information. United States Air Force Kirtland AFB, NM. March 10.

USAF, 2001. No Further Action Proposals for Corrective Action Units SS-77, Abandoned Railroad Spur; SS-82, Air Force Weapons Laboratory/Los Alamos Scientific Laboratories Electromagnetic Pulse Calibration and Simulation Facility; 10-2. Storm Sewer Systems; 10-21, Septic Systems; and 8-35, Waste Oil Storage Tank, Building 481. United States Air Force Kirtland AFB, NM. January.

USAF, 1999. Resource Conservation and Recovery Act (RCRA) Facility Investigation for Solid Waste Management Unit 9-4 (Waste Accumulation Area, Building 617 [ST-276]) and Areas of Concern (Abandoned Railroad Spur [SS-77] and Building 30124, Manzano Auto Hobby Shop [ST-80]). United States Air Force Kirtland AFB, NM. June.

USAF, 1997. SWMU Assessment Report for AOC SS-78, Four Water Tanks; AOC ST-80, Building 30124, Manzano Area Hobby Shop; and AOC SS-77, Abandoned Railroad Tracks. United States Air Force Kirtland AFB, NM. June.

5. SWMU 6-32, Manzano Fire Training Area (Former FT-14)

Location and Current Land Use

SWMU 6-32, Manzano Fire Training Area (Former FT-14), consists of two former burn pits located in a 2-acre area in an open field. The area was used for fire fighter training exercises. No activities are currently performed at the site.

The SWMU is located in the central portion of Kirtland Air Force Base (AFB), north of the entrance gate to the Manzano Weapons Storage Area (Figure 6).

The land use near SWMU 6-32 is urban/industrial in a relatively undeveloped portion of the base. There are no water supply wells located in the area.

Projected Future Land Use

There are no proposed changes for the land use at SWMU 6-32; however, a residential land use scenario was used for all risk-based screening assessments to consider the most restrictive possible land use.

History

SWMU 6-32 Manzano Fire Training Area is an abandoned site consisting of two former burn pits referred to as the west pit and the east pit. The pits are located roughly 60 ft apart. The original size of the west pit was 500 square ft and the size of the east pit was just over 1,000 square ft. Both pits were 2- to 3-ft deep, with earthen berms that rose 1 to 2 ft above the surrounding land surface. There are currently no structures at the site nor do records indicate any buildings ever existed there.

The duration and frequency of training exercises performed at this site are not known and the procedures, quantities, and types of chemicals used were not documented in the available records. However, training exercises were likely performed after wetting down the soil in the pit, applying off-specification jet fuel (jet fuel that cannot be used in aircraft because it contains water) or waste oils, starting a fire, and then extinguishing the fire.

Evaluation of Relevant Information

A RCRA Facility Assessment (RFA) report (USAF, 1981) originally identified the site as having been exposed to chemicals and listed the site 35th in a group of 40 in terms of priority for cleanup. SWMU 6-32 site was investigated as part of the Appendix II, Stage 2B RFI (USAF, 1995). The objective of this investigation was to determine the vertical extent of contaminants in soil in the training pits. Eleven boreholes were drilled and sampled in the burn pits, five in the west pit and six in the east pit. In each borehole in the west pit, a soil sample was collected near the surface (0.2 ft) and then at five foot intervals to a depth of 21 ft. One borehole was advanced to a depth of 83 ft bgs.

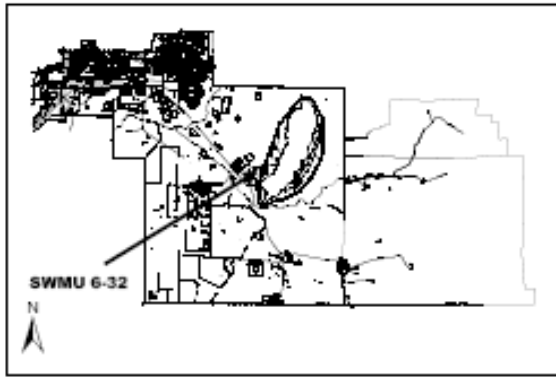
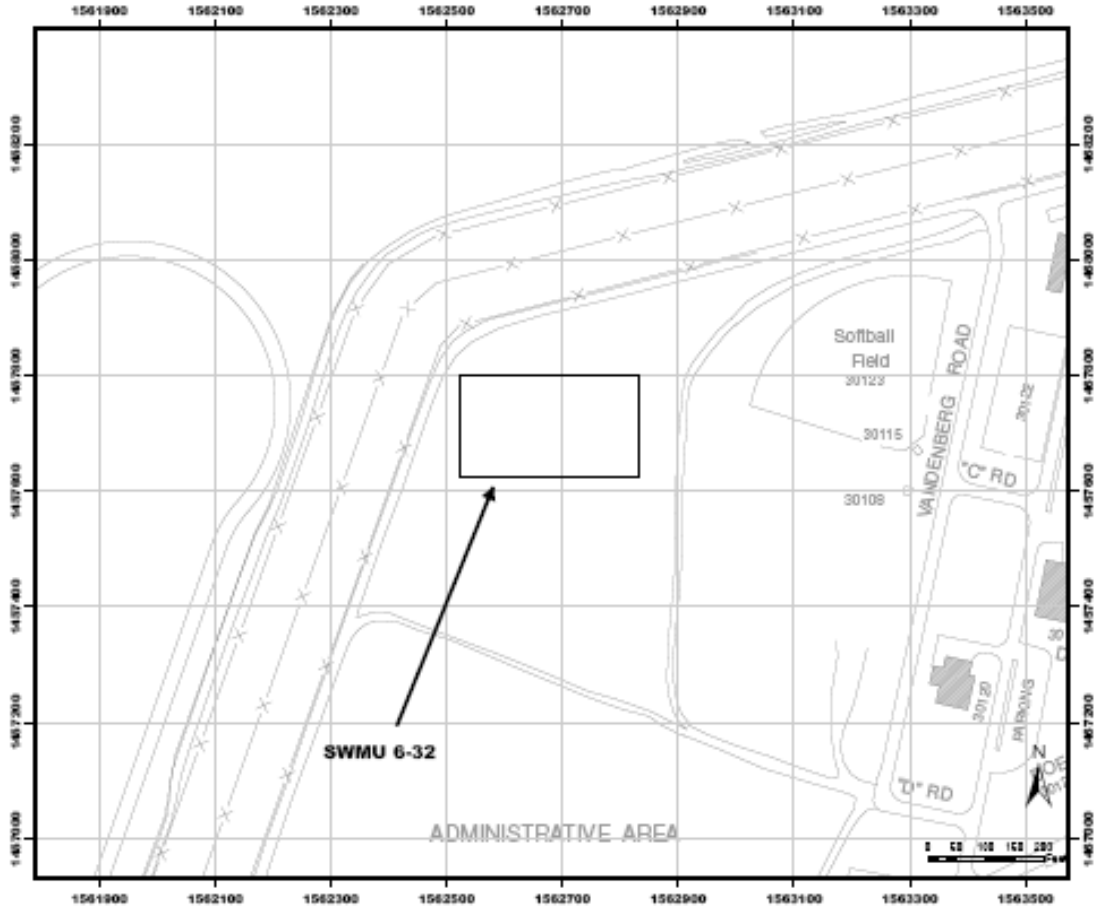


Figure 6. SWMU 6-32 Manzano Fire Training Area (Former FT-14) Site Location Map

In the east pit, six boreholes were sampled just below the surface and then at approximately five and 10 ft bgs. A total of forty-eight soil samples and seven replicates from the two burn pit areas were submitted for analysis. A soil gas survey also was conducted outside each pit boundary to determine if VOC vapors were present in the soil vapor. Twelve soil gas sampling locations were tested and sampled for VOCs. No VOCs were detected in the soil gas samples.

Additional field investigation activities were performed at the site during the Appendix I Phase 2 RFI (USAF, 1997a). The objective of the Appendix I Phase 2 RFI at SWMU 6-32 was to determine the full extent of lead contamination in both pits, and to determine the vertical extent of TPH in the west pit. Five boreholes were drilled in the west pit, seven boreholes were drilled in the east pit, and one borehole was drilled north of the west pit. A total of 145 soil samples, including replicates, were collected and analyzed.

Samples from the Appendix II Stage 2B investigation were analyzed by a laboratory for the expected CoCs associated with normal operations at this site, including VOCs, SVOCs, dioxins, TPH, and metals, as well as soil pH, and soil moisture. During the Appendix I Phase 2 RFI samples were sent to two independent laboratories and analyzed for TPH, metals, pH, and soil moisture. Samples from the two investigations indicated the presence of diesel and hydraulic range TPH, and lead, in the soils at SWMU 6-32. Some VOCs and SVOCs related to petroleum hydrocarbons were also detected.

An ICM, which involved removal of lead-contaminated soils from the surface of the burn pits, was conducted in 1996 (USAF, 1997b). Approximately 144 cy of contaminated soil were removed. Samples were collected from the base of the excavation to verify that lead soil concentrations were below the applicable residential NMED SSLs.

A pilot-scale study was performed at SWMU 6-32 in 1996 to evaluate a radio frequency treatment technology as a way to reduce hydrocarbon contamination. Results of this study indicated that this technology was effective at removing some hydrocarbons from soil. Since the pilot-scale testing substantially impacted the soil conditions at the site, analytical data from prior to the pilot-scale test, was no longer fully representative of the site conditions. In 2002, confirmatory soil sampling was performed to assess any remaining concentrations of CoCs. All detected compounds were below the applicable NMED SSLs.

Site characterization adequately determined the horizontal and vertical extent of the chemical release and addressed the presence of expected CoCs. Those soils containing elevated lead were removed during the ICM to levels below NMED SSLs. Additionally, treatment was performed in the pilot-scale study that effectively removed the petroleum hydrocarbons. As discussed in the VCM report (USAF, 2005), the remaining chemical concentrations do not pose an unacceptable level of risk to human health or the environment.

In an April 14, 2006, letter, the NMED issued a Notice of Deficiency (NOD) requesting additional information based on review of the VCM report (USAF, 2005). On May 6, 2006, Kirtland AFB submitted the information requested (USAF, 2006).

Basis for Determination

In a letter dated May 31, 2006, the NMED's Hazardous Waste Bureau agreed that SWMU 6-32 is appropriate for NFA (NMED, 2006). This NFA proposal is based upon NMED's NFA Criterion 5: The SWMU has been characterized or remediated in accordance with current applicable State or Federal regulations, and the available data indicate that contaminants at SWMU 6-32 (Former FT-14) pose an acceptable level of risk under current and projected future land use.

References

NMED, 2006. Correspondence with Mr. Carl Lanz, Environmental Management Branch, 377 MSG/CEVR, May 31, 2006.

USAF, 2006. *Kirtland AFB Response to NMED's April 14, 2006 Notice of Deficiency*. United States Air Force, Kirtland Air Force Base (AFB), New Mexico. May 6, 2006

USAF, 2005. Voluntary Corrective Measures Report for Inactive SWMU 6-32;Manzano Fire Training Area (Former FT-14). United States Air Force, Kirtland Air Force Base, New Mexico. September.

USAF, 1997a. *RCRA Facility Investigation Report for Appendix I Phase 2 (HNUS)*. United States Air Force, Kirtland Air Force Base, New Mexico. July.

USAF, 1997b. *Interim Corrective Measures Report, SWMU 6-32 Manzano Fire Training Area (FT-14)*. United States Air Force, Kirtland Air Force Base, New Mexico. March.

USAF, 1995. *Final RCRA Facility Investigation Report Appendix II Stage 2*. United States Air Force, Kirtland Air Force Base, New Mexico. July 5.

USAF, 1981. *Phase I Records Search, Hazardous Materials Disposal Sites*. United States Air Force, Kirtland Air Force Base, New Mexico. November.

6. SWMU 8-35, Waste Oil Storage Tank, Building 471 (Former ST-214)

Location and Current Land Use

SWMU 8-35, Waste Oil Storage Tank, Building 471 (Former ST-214), was a UST located next to Building 471. The UST was used for collection of used motor oil. The tank was removed in 1994.

The SWMU was located in the northwestern portion of Kirtland Air Force Base (AFB) at the intersection of Aberdeen Drive and Maxwell Avenue (Figure 7).

Land use near SWMU 8-35 is urban/industrial in an active portion of the base. The SWMU 8-35 area is currently used as a gas station and convenience store. Three water supply wells are located in this area of Kirtland AFB: KAFB-13 located roughly 4,000 feet (ft) southwest, KAFB-14 located roughly 1,950 ft southeast, and KAFB-12 located roughly 1,700 ft northwest of the site.

Projected Future Land Use

There are no proposed changes for the land use at SWMU 8-35; however, a residential land use scenario was used for all risk-based screening assessments to consider the most restrictive possible land use.

History

Building 471, also known as the Westside service station, was constructed in 1954 for use as an automobile service station and maintenance garage and was used for this purpose until sometime between 1990 and 1992. In 1994, the building was renovated and the maintenance garage was converted to retail space. The building continues to be a gas station and convenience store.

The waste oil tank was a 560-gallon steel underground storage tank located 5-ft northeast of Building 471. The date of installation is unknown. When the maintenance garage was active, the UST served as a collection point for used motor oil. It was filled through a 1-ft diameter pipe. A drain inside Building 471 also drained into the tank. Kirtland AFB personnel were also allowed to bring used motor oil to the service station and dispose of it in the waste oil tank. A contractor emptied the tank as necessary. In 1991, a tracer leak test that could detect leaks of 0.05 gallons per hour was performed on the UST. The UST passed the test, meaning no leaks were present. The waste oil tank was removed in 1994 during the building renovation.

Evaluation of Relevant Information

Beginning in 1990, Kirtland AFB regularly sampled the water and sediment present inside the UST. During these sampling events low concentrations of TPH, total halogenated organics (TOX), and some metals were detected (Kirtland AFB, 2004). Detections of these chemicals are expected based on the operational use of the UST.

