

Ordnance and Explosives Off-Post Removal Action Report

**FORT WINGATE DEPOT ACTIVITY
GALLUP, NEW MEXICO**

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TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY	1
1. PURPOSE	4
2. AUTHORITY AND SITE DESCRIPTION	4
a. AUTHORITY	4
b. SITE DESCRIPTION	5
c. PREVIOUS ACTIONS	6
d. LOCAL AUTHORITIES' ROLE	7
3. SAFETY RISK TO THE PUBLIC	8
4. ENDANGERMENT DETERMINATION	8

TABLE OF CONTENTS (Continued)

	Page
5. PROPOSED ACTIONS AND ESTIMATED COSTS	8
a. PROPOSED ACTIONS	8
(1) Description of Corrective Action Alternatives	8
(2) Comparative Analysis of Alternatives	9
(3) Recommended Corrective Action Alternatives	10
(4) Applicable or Relevant and Appropriate Requirements	10
b. ESTIMATED COSTS	11
6. EXPECTED CHANGE SHOULD ACTION BE DELAYED OR NOT TAKEN	11
7. OUTSTANDING POLICY ISSUES	11
8. ENFORCEMENT	11
9. RECOMMENDATION	11
10. REFERENCES	12
11. ATTACHMENTS	13

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Executive Summary

The Fort Wingate Depot Activity (FWDA) is located in western New Mexico, approximately 135 miles west of Albuquerque, New Mexico. FWDA encompasses approximately 22,120 acres and is located southeast of Gallup, New Mexico. The area in and around FWDA is characterized by sparse vegetation with arroyos and mountains.

FWDA was established originally in 1850 as Fort Wingate. In 1941, the installation underwent a major construction and expansion program. The missions assigned to Fort Wingate were to store, ship, and receive material and to dispose of obsolete or deteriorated explosives and ammunition. In 1971, Fort Wingate was placed in reserve status and renamed Fort Wingate Depot Activity. FWDA was targeted for closure and decommission by the U.S. Army under the Defense Base Realignment and Closure Act of 1988 (BRAC). The active missions of FWDA ceased in January 1993 and the installation was targeted for final closure and property transfer in 1995.

The area cleared under this removal action is a 235-acre tract located off-post and adjacent to the western FWDA boundary. The site is privately owned and is used as a grazing

pasture. The project site was contaminated by kick-outs from the former open burning/open detonation (OB/OD) area used before 1955 and the new OB/OD area used after 1955.

Prior to this removal action, the project site had never undergone a clearance action for removal of Ordnance and Explosives (OE) and related debris from the OB/OD operations. In early 1995, the site was surveyed and found to be contaminated with OE and related debris. On April 17, 1995, UXB International, Inc., under contract to the U.S. Army Engineering and Support Center, Huntsville, mobilized to the site in preparation for the removal action. A public meeting was conducted by FWDA on April 20, 1995, in Gallup, New Mexico, to inform the public of the planned clearance activities. Field operations began on May 1, 1995, and completed on June 13, 1995.

Geophysical surveys and a surface clearance were conducted by trained unexploded ordnance (UXO) teams. UXB personnel visually scanned the surface terrain using Explosive Ordnance Reconnaissance (EOR) methods to locate both ordnance on the surface and evidence suggesting the presence of subsurface ordnance. In areas of dense metal contamination or vegetation obstruction, the visual survey was complemented by a surface metal detector search. For subsurface detection, magnetometers were used to detect anomalies. The locations of anomalies were flagged for the follow-on excavations and final disposition.

Grid and boundary surveys were conducted to establish the boundaries of the site and to locate the clearance grids within the boundaries. Size and layout of the grids varied due to the terrain encountered within the site. A total of 512 grids with dimensions of approximately 100 feet by 200 feet were established for the clearance. Search lanes which were no more than 5 feet wide were used to search within each grid. The boundaries of the project site were adjusted as the clearance progressed. The area of contamination did not extend as far to the north as was originally anticipated, but did extend farther to the west and to the south than was originally expected. The work area was appropriately modified during the clearance effort to encompass the actual areas of contamination.

