Final

Historical Information Report
Parcel 6

Fort Wingate Depot Activity
McKinley County, New Mexico

23 February 2009

Contract No. GS-10F-0029M
Contract Task Order No. W9126G-08-F-0070

Prepared for
U.S. Army Corps of Engineers
Fort Worth District

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FORT WINGATE DEPOT ACTIVITY
MCKINLEY COUNTY, NEW MEXICO

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This Historical Information Report summarizes available historical information and previous environmental investigation and remediation activities at Parcel 6 Solid Waste Management Units and Areas of Concern at Fort Wingate Depot Activity, McKinley County, New Mexico.

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Steve Martin
USACE Project Manager

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PREFACE

This Historical Information Report (HIR) summarizes available historical information and previous environmental investigation and remediation activities at Parcel 6 Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) at Fort Wingate Depot Activity (FWDA), McKinley County, New Mexico. The report addresses the requirements of the U.S. Army Corps of Engineers (USACE) Statement of Work (SOW) dated February 19, 2008, and the two subsequent Amendments to that SOW.

This HIR was prepared by CH2M HILL in February 2009. Mr. Mark Patterson served as the FWDA Defense Base Realignment and Closure (BRAC) Environmental Director and Mr. Steve Martin served as the USACE Project Manager.

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Acronyms and Abbreviations

AOC	Area of Concern
ACM	asbestos-containing material
AGM	aboveground magazine
API	aerial photo interpretation
ASC	U.S. Army Sustainment Command
AWS	Ammunition Workshop
BRAC	Base Realignment and Closure Plan
bgs	below ground surface
CBU	cluster bomb
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethene
DDT	dichlorodiphenyltrichloroethane
DOI	U.S. Department of the Interior
EP	Engineering Pamphlet
FWDA	Fort Wingate Depot Activity
HIR	Historical Information Report
HMX	cyclotetramethylene-tetranitramine
HSA	hollow stem auger
HWB	Hazardous Waste Bureau
IRM	Interim Remedial Measures
LBP	lead-based paint
µg/g	microgram(s) per gram
MEC	munitions and explosives of concern
mg/kg	milligram(s) per kilogram
mg/L	milligram(s) per liter
NARA	National Archives and Records Administration
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
OB/OD	Open Burn/Open Detonation
OD	Open Detonation
PCB	polychlorinated biphenyl

PMP	2-(dimethoxyphosphiothioylsulfanylmethyl) isoindole-1,3-dione
RA	Remedial Action
RAR	Release Assessment Report
RCRA	Resource Conservation and Recovery Act
RDX	cyclotrimethylenetrinitramine
RFI	RCRA Facility Investigation
RI	remedial investigation
RI/FS	Remedial Investigation/Feasibility Study
SOW	Scope of Work
SUXOS	Senior Unexploded Ordinance Supervisor
SVOCs	semi-volatile organic compounds
SWMU	Solid Waste Management Unit
TAL	target analyte list
TCL	target compound list
TCS	Thermal Convection System (by PIKA International, Inc.)
TEAD	Tooele Army Depot
TSCA	Toxic Substances Control Act
TM	Technical Manual
TNT	trinitrotoluene
USACE	United States Army Corp of Engineers
USATHAMA	United States Army Toxic and Hazardous Materials Agency
UXO	unexploded ordnance
VOCs	volatile organic compounds
WSMR	White Sands Missile Range
WWI	World War I
WWII	World War II
yd^3	cubic yards

1.0 Introduction

This Historical Information Report presents a summary of previous investigations and historical records available for Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) located within Parcel 6 at Fort Wingate Depot Activity (FWDA), McKinley County, New Mexico (Figures 1-1 and 1-2). Parcel 6 includes 4 SWMUs and 10 AOCs as shown on Figure 1-3. Available historical records for each site have been summarized and relevant records have been attached to this document as a series of appendices.

1.1 Objectives and Scope

This Historical Information Report has been prepared for submission to the New Mexico Environment Department's (NMED) Hazardous Waste Bureau (HWB), as required by Section VIII.A.1.a of the Resource Conservation and Recovery Act (RCRA) Permit (NM 6213820974) for FWDA, which became effective December 31, 2005. This document has been prepared to serve as a companion to the RCRA Facility Investigation (RFI) Work Plan for Parcel 6 in order to document the historical site use and currently understood environmental conditions.

This document was prepared by reviewing available documentation for SWMUs and AOCs within Parcel 6. This work was completed in partial fulfillment of the requirements of Contract Task Order Number W9126G-08-F-0070 under Contract Number GS-10F-0029M as outlined in the Statement of Work (SOW) dated February 19, 2008. Technical oversight of this work was provided by the U.S. Army Corps of Engineers (USACE), Fort Worth District.

1.2 Site Background

FWDA is located approximately 8 miles east of Gallup, New Mexico, and currently occupies approximately 15,277 acres of land in McKinley County, New Mexico (Figure 1-1). The installation is divided into sub-areas based on general location and historical land use (Figure 1-2). The major land use areas include the Administration Area, the Workshop Area, ten Munitions Storage Areas (Igloo Blocks A through H, J, and K), the Open Burning/Open Detonation (OB/OD) Areas, and Protection and Buffer Areas.

FWDA was originally established by the U.S. Army in 1862 at the southern edge of the Navajo territory. In 1918 the mission of FWDA changed from tribal issues to World War I-related activities. Beginning in 1940, FWDA's mission was primarily to receive, store, maintain, and ship explosives and military munitions, as well as to disassemble and dispose of unserviceable or obsolete explosives and military munitions. In 1975, the installation came under the administrative command of Tooele Army Depot (TEAD), located near Salt Lake City, Utah.

In January 1993, the active mission of FWDA was ceased and the installation closed as a result of the Defense Base Realignment and Closure (BRAC) Act of 1988. Beginning in 2002, the U.S. Army reassigned many FWDA functions to the BRAC Division, including caretaker duties, property transfer, and performance of environmental compliance and restoration activities. TEAD retained command and control responsibilities until January 31, 2008, when these responsibilities were transferred to White Sands Missile Range (WSMR).

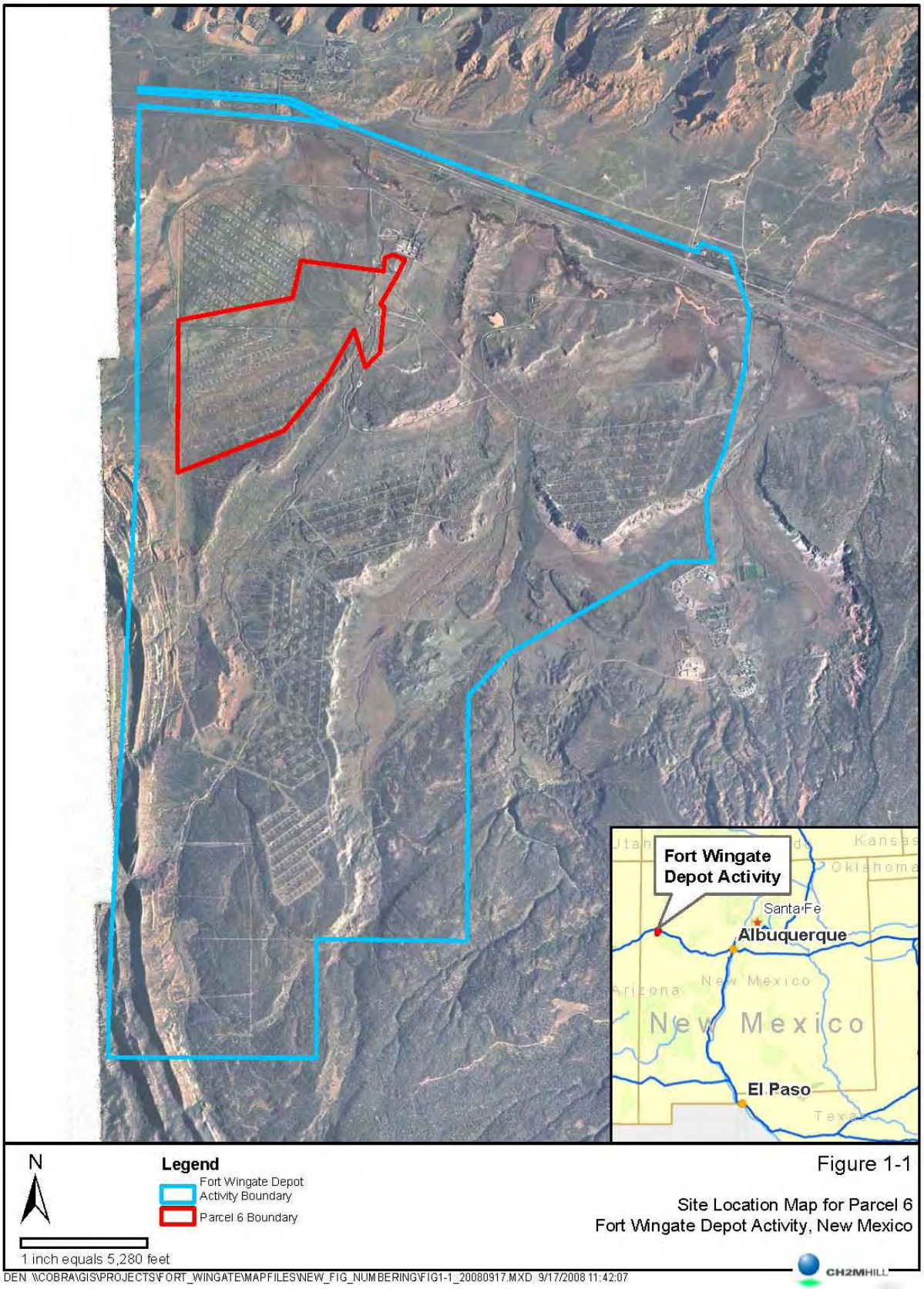
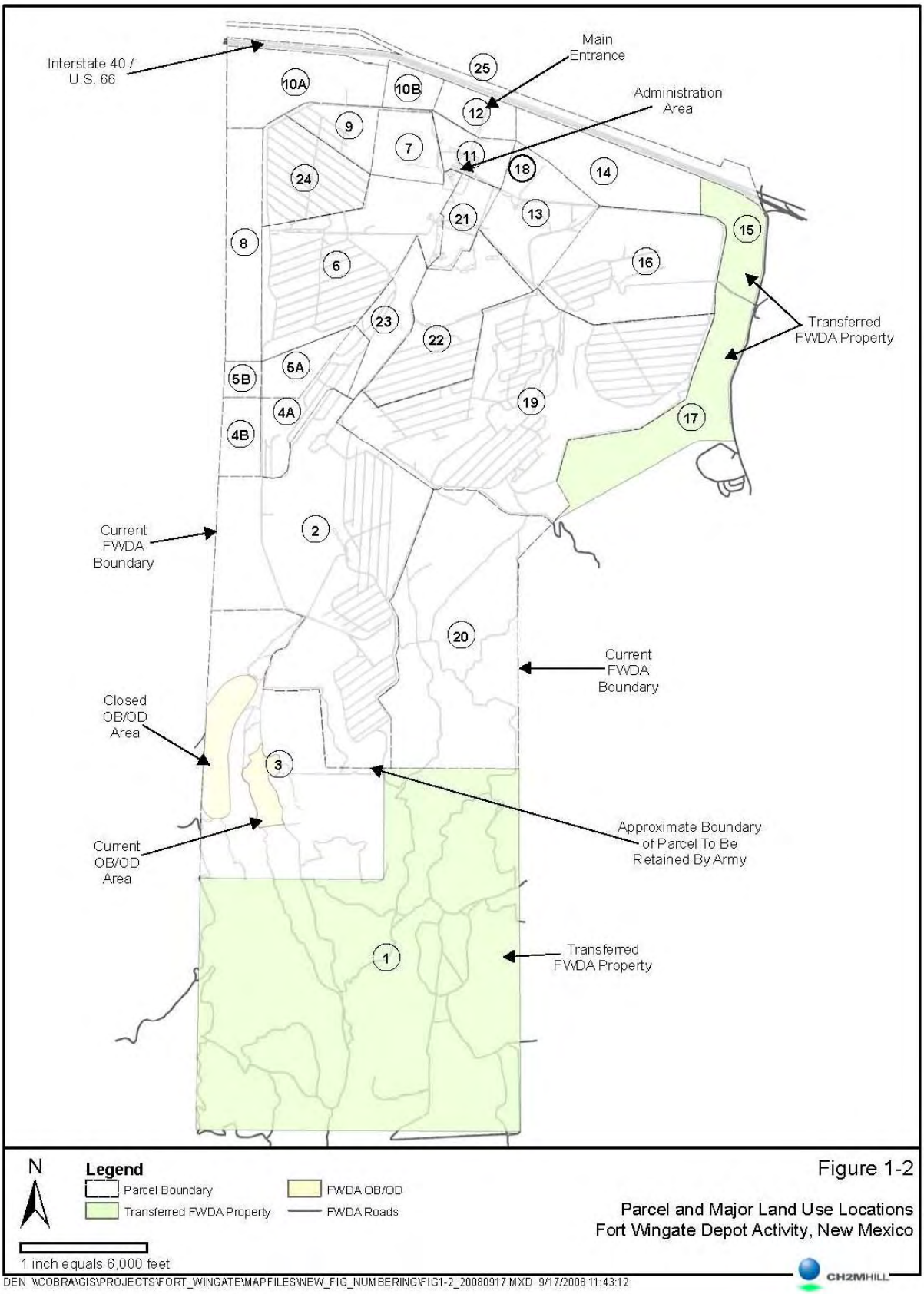