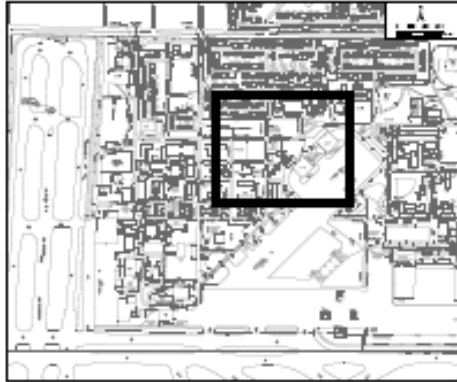
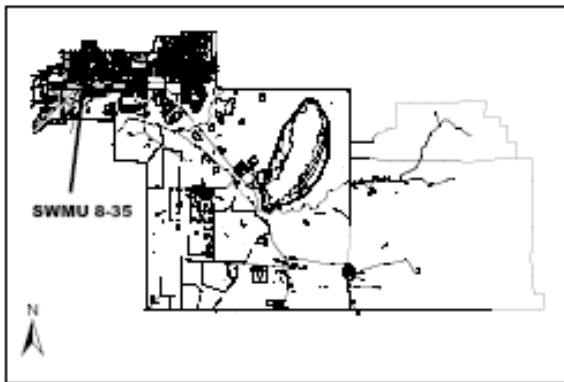
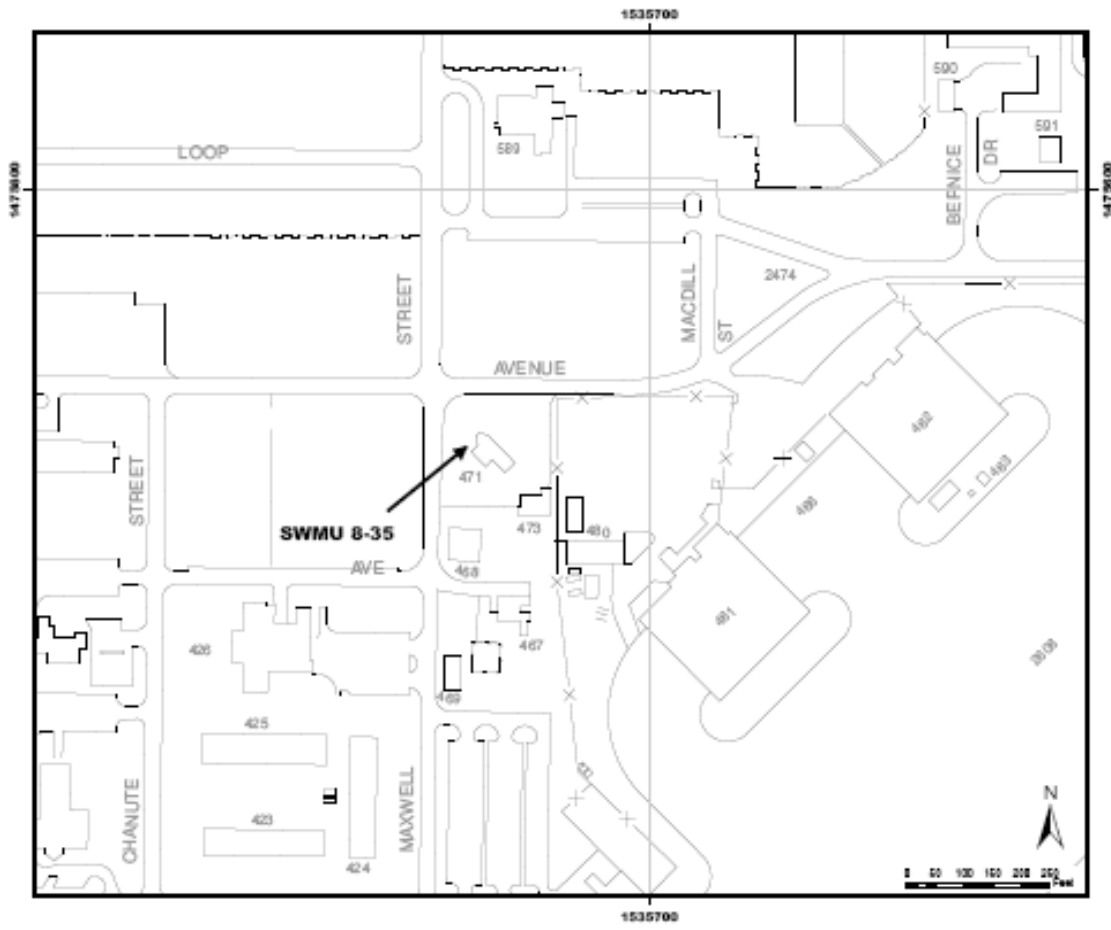


Figure 7. SWMU 8-35, Waste Oil Tank, Building 471 (Former ST-214) Site Location Map

SWMU 8-35 site was investigated as part of the Appendix II, Stage 2B RFI in 1995 (USAF, 1995). The objective of the investigation was to determine the presence or absence of contaminants in soil below the storage tank. Three boreholes were drilled and sampled adjacent to the tank and one borehole was drilled adjacent to the oil filter drain inside Building 471. One background sampling borehole was drilled northeast of SWMU 8-35. Two depth intervals were sampled in each borehole, at depths of 10 to 12 ft bgs and 18 to 20 ft bgs. Ten samples were collected and sent for analysis.

Samples from the Appendix II Stage 2B investigation were analyzed by a laboratory for the expected chemicals of potential concern associated with normal operations at this building, including VOCs, SVOCs, TPH, metals, and mercury, as well as soil pH, and soil moisture. Samples also were screened using field instruments for detectable radiation and VOCs.

Very low levels of diesel and hydraulic range TPH, VOCs, and SVOCs, were found in the soils in the UST area. However, the detected chemical concentrations in the soil were below the applicable residential NMED SSLs.

Site characterization adequately investigated the horizontal and vertical extent of any chemical release and addressed the presence of expected chemicals of potential concern. As discussed in the NFA Proposal report (USAF, 2001), the remaining chemical concentrations do not pose an unacceptable level of risk to human health or the environment.

In a March 10, 2004 letter, the NMED requested additional information based on review of the NFA Proposal report (USAF, 2001). On June 9, 2004, Kirtland AFB submitted the requested supplemental information confirming that the detectable concentrations were below the current SSLs and that the site did not pose an unacceptable level of risk to human health or the environment (USAF, 2004).

Basis for Determination

In a letter dated July 27, 2006, the NMED's Hazardous Waste Bureau agreed that SWMU 8-35 is appropriate for NFA (NMED, 2006). This NFA proposal is based upon NMED's NFA Criterion 5: The SWMU has been characterized or remediated in accordance with current applicable State or Federal regulations, and the available data indicate that contaminants at the SWMU 8-35 (Former ST-214) pose an acceptable level of risk under current and projected future land use.

References

NMED, 2006. Correspondence with Mr. Carl Lanz, Environmental Management Branch, 377 MSG/CEVR, July 27.

USAF, 2004. Kirtland AFB Response to NMED's March 10, 2004 Request for Supplemental Information. United States Air Force, Kirtland Air Force Base, New Mexico.

Kirtland AFB, 2004. 377 MSG/CEVC OWS sampling records. United States Air Force, Kirtland Air Force Base, New Mexico.

USAF, 2001. No Further Action Proposals for Corrective Action Units SS-77, Abandoned Railroad Spur; SS-82, Air Force Weapons Laboratory/Los Alamos Scientific Laboratories Electromagnetic Pulse Calibration and Simulation Facility; 10-2, Storm Sewer Systems; 10-21, Septic Systems; and 8-35, Waste Oil Storage Tank, Building 471. United States Air Force, Kirtland Air Force Base, New Mexico. January.

USAF, 1995. *RCRA Facility Investigation Report, Appendix II, Phase 2(Draft Final)*. United States Air Force, Kirtland Air Force Base, New Mexico. July.

7. SWMU 10-21-B, Site ST-348, Building 610 Septic Tank

Location and Current Land Use

SWMU 10-21-B comprises 10 individual septic systems associated with the 600 Area series of buildings. The 600 Area was known as the ordnance area of Kirtland AFB in the 1940s and 1950s (USAF, 2004) and is located north of the Tijeras Arroyo and just south of the east-west runway of the Albuquerque International Airport. Site ST-348, Building 610 Septic Tank, is located east of the 600 Area buildings and just north of Southgate Road. The site name for ST-348 was originally linked to Building 610 because it is physically the closest building to the septic tank (USAF, 2000). However, recent research has indicated that the septic tank was constructed to service Building 614 (Figure 8).

The current land use near ST-348 is considered urban/industrial in an active portion of the base. The nearest water supply well is KAFB-14, located approximately 4,000 feet from the site.

Projected Future Land Use

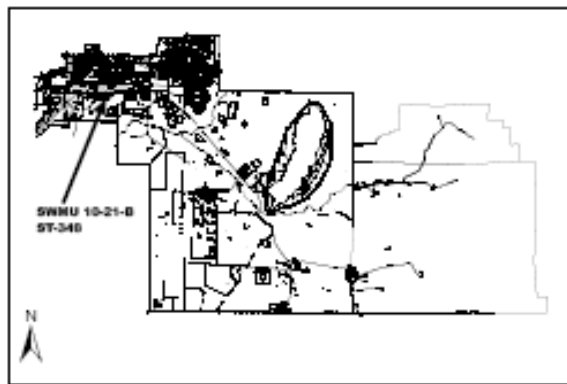
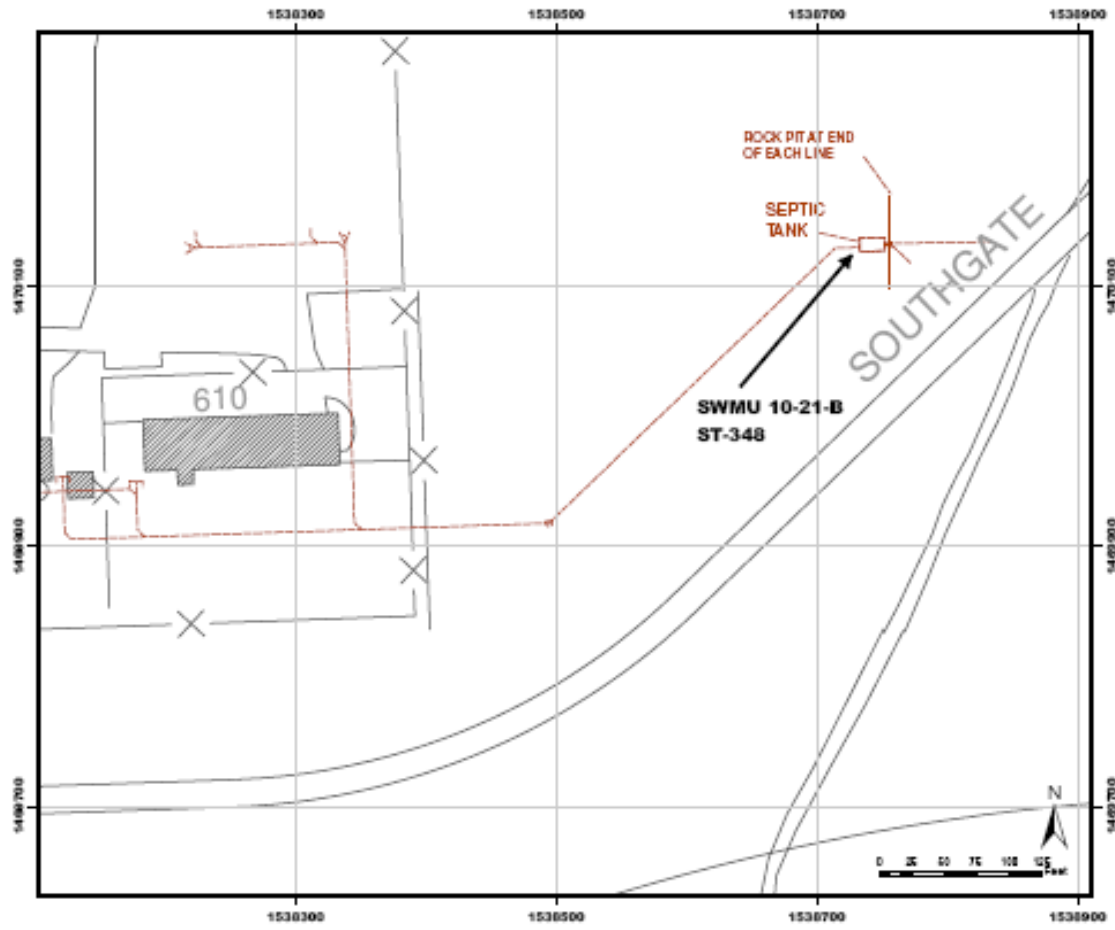
There are no proposed changes for the land use near ST-348; however, a residential land use scenario was used for all risk-based screening assessments to consider the most restrictive possible future land use.

History

Site ST-348 consists of an active 5,400-gallon septic tank, a distributor box, and a leach field (USAF, 2004) servicing Building 614. Six lines have been observed draining out of a distribution box at approximately 30-degree angles. The leach field is south of the distribution box and may extend beneath Southgate Road.

Evaluation of Relevant Information

Kirtland AFB initiated a site assessment investigation at this site in March 2000 including both an exploratory excavation to attempt to determine the location of the leach field and collection of soil samples from the leach field (USAF, 2000). During the exploratory trenching the leach field could not be located. However, five soil borings were advanced in the presumed area expected to be the limits of the leach field based on projection of the drain lines from the distribution box. Soil samples were collected from each location at the 8 to 10 ft bgs interval. Since specific information on previous building activities was not available, Kirtland AFB analyzed soil samples for a standard list of possible contaminants of potential concern including VOCs, SVOCs, metals, TPH, herbicides, pesticides, polychlorinated biphenyls (PCBs), and HE. Silver and zinc were detected in one soil sample at concentrations slightly above Kirtland AFB-approved background values. Thallium and arsenic were detected in one other soil sample at concentrations slightly above Kirtland AFB-approved background values. All detected concentrations other than the arsenic detection were below applicable residential NMED SSLs (USAF, 2000). The arsenic concentration, however, was within the range of naturally occurring concentrations throughout Kirtland AFB. Low concentrations of three pesticides were also detected in two soil samples, however, concentrations were all well below applicable residential SSLs.



