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RCN #630-207-04-07

16 February 1996

HQ ACC/CEVCM
ATTN: Mr. Russ Shannon
129 Andrews Street, Suite 102
Langley AFB, VA 23665-2769

Reference: Contract Number F44650-94-D-0003, Delivery Order No. 5006; RCRA Corrective Action Management Plans for 15 ACC Installations

Subject: Transmittal of the Holloman AFB Corrective Action Management Plan (Final)

Dear Mr. Shannon:

Transmitted with this letter are two hard copies and three diskette copies of the final Holloman AFB Corrective Action Management Plan. We have also sent the 10 required hard copies and three electronic copies to Mr. Warren Neff at Holloman AFB. If you have any questions or coments about the final Holloman CAMP, please do not hesitate to call Jim Clary, Priscilla Falzone, or me. We look forward to hearing from you.

Sincerely,

Scott S. Reed
Team Leader

Enclosures

cc: File 630-207
Priscilla Falzone/AUS
Jim Clary/AUS
LaDawn Torgerson/AUS
Scott Reed/AUS
Helen Vaughn (ACC)
Warren Neff/Holloman AFB

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8501 North Mopac Blvd.
Austin, TX 78759

RCN #630-207-04-07

16 February 1996

49 CES/CEV
ATTN: Mr. Warren Neff
550 Tabosa Avenue, Building 55
Holloman AFB, NM 88330

Subject: Transmittal of the Holloman AFB Corrective Action Management Plan (Final)

Dear Warren:

Enclosed, please find 10 hard copies and three diskette copies of the final Holloman AFB Corrective Action Management Plan (CAMP). We have also sent copies to Mr. Russ Shannon at HQ ACC/CEVCM. This CAMP incorporates all of the detailed Environmental Compliance Program (ECP) funding information for the thirteen solid waste management units (SWMUs) that Holloman and Radian International identified as requiring future corrective action activities funded through the ECP. If you have any questions or comments regarding the information presented in the CAMP, please do not hesitate to call Stacey Weichert, Dave Robbins, or me. We look forward to talking with you in the near future. By the way, congratulations on your nomination as the IRP RPM of the year for ACC!

Sincerely,

Scott S. Reed
Team Leader

Enclosures

Final

RCRA Corrective Action Management Plan

Air Combat Command

Holloman Air Force Base
New Mexico

February 1996

RESOURCE CONSERVATION AND RECOVERY ACT CORRECTIVE ACTION MANAGEMENT PLAN

HOLLOMAN AIR FORCE BASE, NEW MEXICO

Final

Prepared for:

Headquarters Air Combat Command
129 Andrews Street, Suite 102
Langley AFB, VA 23665-2769

Prepared by:

Radian International LLC
8501 N. Mopac Blvd.
Austin, Texas 78759

February 1996

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LIST OF ACRONYMS

49 CES/CEV	49th Civil Engineering Squadron, Environmental Flight
ACC	Air Combat Command
AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
AFI	Air Force Instruction
AOC	Area of Concern
BES	Budget Estimate Submission
BTEX	Benzene, Toluene, Ethyl Benzene, Xylene
CAMP	Corrective Action Management Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
CNFA	Conditional No Further Action
DERA	Defense Environmental Restoration Account
DoD	Department of Defense
ECP	Environmental Compliance Program
EPA	United States Environmental Protection Agency
FFA	Federal Facility Agreement
FFCA	Federal Facilities Compliance Act
FWEC	Foster Wheeler Environmental Corporation
FY	Fiscal Year
FYDP	Future Years Defense Plan
HQ ACC/CEVC	Headquarters Air Combat Command, Environmental Compliance Division
HSWA	Hazardous Solid Waste Amendments

LIST OF ACRONYMS (Continued)

HWIR	Hazardous Waste Identification Rule
IRP	Installation Restoration Program
LTM	Long-Term Monitoring
LTO	Long-Term Operation
NCP	National Contingency Plan
NFA	No Further Action
NMED	New Mexico Environmental Department
OMB	Office of Management and Budget
OWS	Oil/Water Separator
PB	President's Budget
POM	Program Objective Memorandum
PPBS	Planning, Programming, and Budgeting System
PRI	Post-RCRA Facility Investigation
RACER	Remedial Action Cost Engineering and Requirements System
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
SC	Site Closeout
SWMU	Solid Waste Management Unit
TRPH	Total Residual Petroleum Hydrocarbons
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VCA	Voluntary Corrective Action
VOC	Volatile Organic Compound
WIMS-ES	Work Information Management System - Environmental Subsystem

EXECUTIVE SUMMARY

Air Combat Command (ACC) tasked each of its installations having a Resource Conservation and Recovery Act (RCRA) permit to prepare a RCRA Corrective Action Management Plan (CAMP). The primary objective of this CAMP is to identify legally binding requirements that will support funding requirements for Holloman Air Force Base (AFB). Other objectives of this CAMP are to identify all RCRA corrective action requirements, summarize the status of ongoing corrective action activities, identify a source of funding for each requirement, and present a schedule for completing all corrective action activities.

The lead regulatory agency for RCRA corrective action at Holloman AFB has been the United States Environmental Protection Agency (EPA) Region VI, although the New Mexico Environment Department (NMED) received primacy in January 1996. RCRA corrective action activities began on 25 September 1991, the effective date of the RCRA permit. Since then, a total of 113 individual sites were identified as potential solid waste management units (SWMUs) or areas of concern (AOCs) subject to RCRA corrective action. Some SWMUs and AOCs are also Installation Restoration Program (IRP) sites. Table E-1 illustrates the current status of the 113 sites at Holloman AFB. Note this information is also illustrated in a base map in Figure 2-1. Table E-2 summarizes bottom line cost and schedule information for completing all Environmental Compliance Program (ECP)-funded corrective action activities at Holloman AFB. It should be noted that the RCRA corrective action program at Holloman AFB is substantially complete.

Table E-1

Corrective Action Site Summary, Holloman AFB

Sites Type	NFA Approved[a]	NFA Proposed[b]	CNFA	Further Action Required
SWMU	1	54	34	15
AOC	0	2	6	1
Total	**1**	**56**	**40**	**16**

[a] NFA approved by EPA Region VI.
[b] NFA proposed by Holloman AFB.
AOC = Area of Concern.
CNFA = Conditional No Further Action. Condition of NFA is typically removal of contaminated soil or long-term monitoring.
NFA = No Further Action.
SWMU = Solid Waste Management Unit.

Table E-2

Corrective Action Cost Schedule Summary, Holloman AFB

Requirement	Cost	Fiscal Year	ECD
RFI	$0	NA	NA
CMS	$300,000	FY 96 - FY 97	December, 1997
CNFA/CMI	$3,150,000	FY 96 - FY 97	December, 1997
LTO/LTM	$2,700,000	FY 96 - FY 07	December, 2007
S&A	$1,375,000	FY 96 - FY 07	December, 2007
Total	**$7,525,000**		

CMS = Corrective Measure Study.
CMI = Corrective Measures Implementation.
CNFA = Conditional No Further Action. Condition of NFA is typically removal of contaminated soil or long-term monitoring.
ECD = Estimated Completion Date.
FY = Fiscal year.
IRA = Interim Remedial Action.
LTM = Long-term Monitoring.
LTO = Long-term Operation.
NA = Not Applicable.
RFI = RCRA Facility Investigation.
S&A = Supervision and Administration.

1. INTRODUCTION

Holloman AFB (EPA Identification No. NM6572124422), located in Alamogordo, New Mexico, received a RCRA Part B operating permit from NMED and EPA Region VI on August 22,1991. Because NMED did not have primacy for the Hazardous and Solid Waste Amendments (HSWA) portions of RCRA, EPA Region VI issued the HSWA module to the RCRA Part B permit. This module includes the requirement to comply with corrective action provisions pursuant to Section 3004(u) of RCRA and Title 40, Code of Federal Regulations (40 CFR), Part 261.101. The RCRA Part B permit, which governs the operation of Holloman AFB as a hazardous waste management facility, was requested by Holloman AFB and issued by the regulatory agencies in response to the Base's need for a hazardous waste container storage area.

In response to environmental restoration requirements, the Air Force funds RCRA corrective action activities from two separate accounts: the Defense Environmental Restoration Account (DERA) and the ECP account. This CAMP focuses on those RCRA corrective action activities at Holloman AFB funded through the ECP account.

1.1 CAMP Objective

The primary objectives of this CAMP are to identify legally binding requirements which will support funding requirements for the Base and to provide the Environmental Compliance Division of Headquarters Air Combat Command (HQ ACC/CEVC) with a resource advocacy tool to validate and defend RCRA corrective action requirements in future ECP budgets. Specifically, this CAMP identifies the total ECP funding needed to complete all RCRA corrective action work at Holloman AFB and presents a corrective action schedule based on milestones identified in the RCRA permit.

1.2 CAMP Contents

The contents of this CAMP include the following:

- The executive summary explains the need for preparing the CAMP, summarizes the status of corrective action activities at Holloman AFB, and provides bottom-line summaries of cost estimates and schedules for completing all corrective action activities.