Figure 1-1

Site Location Map for Parcel 6
Fort Wingate Depot Activity, New Mexico

1


Interstate 40 / U.S. 66
Main Entrance
Administration Area
Transferred FWDA Property
Current FWDA Boundary
Current FWDA Boundary
Closed OB/OD Area
Approximate Boundary of Parcel To Be Retained By Army
Current OB/OD Area
Transferred FWDA Property
10A
10B
25
12
9
7
11
18
14
24
21
13
15
8
6
16
23
22
5A
5B
19
4A
17
4B
2
20
3
1
N
Legend
Parcel Boundary
Transferred FWDA Property
FWDA OB/OD
FWDA Roads
1 inch equals 6,000 feet
Figure 1-2
Parcel and Major Land Use Locations
Fort Wingate Depot Activity, New Mexico
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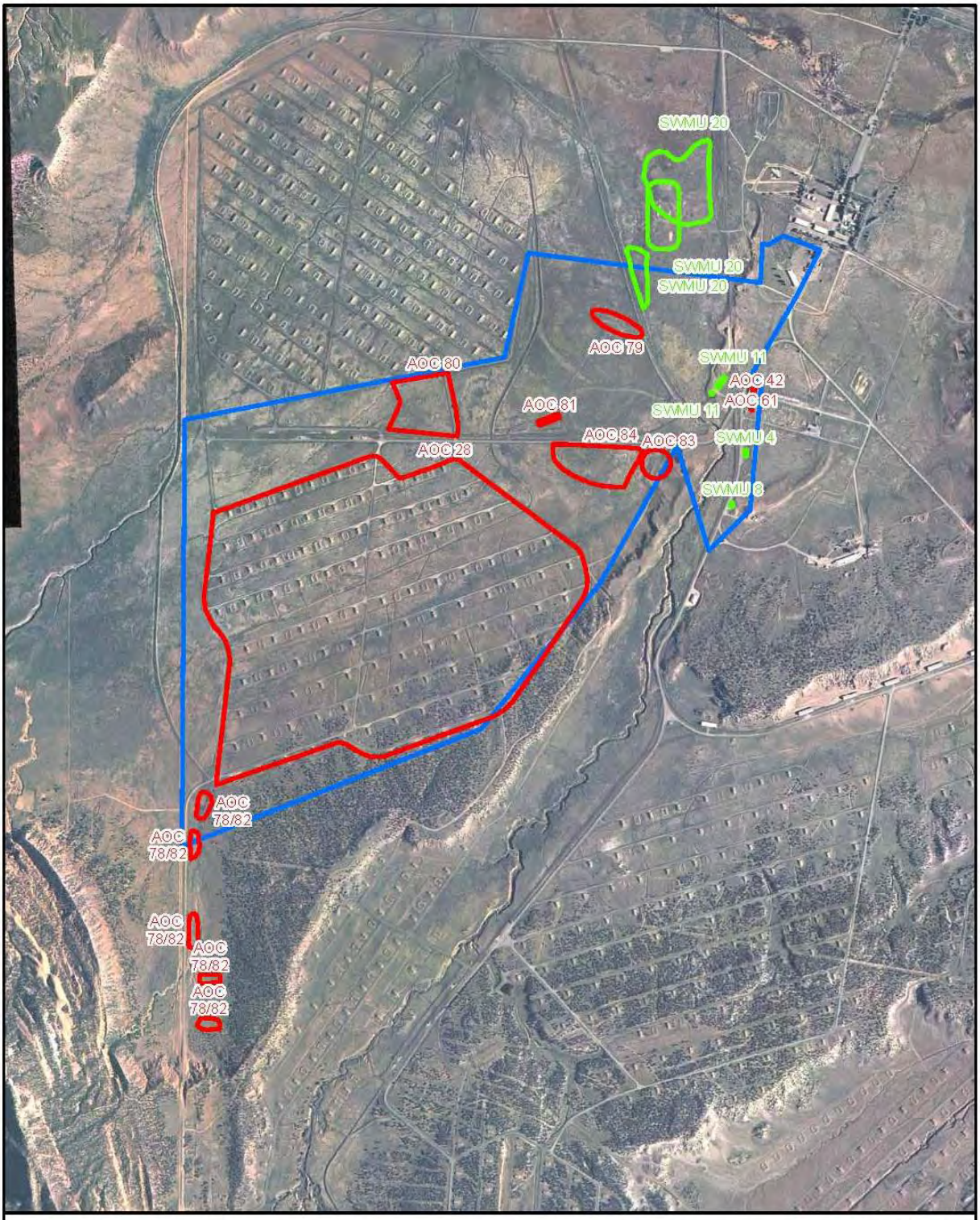
SWMU 20
SWMU 20
SWMU 20
AOC 79
AOC 80
SWMU 11
AOC 42
AOC 61
AOC 81
SWMU 11
AOC 84
AOC 83
SWMU 4
AOC 28
SWMU 8
AOC 78/82
AOC 78/82
AOC 78/82
AOC 78/82
AOC 78/82
N
Legend
Parcel 6 Boundary
AOC Boundary
SWMU Boundary
1 inch equals 2,000 feet
Figure 1-3
Parcel 6 AOC and SWMU Locations
Fort Wingate Depot Activity, New Mexico
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FWDA is currently undergoing final environmental characterization and restoration activities prior to final property transfer and reuse. The installation has been divided into reuse parcels as part of the planned property transfer to the U.S. Department of the Interior (DOI). This Historical Information Report only includes information related to the SWMUs and AOCs located within Parcel 6. The RCRA Permit lists a total of 4 SWMUs and 10 AOCs located within the boundary of Parcel 6 (Figure 1-3), as follows:

- SWMU 4: Building 600 – Ammunition Work Shop Change House Laundry
- SWMU 8: Building 537 – Pesticide and Field Battery Shop
- SWMU 11: Buildings 541 and 542 – Ammunition Workshop
- SWMU 20: Western Landfill
- AOC 28: Igloo Block B
- AOC 42: Building 516 – Ammunition Receiving Building
- AOC 61: Building 507 – Smokeless Powder Magazine
- AOC 75: Electrical Transformers
- AOC 78/82: Feature 18
- AOC 79: Feature 2
- AOC 80: Feature 9
- AOC 81: Feature 11
- AOC 83: Feature 22
- AOC 84: Feature 12

1.3 Summary of Available Historical Information

A number of document reviews and searches have been completed for FWDA since the environmental restoration program began in 1980. Available records pertaining to historical operations and previous investigations within the Parcel 6 boundaries were compiled into an administrative record by the USACE from the following sources:

- Historical maps, drawings, and records located at FWDA
- Interviews with former FWDA personnel familiar with historical FWDA operations
- Historical records and documents obtained from the U.S. Army Field Support Command/Joint Munitions Command History Office's archives and document collection
- Historical records and documents obtained from the National Archives and Records Administration (NARA), stored in multiple locations
- A historical aerial photograph collection and analysis completed for FWDA (Environmental Research, Inc. [ERI], 2006)

Documents made available to the review team for completion of this Historical Information Report were provided by the USACE based on the information available within the administrative record described above. Relevant pages from available documents relating to Parcel 6 SWMUs and AOCs are attached to this document as a series of appendices for each individual SWMU or AOC. Additionally, aerial photograph figures were prepared for Parcel 6 as a whole, and for each individual SWMU and AOC, for each year that data were available. These figures are presented as a series of individual appendices for each site.

2.0 Parcel 6 Historical Information

This section summarizes relevant historical information contained in available FWDA documents. The following subsections provide a site description and operational history for each individual SWMU and AOC, as well as a summary of relevant environmental information contained in the available reports. During the operational history of FWDA there have been vast numbers of documents prepared that may include general information relating to activities within Parcel 6. However, this document only presents and summarizes relevant historical information relating to the operational history and environmental conditions at Parcel 6 SWMUs and AOCs.

Results and conclusions from the historical reports summarized below have not been re-evaluated or interpreted as part of the preparation of this document. The information contained in this report is based solely on the information available in the respective reports and the results and conclusions drawn in the respective reports.

Appendix A presents the available aerial photograph figures for Parcel 6.

2.1 SWMU 4: Building 600, Ammunition Work Shop Change House and Laundry

2.1.1 Site Description and Operational History

Building 600 is located on the east side of Arterial Road No. 2, north of Building 537 and southwest of the Workshop Area (Figure 2-1). Building 600 (formerly Building 539), the former Ammunition Workshop (AWS) Change House and Laundry, was identified as a potential source of explosives because it contained showers and laundry facilities for workers who performed explosives washout activities and handling of munitions (PMC, 2002). Building 600 was constructed in 1942 and is an approximately 3,800-square-foot structure built of native stone and cinder block with a reinforced concrete floor (FWDA, 1961; Daniel, 1994).

At various times during its operation, building drains had discharged to a cesspool, an outfall to the adjacent arroyo, an outfall to the ground surface, and a connection to the sanitary sewer system (PMC, 2002). No specific information regarding exact activities or the period of operation for Building 600 has been found to date. This building was not in operation at the time the installation was closed in 1993.

The SWMU 4 nomenclature has also been historically used for the Burning Ground (currently SWMU 14), so it appears the SWMU 4 designation has been more recently changed to the Building 600 site.

2.1.2 Previous Investigations

A summary of information contained in available documents is presented below. Appendix B1 presents relevant pages from the historical reports summarized below. Appendix B2 presents the available aerial photograph figures. Appendix B3 presents the available historical photographs and drawings.


SWMU 11
SWMU 11
AOC 42
AOC 61
SWMU 4
SWMU 8
N
Legend
Parcel 6 Boundary
SWMU Boundary
AOC Boundary
1 inch equals 250 feet
Figure 2-1
SWMU 4
Historical Information Report, Parcel 6
Fort Wingate Depot Activity, New Mexico
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Facilities Data; FWDA, 1961

This report includes relevant construction information for Building 600.

Final Asbestos Survey Report; Pickering Environmental, 1990

This report includes results of an ACM investigation completed at various FWDA buildings. Results indicated that asbestos-containing material (ACM) was present in approximately 50 square feet of boiler jacket material and 45 linear feet of insulated pipe at Building 600.

Historic Building Inventory; Daniel, 1994

This report includes relevant construction information for Building 600.

Asbestos Survey Buildings 515, 527, 537, 539, 601, 2, 18, 541, 542, 5, 8; USACE, 1998

This report was not available at the time of the preparation of this draft Historical Information Report; however, it is listed in the archival report (SAIC, 2007).

Disinfection and Asbestos Abatement Buildings 8, 2, 512, 18, 601, 537, 539; ICE Contractors, Inc., 1999

This report was not available at the time of the preparation of this draft Historical Information Report; however, it is listed in the archival report (SAIC, 2007).

Environmental Baseline Survey for the Transfer of Lands at Fort Wingate Depot Activity, New Mexico; USACE, 2000

This report provides a physical description of Building 600. This report states that ACM was abated in 1999, lead-based paint (LBP) is assumed, and that there was no supporting documentation found to suggest the presence of polychlorinated biphenyls (PCBs).

Final Work Plan, Environmental Characterization, Buildings 542 and 600; PMC 2000

This report includes background information, previous investigation history, and proposed plans for the 2000 and 2001 field investigation conducted by PMC at SWMU 4. This work plan was completed because Building 600 was identified as a potential source for the low concentrations of cyclotrimethylenetrinitramine (RDX) detected in groundwater samples collected from well TMW11.

The planned field activities at Building 600 included the following:

- Conducting a site walk of the building,
- Confirming the location of the cesspool by manual excavation,
- Advancing four soil borings adjacent to the cesspool to a depth of 12 feet below ground surface (bgs). Samples were to be collected from visibly impacted soil, or at the 6 and 12 feet bgs intervals. Samples were to be analyzed for explosives, target compound list (TCL) volatile organic compounds (VOCs), TCL semi-volatile organic compounds (SVOCs), and target analyte list (TAL) metals at an offsite laboratory,
- Collecting one sample of sediments present in the cesspool to by analyzed for explosives, TCL VOCs, TCL SVOCs, and TAL metals at an offsite laboratory,
- Decommissioning the cesspool,
- Collecting one surface soil sample immediately downstream of the location of the outfall to the arroyo to by analyzed for explosives, TCL VOCs, TCL SVOCs, and TAL metals at an offsite laboratory, and

- Collecting one sample of sediments present in the sanitary sewer manhole to be analyzed for explosives, TCL VOCs, TCL SVOCs, and TAL metals at an offsite laboratory.

Site Summary Report for Area of Concern Septic Tanks; Terranear PMC, 2001

This report presents a summary and evaluation of the environmental investigations for septic tank sites at FWDA. The facility drawings show a cesspool and a separate outfall pipe to the arroyo, prior to connection to the FWDA sanitary sewer at Building 600. The cesspool is located approximately 100 feet northeast of Building 600. It was not visible on the surface; however, a slight depression was observed in the approximate location shown on facility drawings, indicating that the cesspool may have been filled in. It is reportedly constructed of open-jointed rock, is 6 feet by 6 feet in size, and has a total depth of 10 feet. The outfall pipe to the arroyo was visible, and a length of it appears to have been detached and was sticking up in the air.

PMC conducted an investigation of this building including the septic system in November and December of 2000. The cesspool had been filled in sometime in the past and was not unearthed for the field investigation; therefore, no samples were collected. A sediment sample was collected from the sanitary sewer manhole at the far end of the pipe from Building 600. All detected constituents were stated to be less than residential soil screening levels at that time. Closure of the septic tank was documented in a letter to the NMED on June 15, 2001.

Final Phase I RCRA Facility Investigation Report, Buildings 600 and 542; PMC, 2002

The Phase I RFI activities conducted by PMC Environmental in 2000 and 2001 at Building 600 included:

- Reviewing historical facility information including engineering drawings,
- Conducting a walk through of the building,
- Advancing soil borings,
- Collecting surface and subsurface soil, and sewer sediment samples,
- Drilling, installing, sampling, and slug testing of monitoring wells, and
- Collecting groundwater elevation measurements.

Soil and surface sediment samples collected from the site contained low or qualified concentrations of VOCs, SVOCs, and metals, but no explosives.

Four soil borings were advanced adjacent to the cesspool using hollow stem auger (HSA) drilling to a total depth of 12 feet below ground surface (bgs), which was 2 feet below the bottom of the cesspool. Soil samples were collected from 4 to 6 feet bgs and 10 to 12 feet bgs at each location and sampled for explosives, TAL metals, TCL VOCs, and TCL SVOCs. Toluene was detected in each of the eight soil samples collected from the cesspool at concentrations ranging from 0.00028 J to 0.00056 micrograms per gram (µg/g). Two SVOCs were detected at qualified concentrations at one cesspool soil sample collected from 10 to 12 feet bgs. Various metals were detected at generally low or qualified concentrations in all cesspool soil samples collected.

One surface soil sample was collected from a depth of 0.5 foot bgs at the outfall to the arroyo and analyzed for explosives, TAL metals, TCL VOCs, and TCL SVOCs. One VOC, methylene chloride, and a variety of metals were detected at generally low or qualified concentrations in the outfall sample.