**Figure 8. SWMU 10-21-B, Site ST-348, Building 610
Septic Tank Site Location Map**

In a July 29, 2004, letter (NMED, 2004) the NMED requested additional information and sampling based on review of the Release Assessment report (USAF, 2000). In response to the RSI, in August and September 2004, Kirtland AFB conducted additional investigation and trenching at ST-348 (USAF, 2004). A camera survey was performed on the drain lines from their openings at the distribution box to the end of the lines to address the NMED request that the orientation and extent of the drain lines be determined (NMED, 2004). During a meeting held between Kirtland AFB and the NMED on August 31, 2004, the NMED requested that additional soil samples be collected to characterize the drain field along or near the ends of three of the drain lines.

The additional characterization sampling was conducted using a backhoe to expose the drain lines and collect the soil samples. Soil samples were collected near the end of three of the drain lines, designated lines 2, 3, and 4 (USAF, 2004). At each location a sample was collected at the depth of the drain field gravel and at 5 ft below the first sample. The exploratory trenching also verified the location of the end of each of the drain lines and revealed that ends of Lines 2 and 4 were fairly steep, unperforated lines that led to gravel-filled seepage pits (USAF, 2004). The depth of the seepage pit was 7 ft bgs for Line 2 and 5.5 ft bgs for Line 4. In response to a request from the NMED field staff that was onsite during the field activities, additional soil samples were collected from within each seepage pit. Also, in response to a field request from NMED personnel on site, Line 2 was capped at its opening to the distribution box using a concrete plug (USAF, 2004). All 2004 soil samples collected in the leach field were analyzed for VOCs, SVOCs, pesticides, and metals (USAF, 2004).

Arsenic, selenium, silver, and thallium were detected in some soil samples at concentrations slightly above Kirtland AFB-approved background values. With the exception of one detection of arsenic, all concentrations were below applicable residential NMED SSLs (USAF, 2000). All metals concentrations were within the range of naturally occurring concentrations throughout Kirtland AFB. Low concentrations of some pesticides were also detected in some soil samples however concentrations were all below applicable residential SSLs.

In a February 23, 2005, letter (NMED, 2005a), the NMED requested that Kirtland AFB provide additional information documenting that the ST-348 septic tank had been emptied, that the contents had been sampled for hazardous constituents, and that the tank either had not or would not in the future receive discharges that might generate hazardous waste. On May 20, 2005, Kirtland AFB submitted the information regarding the septic tank sampling and verified that discharges or potential discharges to the ST-348 septic tank from activities that may potentially generate hazardous wastes have been halted (USAF, 2005).

Basis for Determination

In a letter dated November 1, 2005, NMED Hazardous Waste Bureau designated the septic tank at site ST-348 with a status of "Active/In place" and agreed the site is appropriate for NFA (NMED, 2005b). This NFA proposal is based upon NMED's NFA Criterion 5: The SWMU has been characterized or remediated in accordance with current applicable State or Federal regulations, and the available data indicate that contaminants at the SWMU 10-21B, Site ST-348 pose an acceptable level of risk under current and projected future land use.

References

NMED, 2004. Request for Supplemental Information: Release Assessment Report for ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, ST-352, and SS-102, December 12, 2000. July 29.

NMED, 2005a. Request for Supplemental Information: Release Assessment Report for ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, ST-352, and SS-102, December 12, 2000. February 23.

NMED, 2005b. Correspondence with Mr. Carl Lanz, Environmental Management Branch, 377 MSG/CEVR, November 1.

USAF, 2000. Release Assessment Report ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, ST-352, and SS-102. Final. 12 December.

USAF, 2004. Response to Request for Supplemental Information: Release Assessment Report for ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, ST-352, and SS-102, December 12, 2000. November.

USAF, 2005. Response to Request for Supplemental Information: November 23, 2004, Response to Request for Supplemental Information: Release Assessment Report for ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, and SS-102 December 12, 2000. May.

8. SWMU 10-21-B, Site ST-349, Building 626 Septic Tank

Location and Current Land Use

SWMU 10-21-B comprises 10 individual septic systems associated with the 600 Area series of buildings. The 600 Area was known as the ordnance area of Kirtland AFB in the 1940s and 1950s (USAF, 2004) and is located north of the Tijeras Arroyo and just south of the east-west runway of the Albuquerque International Airport. Site ST-349, Building 626 Septic Tank, is located approximately 150 feet north of Building 626 and consists of an active 750-gallon concrete septic tank and leach field with 200 feet of 4-inch perforated polyvinyl chloride (PVC) drain line (Figure 9).

The current land use near ST-349 is considered urban/industrial in an active portion of the base. Building 626 is not occupied on a full-time basis (USAF, 2000). The nearest water supply well to the site is KAFB-14, located approximately 4,000 feet from the site.

Projected Future Land Use

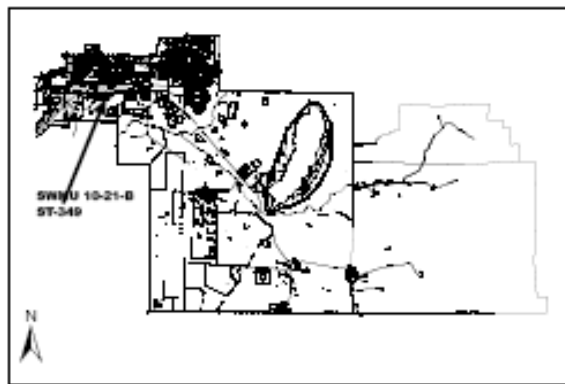
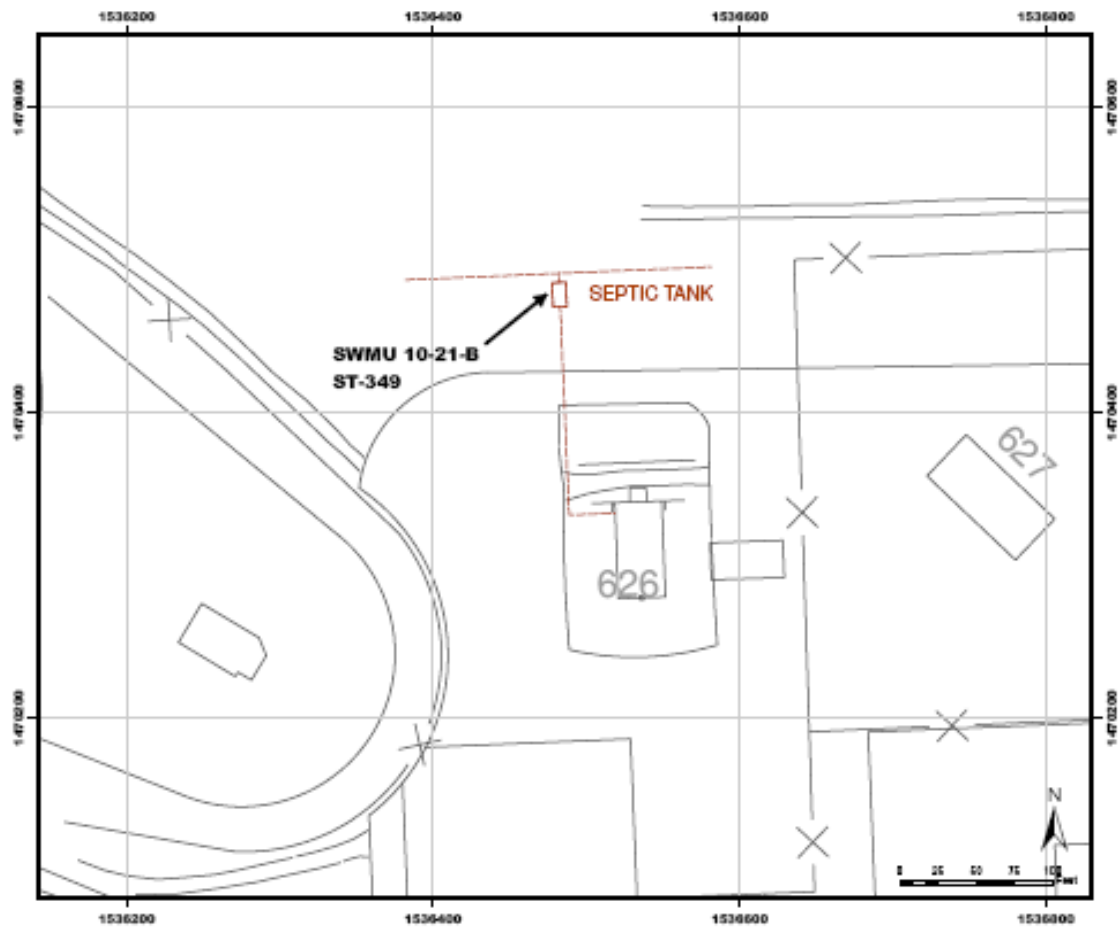
There are no proposed changes for the land use near ST-349; however, a residential land use scenario was used for all risk-based screening assessments to consider the most restrictive possible future land use.

History

Site ST-349 is a 750-gallon septic tank and leach field that was installed to service Building 626 in 1974 (USAF, 2000). Building 626, a bunker that may have been used as a storage area for munitions, is not currently occupied on a full-time basis. The building is only occupied when certain testing activities are going on in the area. The septic system at ST-349, which is active, includes the septic tank and associated leach field that service a restroom within the building (USAF 2004). The septic tank discharge line was uncovered during a field investigation in 2000, and traced north to a “tee,” with each arm of the “tee” extending 100 feet in the east and west directions.

Evaluation of Relevant Information

Kirtland AFB initiated a site assessment investigation at this site in March 2000 including both an exploratory excavation to determine the location of the leach field and collection of a soil sample from the leach field (USAF, 2000). Based on the findings from the exploratory trenching, one soil sample was collected as close as possible to one of the leach field drain lines to characterize possible impacts to the soil from the septic system effluent. Since specific information on previous building activities was not available, Kirtland AFB analyzed the soil sample collected adjacent to the leach field drain line for a standard list of contaminants of potential concern including VOCs, SVOCs, metals, TPH, herbicides, pesticides, PCBs, and HE. The soil sample contained barium at a concentration slightly above Kirtland AFB-approved background value but within the range of naturally occurring concentrations across the base. All detected concentrations for all compounds were below the applicable residential NMED SSLs (USAF, 2000).



**Figure 9. SWMU 10-21-B, Site ST-349, Building 626
Septic Tank Site Location Map**

In a July 29, 2004, letter (NMED, 2004) the NMED requested additional information based on review of the Release Assessment report (USAF, 2000). In a meeting with Kirtland AFB Environmental Management on August 21, 2004, NMED agreed that because the septic system had only serviced a restroom the single leach field soil sample would be adequate to characterize the site if Kirtland AFB submitted other requested information. On November 1, 2004, Kirtland AFB submitted the requested supplemental information (USAF, 2004).

In a February 23, 2005, letter (NMED, 2005a), the NMED requested that Kirtland AFB provide additional information documenting that the ST-349 septic tank had been emptied, that the contents had been sampled for hazardous constituents, and that the tank either had not or would not in the future receive discharges that might generate hazardous waste. Kirtland AFB made an attempt in March 2005 to sample the contents of the ST-349 septic tank. This attempt was unsuccessful because the tank was found to be completely dry (USAF, 2005). The NMED was notified of the findings and verified the tank condition. On May 20, 2005 Kirtland AFB submitted the information regarding the septic tank sampling and verified that discharges or potential discharges to the ST-349 septic tank from activities that may potentially generate hazardous wastes have been halted (USAF, 2005).

Basis for Determination

In a letter dated November 1, 2005, NMED Hazardous Waste Bureau designated the septic system at site ST-349 with a status of "Active/In place" and agreed the site is appropriate for NFA (NMED, 2005b). This NFA proposal is based upon NMED's NFA Criterion 5: The SWMU has been characterized or remediated in accordance with current applicable State or Federal regulations, and the available data indicate that contaminants at the SWMU 10-21B, Site ST-349 pose an acceptable level of risk under current and projected future land use.

References

NMED, 2004. Request for Supplemental Information: Release Assessment Report for ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, ST-352, and SS-102, December 12, 2000. July 29.

NMED, 2005a. Request for Supplemental Information: Release Assessment Report for ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, ST-352, and SS-102, December 12, 2000. February 23.

NMED, 2005b. Correspondence with Mr. Carl Lanz, Environmental Management Branch, 377 MSG/CEVR, November 1.

USAF, 2000. Release Assessment Report ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, ST-352, and SS-102. Final. 12 December.

USAF, 2004. Response to Request for Supplemental Information: Release Assessment Report for ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, ST-352, and SS-102, December 12, 2000. November.

USAF, 2005. Response to Request for Supplemental Information: November 23, 2004
Response to Request for Supplemental Information: Release Assessment Report for ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, and SS-102 December 12, 2000. May.

9. Area of Concern ST-350, 600 Area Field Office Septic Tank

Location and Current Land Use

AOC ST-350 is the septic tank associated with a mobile field office located within the 600 Area series of buildings. The 600 Area was known as the ordnance area of Kirtland AFB in the 1940s and 1950s (USAF, 2004) and is located north of the Tijeras Arroyo and just south of the east-west runway of the Albuquerque International Airport. AOC ST-350 is an active septic tank and leach field that accepts only sanitary waste from a mobile field office restroom (Figure 10).