- Section 1 defines the objectives of this CAMP, identifies the information on which it is based, and discusses its benefits and limitations.

- Section 2 explains key regulatory mechanisms, identifies the lead regulatory agency overseeing corrective action at Holloman AFB, and summarizes the current status of corrective action activities.

- Section 3 describes the overall strategy for completing corrective action at Holloman AFB. Specifically, it explains why Holloman AFB is required to follow RCRA in lieu of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) procedures, explains the current Air Force policy on entering into legal agreements, identifies key individuals, and explains the different sources of funds that are available for RCRA corrective action.

- Section 4 explains the current Air Force ECP programming and budgeting guidance in terms of prioritizing corrective action activities at Holloman AFB.

- Section 5 explains the ECP budget cycle, explains the use of the A-106 plan, presents cost estimate for completing all remaining corrective action work at Holloman AFB, establishes the schedules to complete the work, and explains the assumptions which were made to develop cost estimates and schedules.

- Section 6 includes a list of documents referenced throughout this CAMP.

- Appendix A contains a copy of the RCRA permit.

- Appendix B contains ACC program management guidance for RCRA corrective actions.

- Appendix C contains site descriptions and site maps.

- Appendix D contains the A-106 project data.

1.3 Sources of Information

Information presented in this CAMP was gathered from the work plans, reports, and other documentation prepared in support of Holloman's Installation Restoration Program (IRP) and RCRA Corrective Action Program. This information was augmented by data and information gathered during a site visit to Holloman AFB in late October and early November, 1995. Specific information comes from interviews with base personnel, and review of official documents, including:

- The RCRA permit and HSWA module of the permit;
- Final *RCRA Facility Assessment Report* (AT Kearny and DPRA, 1987);
- *Remedial Investigation (RI) Report—Investigation, Study, and Recommendation for 29 Waste Sites* (Radian, 1992);
- *Risk Assessment Report for the Remedial Investigation—Investigation, Study, and Recommendation for 29 Waste Sites* (Radian, 1992);
- *Site Characterization Report—Sewage Lagoons and Lakes Investigation* (Radian, August 1992);
- Draft Final *Phase II RCRA Facility Investigation for Lakes Holloman and Stinky—Sewage Lagoons and Lakes Investigation* (Radian, December 1993);
- Draft Final *Phase I RCRA Facility Investigation Report for Table 2 Solid Waste Management Units* (Radian, July 1994);
- Draft Final *Corrective Measures Study, T38 Test Cell (SS-59/SWMU 229) and Building 828 (SS-60/SWMU 230)* [Foster Wheeler Environmental Corporation (FWEC) and Radian, December 1994];
- Draft Final *Phase II RCRA Facility Investigation Report for Table 1 Solid Waste Management Units* (FWEC and Radian, June 1995)

- Draft Final *Table 3 RCRA Facility Investigation Report* (FWEC and Radian, July 1995)
- IRP *Management Action Plan* (Radian, February 1995);
- Decision Documents;
- Geographic Information Systems data;
- Air Force Instructions;
- ACC environmental program guidance documents; and
- Official Air Force and EPA correspondence.

1.4 Use and Limitations

Although this CAMP is based on regulatory requirements specified in the Holloman AFB RCRA permit, it is not intended to fulfill any particular regulatory or technical requirement mandated by the permit. The organization and focus of this CAMP center strictly around the Air Force budgeting process.

This CAMP is intended for official use by Holloman AFB, Headquarters ACC, and the Air Staff. This CAMP contains information ACC has deemed necessary to support future RCRA corrective action requirements funded through the Air Force ECP account. As a planning tool, this CAMP reflects a "snapshot" in time of the RCRA corrective action program at Holloman AFB. Changes in the status of RCRA corrective action activities at Holloman AFB will affect cost estimates, compliance schedules, and site status summaries presented in this CAMP.

2. CORRECTIVE ACTION STATUS

This section explains the regulatory mechanisms that initiated RCRA corrective action requirements at Holloman AFB. This section also summarizes the current status of corrective action activities, identifies sites that Holloman AFB has recommended for no further action (NFA), and identifies sites that will require further corrective action using ECP funds.

2.1 Regulatory Driver

As part of industrial activities related to Base operations, Holloman AFB generates wastes that are characterized as RCRA hazardous wastes per the definitions in 40 CFR Part 261. In order to store RCRA hazardous wastes for off-site treatment and disposal, Holloman AFB was required to apply for a RCRA Part B permit to operate a hazardous waste container storage area. As a condition to their RCRA permit application, Holloman AFB must comply with all applicable RCRA Subtitle C requirements, including RCRA corrective action. The requirements specified in the RCRA permit issued by NMED and EPA Region VI to Holloman AFB became effective on 25 September 1991.

Because the State did not have HSWA primacy, EPA issued the HSWA module of the RCRA permit to Holloman AFB, a copy of which is provided in Appendix A. In accordance with their RCRA permit, Holloman AFB must determine whether any releases of hazardous waste or hazardous constituents have occurred from any SWMU and to take appropriate corrective action for any such releases. The RCRA permit also includes a schedule of compliance for carrying out these actions for specific SWMUs. The regulatory authority for these corrective action requirements is provided in Section 3004(u) of RCRA and 40 CFR 264.101. In response to the requirements specified in the RCRA permit, Holloman AFB has been implementing the corrective action program at the 113 SWMUs identified in the permit. The status of these sites and associated activities is provided in Figure 2-1 and in the following sections.

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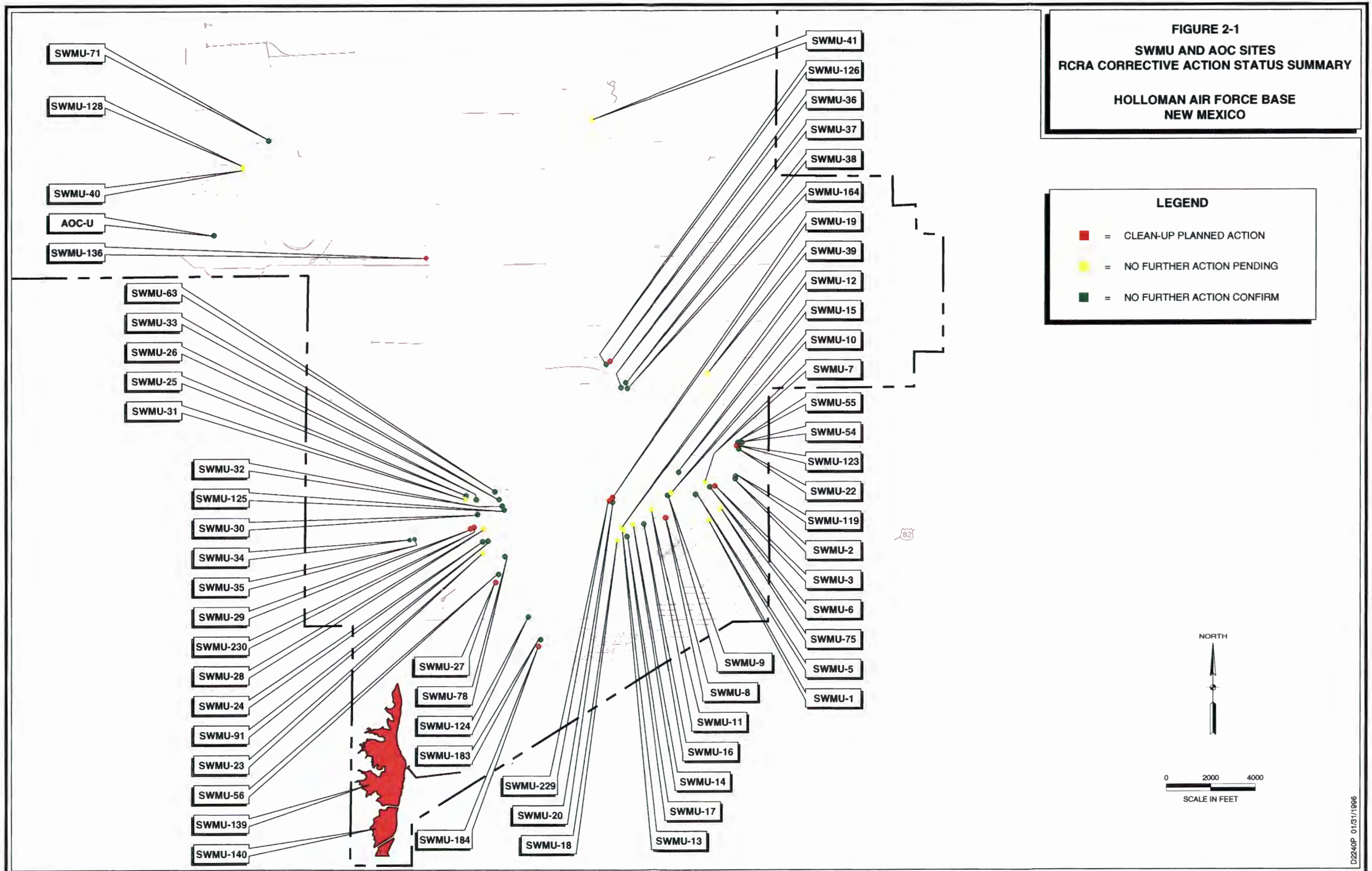
FIGURE 2-1

SWMU AND AOC SITES
RCRA CORRECTIVE ACTION STATUS SUMMARY

HOLLOMAN AIR FORCE BASE
NEW MEXICO



2.2 RCRA Facility Assessment and RCRA Permit Issuance

In accordance with the RCRA permit, Holloman AFB was required to implement RCRA corrective action requirements. As the initial step in the corrective action process, a RCRA Facility Assessment (RFA) was conducted in 1987 by AT Kearney Inc. and DPRA Inc. under contract to EPA. The RFA identified 228 SWMUs and 20 other areas of concern (AOCs). Fifty-nine of these 248 sites were also IRP sites.