One sediment sample was collected from a manhole in the sanitary sewer and analyzed for explosives, TAL metals, TCL VOCs, and TCL SVOCs. Seven VOCs, five SVOCs, and a variety of metals were detected at generally low or qualified concentrations in the sanitary sewer sample.

Six groundwater monitoring wells were installed in the area near groundwater monitoring well TMW11 to determine the source of RDX concentrations previously observed in groundwater at this location. Rising and falling head slug tests were conducted at five of the six new wells. Groundwater samples were collected in February and April 2001, and were analyzed for explosives, TAL metals (total and dissolved), nitrate/nitrate non-specific, and nitrate. Explosives were not detected in any of the new monitoring wells. Nitrate was detected in two of the wells completed in the first unconsolidated water-bearing zone, TMW11 and TMW15, at concentrations ranging from 0.69 to 1.8 milligrams per liter (mg/L).

The report stated the data would be assessed with respect to human health and environmental effects once an agreement had been reached between the Army and NMED with regard to the proper risk assessment methodology. A final report addendum from this investigation has not yet been submitted to the NMED.

Environmental Baseline Survey BRAC Plan; USACE, 2002 (Revised 2003)

This report includes a summary of the RFI that was completed in 2000 and 2001 and states that the findings had not yet been formerly reported. The report also states it was anticipated that additional RFI activities would need to be completed and that Building 600 and surrounding areas will be restricted for use until a response action is complete.

Base Realignment and Closure (BRAC) Plan; Terranear PMC, 2006

The BRAC Plan briefly summarizes the 2000 and 2001 RFI activities.

Aerial Report; Environmental Research, Inc., 2006

This report documents aerial imagery obtained during a search of government and commercial records. The report indicates the photographs were analyzed utilizing a stereoscope to locate potential sources of contamination and to record any findings inside the boundaries of the known SWMUs and AOCs. Aerial images dated from 1935 to 1997 were catalogued. The summary of the imagery analysis provided for SWMU 4 is as follows:

1935 – No significant findings

1948 – Building 600 is present; no significant findings

1952 – Building 600 is present; no significant findings

1958 – No significant findings

1962 – No significant findings

1966 – No significant findings

1973 – No significant findings

1978 – No significant findings

1985 – No significant findings

1991 – No significant findings

1993 – No photo coverage

1997 – No significant findings

While not specifically stated in the summary from the report above, Building 600 is visible from 1948 to 1997.

Letter Archival Report; SAIC, 2007

This archival report is a reference to documents on file with the USACE Fort Worth District as of July 2006. It cites the following reports on file for SWMU 4:

- *Asbestos Survey Buildings 515, 527, 537, 539, 601, 2, 18, 541, 542, 5, 8* (USACE, 1998)
- *Disinfection and Asbestos Abatement Buildings 8, 2, 512, 18, 601, 537, 539* (ICE Contractors, Inc., 1999)
- *Final RFI Work Plan* (PMC, 2000)
- *Phase I RFI* (PMC, 2002) – discussed above

No other reports are directly listed for Building 600 (former Building 539) or SWMU 4.

2.2 SWMU 8: Building 537, Pesticide and Field Battery Shop

A summary of information contained in available documents is presented below. Appendix C1 presents relevant pages from the historical reports summarized below. Appendix C2 presents the available aerial photograph figures. Appendix C3 presents the available historical photographs and drawings.

2.2.1 Site Description and Operational History

Building 537 is located on the east side of Arterial Road No. 2, northwest of Building 530 (former Deactivation Furnace) and south of the Workshop Area (Figure 2-2). Building 537 was constructed in 1941 and is a 4,200 square foot brick structure with a reinforced concrete floor and basement based on available as-built drawings (FWDA, 1961; Daniel, 1994).

This building was originally designated as a field battery shop and was used to service forklift batteries (PMC, 2004). More recently the building was used to mix and store pesticides (mostly insecticides), in leak-proof containers (PMC, 2004). Documentation was not located regarding specific of historic operations at Building 537. Approximately 50 gallons of chlordane was formerly stored in this building but had been disposed of prior to 1988 (PMC, 2004). In addition, the Building 537 site was one of the FWDA locations where a transformer leaked onto the ground (PMC, 2004).

The building has recently been utilized by TPL, Inc. for munitions component recovery and recycling purposes.

Historical reports also indicate a small (approximately 12 feet wide by 17 feet long) foundation slab was located approximately 50 feet east of Building 537 (TtNUS, 2000 and PMC, 2004). The foundation slab had a center drain that discharged, via a 6-inch-diameter vitrified clay pipe, to an earthen ditch between Building 537 and the slab (PMC, 2004). The foundation slab also had two abandoned ¾-inch-diameter water lines on its western edge (PMC, 2004). However, no information has been found in any Army records to identify this foundation slab or its operations. An aerial photograph from 1958 shows the slab, but the building had already been removed (PMC, 2004). Aerial photographs from 1948 and 1952 also show this feature but due to the resolution of these photos it is unclear if this area is a building or just the slab (Appendix C2). This foundation slab was removed in 2004 (PMC, 2004).

Building 537 had a septic tank west of the railroad tracks with an outfall to the arroyo prior to the building's connection to the FWDA sanitary sewer system (PMC, 2004).


SWMU 4
AOC 83
SWMU 8
N
Legend
Parcel 6 Boundary
SWMU Boundary
AOC Boundary
1 inch equals 250 feet
Figure 2-2
SWMU 8
Historical Information Report, Parcel 6
Fort Wingate Depot Activity, New Mexico
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2.2.2 Previous Investigations

Facilities Data; FWDA, 1961

This report includes relevant construction information for Building 537.

Final Report Installation Assessment; US Army Toxic and Hazardous Materials Agency, 1980

This report documents the types of pesticides stored in Building 537. All pesticides were stored in leak proof containers in a well ventilated area with concrete floors. Chlordane (water emulsifiable), chlordane (dust), mathalion (dust), aerosol synergized pyrethrin insect repellent (Dursban M) (water emulsifiable), calcium cyanide (cyanogas-dust), and the rodenticide bait anticoagulants 2-(dimethoxyphosphiothioylsulfanylmethyl) isoindole-1,3-dione (PMP) and Warfarin are listed as pesticides previously used at FWDA and stored in Building 537.

Final Asbestos Survey Report; Pickering Environmental, 1990

This report includes results of an ACM investigation completed at various FWDA buildings. Results indicated that asbestos-containing material (ACM) was present in approximately 50 linear feet of insulated pipe in the basement crawlspace at Building 537.

Facility Assessment Report; PRC Environmental Management Inc., 1990

This report describes the status of Building 537 when the report was published. The chlordane that was previously stored in the building had been disposed of and the building was no longer used for waste storage. The building at this time was utilized to store hazardous materials, but not hazardous waste, and was therefore stated to not be subject to RCRA regulations.

Historic Building Inventory; Daniel, 1994

This report includes relevant construction information for Building 537.

BRAC Remediation Projects (Phase I), PCB Remediation Soil Removal Buildings 536/537; CCC Group, 1996

This document was not located at the time of the preparation of this draft Historical Information Report; however, it was summarized in other documents and therefore is included here. During investigation activities conducted under the base-wide RI/FS (the RI/FS activities as a whole were ultimately reported in 1997), PCB-impacted soils were identified under an electrical transformer at Building 537. As a result, the Army conducted a performance-based disposal action under the Toxic Substances Control Act (TSCA) in 1996. Approximately 45 cubic yards (yd^3) of soil from underneath the former transformer platform adjacent to the building were removed. However, post-excavation samples indicated that elevated PCB concentrations remained in place at the site.

Final Remedial Investigation/Feasibility Study & RCRA Corrective Action Program Document; ERM Program Management Company, 1997

Investigation at this site was initially conducted as part of this installation-wide remedial investigation/feasibility study (RI/FS). The objectives of the RI/FS were to determine if the surface soils around the building had been impacted by the pesticide handling operations and to determine whether contamination was present in a concrete pit located within the building basement. Six surface soil samples were collected around the exterior of the building. Eight wipe samples were collected from various surfaces within the building and basement. One sample of the sediment and one sample of the water within the concrete pit in the building basement were collected. All samples were analyzed for pesticides. Concentrations of multiple pesticide compounds including chlordane,

heptachlor, heptachlor epoxide, dichlorodiphenyldichloroethane (DDD), dichlorodiphenyldichlorethene (DDE), dichlorodiphenyltrichloroethane (DDT), endrin, endrin aldehyde, lindane, alpha-benzenehexachloride, and delta-benzenehexachloride were detected in almost all samples. Some concentrations exceeded applicable screening levels at the time this report was prepared. However, despite the presence of pesticides in and around Building 537, the site was not carried through to the baseline risk assessment being performed as part of that effort. This was because the exterior soil concentrations were determined to present a limited potential for exposure and the interior results were deferred to separate consideration once the disposition of the buildings was decided.

Summary of Sampling and Analysis Event to Delineate PCB Contamination, Buildings 536 and 537; USACE, 1997

This document was not located at the time of the preparation of this draft Historical Information Report; however, it was summarized in other documents and therefore is included here. Aroclor 1260 was detected in excavation post-removal samples from 1996. In 1997, FWDA performed additional soil sampling for PCBs at the former transformer platform. FWDA concluded that subsurface soils under the former transformer platform contained PCBs at concentrations greater than the most conservative TSCA cleanup level of 1 microgram per gram (μg/g), and that additional excavation was warranted.

Removal and Disposal of PCBs and Pesticide Soils; CCC Group, 1998

This document was not located at the time of the preparation of this draft Historical Information Report; however, it was summarized in other documents and therefore is included here. In 1998, FWDA removed an additional 245 yd^3 of PCB-impacted soils from the former transformer platform area. PCBs were not detected in any of the confirmatory samples and the site was backfilled with clean soil.

Asbestos Survey Buildings 515, 527, 537, 539, 601, 2, 18, 541, 542, 5, 8; USACE, 1998

This report was not available at the time of the preparation of this draft Historical Information Report; however, it is listed in the archival report (SAIC, 2007).

Disinfection and Asbestos Abatement Buildings 8, 2, 512, 18, 601, 537, 539; ICE Contractors, Inc., 1999

This report was not available at the time of the preparation of this draft Historical Information Report; however, it is listed in the archival report (SAIC, 2007).

Environmental Baseline Survey for the Transfer of Lands at Fort Wingate Depot Activity, New Mexico; USACE, 2000

This report provides a physical description of Building 537. This report states that PCBs had been detected near two utility poles but contaminated soils had been remediated. Further investigation would be required for evaluating pesticide contamination around the immediate exterior of the building. Friable ACM was abated in 1999 and LBP is assumed.

Final Release Assessments Report; TtNUS, 2000

In 2000, supplemental sampling was performed in areas adjacent to Building 537 to further evaluate potential environmental impacts from past operations, focusing on the pesticide storage and mixing operations, as well as field battery shop operations. Chlordane was detected in 13 samples at concentrations ranging from 9.15 to 82,200 μg/g. Aroclor 1260 was detected at four locations (water

valve box, small foundation slab, near the southeast access door, and in the septic tank sediment) around Building 537. The source of PCBs in soil at these locations was not documented.

Site Summary Report for Area of Concern Septic Tanks; Terranear PMC, 2001

This report presents a summary and evaluation of the environmental investigations for septic tank sites at FWDA. Building 537 had a septic tank located west of the railroad tracks with an outfall to the arroyo prior to the building's connection to the FWDA sanitary sewer system. Both the septic tank and the outfall pipe were observed in the field. Only a 4-inch-diameter cleanout pipe was exposed at the septic tank location, so no assessment of the tank's contents could be made. Pieces of the vitrified clay outfall pipe were observed at the arroyo in the location where the outfall should have been, but the actual outfall appears to have been buried or covered in sediment. The building had restroom facilities, so possibly only sanitary waste may have been discharged to the septic tank. However, it is also possible that spent battery acid and/or pesticides could have been discharged.

The septic tank and cesspools were investigated in 2001, with soil and sediment samples analyzed for TCL VOCs, TCL SVOCs, TCL Pesticides, and TCL PCBs. Arsenic was the only constituent detected above applicable screening values at a concentration of 19.5 milligrams per kilogram (mg/kg).

Environmental Baseline Survey BRAC Plan; USACE, 2002 (Revised 2003)

This report includes a summary of the RFI that was completed in 2000 and 2001 and states that the findings had not yet been formerly reported. It also states that it is anticipated that additional RFI activities will need to be completed and that Building 537 and surrounding areas will be restricted for use until a response action is complete.

Soil Characterization Work Plan, Building 537; PMC, 2003

This report includes background information, previous investigation history, and proposed plans for the 2003 field investigation conducted by PMC at SWMU 8. Field activities were proposed to delineate the extent of PCB contamination greater than 1 µg/g, to excavate and containerize all soil and concrete debris with concentrations of total PCBs exceeding 1 µg/g, to collect confirmation samples documenting PCB concentrations in remaining soil, to delineate the extent of pesticides and metals in soil at the site, and to decommission the septic tank at Building 537.

Field Investigation Report, Building 537; PMC, 2004

Several of the specific objectives outlined in the Soil Characterization Work Plan (2003) were not completed due to funding limitations. Activities that were not completed included excavation of PCB-impacted soil, delineation of pesticides and metals, and decommissioning of the septic tank at Building 537.

Activities that were completed included review of historical drawings, removal of the small building foundation slab, and removal of approximately 100 yd^3 of PCB-impacted soil and 21.3 tons of concrete were disposed of at a chemical waste landfill. The total in-place volume of soils calculated for removal based on test kit results was 383 yd^3, but funding limitations did not allow the entire volume to be removed at this time. Instead a focused "hot spot" removal action was completed, with excavation depths ranging from 1 to 7 feet bgs. PCBs were not detected exceeding 1 µg/g in any of the confirmatory samples and the site was backfilled with clean soil. Interim measures (straw bales) have been maintained around the remediated area to prevent recontamination. According to this report, approximately 260 yd^3 of PCB-impacted soil remain in place at Building 537; further Interim Remedial Measures (IRM) implementation was placed on hold awaiting issuance of the RCRA permit.

Baseline Realignment and Closure (BRAC) Cleanup Plan; PMC, 2006

This report summarizes the remedial investigation (RI) and remedial action (RA) investigations completed at the site previously and states that pesticide and PCB-impacted soil still remain onsite. The building has been recently utilized by TPL for demilitarization activities.