OE items which were determined to be safe to move were transported to a Safe Holding Area (SHA) for later destruction. Igloos C1103 and C1104 inside the FDWA installation were

used for SHA. OE items which were determined to be unsafe to move were marked for disposal in place or "blown-in-place" and were disposed at the end of the work day. Quality Control (QC) inspections by the contractor and Quality Assurance (QA) inspections by the government were completed for all areas within the project site.

A total of 69 live OE items ranging from tracers to a 90 mm projectile were recovered. Of this total, 11 items were blown-in-place. A total of 6,280 pounds of OE scrap and debris were inspected, certified, and turned over to American Metals Recycling in Gallup, New Mexico.

The purpose of this report is to assess the need for additional OE clearance in the off-post area adjacent to the western FWDA boundary. Additionally, this report documents the removal activities performed at the site by UXB International, Inc., recommends that the actions at the site be considered complete, and provides the rationale for this recommendation. Alternatives considered for corrective action include (a) No further action, (b) Perform additional OE detection and removal, and (c) Barricade the OE site.

Based on the assessment of OE clearance activities documented by this report and safety risk to the general public, no further action at the project site is recommended. If the land use of the area changes in the future, further assessment will be performed.

**ORDNANCE AND EXPLOSIVES
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1. PURPOSE.

The purpose of this Removal Action Report is to assess the need for additional Ordnance and Explosives (OE) clearance in the off-post area adjacent to the western Fort Wingate Depot Activity (FWDA) boundary. Additionally, this report documents the removal activities at the site, recommends that the actions at the site be considered complete, and provides the rationale for this recommendation. If the proposed action (No Further Action) is approved, no additional work will be performed at this site.

2. AUTHORITY AND SITE DESCRIPTION.

a. **AUTHORITY.** Congress enacted the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) in 1980. OE is included in the CERCLA as pollutants and contaminants that require remediation. In 1983, the Environmental Restoration Defense Account (ERDA) was established for environmental restoration at the Department of Defense (DOD) active installations and formerly used sites. DOD designated the Army as the lead agency for environmental restoration at the formerly used DOD sites (FUDS). The Secretary of the Army assigned this mission to the Corps of Engineers (USACE) in 1984. The Superfund Amendment and Reauthorization Act (SARA) of 1986 amended certain aspects of

CERCLA, some of which were directly related to OE contamination. SARA established the Defense Environmental Restoration Program (DERP) for correction of environmental damage that creates an imminent and substantial endangerment to the public health or welfare or the environment. The SARA also established a new transfer account designated as the Defense Environmental Restoration Account (DERA) to provide funding for the DERP under DOD jurisdiction.

The National Contingency Plan (NCP) was established by the Clean Water Act of 1972 to provide procedures for remedial actions to be taken in response to the presence of hazardous substances, pollutants, and contaminants at the site. The NCP has been revised and expanded several times since. The March 1990 National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300) is the latest version of the NCP. Paragraph 300.120 states that "DOD will be the removal response authority with respect to incidents involving DOD military weapons and munitions under the jurisdiction, custody, and control of DOD." In April 1990, the U.S. Army Engineering and Support Center, Huntsville (USAESCH) was designated as the USACE Center of Expertise (MCX) and Design Center for OE. As the CX and Design Center for OE, USAESCH is responsible for the design and successful implementation of all USACE response actions involving OF contamination. USAESCH will also provide support to other Department of the Army and DOD agencies when requested.

b. SITE DESCRIPTION. FWDA is located in western New Mexico, approximately 135 miles west of Albuquerque, New Mexico (Figure 1). FWDA encompasses approximately 22,120 acres and is located southeast of Gallup, New Mexico. The area in and around FWDA is characterized by sparse vegetation with arroyos and mountains.

Fort Wingate Depot Activity was established originally in 1850 as Fort Wingate. In 1941, Fort Wingate underwent a major construction and expansion program. The missions assigned to Fort Wingate were to store, ship, and receive material and to dispose of obsolete or deteriorated explosives and ammunition. In 1971, Fort Wingate was placed in reserve status and renamed Fort Wingate Depot Activity. FWDA was targeted for closure and decommission by

the U.S. Army under the Defense Base Realignment and Closure Act of 1988 (BRAC). The active missions of FWDA ceased in January 1993. The installation was targeted for final closure and property transfer in 1995.