On the basis of the results presented in the RFA, NMED and EPA Region VI issued Holloman AFB a RCRA permit in August 1991. The RCRA permit required that 113 sites identified during the RFA be investigated and remediated (if necessary) under RCRA corrective action authority. The permit also divided the 113 sites into three separate tables for further assessment. These tables represent the phases for corrective action based on the perceived risk to human health and the environment. The sites believed to have the highest potential for risk were included on Table 1 of the HSWA permit (30 SWMUs and six AOCs) while sites believed to have less potential for risk were placed on Tables 2 (32 SWMUs and three AOCs) and 3 (41 SWMUs). Each table was then assigned a separate compliance schedule for implementing the remainder of the corrective action program. Many of the Table 1 sites are being addressed under DERA while most sites on Table 2 and 3 are the responsibility of ECP. Tables 2-1, 2-2, and 2-3 present the three tables in the RCRA permit, including the corrective action status for each SWMU and AOC. It should be noted that several Class I (administrative) permit modifications have reorganized these permit tables to a limited extent.

2.3 RCRA Facility Investigation

Although on separate compliance schedules, the RFI process has been initiated and substantially completed for all three SWMU Tables in the RCRA permit. Within each RFI, the investigation was conducted in Phases: a Phase I investigation was conducted to determine whether a release had occurred to soil. Depending on the Phase I results, a Phase II investigation

was conducted to assess the extent of any releases to soil and/or groundwater. A summary of the RFI activities conducted for the three Tables in the RCRA permit are presented below.

Table 2-1

Sites on Table 1 of Holloman AFB's RCRA Permit

SWMU #	Unit Name	IRP Site No.	Status [a]
42	Building 1 Waste Accumulation Area	9	CNFA
102	Acid Trailer Disposal Site	4	NFA
104	Former Army Landfill	29	CNFA
105	Golf Course Landfill	19	CNFA
106	Main Base Landfill	1	CNFA
107	Main Base Substation PCB Disposal Area	11	CNFA
108	MOBSS Landfill Disposal Trench	23	CNFA
109	Old Main Base Landfill	10	CNFA
113A	Sludge Disposal Trenches at Lagoons	20	NFA
113B	Sludge Disposal Trenches near Fire Training Area	30&33	CNFA
114	TEL Disposal Site	3	NFA
115	West Area Landfill #1 PCB Disposal Area	22	CNFA
116	West Area Landfill #2	21	CNFA
170	Fire Department Training Area 1	31	NFA
171	Fire Department Training Area 2	31	CNFA
178	Building 1191 Fuel Runoff Pits	36	NFA
212	Building 824 Waste Accumulation Area	28	NFA
130	Taxiway 4 Tank 28	46	CNFA
132	Building 21 Entomology Leachfield	16	CNFA
137	Building 1166 Test Track Drainfield	38	CNFA
139	Lake Holloman, which includes the earthen ditch carrying discharge from Lagoon G to Lake Holloman	-SL	FA
140	Lake Stinky	-SL	FA
AOC-A	Building 21 Pesticide Rinsewater Spill Area	16	CNFA
AOC-D	Building 882 Spills	26	NFA

Table 2-1

(Continued)

SWMU #	Unit Name	IRP Site No.	Status [a]
AOC-P	Building 301 Fuel Tank Leaks	44	CNFA
AOC-T	POL Storage Tank Leaks	2&5	FA
197 [b]	Former Entomology Shop	14	FA
4	Building 131 O/WS	8	NFA
82	Building 131 Washrack	8	FA
21	Building 702 O/WS	47	NFA
111	Radioactive Waste Disposal Area	42	NFA
122	Building 702 Waste Oil Tank	47	NFA
133	Building 703 Washrack Discharge Area	47	NFA
134	Buildings 920-924 Drainage Ditch	24	NFA
192	Coco Blockhouse Disposal Well	41	NFA
165 [c]	Building 1176 Pond	39	NFA
166 [c]	MOBSS Drainage Lagoon	25	NFA
179 [c]	Discharge Box	39	CNFA
AOC-G [c]	Atlas Substation PCB Spill	43	CNFA
AOC-L [c]	Early Missile Test Site	37	CNFA
229 [d]	T-38 Test Cell	59	FA
230 [d]	Building 828 Fuel Spill Site	60	FA

[a] NFA indicates site recommended for NFA. NFA has not been approved by regulatory agency unless otherwise noted.
[b] Corrected in permit modification dated 23 July 1993
[c] Moved from Table 2 to Table 1 (14 February 1992)
[d] Moved from Table 1 to Table 3.

CNFA = Conditional No Further Action. Conditions imposed on NFA include long-term groundwater monitoring and/or removal of all soil with a total petroleum hydrocarbon level in excess of 1000 mg/kg.
NFA = No Further Action.
FA = Further Action. Further actions may include risk assessment, corrective measures study, or remedial action.

Table 2-2

Sites on Table 2 of Holloman AFB's RCRA Permit

SWMU #	Unit Name	Status [a]
119, 2	Building 121 Waste Oil Tank, Oil/Water Separator	NFA
120, 15	Building 309 Waste Oil Tank, Oil/Water Separator	NFA
121, 17	Building 316 Waste Oil Tank, Oil/Water Separator	NFA
123, 22	Building 704 Waste Oil Tank, Oil/Water Separator	FA, NFA
126, 36	Building 1001 Waste Oil Tank, Oil/Water Separator	NFA, FA
125, 32	Building 868 Fire Water Tank, Oil/Water Separator	NFA
39, 127, 135	Building 1092 Oil/Water Separator, Waste Oil Tank, Oil/Water Separator Drainage Pit	NFA, NFA, CNFA
40, 128, 138	Building 1166 Oil/Water Separator, Waste Oil Tank, Oil/Water Separator Drainage Pit	CNFA
118, 132, AOC-A	Building 21 Pesticide Holding Tank, Leach Field (open pit), Open Concrete Containment Box	CNFA
129, 178	Buildings 1191 & 1192 Spill Tanks, Runoff Pits	NFA
54, 55	Buildings 702 and 702A Waste Accumulation Areas	NFA
56	Building 807 Test Cell Waste Accumulation Area	NFA
63	Building 867 Waste Accumulation Area	NFA
71	Building 1178A Waste Accumulation Area	NFA
78	Trim Pad 3 Waste Accumulation Area	NFA
75	DRMO Waste Storage Area	Removed
91	Building 816 Washrack	NFA
136	Building 1119 Washrack Drainage Pit	FA
141	Pad 9 Drainage Pit, Drain, and Drainline	CNFA
164	Building 1080 Pond	NFA
124	Building 752 Waste Oil Tank	NFA
155	Sludge Drying Beds	NFA
156	Imhoff Tanks	NFA
184	Wastewater Recirculation Line	FA

Table 2-2

(Continued)

SWMU #	Unit Name	Status [a]
177, 181	Building 1176 Swamp, Drainage Troughs	NFA
101	Building 121 (Old Main Base) Landfill	NFA
183	Air Base Sewer System	NFA [b]
AOC-U	Lost River Basin	NFA

[a] NFA indicates site recommended for NFA. NFA has not been approved by regulatory agency unless otherwise noted.
[b] NFA approved by EPA.

CNFA = Conditional No Further Action. Conditions imposed on NFA include long-term groundwater monitoring and/or removal of all soil with a total petroleum hydrocarbon level in excess of 1000 mg/kg.
NFA = No Further Action.
FA = Further Action.