Aerial Report; Environmental Research, Inc., 2006

This report documents aerial imagery obtained during a search of government and commercial records. The photographs were analyzed utilizing a stereoscope to locate potential sources of contamination and to record any findings inside the boundaries of the known SWMUs and AOCs. Aerial images dated from 1935 to 1997 were catalogued. The summary of the imagery analysis provided for SWMU 8 is as follows:

1935 – No significant findings

1948 – A large ditch/trench is located south of Building 537; light-toned material present east of Building 537

1952 – Light-toned material is visible south of Building 537

1958 – No significant findings

1962 – No significant findings

1966 – Staining or dark-toned material extends from Building 537 to the east

1973 – No significant findings

1978 – No significant findings

1985 – No significant findings

1991 – No significant findings

1993 – No photo coverage

1997 – No significant findings

While not specifically stated in the summary from the report above, Building 537 is visible from 1948 to 1997.

Letter Archival Report; SAIC, 2007

This archival report is a reference to documents on file at Fort Worth District Corp of Engineers as of July 2006. It cites the following reports on file for SWMU 8:

- *PCB Remediation Soil Removal Bldgs 536/537* (CCC Group, 1996)
- *Summary of Sampling & Analysis Event to Delineate PCB Contamination, Bldgs 536 & 537* (USACE, 1997)
- *Asbestos Survey Buildings 515, 527, 537, 539, 601, 2, 18, 541, 542, 5, 8* (USACE, 1998)
- *Removal and Disposal of PCBs and Pesticides Soil, Bldgs. 5, 536, 537* (CCC Group, 1998)
- *Disinfection and Asbestos Abatement Buildings 8, 2, 512, 18, 601, 537, 539* (ICE Contractors, Inc., 1999)
- *Environmental Baseline Survey* (EMD, 1999)
- *Final FWDA Soil Characterization Work Plan Building 537* (PMC, 2003)
- *Summary and Documentation for Removal of PCB Contaminated Soils at Building 536 and 537* (USACE, 2003)
- *Field Investigation Report Building 537 (PMC, 2004); and Quality Control Summary Report Building 537* (PMC, 2004).

No other reports are directly listed for Building 537 or SWMU 8.

2.3 SWMU 11: Buildings 541 and 542, Ammunition Workshop

A summary of information contained in available documents is presented below. Appendix D1 presents relevant pages from the historical reports summarized below. Appendix D2 presents the available aerial photograph figures. Appendix D3 presents the available historical photographs and drawings.

2.3.1 Site Description and Operational History

Buildings 541 and 542 are located in the far western portion of the Workshop Area (Figure 2-3). SWMU 11 has been previously listed as combined SWMU 13F (Building 542) and SWMU 47 (Building 541). Building 542 (formerly Building 19) is a former ammunition packing, shipping, and receiving building. Building 542 was constructed in 1942 and is an approximately 7,600-square-foot brick structure with a reinforced concrete floor (FWDA, 1961 and Daniel, 1994). Loading docks are present on both sides of the building and each are approximately 10 feet wide and 181 feet long. A railroad spur is located adjacent to the east loading dock. Records indicate that a variety of ammunition maintenance, modification, and demilitarization operations were performed at Building 542 (PMC, 2002). However, specific dates for the operational history of Building 542 were not found in the available documents.

Building 542 was identified as a potential source of explosives detected in groundwater samples collected from monitoring well TMW11. Building 542 had, at various times during its operation, discharged waste water to a cesspool, a septic tank and drain field, and in later years to the sanitary sewer system. A former employee indicated that munitions had been steamed and/or washed on the loading dock and that the water was allowed to spill onto the dock in an area that is still stained (PMC, 2002). The building has been recently utilized by TPL, Inc. for ammunition component recovery and recycling purposes and TPL is also operating a cyclotetramethylene-tetranitramine (HMX) recovery system in Building 542 (PMC, 2002).


SWMU 11
SWMU 11
AOC 42
AOC 61
AOC 83
SWMU 4
N
Legend
Parcel 6 Boundary
SWMU Boundary
AOC Boundary
1 inch equals 250 feet
Figure 2-3
SWMU 11
Historical Information Report, Parcel 6
Fort Wingate Depot Activity, New Mexico
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Building 541 is listed as a heating plant. Building 541 was constructed in 1942 and is a 600-square-foot brick structure with a reinforced concrete floor (FWDA, 1961; Daniel, 1994). Building 542 is heated by steam provided from a boiler located inside Building 541, an adjacent unconnected building. No other information was available for Building 541.

2.3.2 Previous Investigations

Facilities Data; FWDA, 1961

This report includes relevant construction information for Buildings 541 and 542.

Environmental Survey; ESE, 1981

This document states that beginning in 1949, munitions washout operations were conducted in the 500-series buildings area (page 21). However, there is no specific mention of the activities associated with Buildings 541 and 542.

Final Asbestos Survey Report; Pickering Environmental, 1990

This report includes results of an ACM investigation completed at various FWDA buildings. Results indicated that ACM was present on approximately 35 linear feet of insulated pipe and 48 square feet of boiler head insulation at Building 541. Results indicated that ACM was present in approximately 400 square feet of floor tile at Building 542.

Historic Building Inventory; Daniel, 1994

This report includes relevant construction information for Buildings 541 and 542.

Asbestos Survey Buildings 515, 527, 537, 539, 601, 2, 18, 541, 542, 5, 8; USACE, 1998

This report was not available at the time of the preparation of this draft Historical Information Report; however, it is listed in the archival report (SAIC, 2007).

Disinfection and Asbestos Abatement Buildings 8, 2, 512, 18, 601, 537, 539; ICE Contractors, Inc., 1999

This report was not available at the time of the preparation of this draft Historical Information Report; however, it is listed in the archival report (SAIC, 2007).

Environmental Baseline Survey for the Transfer of Lands at Fort Wingate Depot Activity, New Mexico; USACE, 2000

This report provides a physical description of Buildings 541 and 542. This report states that ACM has been verified at Building 541, it is assumed to contain LBP, and no supporting documentation was found to suggest PCB contamination. Results indicate the presence of ACM in Building 542 was verified, LBP was assumed, and that explosives had been detected in a nearby groundwater well.

Final Work Plan, Environmental Characterization, Buildings 542 and 600; PMC 2000

This report includes background information, previous investigation history, and proposed plans for the 2000 and 2001 field investigation conducted by PMC at SWMU 11. This work plan was completed because Building 542 was identified as a potential source for the low concentrations of RDX detected in groundwater samples collected from well TMW11. Proposed field activities at Building 542 included the following:

- Conducting a site walk of the building.

- Collecting four wipe samples on the east loading dock, which are to be analyzed for explosives at an offsite laboratory.
- Collecting four surface soil samples near stained areas on the east loading dock to be tested for the presence of RDX and trinitrotoluene (TNT) using immunoassay test kits.
- Advancing up to four soil borings adjacent to the east loading dock depending on whether the immunoassay tests detect the presence of explosives. Borings would be advanced to 10 feet bgs with samples collected from visibly impacted soil, or at the 5 and 10 feet bgs intervals. Samples were to be analyzed for explosives and TAL metals at an offsite laboratory.
- Collecting four wipe samples from the west loading dock to be analyzed at an offsite laboratory for explosives.
- Collecting four surface soil samples in the west loading dock area to be tested for the presence of RDX and TNT using immunoassay test kits.
- Advancing one soil boring adjacent to the west loading dock if explosives were detected in the immunoassay samples. The boring would be advanced to 10 feet bgs with samples collected from visibly impacted soil, or at the 5 and 10 feet bgs intervals. Samples were to be analyzed for explosives and TAL metals at an offsite laboratory.

Additional activities associated with the Building 542 cesspool and septic tank were proposed as follows:

- Advancing four soil borings to 19 feet bgs near the cesspool with samples collected from visibly impacted soil or at the 6 feet bgs and bottom intervals. Samples would be analyzed by an offsite laboratory for explosives, TAL metals, TCL VOCs and TCL SVOCs.
- Collecting one sample of the cesspool sediments for analysis for explosives and TAL metals.
- Collecting one sample, if present, of any water within the cesspool for analysis for explosives, RCRA metals, RCRA VOCs, RCRA SVOCs, and flash point.
- Collecting one soil sample from the arroyo outfall for analysis for explosives, TAL metals, TCL VOCs, and TCL SVOCs.
- Decommissioning the cesspool.
- Collecting one sample of the sediments in the septic tank for analysis for explosives, TAL metals, TCL VOCs, and TCL SVOCs.
- Collecting one sample of the water, if present, within the septic tank and analyze for explosives, RCRA metals, RCRA VOCs, RCRA SVOCs, and flash point.
- Advancing ten soil borings along the septic tank drain field to 10 feet bgs with soil samples collected from visibly impacted soil or at the 5 and 10 feet bgs intervals.
- Decommissioning the septic tank.

Site Summary Report for Area of Concern Septic Tanks; Terranear PMC, 2001

This report presents a summary and evaluation of the environmental investigations for septic tank sites at FWDA. Facility drawings for Building 542 showed both a cesspool with arroyo outfall and a septic tank with a drain field prior to the building's connection to the FWDA sanitary sewer system. Both the septic tank and the cesspool with outfall were observed in the field. The septic tank is partially buried at the base of a bank 300 feet southwest of the building. The cesspool is located in the flat area southwest of the building, and is a square open-jointed stone pit, 8 feet by 8 feet in size, with a surface depth of approximately 7 feet below ground surface and a reported total depth of 17 feet below ground surface. The cesspool was almost completely uncovered, so its contents and condition were easily observed. The bottom was dry. Both the inlet and outlet pipes were observed and appeared to be clean. The building has restroom facilities and also has/had a deluge system for fire suppression.

PMC conducted an investigation of this building including the septic system in November and December of 2000. Sediments in the cesspool were analyzed and concentrations were all below applicable soil screening levels. The cesspool was filled in. The water and a portion of the sediment were pumped from the septic tank and disposed. Some sediments remain. However based on concentrations of constituents, the sediment may remain where it is. The septic tank was filled in and abandoned. Abandonment of the cesspool and septic tank was documented in a letter to the NMED on June 15, 2001.

Final Phase I RCRA Facility Investigation Report Buildings 600 and 542; PMC, 2002

Building 542 was identified as a potential source for the low concentrations of RDX detected in groundwater samples collected from well TMW11. Phase 1 RFI investigation activities at Building 542 were conducted in 2000 and 2001 and included:

- Reviewing historical facility information including engineering drawings.
- Conducting a walk through of the building.
- Advancing soil borings.
- Collecting surface and subsurface soil, and sediment and water samples.

During a walk through of the building, petroleum-like staining was observed in Room 5 which contains toilet connections, wash basins, central floor drains, a single shower, and an air compressor. The staining observed near the floor drain and air compressor. The east loading dock had a stained area covering approximately 20 feet of the dock surface extending to the ground surface. Additionally, some staining was observed on the west loading dock.

Four wipe samples were collected as proposed from stained or discolored areas on the east loading dock and were analyzed for explosives; one explosive, HMX, was detected in one sample. Four surface soil samples were collected as proposed adjacent to the stained areas observed on the east loading dock and were tested for TNT and RDX using immunoassay test kits. Explosives were not detected at this location so only a single soil boring was advanced adjacent to the east loading dock to a depth of 10 feet using HSA drilling in accordance with the work plan. Samples were collected from the mid-point and bottom of the borings and analyzed from explosives, TAL metals, TCL VOCs, and TCL SVOCs. Two explosives, HMX and RDX, were detected in soil samples collected adjacent to the east loading dock from the depth intervals of 3 to 5 feet bgs and 10 to 12 feet bgs. The VOC toluene was detected at qualified concentrations, between 11 and 18 SVOCs were detected at low or qualified concentrations, and a variety of metals were also detected at generally low or qualified concentrations in these soil samples.

Four wipe samples were collected from the west loading dock. One explosive, HMX was detected in two wipe samples from the west loading dock. Four surface soil samples were collected near the western loading dock, adjacent to the western edge of the pavement near the dock at topographically low areas. These samples were tested for TNT and RDX using immunoassay test kits. No explosives were detected at this location, so no soil borings were advanced in accordance with the work plan.

Four soil borings were advanced using HSA drilling adjacent to the building cesspool to a depth of 20 feet bgs, which was three feet below the bottom of the cesspool. Soil samples from each boring were collected from 4 to 6 feet bgs and 18 to 20 feet bgs and were analyzed for explosives, TAL metals, TCL VOCs, and TCL SVOCs. The VOCs acetone and toluene and the SVOC bis (2-ethylhexyl) phthalate were detected at qualified concentrations, and a variety of metals were detected at generally low or qualified concentrations from the soil samples collected from the two depth intervals.

One sediment sample was collected from inside the cesspool and analyzed for explosives, TAL metals, TCL VOCs and TCL SVOCs. This sample contained the VOC methylene chloride and eight SVOCs at qualified concentrations, and a variety of metals at generally low or qualified concentrations. At the conclusion of the sampling, the cesspool was abandoned in place.

One surface soil sample was collected immediately down slope from the location of the cesspool outfall and analyzed for explosives, TAL metals, TCL VOCs, and TCL SVOCs. The VOC methylene chloride and a variety of metals were detected at generally low or qualified concentrations in this sample.

One sediment sample from inside of the building septic tank was collected and analyzed for explosives, TAL metals, TCL VOCs, and TCL SVOCs. The VOC carbon disulfide and 14 SVOCs were detected at qualified concentrations, and a variety of metals were detected in this sample. Lead was detected at a concentration of 98.7 µg/g, and thus a second sample was collected for toxicity characteristic leaching procedure (TCLP) lead to determine if the sediment would be classified as hazardous waste. The sample result was a non-detect result with a method detection level of 0.5 milligrams per liter (mg/L) so the sediment was not considered hazardous. Water from the septic tank was sampled and analyzed for explosives, RCRA metals, RCRA VOCs, and RCRA SVOCs and was also found to not be considered a hazardous material. The water and sediments in the septic tank were removed by vacuum truck and the septic tank was abandoned in place.

Ten soil borings were advanced using HSA drilling to a depth of 10 feet bgs within and adjacent to the septic tank drain field. Soil samples were collected from each boring at depths of 4 to 6 feet bgs and 8 to 10 feet bgs and analyzed for explosives, TAL metals, TCL VOCs, and TCL SVOCs. The VOC toluene and the SVOC bis (2-ethylhexyl) phthalate were detected at qualified concentrations, and a variety of metals were detected at generally low or qualified concentrations in these soil samples.