The area cleared under this removal action is a 235-acre tract located off-post and adjacent to the western FWDA boundary (Figure 2). The site is privately owned and is being used as a grazing pasture. The project site was contaminated by kick-outs from the former open burning/open detonation (OB/OD) area used before 1955 and the new OB/OD area used after 1955.

c. PREVIOUS ACTIONS. Prior to this removal action, the project site had never undergone a clearance for removal of OE and related debris from the OB/OD operations. In early 1995, the site was surveyed and found to be contaminated with OE and related debris. On April 17, 1995, UXB International, Inc., under contract to the U.S. Army Engineering and Support Center, Huntsville, mobilized to the site to begin the removal action. A public meeting was conducted by FWDA on April 20, 1995, in Gallup, New Mexico, to inform the public of the planned clearance activities. Field operations began on May 1, 1995, and completed on June 13, 1995.

Geophysical surveys and a surface clearance were conducted by trained unexploded ordnance (UXO) teams. UXB personnel visually scanned the surface terrain using Explosive Ordnance Reconnaissance (EOR) methods to locate both ordnance on the surface and evidence suggesting the presence of subsurface ordnance. In areas of dense metal contamination or vegetation obstruction, the visual survey was complemented by a surface metal detector search. For subsurface detection, magnetometers were used to detect anomalies. The locations of anomalies were flagged for the follow-on excavations and final disposition.

Grid and boundary surveys were conducted to establish the boundaries of the site and to locate the clearance grids within the boundaries. Size and layout of the grids varied due to the terrain encountered within the site. A total of 512 grids with dimensions of approximately 100 feet by 200 feet were established for the clearance. Search lanes which were no more than 5 feet

wide were used to search within each grid. The boundaries of the project site were adjusted as the clearance progressed. The area of contamination did not extend as far to the north as was originally anticipated, but did extend farther to the west and to the south than was originally expected. The work area was appropriately modified during the clearance effort to encompass the actual areas of contamination (see Figure 3 for final limits of cleared/sampled area).

All items encountered on the surface within the clearance areas were evaluated by a Unexploded Ordnance (UXO) Specialist to determine its identity and potential hazard. All "live" OE were marked in-place and the positions recorded for follow-on disposal actions. For subsurface detection, the magnetometers (Schonstedt GA-52B/72CV) were used to detect anomalies to the depth of one foot. The UXO Specialists marked the anomalies locations with a colored pin-flag for excavation and identification.

OE items which were determined to be safe to move were transported to a Safe Holding Area (SHA) for later destruction. Igloos C1103 and C1104 inside the FDWA installation were used for SHA. OE items which were determined to be unsafe to move were marked for disposal in place or "blown-in-place" and were disposed at the end of the work day. Quality Control (QC) inspections by the contractor and Quality Assurance (QA) inspections by the government were completed for all areas within the project site.

During the clearance action, a total of 69 live OE items ranging from tracers to a 90 mm projectile were recovered. Of this total, 11 items were blown-in-place. The net explosive weight for the 69 items was 41.1 pounds. A total of 6,280 pounds of OE scrap and debris were inspected, certified, and turned over to American Metals Recycling in Gallup, New Mexico. A list of the OE recovered and destroyed is shown on Table 1.

d. LOCAL AUTHORITIES' ROLE. The OE project site is located adjacent to and outside the FWDA boundary. The land is privately owned and is being used for a grazing pasture. The contamination was the result of government operations. The clearance was conducted under CERCLA for public safety reasons. There are no other local agencies involvement in the project.

3. SAFETY RISK TO THE PUBLIC.

OE is a safety hazard and under certain circumstances may constitute an imminent danger to the public. The overall objective of the time critical removal action was to reduce risk to the land owners using the site for grazing and to the general public that may traverse the site.

4. ENDANGERMENT DETERMINATION.

Actual or potential exposure to OE and possible explosion at the project site may present an imminent and substantial endangerment to the general public and land owners. The surface and subsurface areas of the site have been cleared to a depth of one foot. However, there is no guarantee that all OE were located and removed from the project site.

5. PROPOSED ACTIONS AND ESTIMATED COSTS.

a. PROPOSED ACTIONS.

(1) Description of Corrective Action Alternatives.

Alternative 1: No Further Action. No additional work will be performed at this time. If additional UXO is discovered on the site, local authorities will be notified and will take any necessary actions to protect general public and property owners.