The current land use near ST-350 is considered urban/industrial in an active portion of the base. The field office is not occupied on a regular basis (USAF, 2000). The nearest water supply well to the site is KAFB-4, located approximately 4,000 feet from the site.

Projected Future Land Use

There are no proposed changes for the land use near ST-350; however, a residential land use scenario was used for all risk-based screening assessments to consider the most restrictive possible future land use.

History

AOC ST-350 is a 500-gallon septic tank and leach field that was installed to service the restroom for a mobile field office in the 600 Series building area (USAF, 2000). The septic system at ST-350, which is active, includes the septic tank and three 50-foot (ft) long 4-inch diameter drain lines.

Evaluation of Relevant Information

Kirtland AFB initiated a site assessment investigation at this site in March 2000. At that time it was determined that the ST-350 septic tank only accepted sanitary waste from the office trailer restroom. Additionally, the office trailer was only occupied during certain testing operations at the site (USAF, 2000). Based on this information it was determined that soil sampling at the site was not required. This information was presented in the Release Assessment report (USAF, 2000).

In a July 29, 2004, letter (NMED, 2004), the NMED indicated that ST-350 was considered an active system used for domestic purposes and therefore the NMED did not consider the site a SWMU. The NMED reiterated this same conclusion in a letter dated February 23, 2005 (NMED, 2005a).

Basis for Determination

In a letter dated November 1, 2005, (NMED, 2005b), the NMED Hazardous Waste Bureau designated the septic system at AOC ST-350 with a status of "Active/In place" and agreed the site is appropriate for NFA. This NFA proposal is based upon NMED's NFA Criterion 2: The site was never used for the management (that is, generation, treatment, storage or disposal) of RCRA solid or hazardous wastes and/or constituents.

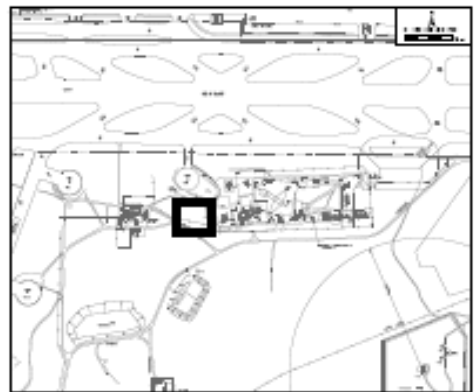
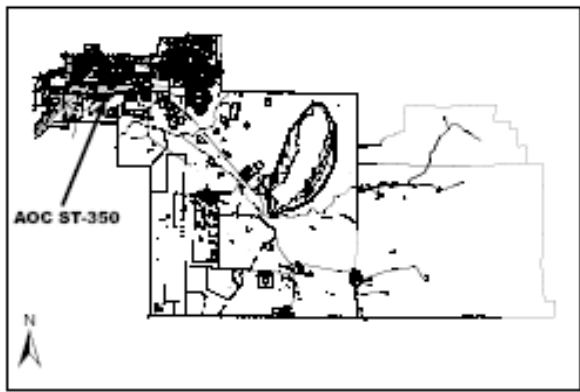
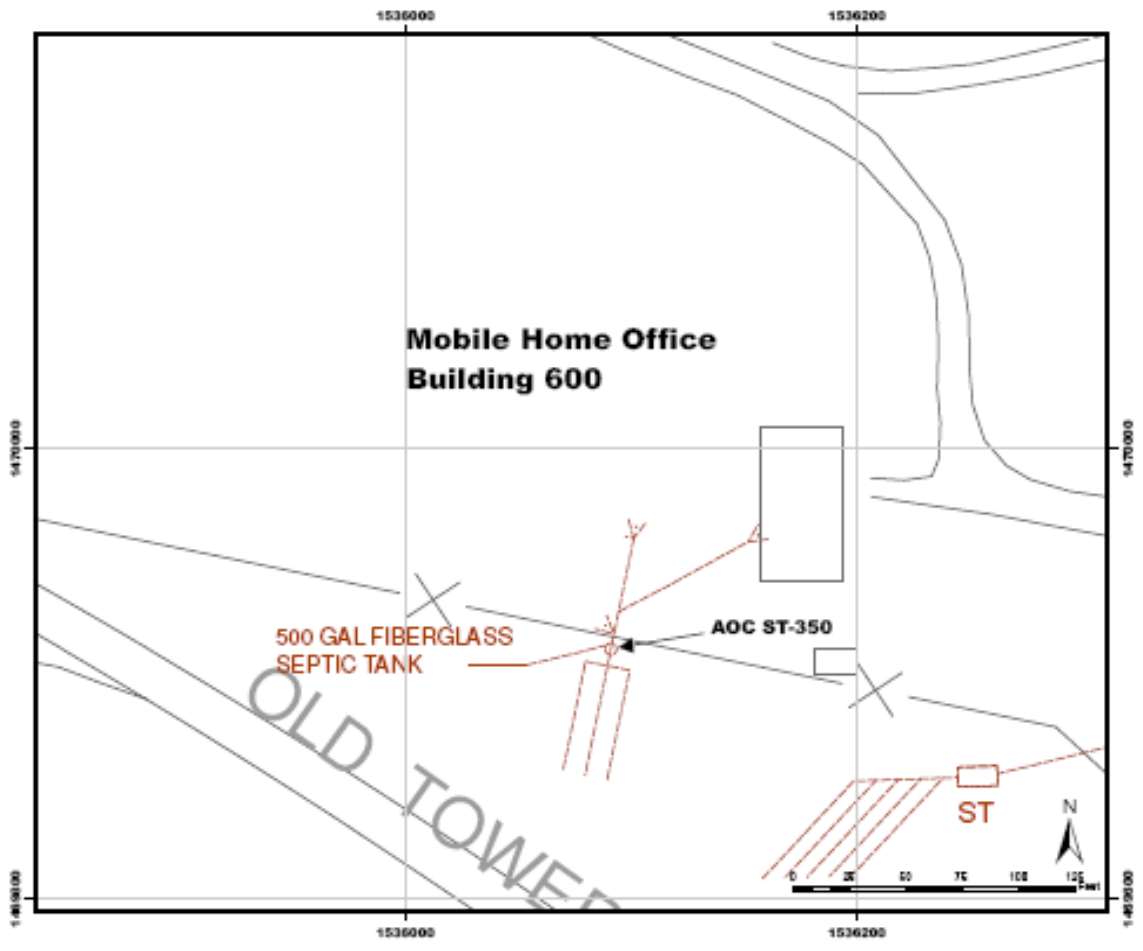


Figure 10. AOC ST-350 Former Septic Tank, Building 600 Site Location Map

References

NMED, 2005a. Request for Supplemental Information: Release Assessment Report for ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, ST-352, and SS-102, December 12, 2000. February 23.

NMED, 2005b. Correspondence with Mr. Carl Lanz, Environmental Management Branch, 377 MSG/CEVR, November 1.

USAF, 2004. Response to Request for Supplemental Information: Release Assessment Report for ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, ST-352, and SS-102, December 12, 2000. November.

USAF, 2000. Release Assessment Report ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, ST-352, and SS-102. Final. 12 December.

10. Area of Concern ST-356, Skeet Range Septic Tank

Location and Current Land Use

AOC ST-356 is comprised of a septic tank and associated leach field that received waste from a restroom in the skeet range clubhouse (Building 20719), located north of Pennsylvania Street just north of the Tijeras Arroyo. Available information suggests that the septic tank and leach field only accepted sanitary waste from the skeet range building (USAF, 2004). The septic tank is located to the southeast of Building 20719 (Figure 11).

The current land use near AOC ST-356 is considered urban/industrial in an active portion of the base. The nearest water supply well to the site is KAFB-4, located approximately 3,300 feet from the site.

Projected Future Land Use

There are no proposed changes for the land use near ST-356; however, a residential land use scenario was used for all risk-based screening assessments to consider the most restrictive possible future land use.

History

AOC ST-356 is a septic tank and leach field that was installed to service the restroom for Building 20719 (USAF, 2000). The septic system at ST-356 remains active.

Evaluation of Relevant Information

Kirtland AFB initiated a site assessment investigation at this site in March 2000. At that time it was determined that the ST-356 septic tank only accepted sanitary waste from the skeet range clubhouse (USAF, 2000). Based on that information it was determined that soil sampling at the site was not required. This information was presented in the Release Assessment Report (USAF, 2000).

In a March 23, 2005, letter (NMED, 2005a) the NMED acknowledged the information submitted by Kirtland AFB in the Release Assessment Report (USAF, 2000) and agreed that the ST-356 septic system had only accepted domestic sewage and was acceptable for NFA.

Basis for Determination

In a letter dated November 1, 2005, (NMED, 2005b), the NMED Hazardous Waste Bureau designated the septic system at site ST-356 with a status of "Active/In place" and agreed the site is appropriate for NFA. This NFA proposal is based upon NMED's NFA Criterion 2:: The site was never used for the management (that is, generation, treatment, storage or disposal) of RCRA solid or hazardous wastes and/or constituents.

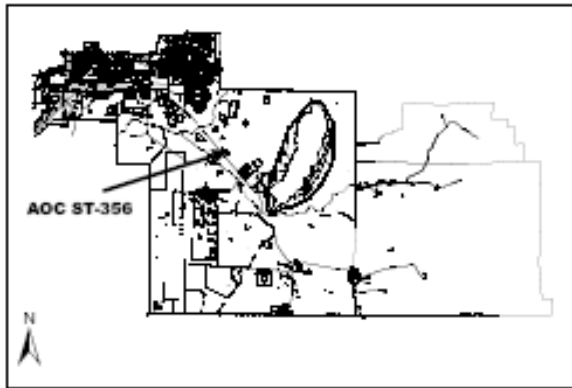
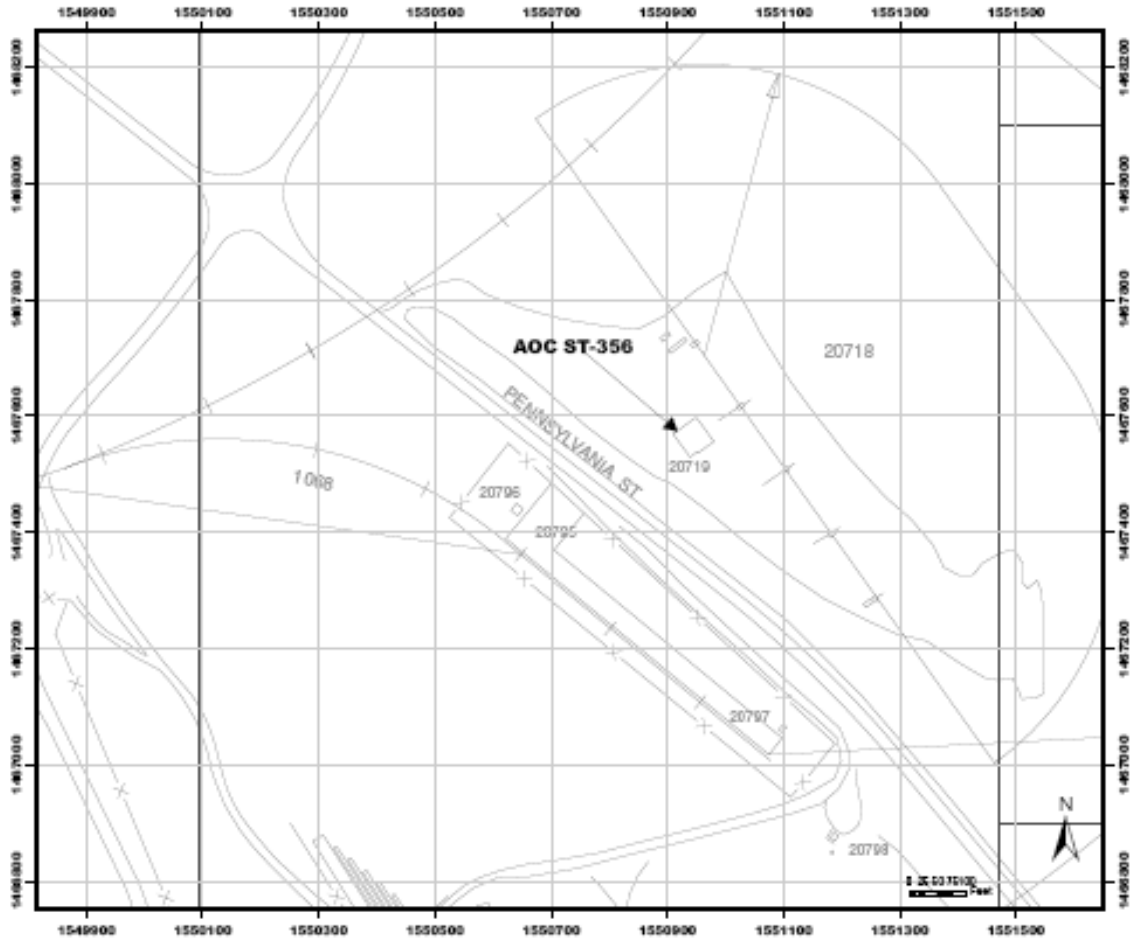


Figure 11. AOC ST-356 Skeet Range Septic Tank Site Location Map

References

NMED, 2004. Request for Supplemental Information: Release Assessment Report for ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, ST-352, and SS-102, December 12, 2000. July 29.

NMED, 2005a. Request for Supplemental Information: Release Assessment Report for ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, ST-352, and SS-102, December 12, 2000. February 23.

NMED, 2005b. Correspondence with Mr. Carl Lanz, Environmental Management Branch, 377 MSG/CEVR, November 1.

USAF, 2000. Release Assessment Report ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, ST-352, and SS-102. Final. 12 December.

USAF, 2004. Response to Request for Supplemental Information: Release Assessment Report for ST-353, ST-354, ST-355, ST-347, ST-356, ST-348, ST-349, ST-350, ST-351, ST-352, and SS-102, December 12, 2000. November.