As part of this overall investigation, six groundwater monitoring wells were installed near well TMW11 to determine the source of RDX concentrations previously observed at this location. The installation of those wells has been previously described in the summary of this RFI as it pertains to SWMU 4.

The report stated the data would be assessed with respect to human health and environmental effects once an agreement had been reached between the U.S. Army and NMED with regard to the proper risk assessment methodology. A final report addendum from this investigation has not yet been submitted to the NMED.

Environmental Baseline Survey BRAC Plan; USACE, 2002 (Revised 2003)

This report includes a summary of the RFI that was completed in 2000 and 2001 and states that the findings had not yet been formerly reported. It also states that it is anticipated that additional RFI activities will need to be completed and states that Building 542 and surrounding areas will be restricted for use until a response action is complete.

Aerial Report; Environmental Research, Inc., 2006

This report documents aerial imagery obtained during a search of government and commercial records. The photographs were analyzed utilizing a stereoscope to locate potential sources of contamination and to record any findings inside the boundaries of the known SWMUs and AOCs. Aerial images dated from 1935 to 1997 were catalogued. The summary of the imagery analysis provided for SWMU 11 is as follows:

1935 – No significant findings

1948 – An excavation is present within a fill area north of Building 542

1952 – Two light-toned structures are located at the edge of a fill area located north of Building 542

1958 – Two bermed structures are present with a fill area north of Building 542

1962 – Two bermed structures and a fill area remain north of Building 542; an excavation is present farther north

1966 – Two bermed structures and a fill area remain north of Building 542; an excavation is present farther north; light-toned material is present west of Building 542

1973 – A pipe has been added leading into the fill area north of Building 542

1978 – No significant findings

1985 – Light-toned mounded material is present west of Building 541

1991 – The area north of the site is being excavated

1993 – No photo coverage

1997 – Probable rubble and/or debris located west of the buildings

While not specifically stated in the summary from the report above, Buildings 541 and 542 are visible from 1948 to 1997.

Letter Archival Report; SAIC, 2007

This archival report is a reference to documents on file at Fort Worth District Corp of Engineers as of July 2006. It cites the following reports on file for SWMU 11:

- *Asbestos Survey Buildings 515, 527, 537, 539, 601, 2, 18, 541, 542, 5, 8* (USACE, 1998)
- *Debris Removal at Eastern Landfill, Debris Removal at Building 542* (Safe Environmental, 1999)
- *Environmental Baseline Survey* (EMD, 1999)
- *Final Work Plan Environmental Characterization Buildings 542 and 600* (PMC, 2000)
- *Final Phase I RCRA Facility Investigation Report, Buildings 542 and 600* (PMC, 2002)

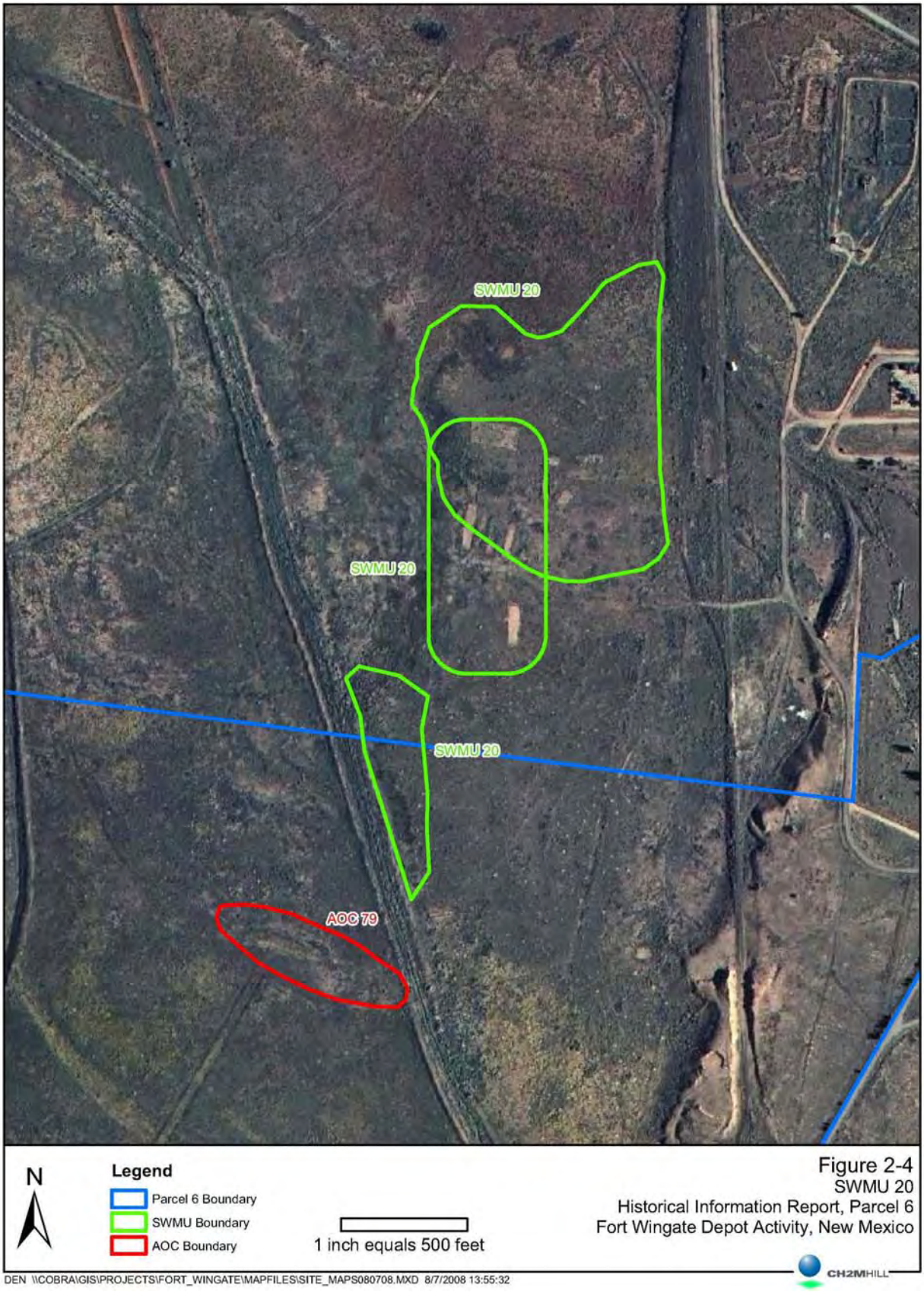
No other reports are directly listed for Building 541, Building 542, or SWMU 11. The 1999 debris removal document was not located at the time of the preparation of this draft Historical Information Report.

2.4 SWMU 20: Western Landfill

A summary of information contained in available documents is presented below. Appendix E1 presents relevant pages from the historical reports summarized below. Appendix E2 presents the available aerial photograph figures. Appendix E3 presents the available historical photographs and drawings.

2.4.1 Site Description and Operational History

The Western Landfill Area is an inactive burial site located approximately 0.5 mile west of the Administrative Area, southwest of the Sewage Treatment Plant and directly west of Building 23 (Figure 2-4). The Western Landfill is predominantly located in Parcel 7, but is partially located in Parcel 6 and has therefore been included with the Parcel 6 investigation activities.


SWMU 20
SWMU 20
SWMU 20
AOC 79
N
Legend
Parcel 6 Boundary
SWMU Boundary
AOC Boundary
1 inch equals 500 feet
Figure 2-4
SWMU 20
Historical Information Report, Parcel 6
Fort Wingate Depot Activity, New Mexico
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The Western Landfill Area appeared to consist of four elongated areas or closed trenches defined by depressions and disturbed vegetation (ERM, 1997). Each area was approximately 100 feet in length and 50 feet in width, and generally oriented from north to south (ERM, 1997). A large mound of soil remained in the vicinity which is likely native soils resulting from trench excavation activities (ERM, 1997). Personnel previously stationed at FWDA reported that the trenches were excavated shortly before the installation was closed in 1993, and non-hazardous materials (for example, trash, refuse, debris, etc.) were disposed of in the trenches (ERM, 1997). In addition, three large disturbed areas were located in proximity to the trenches (ERM, 1997).

2.4.2 Previous Investigations

Previous investigations have been conducted at the Western Landfill. It is not clear whether these investigations included the portion of SWMU 20 that is located within Parcel 6. However, it does not appear that the Feature 4 area located within Parcel 6 has been previously investigated. A description of the available SWMU 20 site investigation history is provided below.

Final Remedial Investigation/Feasibility Study & RCRA Corrective Action Program Document; ERM Program Management Company, 1997

Twenty-nine investigation trenches were completed in the four main trenches (DT1 to DT4) and three disturbed areas (DA1 to DA3) during the RI to determine the depth of the landfill. The investigation trenches penetrated the full thickness of wastes in the vertical and horizontal planes. Waste was encountered in all four disposal trenches and one of the disturbed ground areas. The waste encountered in the Western Landfill generally consisted of solid waste of the sort typically generated during warehousing, packaging, and demilitarization of munitions, with a few exceptions. The primary types of waste included metal banding, various types of wood debris, plastic debris, electrical wiring, and construction and demolition debris. Minor amounts of glass, ash, automobile parts, and a few crushed metal and plastic containers were also present. Material described as unusual included 120 demilitarized projectiles and demolition debris thought to be associated with the Deactivation Furnace were found in DT4, several crushed drums were found in DT2, and several areas thought to be ash were encountered. The report does not indicate the specific locations where ash was found.

Generally, a cover of 1 to 7 feet of sandy silt to silty clayey sand was observed over the disposal trenches. The maximum depth of waste ranged from approximately 7 to 14 feet bgs. During the RI, 15 waste and 16 soil samples were collected and analyzed for explosives, VOCs, SVOCs, pesticides, PCBs, metals, and nitrate/nitrite. Several SVOCs, three VOCs (bromomethane, 1,1,1-trichloroethane, and chlorobenzene), pesticides, and metals were detected at low concentrations exceeding background values of native soil. The report does not indicate a specific source for the final background values, only a description of a 1992 work plan that outlined the methodology for determination of the background values. DA3 was the only disturbed area found to contain significant amounts of waste, with a layer of 5-inch rocket fins present from just below the ground surface to a depth of approximately 3 feet bgs. Investigation trenches were able to penetrate the full thickness of the wastes.

The extent of contamination was believed to be limited to the visible waste and associated matrix and not to have impacted the native soil below the landfill. There is no indication in the report as to why the waste was not expected to have impacted the native soil.

Final Report Removal and Disposal of Western Landfill; USACE, 2005

In 2001, waste and debris were removed from the Western Landfill. Approximately 12,800 yd^3 of debris and soil were excavated and disposed of off site. No live munitions and explosives of concern (MEC) items were recovered during removal activities; approximately 186 tons of MEC-related scrap

and metal debris were recovered and recycled. No unexploded ordnance (UXO) was found in any of the landfill cells or at the site. Confirmation soil samples were collected and the site was backfilled with clean soil, regraded, and revegetated. Post-excavation confirmation samples detected low or qualified concentrations of VOCs, SVOCs, chlorinated herbicides, and pesticides.

Aerial Report; Environmental Research, Inc., 2006

This report documents aerial imagery obtained during a search of government and commercial records. The photographs were analyzed utilizing a stereoscope to locate potential sources of contamination and to record any findings inside the boundaries of the known SWMUs and AOCs. Aerial images dated from 1935 to 1997 were catalogued. The summary of the imagery analysis provided for the Western Landfill area is as follows:

1935 – No significant findings

1948 – Two access roads lead to an area of dark-toned material in the south end of the site. A drainage ditch also leads toward the dark-toned materials. An access road leads to probably debris.

1952 – An access road leads to an area containing dark-toned material and probable debris

1958 – A dark-toned probable trench is present. Dark-toned material remains east of the site. Stacked containers are present in the southern end of the site.

1962 – Multi-toned material and debris are present. Dark-toned material remains east of the site.

1966 – Multi-toned material and debris remain onsite. Dark-toned material or staining remains east of the site.

1973 – A rectangular ground scar and dark-toned material are present; however, the site is inactive

1978 – No significant findings

1985 – No significant findings

1991 – An access road leads to a trench in the northern portion of the site

1993 – No photo coverage

1997 – No significant findings

Letter Archival Report; SAIC, 2007

This archival report is a reference to documents on file at Fort Worth District Corp of Engineers as of July 2006. It cites the following reports on file for SWMU 20:

- *Final Design Analysis, Landfill Closure: Removal and Disposal Western Landfill Area* (TtNUS, 2000)
- *Operation Plan Western Landfill* (FWDA, 2000)
- *Final Report Western Landfill FWDA Vol. I & II* (USACE, 2005)

No other reports are directly listed for the Western Landfill or SWMU 20. The 2000 design and operation plan documents were not located at the time of the preparation of this draft Historical Information Report.

Report of Investigation for Potential Environmental Areas of Concern; USACE, 2007

This report documents an investigation completed at AOCs located outside of the boundaries of current SWMUs and AOCs. Investigation activities were not completed within SWMU 20. However, the report includes background information relevant to the World War I (WWI) magazines. A WWI magazine was formerly located within SWMU 20, Feature 4. WWI magazines historically stored bulk explosives in boxes prior to World War II (WWII). The magazines were wood buildings with metal roofs and were approximately 20 feet by 50 feet in size. All WWI magazines were demolished prior to WWII to clear space for the current structures at FWDA.

2.5 AOC 28: Igloo Block B

A summary of information contained in available documents is presented below. Appendix F1 presents relevant pages from the historical reports summarized below. Appendix F2 presents the available aerial photograph figures. Appendix F3 presents the available historical photographs and drawings.

2.5.1 Site Description and Operational History

Igloo Block B is located in the southwest portion of Parcel 6 (Figure 2-5). It is one of several igloo block areas previously used for the storage of munitions beginning in the early 1940s. Igloo Block B consists of 100 igloo structures and 55 revetments (earthen embankment structures). The igloos were constructed in 1941 each with approximately 1,610 square feet of net interior area with reinforced concrete floors (FWDA, 1961). The igloos are constructed on a flat concrete foundation measuring 62 feet by 25 feet by approximately 13 feet tall and are constructed of brick, poured in place concrete, sheet metal, and earthen fill cover (USACE, 2000). Igloo Block B was specifically used to store 8-inch projectiles, propellant charges, cluster bombs (CBUs), which were transferred to the igloos after being transported to the site by rail (USACE, 2000). Bulk explosives or chemical weapons were not stored in Igloo Block B (USACE, 2000).