Alternative 2: Perform Additional OE Detection and Removal. This alternative includes geophysical surveys to a depth of three feet and disposal of OE found during the survey. Vegetation removal may also be required.

Alternative 3: Barricade the OE Site. This alternative may include installation or erection of natural or artificial barricades around the site and installation of signs stating the danger.

(2) **Comparative Analysis of Alternatives.** This section provides a comparative analysis of alternatives described above. The effectiveness, implementability, and cost of the actions considered for each alternative are discussed in a qualitative manner.

Effectiveness

Alternative 1, No Further Action, may be considered effective since recoverable OE has been removed and no additional OE was found as the result of the QA/QC inspections in the project Area.

Alternative 2, Perform Additional OE Detection and Removal, may provide additional assurance but may not be necessary nor cost effective. Kick-outs from the OB/OD operations are normally located within the top one foot of the surface.

Alternative 3, Barricade the Area, will also provide additional assurance but could interfere with the use of the land by land owners. Since recoverable OE has been removed to the depth of one foot, there is likely no OE remaining on the surface. Since the general public can maneuver past barricades, this alternative is not considered as effective as other alternatives in reducing the safety concern.

Implementation

Alternative 1, No Further Action, can be easily implemented.

Alternative 2, Perform Additional OE Detection and Removal, could be implemented with the current technologies if the land owners provide the permission and right-of-entry. This alternative would have minor and temporary disruption to the use of the land by the land owners.

Alternative 3, Barricade the Area, would be more difficult to implement due to the size of the area (approximately 250 acres). However, this alternative could be implemented with the permission of the land owners.

Cost

- ñ There would not be any additional cost for Alternative 1, No Further Action.
- ñ Estimated cost for Alternative 2 is \$375,000 (\$1,500/acre).
- ñ Estimated cost to Barricade the Area, Alternative 3, is \$252,000 (\$15/foot).

(3) Recommended Corrective Action Alternatives. Based on the comparative analysis of the three alternatives, Alternative 1, No Further Action, is recommended. This alternative is the most appropriate since the area was cleared of recoverable OE to a depth of one foot, with complete QA/QC test performed. The present land use of the areas is grazing. The depth of clearance to one foot will provide sufficient safety protection for this type of land use. Public access to the site is restricted to the land owners and their employees. The project site is not easily accessible to the general public, thus the potential safety concern is reduced. This alternative is easily implemented with no additional cost.

(4) Applicable or Relevant and Appropriate Requirements (ARARs). Pursuant to CERCLA and the NCP, the recommended actions must consider the practicable exigencies of the situation and guidance from applicable ARARs. ARARs are criteria, standards, or requirements that must be considered for remedial actions at the CERCLA site. Further, ARARs address the recommended action only and are not an indication of whether these areas can be developed or transferred in the future. Off-post activities are not controlled by ARARs, but rather must comply with all necessary federal, state, and local requirements.

The recommended Alternative 1, No Further Action, will meet all of the requirements of ARARs since no actions will be taken at the cleared off-post area at this time. Any remedial

actions in the future will consider ARARs or other federal, state, and local requirements prior to taking the actions.

b. ESTIMATED COSTS The estimated cost for the recommended alternative (No Further Action) is \$0. There would be some administrative costs associated with the recommended alternative as related to the future public involvement in considering this site to be completed. In the event that OE is found in the future, costs associated with the support provided by the local law enforcement or Army EOD are not included nor they can be estimated.

6. EXPECTED CHANGE SHOULD ACTION BE DELAYED OR NOT TAKEN.

The level of remaining OE, if any, is not expected to change over time. The project area has been cleared to a depth of one foot and a QC/QA test performed over the entire cleared area. Land use of the area (grazing pasture) is not expected to change in the near future. It is anticipated that local law enforcement agencies will continue to provide emergency support if OE is found.

7. OUTSTANDING POLICY ISSUE.

The current land owners should be notified of the decision that no further action will be taken at the project site. The land owners should consult with the Army if the land use of the area is changed. The Army will consider any appropriate actions that may be required prior to the development of the area.

8. ENFORCEMENT.

There is no enforcement related issue at this site.

9. RECOMMENDATION.

This report recommends that No Further Action be taken at the off-post area adjacent to the FWDA western boundary at this time.