11. SWMU 10-2-E, Jet Engine Test Cell (SS-063, Former ST-336)

Location and Current Land Use

SWMU 10-2-E, Jet Engine Test Cell (SS-063, Former ST-336) is used to test jet engine performance. Operations at the Jet Engine Test Cell include the draining and replacement of jet engine fuel and hydraulic fluid.

The SWMU is located in the western portion of Kirtland AFB on Cell Drive south of the east-west runway (Figure 12).

Land use near SWMU 10-2-E is urban/industrial area in a relatively undeveloped portion of the base. There are two water supply wells located in this area of Kirtland AFB: KAFB-2 is located 1,000 ft northeast and KAFB-14 is located 6,000 ft northwest of SWMU 10-2-E.

Projected Future Land Use

There are no proposed changes for the land use at SWMU 10-2-E; however, a residential land use scenario was used for all risk-based screening assessments to consider the most restrictive possible land use.

History

The Jet Engine Test Cell is used to test jet engine performance. Operations at the Jet Engine Test Cell include the draining and replacement of jet engine fuel and hydraulic fluids. Waste materials generated at this site include waste fuel and engine oil. During operations at the test cell in the 1960s, an unknown quantity of residual waste fuel and waste oil that may have been spilled or dripped onto the floor of the facility during operations was washed down the ramp on the east side of the facility during routine cleaning procedures. The concrete ramp was not used to drain fuel, waste fuel, oil, or waste oil at any time during the site operations.

The mission of the Jet Engine Test Cell has remained the same. Procedures for spill prevention are in place and dry methods are now used to address any spills that occur.

Evaluation of Relevant Information

SWMU 10-2-E was investigated as part of the Appendix III Non-Wasteline Sites RFI in 1994 (USAF, 1995). Five boreholes, including one background borehole, were drilled and sampled in the soil at SWMU 10-2-E extending from the ground surface to approximately 26 ft bgs. Twenty-two soil samples and four replicate samples were collected for laboratory analysis.

In 2000, Kirtland AFB and NMED Hazardous Waste Bureau staff observed soil staining near the corners of the fence around the Jet Engine Test Cell ramp. Based on this observation, the NMED prepared a RSI for the site and required an additional phase of investigation. In July 2003, three borings were installed and sampled using a drill rig to address NMED's concerns. Two borings were drilled to 26 ft bgs and one was drilled to 40 ft bgs.

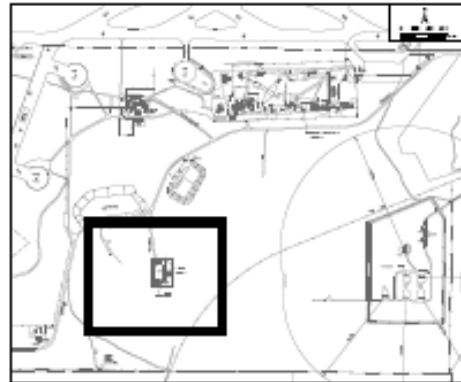
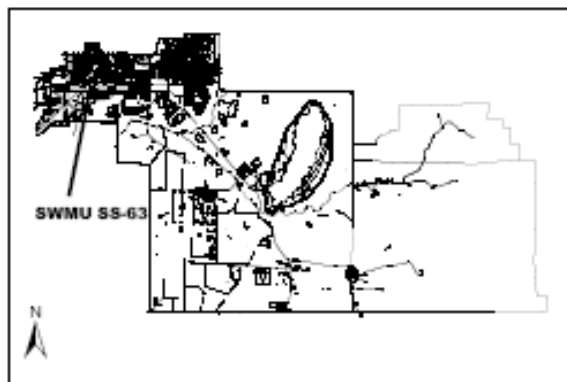
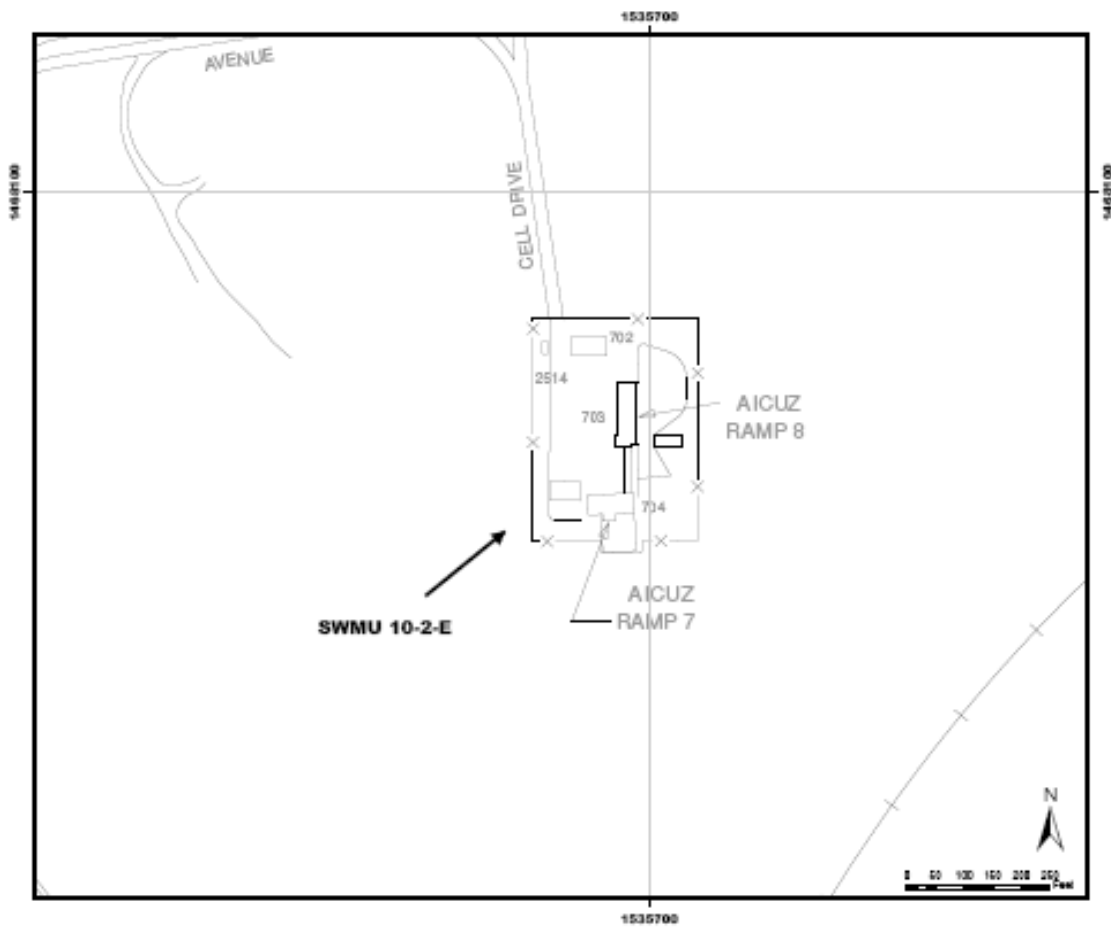


Figure 12. SWMU 10-2-E, Jet Engine Test Cell (SS-063, Former ST-336) Site Location Map

Analytical samples were collected at 5-ft intervals and field-screened using a PID. A total of 24 soil samples including three replicate samples were collected for laboratory analysis. No soil stains were observed during the 2003 investigation.

Samples from the Appendix III Non-Wasteline Sites investigation were analyzed by a laboratory for the expected CoCs associated with normal operations at this site, including TPH and lead, as well as soil pH, and soil moisture. Results of the analysis showed that no contaminants were released to the environment from this site.

During the 2003 RFI, soil samples were analyzed for VOCs, SVOCs, TPH, and lead. Laboratory analyses indicated that VOCs were not detected in any soil samples. Fifteen SVOCs were detected, with most detected in a single sample collected at a depth of 5 to 7 ft bgs. One SVOC, benzo(a)pyrene, was detected at 0.64 mg/kg, which slightly exceeds the NMED residential SSL of 0.62 mg/kg. TPH was detected below NMED TPH screening guidelines and lead concentrations were detected below NMED-approved background concentrations for Kirtland AFB. All detected constituents were below NMED standards for protection of groundwater SSLs.

Site characterization adequately investigated the horizontal and vertical extent of any chemical release and addressed the presence of expected chemicals of potential concern. As discussed in the 2005 RFI report (USAF, 2005), the remaining chemical concentrations do not pose an unacceptable level of risk to human health or the environment.

Basis for Determination

In a letter dated July 27, 2006, the NMED's Hazardous Waste Bureau agreed that SWMU 10-2-E is appropriate for NFA (NMED, 2006). This NFA proposal is based upon NMED's NFA Criterion 5: The SWMU has been characterized or remediated in accordance with current applicable State or Federal regulations, and the available data indicate that contaminants at the SWMU 10-2-E (SS-063, Former ST-336) pose an acceptable level of risk under current and projected future land use.

References

NMED, 2006. Correspondence with Mr. Carl Lanz, Environmental Management Branch, 377 MSG/CEVR, July 27, 2006.

USAF, 2005. RFI Report Solid Waste Management Unit 10-2-E; Jet Engine Test Cell (SS-063, Former ST-336). United States Air Force, Kirtland AFB, New Mexico. November.

USAF, 1995. RFI Report, Appendix III, Non-Wasteline Sites. U.S. Air Force, Kirtland Air Force Base, New Mexico. October 23.

12. SWMU 6-22, Lake Christian (OT-46)

Location and Current Land Use

SWMU 6-22, Lake Christian (OT-46), is a manmade lake, once used for explosives research. The site originally contained a 200-ft by 100-ft manmade lake. The lake bed was covered with a polyethylene liner and the water level in the lake was maintained with groundwater pumped from an onsite groundwater well. All structures and utilities at the site have been removed, the lake has been drained, and no activities are currently ongoing in the area. The SWMU was located in the southeast portion of Kirtland AFB (Figure 13).

The land use near SWMU 6-22 is urban/industrial in an active portion of the base. The onsite well used to maintain the water level in the lake was not for potable use and has been abandoned. There are no production wells for potable water use within several miles of the site.

Projected Future Land Use

There are no proposed changes for the land use at SWMU 6-22; however, a residential land use scenario was used for all risk-based screening assessments to consider the most restrictive possible land use.

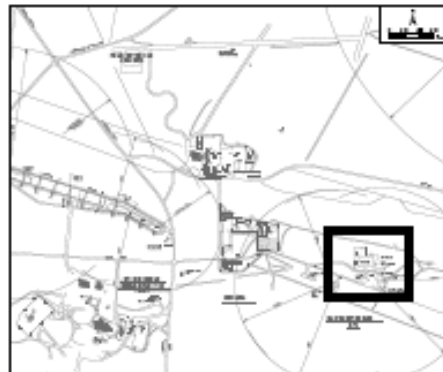
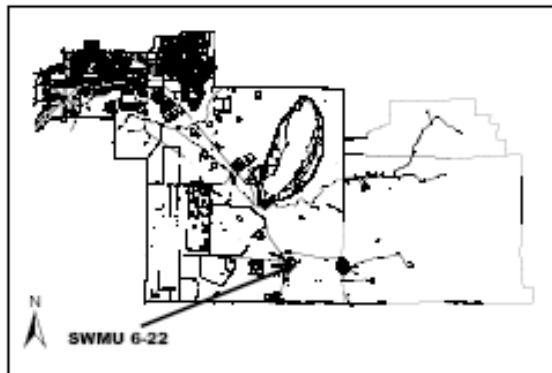
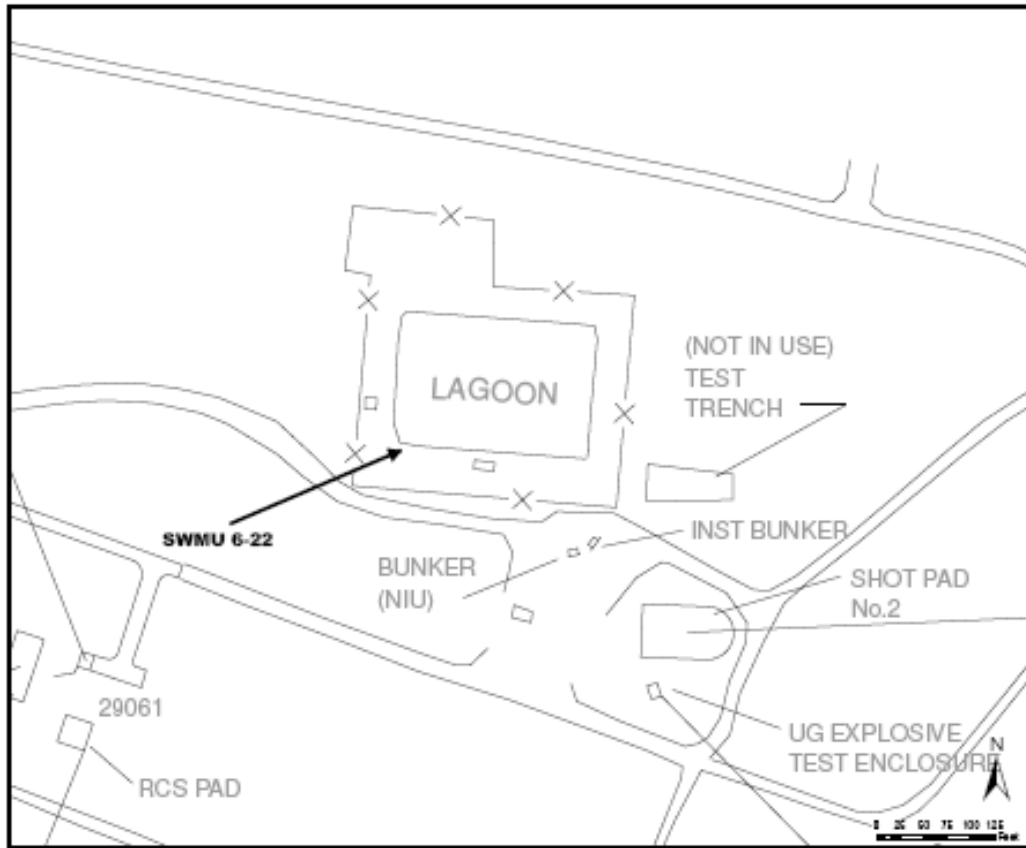
History

The SWMU 6-22 site was constructed in the 1950s for use as an underwater explosives testing facility. Laboratory animals were submerged at the site to study the effects of underwater detonation of explosives such as 2,4,6-trinitrotoluene (TNT) and pentolite. The site was active until the mid 1960s. The site is no longer used for any purpose and is surrounded by a chain-link fence.