Munitions were stored in wooden ammunition boxes containing multiple metal containers. A minimum of three protective layers were used for storing munitions components, and extreme caution was used during handling and storage. No records were available indicating or suggesting the storage of chemical agents, biological agents, or radiological materials. Large numbers of napalm bombs were stored at FWDA during the Southeast Asian conflict; however, records regarding the location of storage areas were not found (USATHAMA, 1980). No evidence was available to indicate environmental impact; however, 40 years of munitions storage provided the potential for dust from stored explosives to accumulate in the interiors of the igloos and around the floor drains (USACE, 2000). There was no specific date indentified for the end of munitions storage.

2.5.2 Previous Investigations

Facilities Data; FWDA, 1961

This report includes relevant construction information for igloos similar to those in Igloo Block B.

Figure 2-5
AOC 28
Historical Information Report, Parcel 6
Fort Wingate Depot Activity, New Mexico

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Defense Environmental Restoration Program for Property Owned by the Department of Defense Ordnance and Explosive Waste Chemical Warfare Materials Archives Search Report; USACE, 1995

Igloo Block B was included in a site survey for potential bomb burial during the 1940s and 1950s. This area was identified as a potential burial location based on interviews with former FWDA personnel. Historical aerial photography review and a helicopter fly over were utilized to inspect the 55 revetment areas within Igloo Block B. No evidence was found suggesting burial of ordnances.

Final Remedial Investigation/Feasibility Study & RCRA Corrective Action Program Document; ERM Program Management Company, 1997

During the RI, 24 surface soil samples were collected under the igloo drains, 15 surface soil samples were collected in storage revetments, and 24 wipe samples were collected from the interior of the same igloos selected for soil sampling. These samples were analyzed for munitions constituents including explosives, nitrate/nitrite, and phosphorous.

Only nitrate/nitrite was detected above the background level of 30.0 µg/g in one soil sample (270 µg/g). The report does not indicate a specific source for the final background values, only a description of a 1992 work plan that outlined the methodology for determination of the background values. Three wipe samples from Igloo Block B contained detectable levels of explosives. 2,4,6-TNT was detected in B1021-3 at a concentration of 0.087 micrograms per square centimeter (µg/cm$^{2)}$. RDX was detected in B1013-1 and B1037-3 at concentrations of 0.11 µg/cm^2 and 0.095 µg/cm^2, respectively.

Environmental Baseline Survey for the Transfer of Lands at Fort Wingate Depot Activity, New Mexico; USACE, 2000

This report provides a physical description of Igloo Block B. It also discusses the baseline surveys completed which included; ACM, LBP, PCBs, and radon surveys. The buildings were not considered to be potentially hazardous according to the RI/FS Risk Assessment. Environmental issues that would potentially affect the property transfer were not found during this limited investigation.

Base Realignment and Closure (BRAC) Cleanup Plan; PMC, 2006

This report summarizes the findings of the investigation within Igloo Block B up until this point. UXB International conducted a survey to characterize the extent of possible UXO contamination from 1992 to 1993. It also describes TPL Inc.'s operations within Igloo Block B. At the time the document was written, TPL had an industrial command facility contract under which they primarily recovered and recycled components of munitions.

Aerial Report; Environmental Research, Inc., 2006

This report documents aerial imagery obtained during a search of government and commercial records. The photographs were analyzed utilizing a stereoscope to locate potential sources of contamination and to record any findings inside the boundaries of the known SWMUs and AOCs. Aerial images dated from 1935 to 1997 were catalogued. The summary of the imagery analysis provided for AOC 28 is as follows:

1935 – Two ground scarred or graded areas are present; probably former or planned building locations

1948 – No significant findings

1952 – No significant findings

1958 – No significant findings

1962 – No significant findings

1966 – No significant findings

1973 – No significant findings

1978 – No significant findings

1985 – No significant findings

1991 – No significant findings

1993 – Partial photo coverage; no significant findings

1997 – No significant findings

While not specifically stated in the summary from the report above, the Block B igloos are visible from 1948 to 1997.

Letter Archival Report; SAIC, 2007

This archival report is a reference to documents on file at Fort Worth District Corp of Engineers as of July 2006. It cites the following reports on file for Igloo Block B:

- *Field Investigation, RI/FS, Accelerated Transfer of SW Property, Igloo Blocks A, B, & C* (ERM, 1992)
- *Environmental Baseline Survey* (EMD, 1999)

No other reports are directly listed for Igloo Block B or AOC 28.

Report of Investigation for Potential Environmental Areas of Concern; USACE, 2007

This report documents an investigation completed at AOCs located outside of the boundaries of current SWMUs and AOCs. Investigation activities were not completed within AOC 28. However, the report includes background information relevant to the WWI magazines. Several WWI magazines were formerly located within the boundaries of Igloo Block B. WWI magazines historically stored bulk explosives in boxes prior to WWII. The magazines were wood buildings with metal roofs and were approximately 20 feet by 50 feet in size. All WWI magazines were demolished prior to WWII to clear space for the current structures at FWDA.

Onsite Treatment/Desensitization of 16 Boxes of Abandoned Energetics; PIKA, 2007

PIKA International, Inc. (PIKA) was contracted by the U.S. Army Sustainment Command (ASC) in support of the Joint Munitions Command for the onsite treatment/desensitization of 16 boxes of abandoned energetics and materials at FWDA. The objective of this project was to treat 16 boxes of unstable energetic materials located within aboveground magazine (AGM) B-1009 at FWDA with PIKA's Thermal Convection System (TCS). Additionally, Open Detonation (OD) procedures were used to remove explosive hazards from select containers of energetics which, due to their size and characteristics, did not yield themselves to treatment in the TCS.

Select containers identified during the material evaluation phase that could not be treated within the TCS due to their size and/or characteristics. These select containers were disposed by open detonation on January 31, 2008, following procedures in approved amendments to the Work Plan, Explosive Safety Submission, and NMED Emergency Authorization. Demolition operations were conducted in accordance with the procedures outlined in Technical Manual (TM) 60A-1-1-31, Engineering

Pamphlet (EP) 385-1-95a, Basic Safety Concepts and Considerations for Munitions and Explosives of Concern (MEC) Removal Action Operations, dated 27 August 2004. The containers were removed from the igloo by the Senior Unexploded Ordinance Supervisor (SUXOS) and manually transported to the designated open detonation area (approximately 20 feet by 20 feet) located between Igloos B-1044 and B-1045. Boosters/donor explosives were placed in intimate contact with each container and covered with sand-bags. The containers were disposed by countercharging the energetics inside the container with the explosive donor charge (e.g., booster) and detonating the donor charge. All disposal operations were performed under the direction and supervision of the UXO Safety.

The NMED approved all actions in an Emergency Permit dated October 30, 2007. The permit is provided in the project report. All results of this action were submitted to the NMED in March 2008 in a report titled *Onsite Treatment/Desensitization of 16 Boxes of Abandoned Energetics.*

2.6 AOC 42: Building 516 (Ammunition Receiving Building)

A summary of information contained in available documents is presented below. Appendix G1 presents relevant pages from the historical reports summarized below. Appendix G2 presents the available aerial photograph figures. Appendix G3 presents the available historical photographs and drawings.

2.6.1 Site Description and Operational History

Building 516 is located on the north side of Service Road No. 3, east of Buildings 541 and 542 in the northwestern portion of the Workshop Area (Figure 2-6). Building 516 is listed as the ammunition receiving building and was constructed in 1948. The building is a 400-square-foot brick structure with a reinforced concrete floor (FWDA, 1961; Daniel, 1994). This building has no water service and was not connected to the sanitary sewer.

2.6.2 Previous Investigations

Facilities Data; FWDA, 1961

This report includes relevant construction information for Building 516.

Final Asbestos Survey Report; Pickering Environmental, 1990

This report includes results of an ACM investigation completed at various FWDA buildings. Results indicated that no ACM was present at Building 516.

Historic Building Inventory; Daniel, 1994

This report includes relevant construction information for Building 600.

Environmental Baseline Survey for the Transfer of Lands at Fort Wingate Depot Activity, New Mexico; USACE, 2000

This report documents a survey for ACM and no suspect ACM was found. No information exists regarding LBP or PCBs. LBP is assumed to be present based on building construction dates.


SWMU 11
SWMU 11
AOC 42
AOC 61
SWMU 4
N
Legend
Parcel 6 Boundary
SWMU Boundary
AOC Boundary
1 inch equals 250 feet
Figure 2-6
AOC 42
Historical Information Report, Parcel 6
Fort Wingate Depot Activity, New Mexico
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Aerial Report; Environmental Research, Inc., 2006

This report documents aerial imagery obtained during a search of government and commercial records. The photographs were analyzed utilizing a stereoscope to locate potential sources of contamination and to record any findings inside the boundaries of the known SWMUs and AOCs. Aerial images dated from 1935 to 1997 were catalogued. The summary of the imagery analysis provided for AOC 42 is as follows:

1935 – No significant findings

1948 – Building 516 present; no significant findings

1952 – No significant findings

1958 – No significant findings

1962 – No significant findings

1966 – No significant findings

1973 – No significant findings

1978 – No significant findings

1985 – No significant findings

1991 – No significant findings

1993 – No photo coverage

1997 – No significant findings

While not specifically stated in the summary from the report above, Building 516 is visible from 1948 to 1997.

Letter Archival Report; SAIC, 2007

This archival report is a reference to documents on file at Fort Worth District Corp of Engineers as of July 2006. It cites the following report on file for Building 516: *Environmental Baseline Survey* (EMD, 1999). No other reports are directly listed for Building 516 or AOC 42.

2.7 AOC 61: Building 507 (Smokeless Powder Magazine)

A summary of information contained in available documents is presented below. Appendix H1 presents relevant pages from the historical reports summarized below. Appendix H2 presents the available aerial photograph figures. Appendix H3 presents the available historical photographs and drawings.

2.7.1 Site Description and Operational History

Building 507 is located in the ammunition workshop area to the north of Building 539 and to the west of Building 515 (Figure 2-7). Building 507 is listed as the smokeless powder magazine and was constructed in 1948. This building has 100 square feet of usable area and is constructed of concrete with an earth fill covering and a reinforced concrete floor (FWDA, 1961). This building has no water service and was not connected to the sanitary sewer. There was no specific information available in the provided documents relating to the operational history of this building.


SWMU 11
SWMU 11
AOC 42
AOC 61
SWMU 4
N
Legend
Parcel 6 Boundary
SWMU Boundary
AOC Boundary
1 inch equals 250 feet
Figure 2-7
AOC 61
Historical Information Report, Parcel 6
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2.7.2 Previous Investigation

Facilities Data; FWDA, 1961

This report includes relevant construction information for Building 507.

Aerial Report; Environmental Research, Inc., 2006

This report documents aerial imagery obtained during a search of government and commercial records. The photographs were analyzed utilizing a stereoscope to locate potential sources of contamination and to record any findings inside the boundaries of the known SWMUs and AOCs. Aerial images dated from 1935 to 1997 were catalogued. The summary of the imagery analysis provided for AOC 61 is as follows:

1935 – No significant findings

1948 – Building 507 present; no significant findings

1952 – Building 507 present; no significant findings

1958 – No significant findings

1962 – No significant findings

1966 – No significant findings

1973 – No significant findings

1978 – No significant findings

1985 – No significant findings

1991 – No significant findings

1993 – No photo coverage

1997 – No significant findings

While not specifically stated in the summary from the report above, Building 507 is visible from 1948 to 1997.

Letter Archival Report; SAIC, 2007

This archival report is a reference to documents on file at Fort Worth District Corp of Engineers as of July 2006. It does not cite any reports for Building 507 or AOC 61, only a record of drawings on file.

2.8 AOC 75: Electrical Transformers

A summary of information contained in available documents is presented below. Little specific information exists regarding the electrical transformers located within Parcel 6. Therefore no aerial photographs are presented as specific locations are unknown. Appendix I1 presents relevant pages from the available document summarized below. Appendix I2 presents the available historical photographs and drawings.

2.8.1 Site Description and Operational History

There are at least 65 former or existing transformers within multiple Parcels that are included as AOC 75. Transformers are located within Parcels 6, 7, 11, 12, 13, 19, 21, and 22.

2.8.2 Previous Investigations

Baseline Realignment and Closure (BRAC) Cleanup Plan; PMC, 2006

All historical data refers to AOC 75 as the main transformer bank, Structure 81. There is no specific information available regarding the transformers located within Parcel 6.

2.9 AOC 78/82: Feature 18

A summary of information contained in available documents is presented below. Appendix J1 presents relevant pages from the historical reports summarized below. Appendix J2 presents the available aerial photograph figures. Appendix J3 presents the available historical photographs and drawings.

2.9.1 Site Description and Operational History

AOC 78/82 is described as Feature 18 on 1973 aerial photo (API-5) in the 1995 Archive Search Report (Figure 2-8 and Appendix J3). The 1995 Archive Search Report lists the 1973 aerial photo in a table without further description. Therefore this report has not been included in the previous investigation section below. AOC 78/82 is located in the far southwestern corner of Parcel 6 and is approximately 4.4 acres in size. Review of historical aerial photographs indicates that grading and construction of a pond were completed at this site. However, the pond feature may just be an artifact of natural drainage collecting adjacent to where the western patrol road crosses the main local drainage feature.

Review of historical FWDA maps for this area lists the four northern features of AOC 78/82 as Open Storage Sites or a Standard Ammunition Magazine. Temporary building numbers of Z-223 or X-23; Z-227; Z-224 or X-24; and Z-228 were identified from north to south for the four southern AOC 78/82 features. Included in Appendix J3 is an as-built drawing assumed to be for this type of structure. No additional information is available relating to the operational history of this site.