10. REFERENCES.

- a. UXB International, Inc., Final Report, Unexploded Ordnance (UXO) Surface Clearance and Sampling Project, Fort Wingate Army Depot, Gallup, New Mexico, July 1995.

- b. Department of the Army, U.S. Army Corps of Engineers, Program Manual, Defense Environmental Restoration Program, Formerly Used Defense Sites (DERPFUDS), December 1993.

ATTACHMENTS

TABLE 1

UXO Recovered and Disposition

Following is a list of all UXO discovered at the project site on FWDA. Those items annotated as "BIP" were blown in place because they were considered too dangerous to move. All other UXO were moved to the Safe Holding Areas (either Igloo C1103 or Igloo C1104) and disposed of daily.

Sequence Number	Item Number	Survey Location	Depth	Nomenclature
1	10F-001	1001	Surface	Modified 60mm - M2 mine
2	12E-001	1000	Surface	3.5" rocket motor
3	16E-001	1002	Surface	75mm HE projo (no fuze)
4	12B-001	1003	Surface	M66A1 tracer
5	18B-001	1009	Surface	M66A1 tracer
6	18B-002	1010	Surface	75mm HE projo (no fuze)
7	18L-001	1004	Surface	100 lb mass
8	24A-001	1011	Surface	M66A1 tracer
9	24B-001	1012	Surface	Modified 60mm - M2 mine
10	14J-001	1058	8"	M66A1 tracer
11	14J-002	1057	3"	M66A1 tracer
12	14J-003	1056	8"	3.5" rocket fuze
13	20B-001	1007	Surface	40mm projo tracer
14	20C-001	1008	Surface	M83 BIP
15	22A-001	1005	Surface	M83 BIP
16	22B-001	1006	Surface	M83 BIP
17	22D-001	1013	2"	40mm HE projo (no fuze)
18	22D-002	1014	3"	M66A1 tracer
19	32B-001	1017	Surface	40mm projo tracer
20	32C-001	1015	Surface	M66A1 tracer
21	32C-002	1016	Surface	40mm projo tracer (later found inert)

Sequence Number	Item Number	Survey Location	Depth	Nomenclature
22	19F-001	1054	2"	40 mm projo tracer
23	22L-001	1033	Surface	M66A1 tracer
24	31G-001	1039	Surface	75mm HE projo (no fuze)
25	34A-001	1018	Surface	40mm HE projo (no fuze)
26	34A-002	1047	Surface	Mech time fuze (no clock)
27	34A-003	1048	Surface	40mm projo tracer
28	44A-001	1021	Surface	75mm projo (WP) BIP
29	44A-002	1020	Surface	75mm HE projo (no fuze)
30	42B-001	1022	Surface	37mm projo (no fuze)
31	35G-001	1023	Unk	Modified 60mm - M2 mine
32	35G-002	1024	Unk	M66A1 tracer
33	35G-003	1066	Unk	Unknown - partial fuze?
34	44C-001	1028	Surface	Modified 60mm - M2 mine
35	54C-001	1019	Surface	M66A1 Full up BIP
36	46K-001	1025	Surface	90mm HE projo (no fuze)
37	46A-001	1026	Surface	25 Lb frag bomb (no fuze)
38	46A-002	1027	Surface	Modified 60mm - M2 mine
39	30A-001	1052	Surface	40mm HE projo BIP
40	30A-002	1046	Surface	M66A1 tracer
41	30B-001	1051	Surface	M83 BIP
42	30B-002	1050	Surface	40mm HE projo (no fuze)
43	28A-001	1044	Surface	3.5" rocket fuze BIP
44	28A-002	1045	Surface	40mm HE projo (no fuze)
45	36E-001	1029	Surface	40mm HE projo (no fuze)
46	36E-002	1029	Surface	40mm HE projo (no fuze)
47	36E-003	1029	Surface	40mm HE projo (no fuze)
48	40G-001	1032	Surface	40mm HE projo (no fuze)
49	26B-001	1043	Surface	40mm HE projo tracer