Table 2-3

Sites on Table 3 of Holloman AFB's RCRA Permit

SWMU #	Unit Name	Status [a]
11	Bldg. 300 Oil/Water Separator	CNFA
12	Bldg. 304 Oil/Water Separator	CNFA
13	Bldg. 304A Oil/Water Separator	CNFA
14	Bldg. 306 Oil/Water Separator	CNFA
15	Bldg. 309 Oil/Water Separator	NFA
16	Bldg. 315 Oil/Water Separator	NFA
18	Bldg. 500 Oil/Water Separator	CNFA
19	Bldg. 638 Oil/Water Separator	FA
20	Bldg. 639 Oil/Water Separator	NFA
21	Bldg. 702 Oil/Water Separator	NFA
23	Bldg. 800 Oil/Water Separator	CNFA
24	Bldg. 801 Oil/Water Separator	NFA
25	Bldg. 805 Oil/Water Separator	NFA
26	Bldg. 809 Oil/Water Separator	NFA
27	Bldg. 810 Oil/Water Separator	FA
28	Bldg. 822 Oil/Water Separator	CNFA
29	Bldg. 827 Oil/Water Separator	FA
30	Bldg. 830 Oil/Water Separator	NFA
31	Bldg. 855 Oil/Water Separator	CNFA
33	Bldg. 869 Oil/Water Separator	NFA
34	Bldg. 902 Oil/Water Separator	NFA
35	Bldg. 903 Oil/Water Separator	NFA
37	Bldg. 1080 Oil/Water Separator	NFA
38	Bldg. 1080A Oil/Water Separator	NFA
41	Bldg. 1266 Oil/Water Separator	CNFA

Table 2-3

(Continued)

SWMU #	Unit Name	Status
1	Bldg. 55 Oil/Water Separator	CNFA
3	Bldg. 130 Oil/Water Separator	FA
4	Bldg. 131 Oil/Water Separator	NFA
5	Bldg. 137 Oil/Water Separator	NFA
6	Bldg. 193 Oil/Water Separator	NFA
7	Bldg. 198 Oil/Water Separator	CNFA
8	Bldg. 231 Oil/Water Separator	FA
9	Bldg. 282 Oil/Water Separator	NFA
10	Bldg. 283 Oil/Water Separator	CNFA
231	Incinerator/Landfill	NFA
AOC-V	Officer's Club	CNFA

[a] NFA indicates site recommended for NFA. NFA has not been approved by regulatory agency unless otherwise noted.

CNFA = Conditional No Further Action. Conditions imposed on NFA include long-term groundwater monitoring and/or removal of all soil with a total petroleum hydrocarbon level in excess of 1000 mg/kg.
NFA = No Further Action.
FA = Further Action.

2.3.1 Investigation of Table 1 Sites

Table 1 of the HSWA permit consists of 30 SWMUs and six AOCs, most of which are also IRP sites. The IRP sites and SWMUs/AOCs have been investigated over several years and in many separate projects. (Five Table 1 sites were also investigated as part of the Table 2 RFI and are discussed in the next subsection.) In 1987, Holloman AFB conducted a confirmation investigation to confirm the presence of contamination at two sites identified during the 1983 IRP records search and five sites that were identified afterward. Subsequently, these seven sites were included in the 29 Sites investigation (Radian, 1992). In addition, Walk, Haydel, and Associates conducted a remedial investigation of several other Table 1 SWMUs (1989). On the basis of these Phase I investigations, recommendations were made regarding the need for additional activities at each site. The recommendations ranged from NFA to further investigation to conducting an FS/CMS. As a result, a Phase II RFI was conducted for seven SWMUs and two AOCs. Currently, 16 sites have been proposed for NFA and 19 for conditional no further action (CNFA). Seven sites are anticipated to require further corrective measures. Table 2-4 presents the overall investigation results for each site.

2.3.2 Investigation of Table 2 Sites

The Table 2 RFI was conducted at 44 SWMUs and two AOCs. The majority of these SWMUs are on Table 2 of the HSWA permit; however, in addition to the Table 2 SWMUs, one SWMU from Table 3 (SWMU 21) and four SWMUs and one AOC from Table 1 (118, 132, 165, 179, and AOC-A) were also included. These five SWMUs and one AOC were investigated in Table 2 because of their proximity to, or connection with, other Table 2 SWMUs, allowing economies of scale to factor into the investigation process. On the basis of the investigation's analytical results and risk assessment, decision trees were used to make one of the following recommendations to NMED and EPA Region VI for each SWMU:

Table 2-4

Summary of Table 1 Investigation

SWMU	SWMU Description	Nature of Suspected Release	COPCs in Soil	COPCs in Groundwater	Risk Assessment Results	Recommendations
4 82	Building 131 O/WS Building 131 Washrack	Overflow	BTEX, TRPH	BTEX	Unacceptable Risk	FS/CMS VCA/LTM
21	Building 702 O/WS (Investigated in Table 2 RFI)	See Table 2-5	See Table 2-5	See Table 2-5	See Table 2-5	NFA
42	Building 1 Waste Accumulation Area	Leaks & spills	TRPH, lead	None	Unacceptable Risk	FS/CMS
102	Acid Trailer Disposal Site	Buried waste, leaks, leaching	None	TRPH	Acceptable Risk	NFA
104	Former Army Landfill	Buried waste, leaks, leaching	None	4,4'-DDD, chloroform	Acceptable Risk	CNFA
105	Golf Course Landfill	Buried waste, leaks, leaching	None	lead, cadmium	Acceptable Risk	CNFA
106	Main Base Landfill	Buried waste, leaks, leaching	None	TRPH, pesticides	Acceptable Risk	CNFA
107	Main Base Substation PCB Disposal Area	Spills	PCBs, TRPH	None	Acceptable Risk	CNFA
108	MOBSS Landfill Disposal Trench	Buried waste, leaks, leaching	None	delta-BHC	Acceptable Risk	CNFA
109	Old Main Base Landfill	Buried waste, leaks, leaching	None	TRPH, solvents	Acceptable Risk	CNFA
111	Radioactive Waste Disposal Area	Buried waste	Radioactive material	None	Acceptable Risk	NFA
113A	Sludge Disposal Trenches at Lagoons	Buried waste, leaks, leaching	Toxic metals, PCB-1254, organochlorine pesticides, dicamba	None	Acceptable Risk	CNFA
113B	Sludge Disposal Trenches near Fire Training Area	Buried waste, leaks, leaching	organochlorine pesticides, chlorinated herbicides, PCBs, metals, VOCs	Nitrate/nitrite, sulfate, beryllium, lead, selenium, VOCs	Unacceptable Risk	CNFA
114	TEL Disposal Site	Buried waste, leaks, leaching	lead, ethyl benzene, xylene, TRPH	lead, VOCs	Unacceptable Risk	CNFA
115	West Area Landfill #1 PCB Disposal Area	Buried waste, leaks, leaching	None	4,4'-DDE, alpha-BHC, cadmium, VOCs	Acceptable Risk	CNFA
116	West Area Landfill #2	Buried waste, leaks, leaching	None	VOCs	Acceptable Risk	CNFA
122	Building 702 Waste Oil Tank	Leak	Benzene, TRPH	Benzene, TRPH	Acceptable Risk	NFA

Table 2-4

(Continued)

SWMU	SWMU Description	Nature of Suspected Release	COPCs in Soil	COPCs in Groundwater	Risk Assessment Results	Recommendations
130	Taxiway 4 Tank 28		BTEX, TRPH	BTEX, TRPH	Acceptable Risk	CNFA
132	Building 21 Entomology Leachfield	Discharges, leaching	organochlorine & organophosphorus pesticides, VOCs	organochlorine & organophosphorus pesticides	Acceptable Risk	CNFA[a]
133	Building 703 Washrack Discharge Area	Overflows	TRPH	None	Acceptable Risk	NFA
134	Building 920-924 Drainage Ditch	Discharges	None	None	Acceptable Risk	NFA
137	Building 1166 Test Track Drainfield	Discharges	TRPH	trichloroethene, chloroform, nitrate/nitrite	Acceptable Risk	CNFA
139	Lake Holloman, including ditch from Lagoon G	Discharges	Solvents, PCBs	Solvents, PCBs	Unacceptable Risk	FS/CMS
140	Lake Stinky	Discharges	Solvents, PCBs	Solvents, PCBs	Unacceptable Risk	FS/CMS
165 179	Building 1176 Pond Discharge Box	Discharges, leaks	toxic metals, chlorinated VOCs	chlorinated VOCs	Unacceptable Risk	NFA[b]
166	MOBSS Drainage Lagoon	Discharges, leaks	Pesticides, solvents	Pesticides, solvents	Acceptable Risk	NFA
170	Fire Department Training Area 1	Discharges, spills	TRPH	BTEX, VOCs	Unacceptable Risk	CNFA
171	Fire Department Training Area 2	Discharges, spills	TRPH	BTEX, VOCs	Unacceptable Risk	CNFA
178	Building 1191 Fuel Runoff Pits	Spills	None	Trichloroethene, selenium, lead, VOCs	Acceptable Risk	NFA[a]
192	CoCo Blockhouse Disposal Well	Buried waste	Propellants, oxidizers	None	Acceptable Risk	NFA
197	Former Entomology Shop	Discharges	4,4'-DDD, 4,4'-DDE, 4,4'-DDT, aldrin, chlordane	2,4-DB	Unacceptable Risk	VCA
212	Building 824 Waste Accumulation Area	Overflows	VOCs	VOCs	Acceptable Risk	NFA
AOC-A	Building 21 Pesticide Rinsewater Spill Area	Discharges	Organochlorine and organophosphorus pesticides, VOCs	Organochlorine and organophosphorus pesticides	Acceptable Risk	CNFA
AOC-D	Building 882 Spills	Spills	None	None	Acceptable Risk	NFA
AOC-G	Atlas Substation PCB Spill	Spill	TRPH, PCBs	None	Acceptable Risk	CNFA

Table 2-4

(Continued)

SWMU	SWMU Description	Nature of Suspected Release	COPCs in Soil	COPCs in Groundwater	Risk Assessment Results	Recommendations
AOC-L	Early Missile Test Site	Discharges, overflows	TRPH, PCBs, lead, cadmium	Chloroform, copper, antimony	Unacceptable Risk	CNFA
AOC-P	Building 301 Fuel Tank Leaks		TRPH	None	Unacceptable Risk	CNFA
AOC-T	POL Storage Tank Leaks	Spills	BTEX, TRPH	BTEX	Unacceptable Risk	CNFA

[a] NFA was recommended in the Table 1 investigation. However, EPA requested additional investigation and CNFA was recommended in Table 2 (see Table 2-5).
[b] SWMU 165 never located. Further investigation recommended and carried out in Table 2 investigation (see Table 2-5).