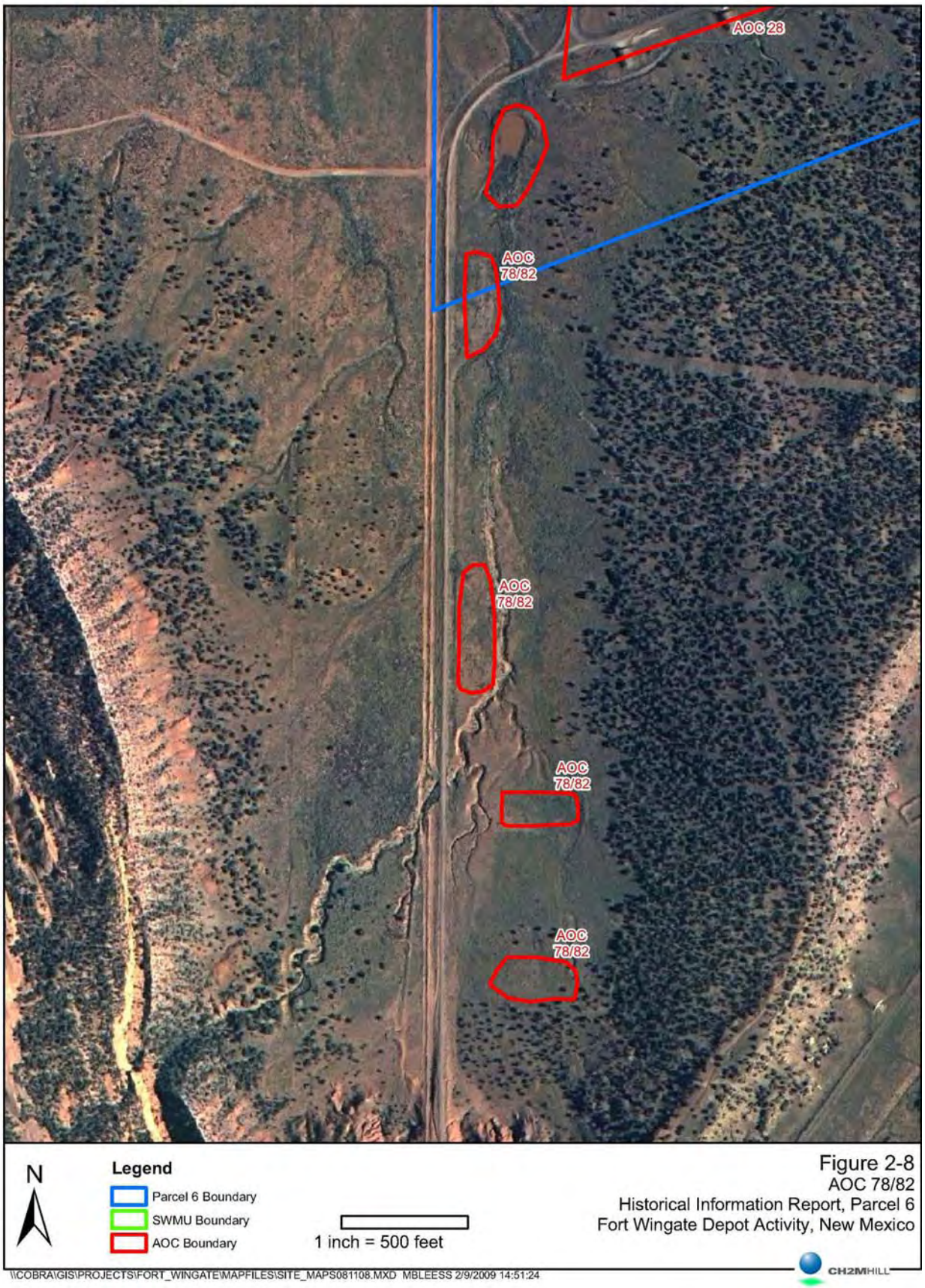

Figure 2-8
AOC 78/82
Historical Information Report, Parcel 6
Fort Wingate Depot Activity, New Mexico

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2.9.2 Previous Investigations

Aerial Report; Environmental Research, Inc., 2006

This report documents aerial imagery obtained during a search of government and commercial records. The photographs were analyzed utilizing a stereoscope to locate potential sources of contamination and to record any findings inside the boundaries of the known SWMUs and AOCs. Aerial images dated from 1935 to 1997 were catalogued. The summary of the imagery analysis provided for AOC 78/82 is as follows:

1935 – No significant findings

1948 – Two graded areas are present.

1952 – Two graded scarred areas are present.

1958 – Two graded areas are present.

1962 – One graded area remains.

1966 – One of the graded areas remains.

1973 – A pond has been constructed in the northernmost area; three scarred or graded areas are present to the south

1978 – The pond and two graded areas remain

1985 – The pond remains to the north; the graded areas are revegetating

1991 – The pond remains to the north; a trench or excavation is visible south of the pond; the former graded areas are mostly revegetating.

1993 – No photo coverage

1997 – The pond remains to the north

Report of Investigation for Potential Environmental Areas of Concern; USACE, 2007

This report documents an investigation completed at AOCs located outside of the boundaries of current SWMUs and AOCs. Investigation activities were not completed within AOC 78/82. However, the report includes background information relevant to areas at FWDA that were previously used to temporarily store inert items and ordnance, such as AOC 78/82. The report indicates that buildings designated with an X- identifier were wood-framed structures with a roof but no walls. These buildings had earth or gravel floors and were present at FWDA from approximately 1945 to 1980. Areas with a Z- identifier were either buildings such as those with the X- identifier or were flat open storage areas with no associated building that were present at FWDA from approximately 1945 to 1980.

2.10 AOC 79: Feature 2

A summary of information contained in available documents is presented below. Appendix K1 presents relevant pages from the historical reports summarized below. Appendix K2 presents the available aerial photograph figures. Appendix K3 presents the available historical photographs and drawings.

2.10.1 Site Description and Operational History

This AOC is described as Feature 2 on the 1973 aerial photo (API-5) in the 1995 Archive Search Report (Figure 2-9 and Appendix K3). The 1995 Archive Search Report lists the 1973 aerial photo in a table without further description. Therefore this report has not been included in the previous investigation section below. AOC 79 is located in the northern portion of Parcel 6 and is approximately 3.6 acres in size. Review of historical aerial photographs indicates that an access road leads to a probable building foundation and a scarred and stained soil area.

Review of historical FWDA maps for this area lists a portion of AOC 79 as an Open Storage Site or a Standard Ammunition Magazine. A temporary building number of Z-220 or X-18 is listed for this area. Included in Appendix K3 is an as-built drawing assumed to be for this type of structure. No additional information is available relating to the operational history of this site.

2.10.2 Previous Investigations

Aerial Report; Environmental Research, Inc., 2006

This report documents aerial imagery obtained during a search of government and commercial records. The photographs were analyzed utilizing a stereoscope to locate potential sources of contamination and to record any findings inside the boundaries of the known SWMUs and AOCs. Aerial images dated from 1935 to 1997 were catalogued. The summary of the imagery analysis provided for AOC 79 is as follows:

1935 – No significant findings

1948 – An access road leads to a probable building foundation

1952 – Access road leads to two probable trenches with dark-toned materials

1958 – Access roads lead to a scarred and disturbed area

1962 – Access roads lead to areas of dark-toned material or staining northwest and southwest of the site

1966 – No significant findings

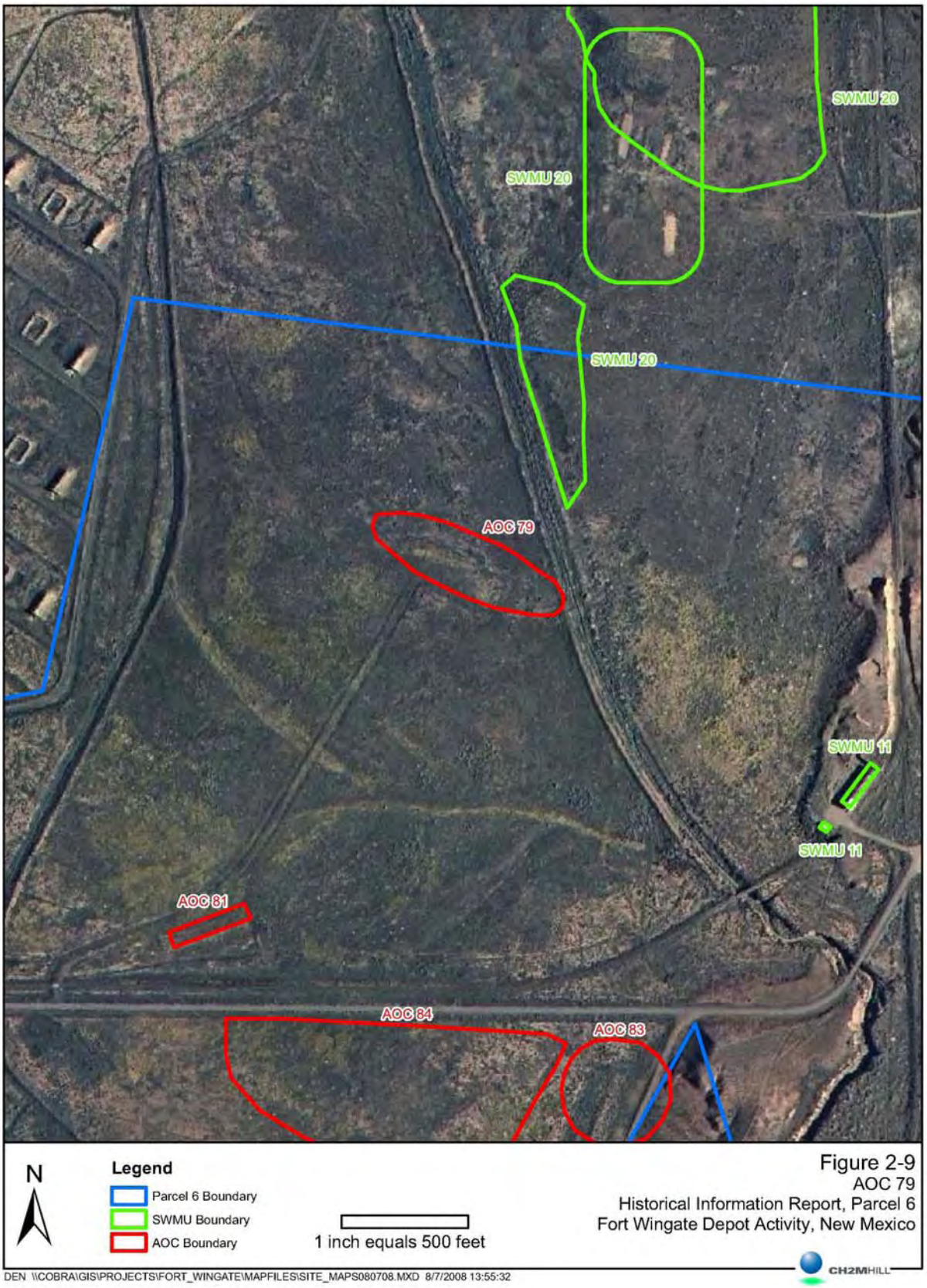
1973 – The perimeter of the site has been cleared/graded; the other areas to the south appear as graded or scarred staging or parking areas

1978 – An access road leads to a ground scarred area

1991 – No significant findings

1993 – No photo coverage

1997 – The central portion of the site is scarred; however, this may be due to erosion


SWMU 20
SWMU 20
SWMU 20
AOC 79
SWMU 11
SWMU 11
AOC 81
AOC 84
AOC 83
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Legend
Parcel 6 Boundary
SWMU Boundary
AOC Boundary
1 inch equals 500 feet
Figure 2-9
AOC 79
Historical Information Report, Parcel 6
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Report of Investigation for Potential Environmental Areas of Concern; USACE, 2007

This report documents an investigation completed at AOCs located outside of the boundaries of current SWMUs and AOCs. Investigation activities were not completed within AOC 79. However, the report includes background information relevant to areas at FWDA that were previously used to temporarily store inert items and ordnance, such as AOC 79. The report indicates that buildings designated with an X- identifier were wood-framed structures with a roof but no walls. These buildings had earth or gravel floors and were present at FWDA from approximately 1945 to 1980. Areas with a Z- identifier were either buildings such as those with the X- identifier or were flat open storage areas with no associated building that were present at FWDA from approximately 1945 to 1980.

2.11 AOC 80: Feature 9

A summary of information contained in available documents is presented below. Appendix L1 presents relevant pages from the historical reports summarized below. Appendix L2 presents the available aerial photograph figures. Appendix L3 presents the available historical photographs and drawings.

2.11.1 Site Description and Operational History

This AOC is described as Feature 9 on the 1962 aerial photo (API-3) in the 1995 Archive Search Report (Figure 2-10 and Appendix L3). The 1995 Archive Search Report lists the 1962 aerial photo in a table without further description. Therefore this report has not been included in the previous investigation section below. AOC 80 is located in the northwest portion of Parcel 6. Review of historical aerial photographs indicates this site is a scarred and stained soil area. No additional information is available relating to the operational history of this site.

2.11.2 Previous Investigations

Aerial Report; Environmental Research, Inc., 2006

This report documents aerial imagery obtained during a search of government and commercial records. The photographs were analyzed utilizing a stereoscope to locate potential sources of contamination and to record any findings inside the boundaries of the known SWMUs and AOCs. Aerial images dated from 1935 to 1997 were catalogued. The summary of the imagery analysis provided for AOC 80 is as follows:

1935 – No significant findings

1948 – Disturbed ground, light-toned material and a ground scar are present

1952 – Disturbed ground, light-toned material and a ground scar are present

1958 – Disturbed ground, light-toned material and a ground scar are present

1962 – Disturbed ground and light-toned material are present

1966 – No significant findings

1973 – Disturbed ground and light-toned material are present

1978 – Disturbed ground and light-toned material remain

1985 – Disturbed ground and light-toned material remain

Figure 2-10
AOC 80
Historical Information Report, Parcel 6
Fort Wingate Depot Activity, New Mexico

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1991 – Disturbed ground and light-toned material remain

1993 – No photo coverage

1997 – No significant findings

2.12 AOC 81: Feature 11

A summary of information contained in available documents is presented below. Appendix M1 presents relevant pages from the historical reports summarized below. Appendix M2 presents the available aerial photograph figures. Appendix M3 presents the available historical photographs and drawings.

2.12.1 Site Description and Operational History

This AOC is described as Feature 11 on the 1962 aerial photo (API-3) in the 1995 Archive Search Report (Figure 2-11 and Appendix M3). The 1995 Archive Search Report lists the 1962 aerial photo in a table without further description. Therefore this report has not been included in the previous investigation section below. AOC 81 is located in the central portion of Parcel 6. Review of historical aerial photographs indicates this site previously contained a rectangular building and a stained soil area.