Sequence Number	Item Number	Survey Location	Depth	Nomenclature
50	26C-001	1042	Surface	40mm HE projo tracer
51	38G-001	1031	Surface	M66A1 tracer
52	28D-001	1049	Surface	40mm HE projo (no fuze)
53	36F-001	1030	Surface	75mm HE projo (no fuze)
54	22J-001	1036	Surface	40mm projo (no fuze)
55	22I-001	1037	Surface	40mm HE projo (no fuze)
56	20G-001	1038	Surface	M66A1 tracer
57	28K-001	1059	Surface	M66A1 tracer
58	28I-001	1035	Surface	75mm HE projo (no fuze)
59	26J-001	1034	Surface	75mm HE projo (no fuze)
60	24H-001	1041	Surface	M83 Butterfly BIP
61	24H-002	1040	Surface	M66A1 tracer
62	24G-001	1055	Surface	M66A1 tracer
63	24D-001	1053	Surface	40mm HE projo tracer
64	4SG-001	1061	Surface	3.5" rocket motor
65	6SE-001	1060	Surface	3.5" rocket fuze
66	5SH-001	1064	2"	Fuze component
67	38M-001	1062	Surface	75mm (WP) BIP
68	2SJ-001	1063	Surface	Modified 60mm mortar (M2)
69	22N-001	1065	Surface	Base fuze/booster? (unknown) BIP