Evaluation of Relevant Information

An initial RFA report (USAF, 1981) identified the site as having the potential to have had release of chemicals and the site was listed on Kirtland AFB's original RCRA permit.

The SWMU 6-22 site was investigated as part of the Stage 2A RFI in 1993 (USAF, 1993). The objective of this investigation was to assess the presence of contaminants in the lake sediment, in the soil beneath the lake, and in the groundwater in the area of the lake. Two boreholes were drilled and two groundwater monitoring wells were installed. Two water samples were collected from the lake at depths of 1 ft and 20 ft below the water surface. Groundwater samples were collected from the monitoring wells and the onsite well used to supply water for the lake. Five lake-bottom sediment samples were also collected.



**Figure 13. SWMU 6-22, Lake Christian (OT-46)
Site Location Map**

SWMU 6-22 was further investigated as part of the Phase 2 RFI (USAF, 1997) to complete characterization of both the bottom sediments in the lake and groundwater down gradient from the lake.

Samples collected during the Stage 2A, Phase 2 RFI were analyzed by a laboratory for the expected CoCs associated with normal operations at this site, including VOCs, SVOCs, dioxins, TPH, and metals, as well as soil pH, and soil moisture. Samples during the Phase 2 RFI were analyzed by a laboratory for VOCs, SVOCs, metals, herbicides, pesticides, PCBs, and HE. Low concentrations of VOCs, SVOCs, and HE were detected, but were below applicable residential SSLs. Metals concentrations detected were determined to be consistent with naturally occurring background values. Groundwater monitoring during the RFIs did not indicate the presence of CoCs.

An ICM was performed in 1999 and 2000, which involved relocating existing fish from the lake, draining the lake, and stabilizing the lake bed (USAF, 2001). An estimated 2.7 million gallons of water were removed from the lake. Thirty samples were collected from the exposed sediments of the exposed lake bed and underlying soils to assess if expected CoCs were present. Samples were analyzed for VOCs, SVOCs, metals, herbicides, pesticides, PCBs, inorganic anions, HE, and radiological constituents. Low concentrations of some VOCs, the anions fluoride and sulfate, and gross alpha and beta radiological constituents were detected, but were below applicable SSLs. The final activities under the ICM included backfill and compaction of the dry lake bed.

Groundwater at the SWMU continued to be monitored as part of the Long-Term Groundwater Monitoring Program through 2003 (USAF, 2004). Quarterly samples from the two existing groundwater monitoring wells, an additional third monitoring well that was installed in 1996, and the one well that supplied water for the lake were collected from 1996 to 2003. Groundwater samples showed no unacceptable concentrations of CoCs.

In 2004, a VCM was performed at SWMU 6-22 (USAF, 2004). During the VCM, all utility lines, test apparatus, structures, and equipment were removed from the site. Additionally, the equipment was removed from the onsite well that had been used to supply water for the lake and the well was abandoned.

As discussed in the VCM Work Plan report (USAF, 2004), the chemical concentrations at the do not pose an unacceptable level of risk to human health or the environment.

A comprehensive VCM Completion Report was submitted to the NMED on May 6, 2006, presenting the details of the 2004 VCM activities and summarizing all historic activities and sampling data for the site. The VCM Completion Report concluded that site characterization had adequately investigated the horizontal and vertical extent of any chemical releases to the soil and groundwater at the site and recommended the site for NFA.

Basis for Determination

In a letter dated July 27, 2006, the NMED's Hazardous Waste Bureau agreed that SWMU 6-22 is appropriate for NFA (NMED, 2006). This NFA proposal is based upon NMED's NFA Criterion 5: The SWMU has been characterized or remediated in accordance with current applicable State or Federal regulations, and the available data indicate that contaminants at the SWMU 6-22 (OT-046) pose an acceptable level of risk under current and projected future land use.

References

NMED, 2006. Correspondence with Mr. Carl Lanz, Environmental Management Branch, 377 MSG/CEVR, July 27, 2006.

USAF, 2006. *Voluntary Corrective Measure Completion Report for OT-46.*. United States Air Force, Kirtland Air Force Base, New Mexico. May 6.

USAF, 2001. Interim Corrective Measure Report for Corrective Action Unit 6-22 Lake Christian (OT-46). United States Air Force, Kirtland Air Force Base, New Mexico. March.

USAF, 1997. *Phase 2 RCRA Facility Investigation Report.* United States Air Force, Kirtland Air Force Base, New Mexico. August

USAF, 1993. *Installation Restoration Program (IRP) Stage 2A RCRA Facility Investigation (RFI).* United States Air Force, Kirtland Air Force Base, New Mexico. December.

USAF, 1981. *Phase I Records Search, Hazardous Materials Disposal Sites.* United States Air Force, Kirtland Air Force Base, New Mexico. November.

13. SWMU LF-107, Veterans Administration Hospital Demolition Debris Landfill (Former LF-107)

Location and Current Land Use

SWMU LF-107, Veterans Administration (VA) Demolition Debris Landfill (LF-107) is a 6-acre area that was used for disposal of construction materials generated during the demolition of the VA Hospital.

The SWMU is located in the southeast portion of Kirtland AFB, approximately 100 ft west of Coyote del Arroyo (Figure 14).

The land use near SWMU LF-107 is urban/industrial in an active portion of the base. There are no active water supply wells located in this area of Kirtland AFB.

Projected Future Land Use

There are no proposed changes for the land use at SWMU LF-107; however, a residential land use scenario was used for all risk-based screening assessments to consider the most restrictive possible land use.

History

The SWMU LF-107 site was used as a borrow pit for gravel and sand from approximately 1975 through 1985. In 1986, the borrow pit was used for placement of construction rubble during the demolition of the Albuquerque VA Hospital (United States Air Force [USAF], 2000). Additional soil was not excavated to allow for placement of debris; rather, the debris was placed into the depression left from removal of gravel and sand in previous years (USAF, 2002). The demolition debris from the VA Hospital was placed in the borrow pit to save space in the base's active Construction and Demolition (C&D) landfill.

Debris was deposited at this site to depths ranging from 15 to 35 ft. Once the demolition of the VA Hospital was complete, the landfill area was backfilled and graded, and a fence was built around the area. The types of materials deposited at the landfill included concrete rubble, bricks, rebar, scrap metal, metal piping, asphalt, sheet metal, PVC pipe, and two large boilers from the VA Hospital demolition. The construction debris now been removed from the site and the area has been regarded and compacted with clean fill. Currently, the area is no longer used for any activities.

Evaluation of Relevant Information

The SWMU LF-107 site was investigated during an Enhanced Site Assessment (ESA) in 2002 (USAF, 2002). The objective of the investigation was to determine whether the disposal activities at the site impacted the soils adjacent to and within the landfill. During this investigation, a soil gas survey was performed and sampling was conducted at 32 locations within the landfill at depths of 3 ft bgs.

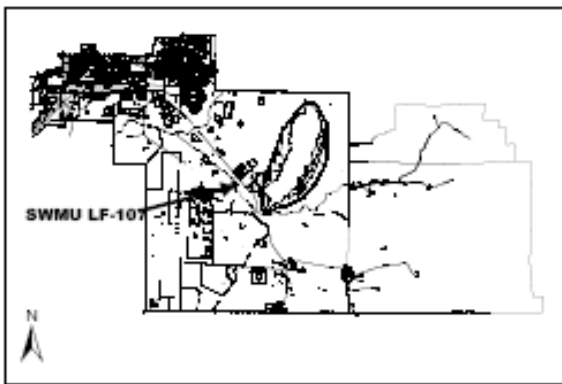
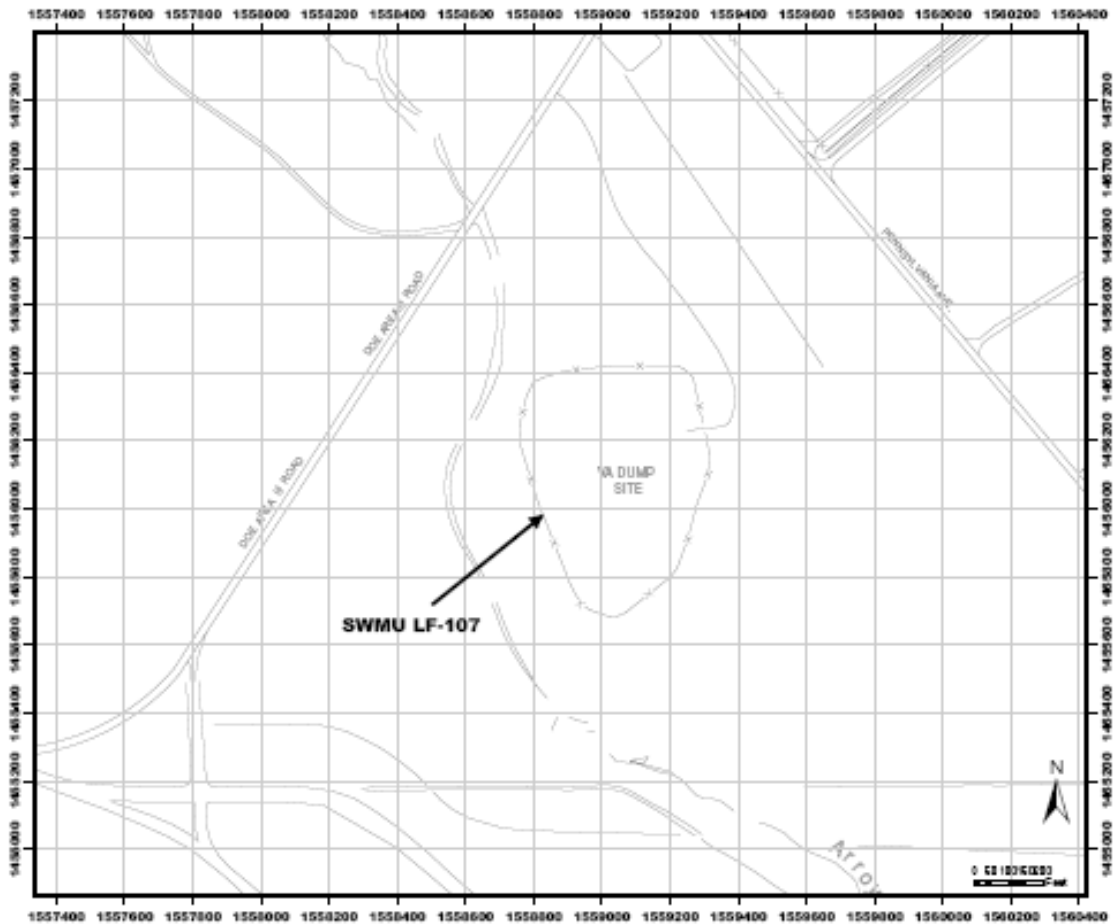


Figure 14. SWMU LF-107 Veterans Administration Hospital Demolition Debris Landfill (LF-107 Site Location Map)

The soil gas survey involved two phases: active methane monitoring and passive sampling for VOCs and SVOCs. The results of the methane monitoring showed no detectable levels of methane at any of the soil gas survey locations. Petroleum hydrocarbon fuel-related VOC and SVOC compounds, chloroform, and two VOC chlorinated solvents, trichloroethene and tetrachloroethane, were detected during the passive soil gas survey.

Data from the soil gas survey were used to select 10 locations for further investigation where test pits were excavated to depths of 12 ft bgs and sampled. Ten soil samples, and one replicate soil sample, were collected from the test pits and sent for laboratory analyses. Soil samples from the ESA were analyzed for VOCs, SVOCs, metals, HE, and gross alpha, gross beta, and gross gamma radiation. During the 2000 ESA, concentrations of VOCs, SVOCs, and metals were detected in the soil. Some concentrations of SVOCs exceeded applicable risk-based screening levels.

A VCM was performed in 2004 during which Kirtland AFB removed the contents of the SWMU LF-107 landfill. Samples were collected from the base of the excavations to verify that underlying soil that had been impacted by the landfill materials was removed. The SWMU LF-107 area was then re-graded, backfilled, and revegetated. Human health and ecological risk assessments were conducted based on the post-excavation soil sampling data. It was determined that the site did not pose an unacceptable level of risk to human health or the environment (USAF, 2006).

Basis for Determination

In a letter dated March 16, 2006, the NMED's Hazardous Waste Bureau agreed that SWMU LF-107 was appropriate for NFA (NMED, 2006). This NFA proposal is based upon NMED's NFA Criterion 5: The SWMU has been characterized or remediated in accordance with current applicable State or Federal regulations, and the available data indicate that contaminants at the SWMU LF-107 pose an acceptable level of risk under current and projected future land use.

References

NMED, 2006. Correspondence with Mr. Carl Lanz, Environmental Management Branch, 377 MSG/CEVR, March 16.

USAF, 2006. Voluntary Corrective Measures Implementation Report for Solid Waste Management Unit LF-107, Veteran's Administration Hospital Demolition Debris Landfill (LF-107). United States Air Force, Kirtland Air Force Base, New Mexico. January.

USAF, 2002. Enhanced Site Assessment Report for CAU SS-103, Jet Engine Test Cell Fuel Line Spill Site (SS-103), and CAU LF-107, Veterans Administration Hospital Demolition Debris Landfill (LF-107). United States Air Force, Kirtland Air Force Base, New Mexico. December.