COPCs = Chemicals of potential concern detected during the investigation.
BTEX = Benzene, toluene, ethyl benzene, xylene.
TRPH = Total residual petroleum hydrocarbons.
PCB = Polychlorinated biphenyl.
VOC = Volatile organic compound.
NFA = No further action.
FS/CMS = Feasibility study/corrective measures study.
VCA = Voluntary corrective action.
LTM = Long-term monitoring.
RFI = RCRA facility investigation.
CNFA = Conditional no further action. Condition is the remediation of TRPH soil contamination.
NA = Not applicable.

- NFA where no release has occurred or where a potential release does not warrant further action;

- CNFA for SWMUs that pose minimal risk to human health and the environment, but have total recoverable petroleum hydrocarbon (TRPH)-contaminated soil that must be remediated; and

- Further evaluation where additional data may be needed to evaluate risk and/or to support interim measures or a CMS/CMI.

Twenty-nine sites were proposed for NFA, 28 for CNFA, and four for further action. Table 2-5 presents the investigation results along with the recommendation for each SWMU evaluated in the Table 2 investigation.

2.3.3 Investigation of Table 3 Sites

Table 3 of Holloman AFB's RCRA permit currently contains 33 oil/water separators (O/WSs), the T-38 Test Cell Fuel Spill (SWMU 229), the Building 828 Fuel Spill (SWMU 230), the Officer's Club (AOC-V), and the Incinerator/Landfill (SWMU 231). However, SWMUs 229, 230, 231, and AOC-V have been or are being studied under other IRP investigations and several are being remediated though voluntary corrective actions (VCAs) or interim remedial actions (IRAs). Of the 33 O/WSs, 10 were recommended for NFA prior to investigation based on a screening methodology agreed to by EPA Region VI. Therefore, the Table 3 RFI addressed the investigation of 23 O/WSs and a few other sites, and recommendations were made using the same logic as applied in the Table 2 investigation: NFA (18 sites), CNFA (13 sites), further evaluation or CMS/CMI (5 sites). Table 2-6 summarizes the investigation results and recommendations for these sites.

Table 2-5

Summary of Table 2 Investigation

SWMU	SWMU Description	Nature of Suspected Release	Analytes > Trigger Criteria	Risk-based Screen COPCs[a]			Risk Assessment Results	Recommendations
				Surface Soil	Subsurface Soil	Groundwater		
2 119	Bldg. 121 Oil/Water Separator Bldg. 121 Waste Oil Tank	Leak	None	None	None	None	Qual	NFA
15 120	Bldg. 309 Oil/Water Separator Bldg. 309 Waste Oil Tank	Leak	None	None	None	None	Qual	NFA
17 121	Bldg. 316 Oil/Water Separator Bldg. 316 Waste Oil Tank	Leak	None	None	None	None	Qual	NFA
21 22 123	Bldg. 702 Oil/Water Separator Bldg. 704 Oil/Water Separator Bldg. 704 Waste Oil Tank	Leak	Benzene, TRPH	None	1,1-dichloroethene, benzene	arsenic, benzene, beryllium, ethylbenzene, tetrachloroethene	Acceptable risk	CNFA/NFA[h]
32 125	Bldg. 868 Oil/Water Separator Bldg. 868 Fire Water Tank	Leak	None	None	None	None	Qual	NFA
36 126	Bldg. 1001 Oil/Water Separator Bldg. 1001 Waste Oil Tank	Leak	TRPH	None	None	None	Qual	CNFA
39 127 135	Bldg. 1092 Oil/Water Separator Bldg. 1092 Waste Oil Tank Oil/Water Separator Drainage Pit	Leak	TRPH	No risk-based screen, pending further investigation	None	None	Qual	Phase II investigation
40 128 138	Bldg. 1166 Oil/Water Separator Bldg. 1166 Waste Oil Tank Oil/Water Separator Drainage Pit	Leak	TRPH	None	None	None	Qual	CNFA
54 55	Bldg. 702 Waste Accumulation Area Bldg. 702A Waste Accumulation Area	Waste oil spills	TRPH	None	1,1-dichloroethene, benzene	arsenic, benzene, beryllium, ethylbenzene, tetrachloroethene	Acceptable risk	NFA
56	Bldg. 807 Waste Accumulation Area	Waste oil and solvent spills	None	None	None	None	Qual	NFA

Table 2-5

(Continued)

SWMU	SWMU Description	Nature of Suspected Release	Analytes > Trigger Criteria	Risk-based Screen COPCs[a]			Risk Assessment Results	Recommen-dations
				Surface Soil	Subsurface Soil	Groundwater		
63	Bldg. 867 Waste Accumulation Area	Waste oil and solvent spills	None	None	None	None	Qual	NFA
71	Bldg. 1178A Waste Accumulation Area	Waste oil and solvent spills	None	None	None	None	Qual	NFA
75	DRMO Hazardous Waste Storage Area	Small oil spills	NA[c]	NA[c]	None	None	NA[c]	NA[c]
78	Trim Pad 3 Waste Accumulation Area	Waste oil and hydraulic fluid	None	None	None	None	Qual	NFA
91	Bldg. 816 Washrack	Contaminated rinsewater	None	None	None	None	Qual	NFA
101	Bldg. 121 (Old Main Base) Landfill	Domestic solid waste and in-cinerator ash	NA[d]	NA[d]	None	None	NA[d]	NA[d]
118 132 AOC-A	Bldg. 21 Pesticide Holding Tank Bldg. 21 Entomology Leach Field Bldg. 21 Pesticide	Pesticides, PCBs, and solvent spills	PCB 1260 and TRPH in soil. Gamma-BHC and heptachlor epoxide in groundwater.	heptachlor epoxide, PCB 1260	PCB 1260	alpha-BHC, benzene, chlorobenzene, dieldrin, ethylbenzene, gamma-BHC, heptachlor epoxide, methylene chloride, trichloroethene	Acceptable risk	CNFA
124	Bldg. 752 Waste Oil Tank	Leak	None	None	None	None	Qual	NFA
129 178	Bldg. 1191 Spill Tank Bldg. 1191 Fuel Runoff Pits	Unconventional fuels spills	TRPH in soil. Lead in drain sample.	benzo(a)pyrene	None	beryllium, bromo-dichloromethane, nitrate/nitrite, trichloroethene	Acceptable risk	CNFA
136	Bldg. 1119 Washrack Drainage Area	Contaminated rinsewater	TRPH	None	None	None	Qual	CNFA
141	Pad 9 Drainage Pit	Contaminated rinsewater	NA[d]	NA[d]	None	None	NA[d]	NA[d]
155	Sludge Drying Beds	Sewage sludge	None	Beryllium	None	None	Qual	NFA

Table 2-5

(Continued)

SWMU	SWMU Description	Nature of Suspected Release	Analytes > Trigger Criteria	Risk-based Screen COPCs[a]			Risk Assessment Results	Recommen-dations
				Surface Soil	Subsurface Soil	Groundwater		
156	Imhoff Tanks	Sewage sludge	None	Beryllium	None	None	Qual	NFA
164	Bldg. 1080 Pond	Flightline run-off and fuel spill	None	Arsenic, barium, cadmium, chromium[e]	None	None	Acceptable risk	NFA
165 177 179 181	Bldg. 1176 Pond Bldg. 1176 Sumps Discharge Box Bldg. 1176 Drainage Trough	Unconventional fuels and solvents spills	TCE and TCA in groundwater	arsenic, benzo(a)pyrene	None	1,1-dichloroethene, beryllium, carbon tetrachloride, tetrachloroethene, trans-1,3-dichloropropene, trichloroethene, vinyl chloride	Acceptable risk	NFA
183	Air Base Sewer System	Sewer line leaks	NA[f]	NA[f]	None	None	NA[f]	Phase II investigation
184	Wastewater Recirculating Line	Sewage lagoon waste	NA[g]	NA[g]	None	None	NA[g]	NA[g]
AOC-U	Lost River Basin	Runoff from IRP sites, SWMUs, and storage areas	None	None	None	None	Qual	NFA

[a] Risk-based screen COPCs are for ingestion unless otherwise noted.
[b] Groundwater data collected during previous investigation.
[c] No investigation performed at this SWMU.
[d] SWMU was investigated previously under another program.
[e] Risk-based screen COPCs for inhalation.
[f] No chemical analyses or risk assessment activities were performed in this phase of the investigation.
[g] SWMU will be investigated as part of sewage lagoon closure.
[h] CNFA is recommended for SWMU 123; NFA is recommended for SWMUs 21 and 22.