FACILITY LOCATION MAP FORT WINGATE DEPOT ACTIVITY

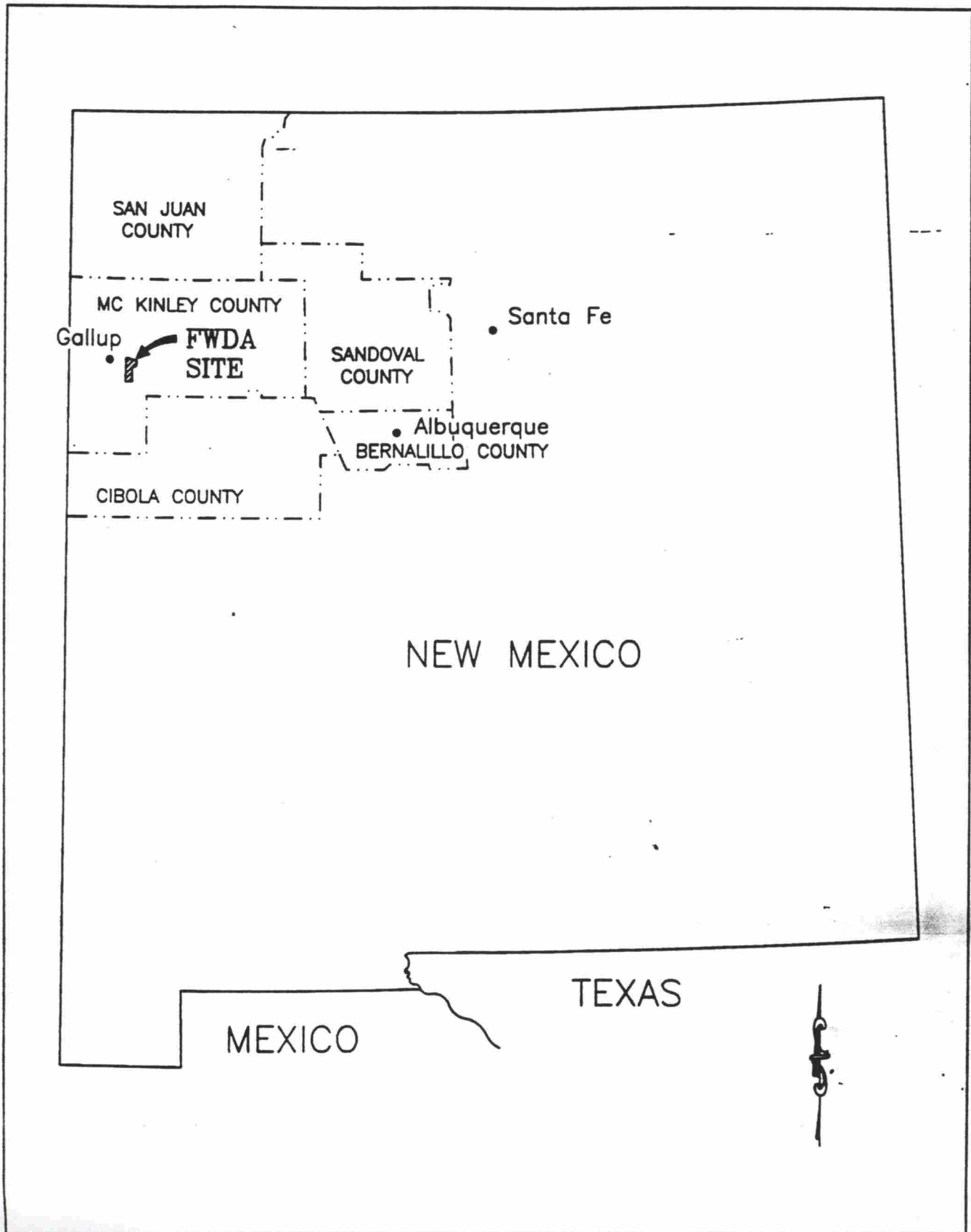
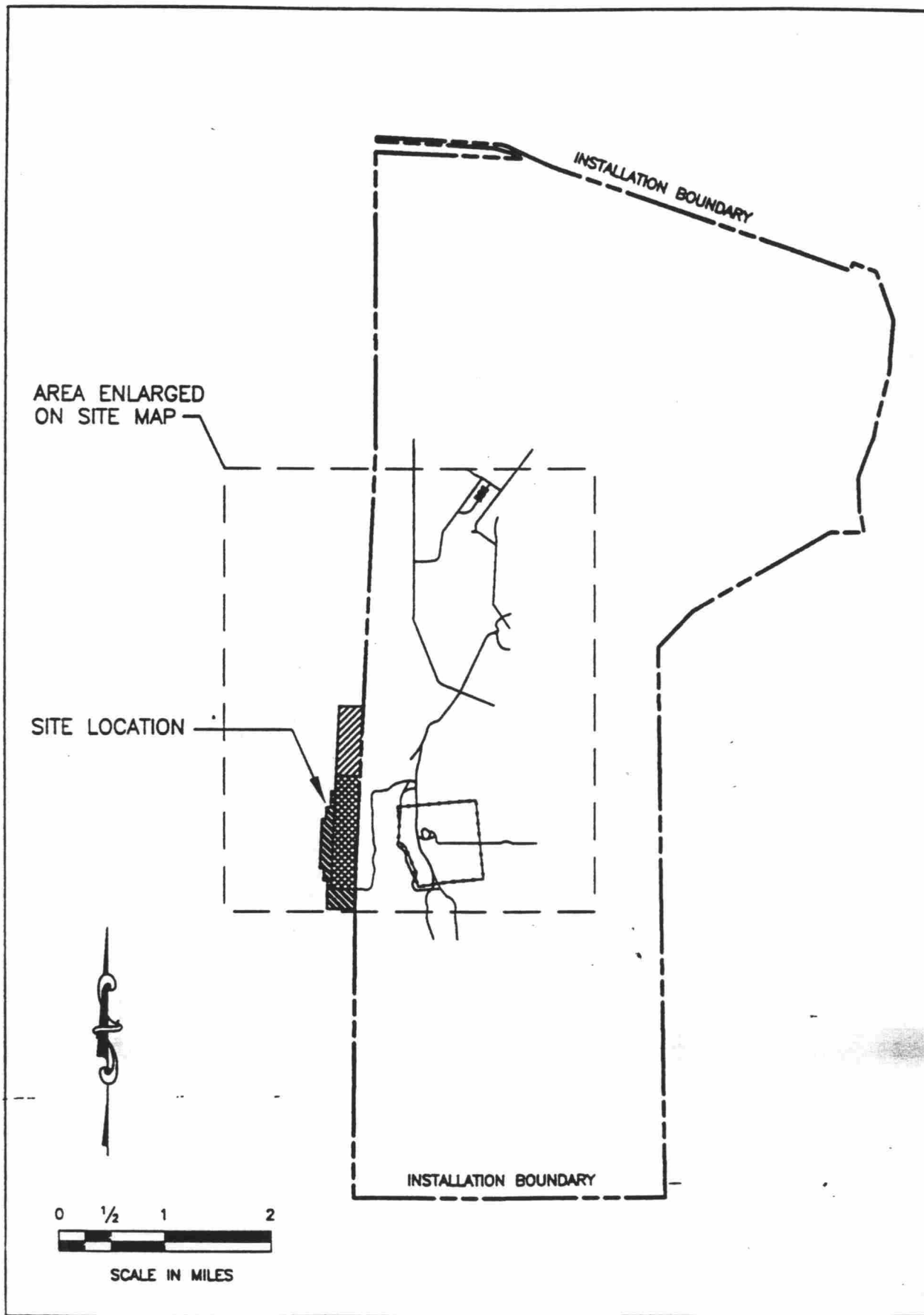