USAF, 2000. Correspondence with Mr. James Bearzi, Chief, Hazardous and Radioactive Materials Bureau, New Mexico Environmental Department. March 6.

14 SWMU SS-078-B, Water Tower (WT) Soils – WT-21871

Location and Current Land Use

SWMU SS-078, Water Tower Soils, includes five individual elevated potable water towers located at four locations on Kirtland Air Force Base (AFB). These water towers (WTs) included the following: WT-21871, WT-21650, WT-2474, and two tanks located at the Inhalation Toxicology Research Institute (ITRI). To aid in tracking data, document submittals, and approval for NFA of the individual WTs, SWMU SS-078 has been divided into four individual sites: SWMU SS-078-A (WT-21650), which has already been approved for NFA; SS-078-B (WT-21871); SS-078-C (WT-2474); and SS-078-D (ITRI WTs). Only SWMU SS-078-B (WT-21871) is addressed in this section.

SWMU SS-078-B is located in the eastern portion of Kirtland AFB, at the western end of a Sandia National Laboratories (SNL) parking lot (Figure 15). Land use near SWMU SS-078-B is urban/industrial in an active portion of the base. There is one water supply well located in this area of Kirtland AFB: KAFB-1 is located roughly 5,500 ft east of SWMU SS-078-B.

Projected Future Land Use

There are no proposed changes for the land use at SS-078-B; however, a residential land use scenario was used for all risk-based screening assessments to consider the most restrictive possible land use.

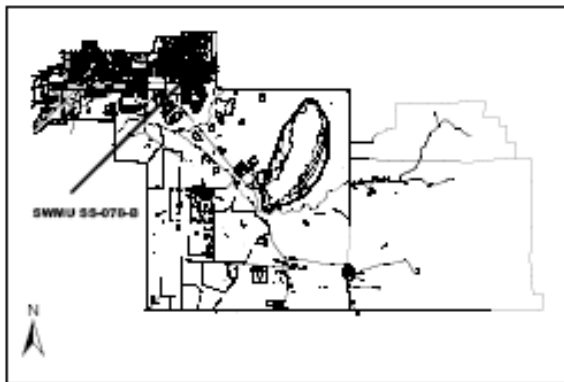
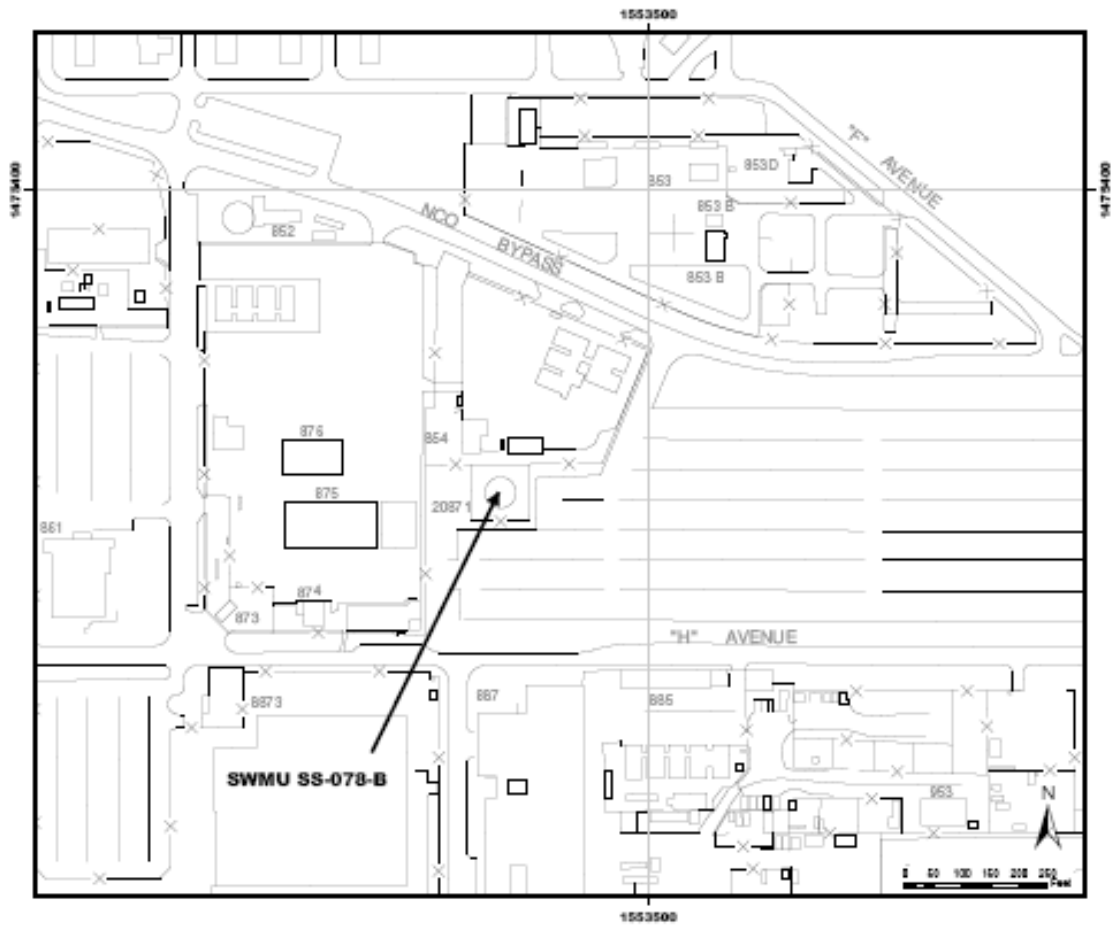
History

The SWMU SS-078-B, WT-21871, was constructed in 1950 and had a capacity of 500,000 gallons. The combined tank and tower structure was 130-ft tall, and the tank was supported by eight columns with lateral bracing rods on concrete piers. The water tank was demolished and removed from the site for disposal in September 1999. Subsequently, SNL constructed a storm water detention pond at the site.

Evaluation of Relevant Information

An initial formal assessment of SWMU SS-078-B was performed and reported in the SWMU Assessment Report (SAR) (USAF 1997). A total of 36 composite surface soil samples and 24 discrete subsurface soil samples were collected at SWMU SS-078-B. The anticipated chemicals of concern at the site were metals associated with the paint that had been used on the former water tower. All samples were analyzed for metals.

Concentrations of aluminum, arsenic, copper, lead, and zinc were detected above background levels in soil samples collected at SWMU SS-078-B during the SWMU Assessment. Detected concentrations of aluminum, copper, and zinc were below applicable screening levels. Arsenic was detected above applicable screening levels but within the range of naturally occurring concentrations at Kirtland AFB. Lead was detected in all 15 samples, and in four samples at concentrations that exceeded applicable screening levels. The presence of lead was attributed to paint that had weathered from the tank (USAF, 1997). On the basis of the analytical results presented in the SAR, SWMU SS-078-B was recommended for further investigation.



**Figure 15. SWMU SS-078-B, Water Tank Soils, WT-21871
Site Location Map**

On March 31, 1998 the NMED transmitted to Kirtland AFB the EPA comments on the SAR, in which the EPA agreed with Kirtland AFB's recommendation of formal SWMU designation for WT-21871 (USEPA, 1998; NMED, 1998).

SWMU SS-078-B was further investigated during a RFI to define the horizontal and vertical extent of lead contamination present in soils at the site (USAF, 2001). More than 60 surface and subsurface soil samples were collected from the area beneath and adjacent to the tank. Samples were analyzed for total lead. Lead was found in surface soils within the area below SWMU SS-078-B at concentrations exceeding the NMED's residential SSLs. Toxicity characteristic leaching procedure (TCLP) analyses were also performed on a composite soil sample from the site in order to assess appropriate disposal criteria for soil that would be excavated.

An ICM was conducted at SWMU SS-078-B in February 2000 to remove lead-contaminated soils. The ICM activities included stabilization of lead-contaminated soil, excavation of stabilized soil, collection and analysis of soil samples to verify removal of lead-impacted soil, proper offsite disposal of excavated soil, and restoration of the site (USAF, 2002a). ICM confirmation sampling indicated the lead concentrations in the soil at the site were below the NMED residential SSLs.

The NMED issued a RSI dated July 29, 2004, requesting additional information on the site (NMED, 2004). Kirtland AFB submitted requested information in August and October 2004 (USAF, 2004a; 2004b). Further additional information for the site was submitted by Kirtland AFB on April 14, 2005, reporting that historical sampling data had been re-evaluated relative to the current NMED residential SSLs at the time and the evaluation confirmed that that the site did not pose an unacceptable risk to human health or the environment.

Basis for Determination

In a letter dated July 27, 2006, the NMED's Hazardous Waste Bureau agreed that SWMU SS-078-B is appropriate for NFA (NMED, 2006). This NFA proposal is based upon NMED's NFA Criterion 5: The SWMU has been characterized or remediated in accordance with current applicable state or federal regulations, and the available data indicate that contaminants at the SWMU SS-078-B (WT-21871) pose an acceptable level of risk under current and projected future land use.

References

NMED, 2006. Correspondence with Mr. Carl Lanz, Environmental Management Branch, 377 MSG/CEVR. July 27.

NMED, 1998. Transmittal of EPA Comments regarding KAFB SWMU Assessment Reports for: Fuel Tank Burn Area (AOC SS-76), Four Water Tanks (AOC SS-78), Manzano Area Auto Hobby Shop (AOC ST-80), and Railroad Tracks (AOC SS-77). 31 March.

USAF, 2004a. Response to Request for Supplemental Information for the Interim Corrective Measures Report for Corrective Action Units SS-78, Water Tower Soils; SS-79, Building 381 Spill Site; and WP-87, Great Reusable Air Blast Simulator Site Waste Pile. United States Air Force, Kirtland Air Force Base, New Mexico. August.

USAF, 2004b. Response to Request for Supplemental Information for the Interim Corrective Measures Report for Corrective Action Units SS-78, Water Tower Soils; SS-79, Building 381 Spill Site; and WP-87, Great Reusable Air Blast Simulator Site Waste Pile. United States Air Force, Kirtland Air Force Base, New Mexico. October.

USAF, 2002a. Interim Corrective Measures Report for Corrective Action Units SS-78, Water Tower Soils (SS-78); SS-79, Building 381 Spill Site (SS-79); and WP-87, Grabs Site Waste Pile (WP-87). United States Air Force, Kirtland Air Force Base, New Mexico. January.

USAF, 2001. Resource Conservation and Recovery Act Facility Investigation Report for Corrective Action Units SS-78, Water Tower Soils; and DP-88, Trestle Site Disposal Area. United States Air Force, Kirtland Air Force Base, New Mexico. March.

USAF, 1997. SWMU Assessment Report For AOC SS-78, Four Water Tanks; AOC ST-80, Building 30124, Manzano Area Hobby Shop; and AOC SS-77, Railroad Tracks, Final Draft. United States Air Force, Kirtland Air Force Base, New Mexico. June.

USAF, 1996. Correspondence to Mr. Benito Garcia, Chief, Hazardous and Radioactive Materials Bureau, NM Environment Department, Santa Fe, NM. United States Air Force, Kirtland Air Force Base, New Mexico. July 17.

USEPA, 1998. Comments-Kirtland Air Force Base SWMU Assessment Report for AOC SS-78, Four Water Tanks; AOC ST-80, Bldg 30124, the Manzano Area Auto Hobby Shop; and AOC SS-77, Railroad Tracks, Final Draft - June 1997. March 4.

15 SWMU SS-078-C, Water Tower Soils (WT-2474)

Location and Current Land Use

SWMU SS-078, Water Tower Soils, includes five individual elevated potable water towers located at four locations on Kirtland AFB. These water towers (WTs) included the following: WT-21871, WT-21650, WT-2474, and two tanks located at ITRI. To aid in tracking data, document submittals, and approval for NFA of the individual WTs, SWMU SS-078 has been divided into four individual sites: SWMU SS-078-A (WT-21650), which has already been approved for NFA; SS-078-B (WT-21871); SS-078-C (WT-2474); and SS-078-D (ITRI WTs). Only SWMU SS-078-C (WT-2474) is addressed in this section.

The SWMU SS-078-C is located in the western portion of Kirtland AFB, at the intersection of Aberdeen Drive and McGill Street on a traffic island (Figure 16).

The land use near SWMU SS-078-C is urban/industrial in an active portion of the base. There are two water supply wells located in this area of Kirtland AFB, KAFB-14 is located roughly 1,900 ft southeast, and KAFB-15 is located 2,700 ft east-southeast of SS-078-C.

Projected Future Land Use

There are no proposed changes for the land use at SS-078-C; however, a residential land use scenario was used for all risk-based screening assessments to consider the most restrictive possible land use.