NFA = No further action.
CNFA = Conditional no further action.
Qual = Qualitative, rather than quantitative risk assessment done for this SWMU. Qualitative results for each SWMU are presented in Section 4.
NA = Not applicable.

Table 2-6

Summary of Table 3 Investigation

SWMU[a]	Soil					Groundwater		Special Considerations	Current Operation	RFI Recommen-dations	Condition of NFA
	Release to Soil?	Type of Release	Maximum TRPH (mg/kg)	Risk-Based Screen COCs[b]	Risk Assessment Results	Release to Ground-water?	Chemicals Detected in Groundwater				
1	Yes	Overflow	>1000	Benzo(a)pyrene, Mercury, Thallium	Risk within acceptable range.	Yes	VOCs and metals	Elevated TRPH results east of the SWMU are the result of previous asphalt paving activities.	In use	CNFA	Remediate vadose zone soil
4	No	No Release	<100	NA	NA	No	None	None	Abandoned	NFA	None
7	Yes	Subsurface	>1000	No COCs	NA	Yes	VOCs, SVOCs, and metals	None	In use as sediment trap	CNFA	Remediate vadose zone soil; take out of service to remove source
9	No	No Release	<100	NA	NA	No	None	None	In use	NFA	None
11	Yes	Overflow	>1000	Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Cadmium, Indeno(1,2,3-cd)pyrene	Risk within acceptable range.	Yes	VOCs, SVOCs, and metals	Interviews with personnel in Building 292 during the investigation indicated that above- ground tanks were located in the parking lot. These may be a potential distinct source.	Replaced with new O/WS	CNFA	Remediate vadose zone soil
12&13	Yes	Overflow	>1000	Benzo(a)pyrene	Risk within acceptable range.	Yes	VOCs, SVOCs, and metals	None	Replaced with new O/WS	CNFA	Remediate vadose zone soil not under concrete
14	Yes	Subsurface	>1000[c]	No COCs	NA	Yes	VOCs, SVOCs, and metals	None	In use	CNFA	Mitigate O/WS leak
16	Yes	Overflow	100 - 1000	No COCs	NA	Yes	VOCs, SVOCs, and metals	None	In use	NFA	NA
19	Yes	Overflow	>1000	No COCs	NA	No	None	Suspected release from this SWMU will be addressed under the SWMU 229 IRA.	In use as sediment trap	CNFA	Remediate soil
20	No	No Release	<100	No COCs	NA	No	None	None	Abandoned	NFA	NA

Table 2-6

(Continued)

SWMU[a]	Soil					Groundwater		Special Considerations	Current Operation	RFI Recommen-dations	Condition of NFA
	Release to Soil?	Type of Release	Maximum TRPH (mg/kg)	Risk-Based Screen COCs[b]	Risk Assessment Results	Release in Ground-water?	Chemicals Detected in Groundwater				
23	Yes	Subsurface	>1000	No COCs	NA	Yes	VOCs, SVOCs, and metals	None	In use as sediment trap	CNFA	Remediate vadose zone soil; ake out of service or replace O/WS
24	No	No Release	<100	No COCs	NA	No	None	None	In use as sediment trap	NFA	NA
25	No	No Release	<100	No COCs	NA	No	None	None	Removed and replaced with new O/WS	NFA	NA
27	Yes	Overflow	>1000	No COCs	NA	Yes	VOCs,SVOCs, and metals	Free-product lense	Abandoned and filled with sand	CNFA	Remediate vadose zone soil; remove LNAPL during soil remediation
28	Yes	Overflow/ subsurface	>1000	No COCs	NA	Yes	VOCs, SVOCs, and metals	Release from SWMU 29 may affect results near SWMU 28.	Removed and replaced with new O/WS	CNFA	Remediate vadose zone soil
29	Yes	Overflow	>1000	No COCs	NA	No	NA	Suspected release form this SWMU will be addressed under the SWMU 230 CMI.	Replaced with new O/WS	CNFA	Remediate soil
31	Yes	Subsurface	>1000	No COCs	NA	Yes	VOCs and metals	None	In use/ unknown	CNFA	Remediate vadose zone soil; mitigate O/WS leak
34	Yes	Overflow/ runoff	100 - 1000	Beryllium, Cadmium	Risk within acceptable range.	Yes	VOCs and metals	None	In use as sediment trap	NFA	NA
35	No	No Release	<100	NA	NA	No	None	None	Removed and replaced with new O/WS	NFA	NA
37	Yes	Overflow	100 - 1000	No COCs	NA	No	NS	None	In use	NFA	NA

Table 2-6

(Continued)

SWMU[a]	Soil					Groundwater		Special Considerations	Current Operation	RFI Recommendations	Condition of NFA
	Release to Soil?	Type of Release	Maximum TRPH (mg/kg)	Risk-Based Screen COCs[b]	Risk Assessment Results	Release to Groundwater?	Chemicals Detected in Groundwater				
38	Yes	Subsurface/ overflow	100 - 1000	Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene	Risk within acceptable range.	No	NS	Potential point sources or spills related to AGE machinery.	In use/ unknown	NFA	NA
41	Yes	Overflow	>1000	No COCs	NA	No	NS	None	In use as sediment trap	CNFA	Remediate vadose zone soil

[a] All SWMUs are oil/water separators. Their associated building numbers are given in each subsection and are on the sample location figures.

[b] Arsenic was detected at levels above the EPA Region III risk-based concentration at all SWMUs except 11, 16, 27, and 31. However, all arsenic results were below the background upper tolerance limit. It was therefore eliminated as a COC.

[c] All soils with TRPH > 1000 mg/kg are below the water table.

CNFA = Conditional no further action; the "condition" of NFA is explained in the adjacent column.
COC = Chemical of concern.
NA = Not applicable.
NFA = No further action.
NS = Not sampled.
SVOC = Semivolatile organic compound.
SWMU = Solid waste management unit.
TRPH = Total recoverable petroleum hydrocarbons.
VOC = Volatile organic compound.

2.4 Corrective Measures Study/Corrective Measures Implementation

For all sites in the RCRA corrective action program, remedies are selected in accordance with the guidance and remedy selection criteria provided in the proposed Subpart S corrective action rule (55 Federal Register 30823, 27 July 1990). Typically, this involves a corrective measures study (CMS) or other type of feasibility study unless cleanup is conducted voluntarily or through an interim measure or remedial action. To date, three Table 2 SWMUs have been completely remediated while five Table 3 SWMUs are being cleaned up under voluntary corrective actions. Currently, five Table 1 SWMUs, nine Table 2 SWMUs, and seven Table 3 SWMUs are being evaluated for potential remedial alternatives in a CMS or are having corrective measures implemented, including long-term operation/long-term monitoring (LTO/LTM). Holloman AFB anticipates that 13 of these sites will require further remedial action using ECP funds. Table 2-7 presents these sites, the planned corrective action, and the schedule for implementation. ECP funding estimates for these activities are provided in Section 5.

2.5 Future of Corrective Action Program at Holloman AFB

Holloman AFB will continue to implement corrective action activities as specified in the RCRA permit and as required by EPA and NMED following review of all reports, permit modifications, and other binding agreements. While Holloman AFB's corrective action program is substantially complete, some remediation and LTO/LTM remain to be completed. The remainder of this CAMP discusses those activities that will require ECP funding.

Table 2-7

Planned Corrective Actions Requiring ECP Funds

SWMU	HSWA Permit Table	Planned Corrective Action	Schedule
3	3	Long-term operation and maintenance (LTO/LTM) of a soil vapor extraction (SVE) system	FY96-FY97
8	3	LTO/LTM of a bioventing system	FY96-FY97
19	3	Excavation of Oil/Water Separator and associated TRPH-contaminated soil	FY96
27	3	Installation and operation of a groundwater pump and treat system	FY96-FY97
29	3	Excavation of Oil/Water Separator and associated TRPH-contaminated soil	FY96
36	2	LTO/LTM of a bioventing system	FY96-FY97
123	2	LTO/LTM of a bioventing system	FY96-FY97
136	2	LTO/LTM of a bioventing system	FY96-FY97
139	1	CMS, long-term groundwater monitoring	FY97-FY07
140	1	CMS, long-term groundwater monitoring	FY97-FY07
184	2	CMS, disposal of 400 cubic yards of contaminated soil	FY96-FY97
229	1 & 3	LTO/LTM of SVE system	FY96-FY01
230	1 & 3	LTO/LTM of SVE system	FY96-FY01

3. STRATEGY

This section describes the overall strategy for corrective action activities at Holloman AFB. Specifically, it explains why Holloman AFB is required to follow RCRA corrective action response procedures in lieu of CERCLA National Contingency Plan (NCP) procedures. It explains the current Air Force policy on entering into legal agreements, identifies key individuals associated with the Holloman AFB corrective action program, and explains why Holloman AFB plans to use ECP funds exclusively for completing certain corrective action requirements.