Figure 1



VICINITY MAP
FORT WINGATE, NEW MEXICO

Figure 2

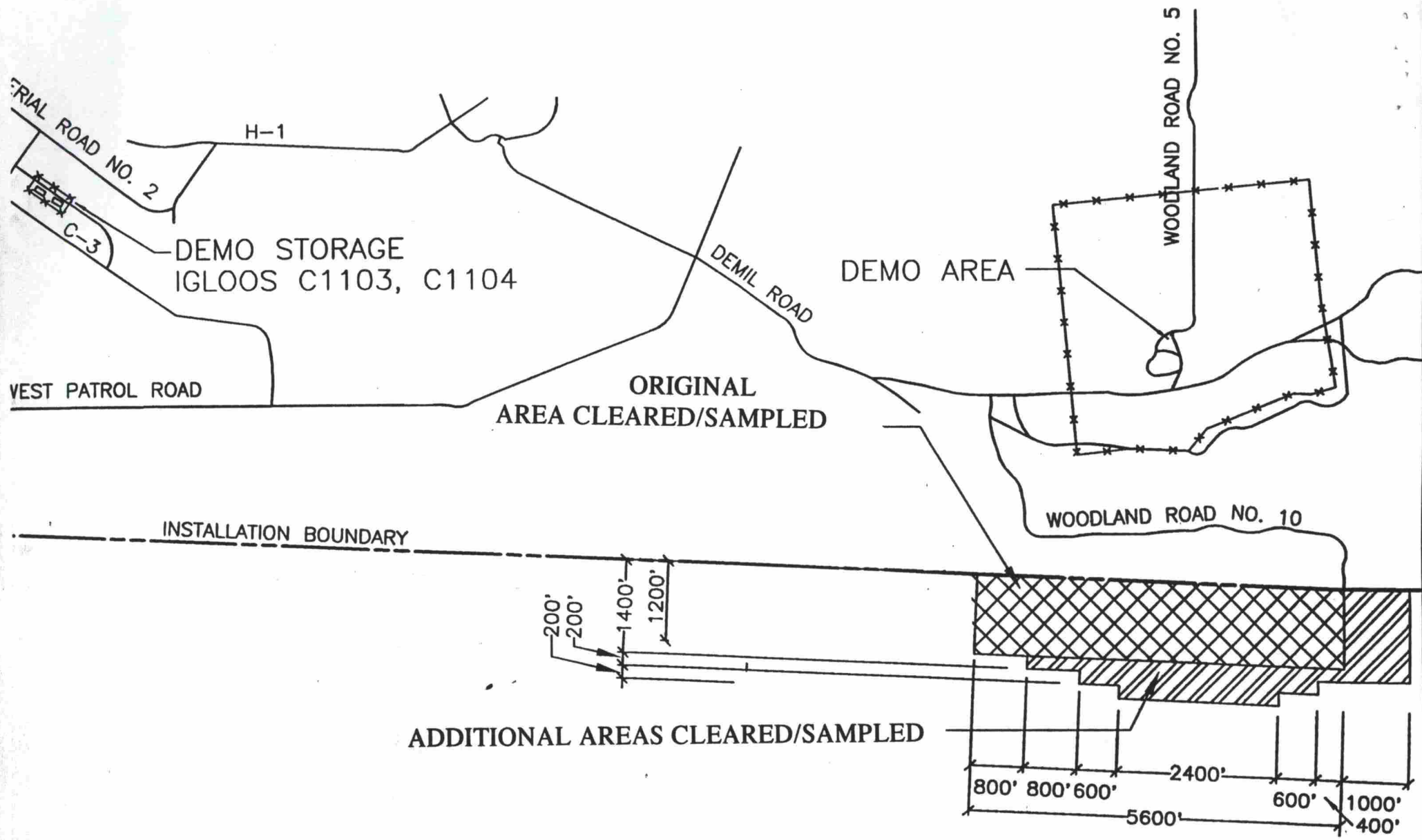


Figure 3