Review of historical FWDA maps for this area lists AOC 81 as an Open Storage Site or a Standard Ammunition Magazine. A temporary building number of X-19 or T-330 is listed for this area. Included in Appendix M3 is an as-built drawing assumed to be for this type of structure. No additional information is available relating to the operational history of this site.

2.12.2 Previous Investigations

Aerial Report; Environmental Research, Inc., 2006

This report documents aerial imagery obtained during a search of government and commercial records. The photographs were analyzed utilizing a stereoscope to locate potential sources of contamination and to record any findings inside the boundaries of the known SWMUs and AOCs. Aerial images dated from 1935 to 1997 were catalogued. The summary of the imagery analysis provided for AOC 81 is as follows:

1935 – No significant findings

1948 – A rectangular building is present; no significant findings

1952 – Rectangular scar/building foundation; no significant findings

1958 – No significant findings

1962 – Dark-toned material or staining is present west and south of the site

1966 – No significant findings

1973 – No significant findings

1978 – No significant findings

1985 – No significant findings

1991 – No significant findings


SWMU 20
AOC 79
AOC 80
AOC 81
AOC 84
AOC 83
AOC 28
N
Legend
Parcel 6 Boundary
SWMU Boundary
AOC Boundary
1 inch equals 500 feet
Figure 2-11
AOC 81
Historical Information Report, Parcel 6
Fort Wingate Depot Activity, New Mexico
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1993 – No photo coverage

1997 – No significant findings

Report of Investigation for Potential Environmental Areas of Concern; USACE, 2007

This report documents an investigation completed at AOCs located outside of the boundaries of current SWMUs and AOCs. Investigation activities were not completed within AOC 81. However, the report includes background information relevant to areas at FWDA that were previously used to temporarily store inert items and ordnance, such as AOC 81. The report indicates that buildings designated with an X- identifier were wood-framed structures with a roof but no walls. These buildings had earth or gravel floors and were present at FWDA from approximately 1945 to 1980. Areas with a T- identifier were flat open storage areas with no associated building that were present at FWDA from approximately 1945 to 1948.

2.13 AOC 83: Feature 22

A summary of information contained in available documents is presented below. Appendix N1 presents relevant pages from the historical reports summarized below. Appendix N2 presents the available aerial photograph figures. Appendix N3 presents the available historical photographs and drawings.

2.13.1 Site Description and Operational History

This AOC is described as Feature 22 on 1973 aerial photo (API-5) in the 1995 Archive Search Report (Figure 2-12 and Appendix N3). The 1995 Archive Search Report lists the 1973 aerial photo in a table without further description. Therefore this report has not been included in the previous investigation section below. This AOC also appears to be listed under SWMU 40 as Structure 63. AOC 83 is located in the west-central portion of Parcel 6. Review of historical aerial photographs indicates this site previously contained a building, stacked material, and disturbed ground. Review of historical FWDA maps for this area lists a portion of AOC 83 as an Open Storage Site or a Standard Ammunition Magazine. A temporary building number of Z-332 or X-20 is listed for this area. Included in Appendix N3 is an as-built drawing assumed to be for this type of structure. No additional information is available relating to the operational history of this site.

2.13.2 Previous Investigations

Aerial Report; Environmental Research, Inc., 2006

This report documents aerial imagery obtained during a search of government and commercial records. The photographs were analyzed utilizing a stereoscope to locate potential sources of contamination and to record any findings inside the boundaries of the known SWMUs and AOCs. Aerial images dated from 1935 to 1997 were catalogued. The summary of the imagery analysis provided for AOC 83 is as follows:

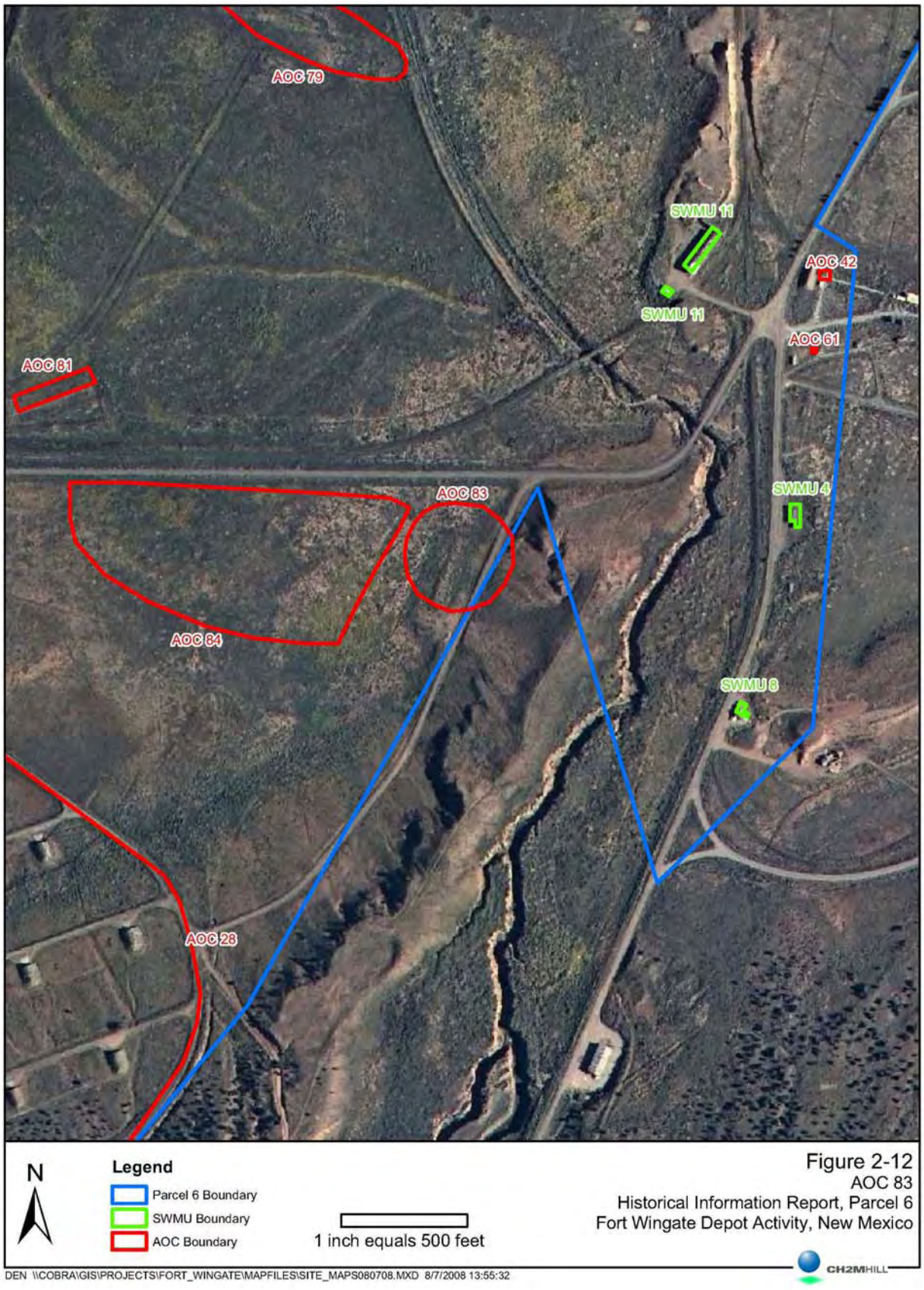
1935 – No significant findings

1948 – A building is present; no significant findings

1952 – A building is present; no significant findings

1958 – A building is present; no significant findings

1962 – A building is present; no significant findings


AOC 79
SWMU 11
SWMU 11
AOC 42
AOC 61
AOC 81
AOC 83
SWMU 4
AOC 84
SWMU 8
AOC 28
N
Legend
Parcel 6 Boundary
SWMU Boundary
AOC Boundary
1 inch equals 500 feet
Figure 2-12
AOC 83
Historical Information Report, Parcel 6
Fort Wingate Depot Activity, New Mexico
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1966 – The building seen in 1962 has been removed

1973 – Stacked material is present onsite; disturbed ground and erosional features are present to the east

1978 – A graded area is present with probable stacked material

1985 – No significant findings

1991 – No significant findings

1993 – No photo coverage

1997 – No significant findings

Report of Investigation for Potential Environmental Areas of Concern; USACE, 2007

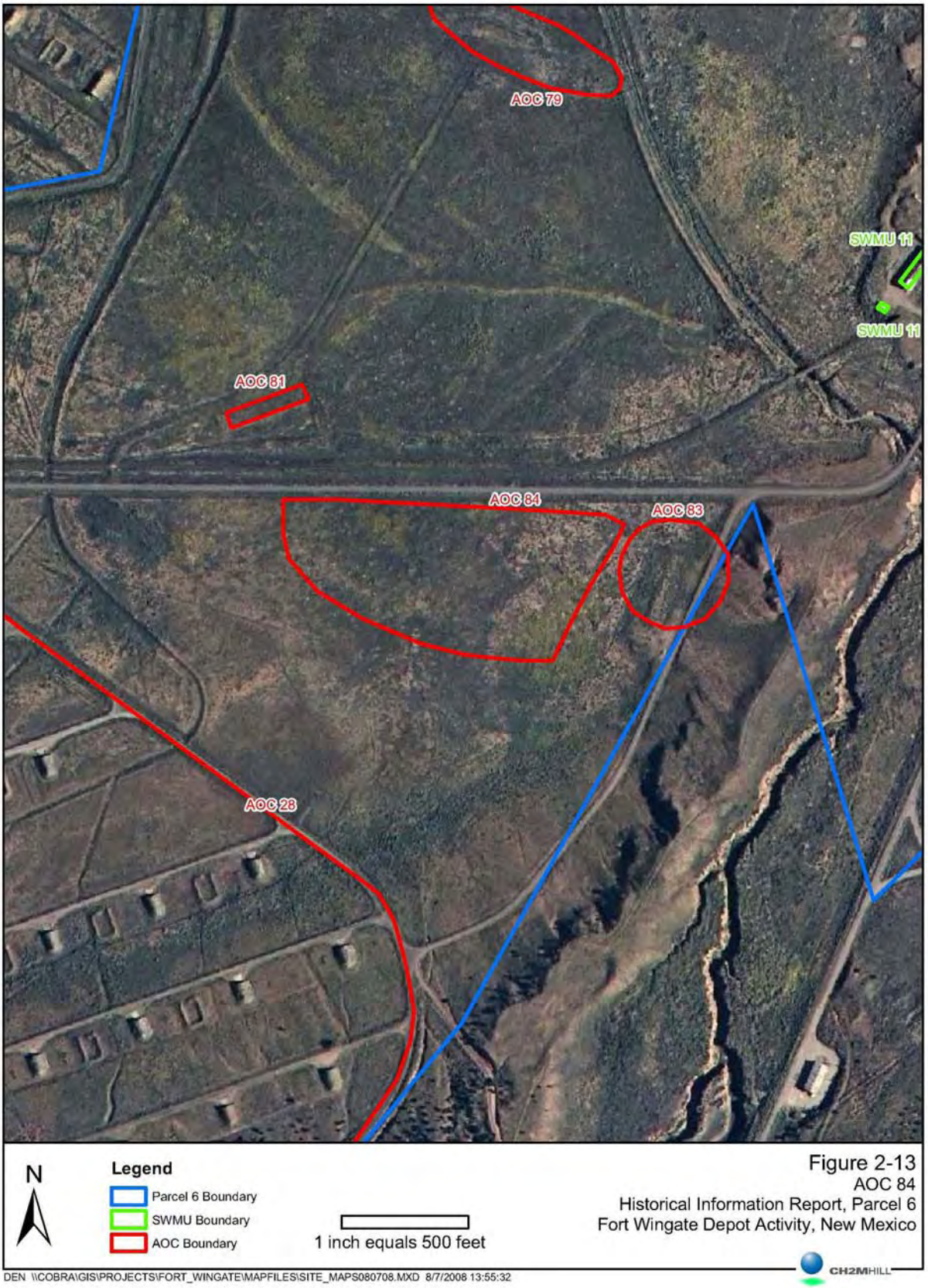
This report documents an investigation completed at AOCs located outside of the boundaries of current SWMUs and AOCs. Investigation activities were not completed within AOC 83. However, the report includes background information relevant to areas at FWDA that were previously used to temporarily store inert items and ordnance, such as AOC 83. The report indicates that buildings designated with an X- identifier were wood framed structures with a roof but no walls. These buildings had earth or gravel floors and were present at FWDA from approximately 1945 to 1980. Areas with a Z- identifier were either buildings such as those with the X- identifier or were flat open storage areas with no associated building that were present at FWDA from approximately 1945 to 1980.

2.14 AOC 84: Feature 12

A summary of information contained in available documents is presented below. Appendix O1 presents relevant pages from the historical reports summarized below. Appendix O2 presents the available aerial photograph figures. Appendix O3 presents the available historical photographs and drawings.

2.14.1 Site Description and Operational History

This AOC is described as Feature 12 on 1962 aerial photo (API-3) in the 1995 Archive Search Report (Figure 2-13 and Appendix O3). The 1995 Archive Search Report lists the 1962 aerial photo in a table without further description. Therefore this report has not been included in the previous investigation section below. AOC 84 is located in the central portion of Parcel 6. Review of historical aerial photographs indicates this site is a scarred and stained soil area. No additional information is available relating to the operational history of this site.


AOC 79
SWMU 11
SWMU 11
AOC 81
AOC 84
AOC 83
AOC 28
N
Legend
Parcel 6 Boundary
SWMU Boundary
AOC Boundary
1 inch equals 500 feet
Figure 2-13
AOC 84
Historical Information Report, Parcel 6
Fort Wingate Depot Activity, New Mexico
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2.14.2 Previous Investigations

Aerial Report; Environmental Research, Inc., 2006

This report documents aerial imagery obtained during a search of government and commercial records. The photographs were analyzed utilizing a stereoscope to locate potential sources of contamination and to record any findings inside the boundaries of the known SWMUs and AOCs. Aerial images dated from 1935 to 1997 were catalogued. The summary of the imagery analysis provided for AOC 84 is as follows:

1935 – No significant findings

1948 – No significant findings

1952 – No significant findings

1958 – No significant findings

1962 – Disturbed ground and dark-toned material are present

1966 – No significant findings

1973 – No significant findings

1978 – No significant findings

1985 – No significant findings

1991 – No significant findings

1993 – No photo coverage

1997 – No significant findings

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