3.1 Response Procedures

In response to past releases of hazardous substances, the Air Force implemented the IRP in the mid-1980s. Since then, the preferred course of action for Air Force IRP activities has remained in accordance with CERCLA and response procedures consistent with the NCP. However, in 1984, the Hazardous and Solid Waste Amendments introduced new requirements for response activities under RCRA regulations governing corrective action.

3.1.1 Pre-RCRA Environmental Restoration

Since 1983, Holloman AFB has actively conducted an environmental restoration program. Initially, the program was managed under the Air Force's IRP but was integrated with EPA's RCRA corrective action program in 1991 to reduce duplicative efforts between programs. Holloman AFB began its IRP by conducting the *IRP Phase I Records Search* (CH2M Hill, 1983) that identified 41 sites. The IRP is a phased investigation and remediation program based on CERCLA and the statutory amendments [the Superfund Amendments and Reauthorization Act (SARA)] to CERCLA that require federal facilities to comply with the National Contingency Plan (NCP).

3.1.2 RCRA Versus CERCLA at Holloman AFB

As appropriate, the Base must address environmental restoration needs through the IRP and RCRA corrective action program. Both are similarly phased and ultimately intended to ensure that contaminated sites that pose a threat to human health and the environment are remediated. In the preamble to the proposed RCRA Subpart S corrective action regulations, EPA encourages coordination between the two independent programs. Since its RCRA permit became effective (September 25, 1994), Holloman AFB has integrated the two programs to reduce duplicative efforts, following the RCRA corrective action process. This approach has been embraced by EPA Region VI and NMED. As a result, because IRP activities began prior to the RCRA corrective action program, many of the Phase I investigation activities for sites on Table 1 of Holloman AFB's RCRA permit have been completed under the IRP, and Holloman AFB has received RCRA corrective action "credit" for these activities. All remaining activities have been conducted under the RCRA corrective action program.

3.1.3 Legal Agreements

It is Air Force policy to enter into legal agreements with regulatory agencies when required by statute (e.g., CERCLA, Section 120, Federal Facilities Agreements (FFA) at National Priorities List locations) or when deemed to be in the best interest of the Air Force (SAF/MIQ Policy Memorandum, 14 April 1993). Holloman AFB is not listed on the National Priorities List and is, therefore, not legally required to enter into an FFA-style of agreement with any regulatory agency. To date, Holloman AFB has not entered into such an agreement. All references to regulatory authority and schedule milestones within this CAMP are based on the RCRA permit dated August 22, 1991.

3.2 Management and Responsibilities

Management and responsibility for the RCRA corrective action program at Holloman AFB is assigned to the 49th Civil Engineering Squadron, Environmental Flight (49

CES/CEV) at Holloman AFB. It is responsible for programming and executing all corrective action projects. Holloman AFB is responsible for executing all RCRA corrective action activities. HQ ACC/CEVC is responsible for validating and budgeting all ECP-eligible corrective action program requirements submitted by Holloman AFB to HQ ACC/CEVC. CES/ESV is responsible for validating and budgeting any DERA-funded RCRA corrective action activities. Appendix B contains ACC Program Management guidance for RCRA corrective actions that further defines these responsibilities.

As mentioned in Section 2, EPA Region VI has been the lead regulatory agency for overseeing RCRA corrective action at Holloman AFB. However, NMED received authorization to carry out the HSWA provisions of RCRA from EPA in January 1996, and the State will now serve as the lead Agency for the remainder of Holloman AFB's program. Contract service support for corrective action at Holloman AFB is provided by the United States Army Corps of Engineers (USACE), Omaha District. Table 3-1 identifies key individuals that make up the Holloman AFB RCRA corrective action team.

3.3 Funding

According to the Air Force's funding guidelines, 31 SWMUs at Holloman AFB are eligible for ECP funding. However, the Base estimates that only 13 of these SWMUs will require any additional corrective action funding beyond Fiscal Year (FY) 1995 as the remaining SWMUs are being proposed for NFA. Therefore, Holloman AFB intends to seek ECP funds to complete all remaining RCRA corrective action activities at these 13 SWMUs. The need to use ECP funds versus DERA funds is based on the current DERA eligibility rules. For response activities to be eligible for DERA funds, the release must have occurred before January 1984, or been sustained over a period that included 1984 (1996/97 Air Force Environmental Restoration Program Management Guidance). All corrective action activities described in this CAMP are in response to releases that are known or believed to have occurred after 1984.

Table 3-1

Holloman AFB RCRA Corrective Action Team

Name and Title	Organization/Address	Telephone/Fax
Mr. Warren Neff, Holloman AFB Project Manager	49 CES/CEV Holloman AFB, NM 88330	(505) 475-5395 (phone) (505) 475-7015 (fax)
Mr. John Poland, Holloman AFB Environmental Flight Chief	49 CES/CEV Holloman AFB, NM 88330	(505) 475-3931 (phone) (505) 475-7015 (fax)
Mr. Russ Shannon, ACC RCRA Corrective Action Program Manager	HQ ACC/CEVC 129 Andrews St., STE 102 Langley AFB, VA 23665-2769	(804) 764-3668 (phone) (804) 764-8033 (fax)
Mr. Jim Haggins, ACC Project Manager	HQ ACC/CEVR 129 Andrews St., STE 102 Langley AFB, VA 23665-2769	(804) 764-3706 (phone) (804) 764-5339 (fax)
Mr. Lowell Seaton, EPA Region VI Project Manager	USEPA Region VI 1445 Ross Avenue Dallas, TX 75202-2733	(214) 665-8304 (phone) (214) 665-6660 (fax)
Mr. Steve Pullen, NMED DSMOA Program	NMED, Hazardous and Radioactive Materials Bureau 525 Camino de Los Marquez Santa Fe, NM 87502-6610	(505) 827-4308 (phone) (505) 827-4361 (fax)
Mr. Tom Zink, USACE-Omaha Project Manager	USACE ATTN: CEMRO-MD-H 215 North 17th Street Omaha, NE 68102-4978	(402) 221-7711 (phone) (402) 221-7838 (fax)
Mr. Mark Mercier, USACE-Omaha Technical Manager	USACE ATTN: CEMRO-MD-EA 215 North 17th Street Omaha, NE 68102-4978	(402) 221-7666 (phone) (402) 221-7838 (fax)

3.4 Future Regulatory Impacts

Both RCRA and CERCLA are past due for Congressional reauthorization. Conflicting pressures from the regulated community, the environmental movement, the EPA, and from within congress itself, have delayed reauthorization and resulted in several different regulatory agendas being proposed by various groups. As corrective action compliance strategies are developed by the Base, these agendas and the regulations associated with them must be recognized and planned. Some of the major regulatory programs and a brief synopsis of each are as follows:

RCRA/CERCLA Reauthorizations—A major issue under consideration is creating parity between these programs (i.e., the requirements of one program would fulfill the requirements of the other).

RCRA Corrective Action—Proposed Subpart S, which documents the RCRA corrective action process, is currently being redrafted to more closely adhere to some of the principles upon which CERCLA is based. A more "voluntary" program would promote consideration of industrial future land use where applicable, provide greater authority and oversight roles to state agencies, redefine the definition of a SWMU to include a more site-wide assessment, and place the burden of achieving the remediation goals more squarely on the regulated community.

Hazardous Waste Identification Rule (HWIR)—The proposed HWIR would set threshold levels based on human health risk assessment for media (i.e., soil, groundwater, surface water) that are contaminated with hazardous wastes. Media containing hazardous constituents below the threshold levels would no longer be considered hazardous waste, relieving these media from several stringent RCRA requirements that impact the remediation of hazardous wastes.

Post-Closure Care Permitting—In 1994, the U.S. EPA proposed a draft rule to streamline the closure care and post-closure care authorization process for RCRA regulated hazardous waste management units. The rule is scheduled to be promulgated in 1996 and would provide alternate mechanisms to RCRA post-closure-care permits for these regulated units (e.g., post-closure care authorized under administrative orders).

Proposed Military Munitions Rule—In November 1995, the EPA proposed the Military Munitions rule that, among other things, would subject closed or inactive munitions training ranges to RCRA closure standards.

Each of the above items will have an impact on the future of RCRA corrective action. Therefore, plans and strategies developed should consider possible changes to the programs discussed and remain flexible to take advantage of changes as they are proposed and promulgated.

4. PRIORITIZATION

This section explains how corrective action requirements at Holloman AFB are prioritized in accordance with current Air Force programming and budgeting guidance.

4.1 ECP Budget Priorities

Prioritizing line item requirements in the ECP budget is based on compliance status. The following is based on the current Air Force guidance for prioritizing ECP budgets. For additional information on Air Force budget procedures, refer to the Handbook of Environmental Quality, Chapter 9.