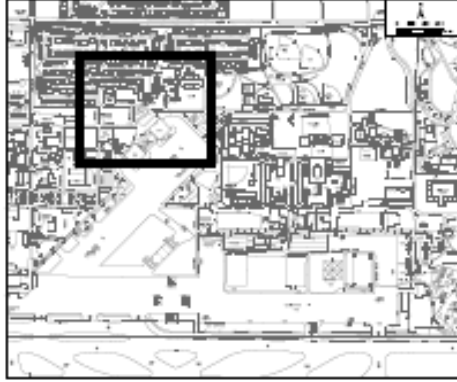
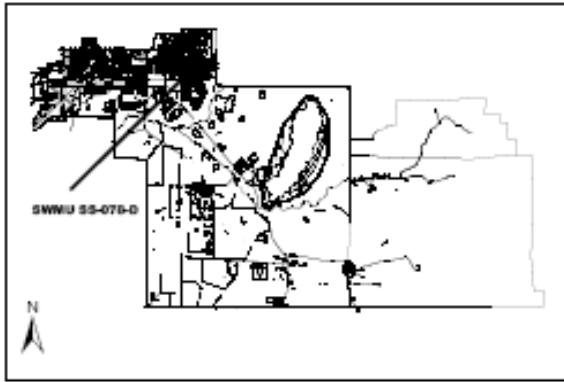
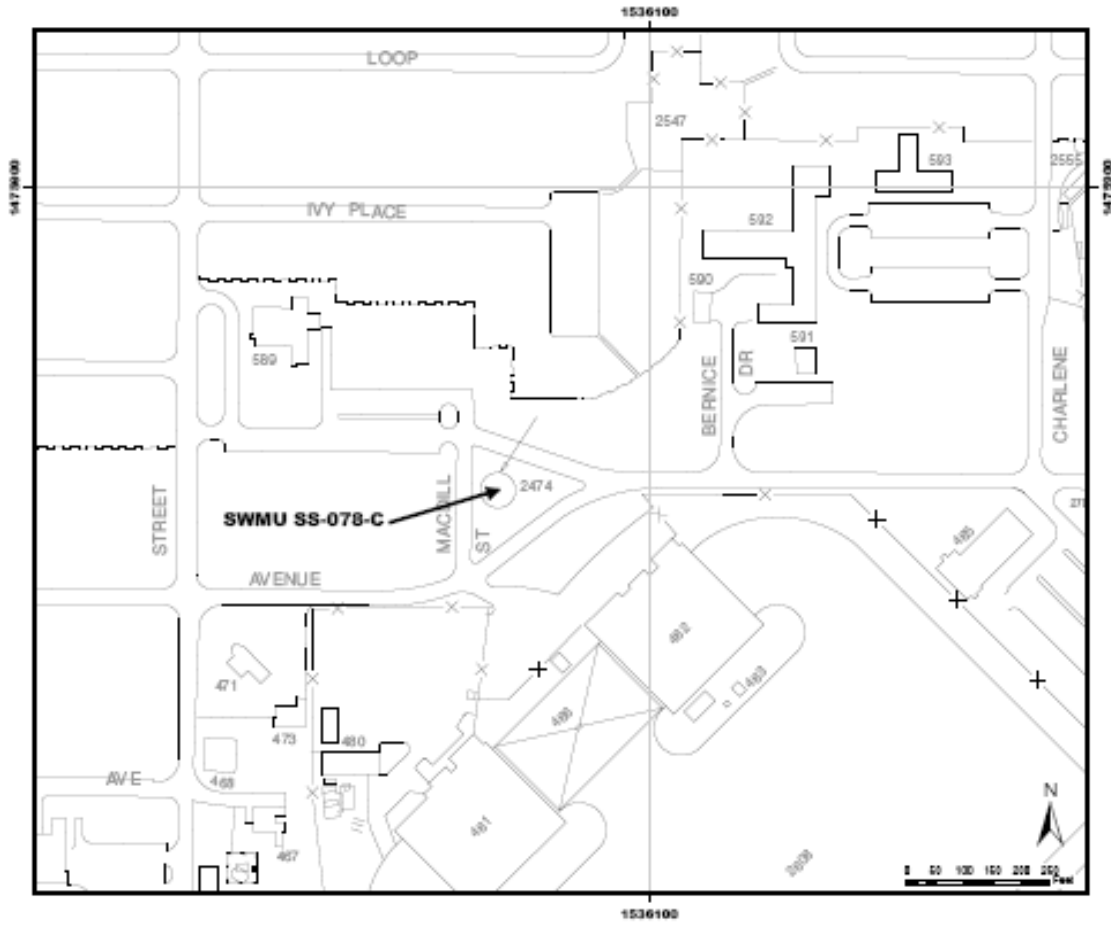
History

The SWMU SS-078-C, WT-2474 was constructed in 1969. The 500,000-gallon tank is 130-ft tall and is supported by eight columns on concrete piers, accompanied by lateral bracing rods. The tank is currently used to store water for fire suppression.

Evaluation of Relevant Information

An initial formal assessment of SWMU SS-078-C was performed and reported in the SAR (USAF 1997). A total of nine composite surface soil samples and six discrete subsurface soil samples were collected at SWMU SS-078-C. The anticipated chemicals of concern at the site were metals associated with paint that had been used on the water tower. All samples were analyzed for metals.

At SWMU SS-78-C, arsenic and lead were the only metals detected in the soil samples collected. Arsenic concentrations detected were within background concentrations for Kirtland AFB. Lead concentrations were below applicable screening levels. On the basis of the analytical results presented in the SAR, SS-078-C was not recommended for further investigation. On March 31, 1998 the New NMED transmitted to Kirtland AFB the USEPA comments on the SAR, in which USEPA agreed with Kirtland AFB's recommendation that further investigation was not needed at the site (USEPA, 1998, NMED, 1998).



**Figure 16. SWMU SS-078-C, Water Tank Soils, WT-2474
Site Location Map**

Basis for Determination

In a letter dated July 27, 2006, the NMED's Hazardous Waste Bureau agreed that SWMU SS-078-C is appropriate for NFA (NMED, 2006). This NFA proposal is based upon NMED's NFA Criterion 5: The SWMU has been characterized or remediated in accordance with current applicable state or federal regulations, and the available data indicate that contaminants at the SWMU SS-078-C (WT-2474) pose an acceptable level of risk under current and projected future land use.

References

NMED, 2006. Correspondence with Mr. Carl Lanz, Environmental Management Branch, 377 MSG/CEVR. July 27.

USAF, 1997. SWMU Assessment Report For AOC SS-78, Four Water Tanks; AOC ST-80, Building 30124, Manzano Area Hobby Shop; and AOC SS-77, Railroad Tracks, Final Draft. June 1997

USEPA, 1998. Comments-Kirtland Air Force Base SWMU Assessment Report for AOC SS-78, Four Water Tanks; AOC ST-80, Bldg 30124, the Manzano Area Auto Hobby Shop; and AOC SS-77, Railroad Tracks, Final Draft - June 1997. March 4.

16 SWMU SS-078-D, Water Tower Soils (ITRI WTs)

Location and Current Land Use

SWMU SS-078, Water Tower Soils, includes five individual elevated potable water towers located at four locations on Kirtland AFB. These water towers (WTs) included the following: WT-21871, WT-21650, WT-2474, and two tanks located at the ITRI. To aid in tracking data, document submittals, and approval for NFA of the individual WTs, SWMU SS-078 has been divided into four individual sites: SWMU SS-078-A (WT-21650), which has already been approved for NFA; SS-078-B (WT-21871); SS-078-C (WT-2474); and SS-078-D (ITRI WTs). Only SWMU SS-078-D (ITRI WTs) is addressed in this section.

The SWMU SS-078-D is located in the southeast portion of Kirtland AFB, north of the ITRI facility (Figure 17).

Land use near SWMU SS-078-D is urban/industrial in an active portion of the base. There are no water supply wells located in the area.

Projected Future Land Use

There are no proposed changes for the land use at SS-078-D; however, a residential land use scenario was used for all risk-based screening assessments to consider the most restrictive possible land use.

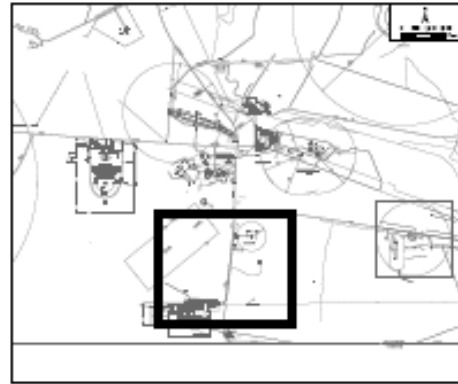
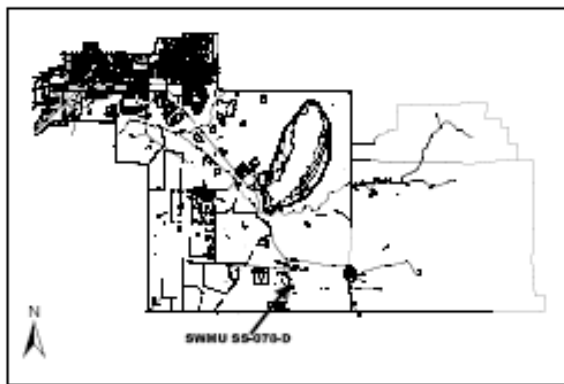
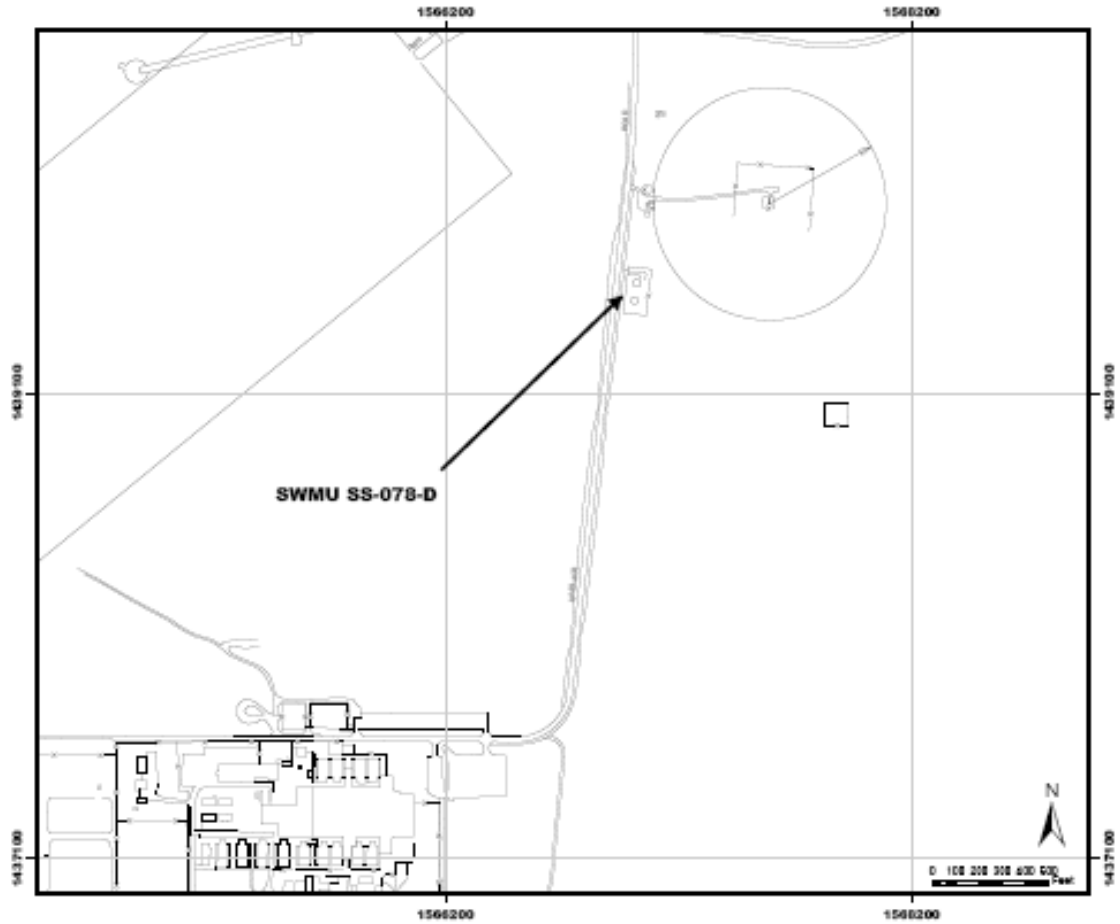
History

SWMU SS-078-D water tanks were constructed in the 1940s and consist of two 100,000-gallon elevated tanks. The tanks are no longer operated by Kirtland AFB but are still in use by SNL.

Evaluation of Relevant Information

An initial formal assessment of SWMU SS-078-D was performed and reported in the SAR (USAF 1997). A total of nine composite surface soil samples and 24 discrete subsurface soil samples were collected at SWMU SS-078-D. The anticipated chemicals of concern at the site were metals associated with paint that had been used on the water tower. These samples were analyzed for metals.

Arsenic, lead, and zinc were the only metals detected in the soil samples collected at SWMU SS-078-D. Arsenic concentrations detected were within background concentrations for Kirtland AFB. Lead and zinc concentrations were below applicable screening levels. On the basis of the analytical results presented in the SAR, SS-078-D was not recommended for further investigation. On March 31, 1998, NMED transmitted to Kirtland AFB the USEPA comments on the SAR, in which USEPA agreed with Kirtland AFB's recommendation that further investigation was not needed (USEPA, 1998; NMED, 1998).



**Figure 17. SWMU SS-078-D, Water Tank Soils, (ITRI WTs)
Site Location Map**

Basis for Determination

In a letter dated July 27, 2006, the NMED's Hazardous Waste Bureau agreed that SWMU SS-078-D is appropriate for NFA (NMED, 2006). This NFA proposal is based upon NMED's NFA Criterion 5: The SWMU has been characterized or remediated in accordance with current applicable state or federal regulations, and the available data indicate that contaminants at the SWMU SS-078-D (WT-2474) pose an acceptable level of risk under current and projected future land use.

References

NMED, 2006. Correspondence with Mr. Carl J. Lantz, Environmental Management Branch, 377 MSG/CEVR, July 27, 2006.

USAF, 1997. SWMU Assessment Report For AOC SS-78, Four Water Tanks; AOC ST-80, Building 30124, Manzano Area Hobby Shop; and AOC SS-77, Railroad Tracks, Final Draft. June 1997

USAF, 1996. Letter from C. B. DeWitt, Kirkland AFB, Albuquerque, NM, to Mr. Benito Garcia, Chief, Hazardous and Radioactive Materials Bureau, NM Environment Department, Santa Fe, NM. 17 July.

USEPA, 1998. Comments-Kirtland Air Force Base SWMU Assessment Report for AOC SS-78, Four Water Tanks; AOC ST-80, Bldg 30124, the Manzano Area Auto Hobby Shop; and AOC SS-77, Railroad Tracks, Final Draft - June 1997. March 4.