All ECP requirements are divided into two broad categories: recurring environmental compliance activities and nonrecurring environmental compliance activities. RCRA corrective action requirements are, with few exceptions, nonrecurring activities. ECP-eligible projects identified in the A-106 plan are divided into three classes based on compliance status. Project classes and priorities are summarized in Table 4-1. Note at a minimum, class I and class II projects must be programmed, funded, and executed to ensure compliance with all scheduled regulatory milestones.

Table 4-1

ECP Classifications and Priorities

Class	Priority
I	Projects required to correct current violations of applicable regulations and standards, especially those identified in notices of violation (NOVs) or compliance agreements.
II	Projects that must be addressed in the agency's current planning cycle to meet a compliance deadline in the immediate future.
III	Unrelated to correct environmental problems which are not related to compliance with applicable standards; projects in this category address long-term compliance and demonstrate environmental leadership.

Besides being an Air Force budget tool, the A-106 plan also serves as a budget communication link between the Air Force and EPA. Knowing future Air Force requirements, EPA is better able to plan and advocate for the necessary resources it needs to oversee Air Force environmental activities. The A-106 plan is important to installation commanders in prioritizing projects within annual budgets. Section 5 discusses the function of the A-106 plan in programming RCRA corrective action projects.

4.2 Holloman AFB Corrective Action Priorities

All RCRA corrective action requirements at Holloman AFB are Class I requirements for the year in which they are programmed. This means that ECP funds are needed in the programmed year to meet a scheduled milestone contained in the RCRA permit. If Holloman AFB fails to meet a permit milestone, the Base may be subject to penalties and additional actions through an NMED or EPA enforcement action.

The corrective action milestones in the RCRA permit are based on NMED's and EPA's expectation that Holloman AFB complete individual steps in the corrective action process in a reasonable amount of time. Beyond the phasing of activities for the three site tables in the RCRA permit, permit milestones are not based on any site-specific conditions. In other words, there is a consensus between regulators and the base that no corrective action site(s) poses an imminent threat such that interim corrective action or a more compressed corrective action schedule is warranted.

Holloman AFB received full funding for RCRA corrective action activities in fiscal years (FYs) 1991 through 1995. Holloman also anticipates full funding for all activities scheduled in FY 1996.

5. PROGRAMMING AND BUDGETING

This section explains the Air Force ECP budget cycle with respect to the Program Objective Memorandum (POM), preparing annual ECP financial plans, and programming RCRA corrective action requirements using the A-106 module of the Work Information Management System Environmental Subsystem (WIMS-ES). This section also identifies the total estimated cost to complete all remaining corrective action activities at Holloman AFB and establishes the compliance schedules for completing the work based on scheduled milestones identified in the RCRA permit. Finally, this section explains the assumptions upon which the cost estimates and work schedules are based.

5.1 ECP Budget Cycle

The ECP budgeting cycle is a lengthy process, requiring a forecast of estimated expenditures into the out years. To obtain ECP funds, projects are usually identified years in advance of when they are actually needed. The process of identifying future funding requirements is called "programming." Department of Defense (DoD) procedures for programming requirements are via the Planning, Programming, and Budgeting System (PPBS). From the PPBS, future requirements are identified and compiled in the Future Years Defense Plan (FYDP). The POM is an integral part of that process. The POM identifies the projected amount of ECP funds that will be available to the Air Force in each fiscal year over the FYDP period. The Air Staff uses POM figures, along with validated programmed requirements identified in the WIMS-ES, to develop the Air Force Budget Estimate Submission (BES), or Amended BES, (depending on the year of the budget cycle). The BES (or Amended BES) eventually becomes part of the President's Budget (PB), or Amended PB. At the end of the funding cycle, the actual amount of ECP funds that the Air Force receives in the year of execution depends on whether the full ECP requirement was identified in the PB (or Amended PB), and whether Congress authorizes and appropriates the funds.

In anticipation of receiving ECP funds, the Air Staff develops a financial plan using the POM figure as a bottom line and validated ECP line item requirements submitted from each major air command via the WIMS-ES. Once ECP funds become available at the beginning of the fiscal year, each major air command receives an ECP allocation. In recent years, the ECP allocation for ACC has been less than the total amount of funds required in its financial plan. As a result, each ACC installation has been required to adjust its financial plan to ensure that their most critical requirements are funded that year.

5.2 A-106 Plan

In accordance with Executive Order 12088, *Federal Compliance with Pollution Control Standards,* all Air Force installations are required to prepare a five-year pollution abatement plan (also known as an A-106 plan). The report mechanism for preparing and submitting the A-106 plan is through the A-106 module in the WIMS-ES. A-106 inputs (i.e., ECP requirements) are transmitted to ACC for review and validation before they are released to the Air Staff, which uses them as the basis for the programming and budgeting process described above. In addition, A-106 inputs (i.e., five-year pollution abatement plans) are also provided to the EPA via the Office of Management and Budget (OMB). EPA uses the plans to monitor federal facilities to ensure that all known environmental requirements at a given location are identified and programmed.

Appendix D contains a summary of corrective action project data from the A-106 module of the WIMS-ES for Holloman AFB. For projects with a programmed amount greater than $100,000, ACC also requires installations to submit supplemental detailed project narratives to HQ ACC/CEVC for validation. This requirement is explained in the ACC RCRA Corrective Action Program Guidance (Appendix B). Additional information on environmental budgeting is contained in Air Force Instruction (AFI) 32-7001.

5.3 RACER Cost Estimates

To develop corrective action project cost estimates for the remaining activities at Holloman AFB, the Base used the Air Force-developed Remedial Action Cost Engineering and Requirements (RACER) system. RACER is a parametric cost estimate software package that operates on a personal computer. RACER software allows users to override selected default parameters and input site-specific parameters to improve the overall accuracy of remedial action cost estimates.

To develop a cost-to-complete estimate for all remaining RCRA corrective action activities at Holloman AFB, installation program managers had to make key assumptions as to which sites will be granted NFA, which will require cleanup, and which will need long term maintenance/operation of remediation systems following NMED and EPA comment on the RFI and CMS reports, decision documents, and other documentation. Currently, program managers estimate that a total of 13 sites will require action beyond FY 1995. The results of the RACER cost estimates for planned corrective action activities at Holloman AFB are summarized in Table 5-1.

5.4 Schedules

Tables 5-2 through 5-11 contain the planned schedules for completing all ECP-funded RCRA corrective action activities at Holloman AFB, including project supervision and administration (S&A). The schedules are organized to coincide with the major steps of the corrective action process remaining to be completed. To the greatest extent possible, all milestone dates in the schedules are based on the RCRA permit. Actual milestone dates may change or slip in the future due to regulatory document reviews and project execution delays.

The RCRA permit is written such that corrective action activities proceed in sequence. In general, the permit specifies that an action shall begin or be completed within a set number of days after receiving notice from the Agency to proceed. Normally, a notice to proceed

Table 5-1

Corrective Action Cost Schedule, Holloman AFB

FY	Project Title	Project Number	ECP Fund Priority	RACER Estimate	Programmed Amount[a]	Current Working Estimate	Obligated Amount	Sites
96	LTM/CMI	KWRD966005	Class I	NA	$2,700,000	$2,700,000	TBD	41 SWMUs
96	S&A	OS-005302	Class I	NA	$450,000	$450,000	TBD	Supervision and Administration of CMS/CMI for 41 SWMUs
96	CMS	KWRD966001	Class I	$66,000	$100,000	$100,000	TBD	SWMU-184
96	CMI	KWRD966002	Class I	$123,000	$175,000	$175,000	TBD	SWMU-19, SWMU-27, SWMU-29
96	LTO/LTM	KWRD966004	Class I	$629,000	$600,000	$600,000	TBD	SWMU-3, SWMU-8, SWMU-27, SWMU-36, SWMU-123, SWMU-136, SWMU-229, SWMU-230
97	CMS	KWRD976001	Class I	$232,000	$200,000	$200,000	TBD	SWMU-139, SWMU-140
97	CMI	KWRD976002	Class I	$164,000	$275,000	$275,000	TBD	SWMU-184
97	LTO/LTM	KWRD976004	Class I	$677,000	$650,000	$650,000	TBD	SWMU-3, SWMU-8, SWMU-27, SWMU-36, SWMU-123, SWMU-136, SWMU-139, SWMU-140, SWMU-229, SWMU-230
97	S&A	OS-005303	Class I	NA	$350,000	$350,000	TBD	Supervision and Administration
98	LTO	KWRD976004	Class I	$295,000	$300,000	$300,000	TBD	SWMU-229, SWMU-230
98	S&A	OS-005304	Class I	NA	$150,000	$150,000	TBD	Supervision and Administration for LTO at SWMUs 229 & 230
99	LTO/LTM	KWRD996004	Class I	$343,000	$350,000	$350,000	TBD	SWMU-139, SWMU-140, SWMU-229, SWMU-230
99	S&A	OS-005305	Class I	NA	$125,000	$125,000	TBD	Supervision and Administration for LTO at SWMUs 229 & 230 and LTM at SWMUs 139 & 140
00	LTO	KWRD006004	Class I	$295,000	$300,000	$300,000	TBD	SWMU-229, SWMU-230
00	S&A	OS-005306	Class I	NA	$100,000	$100,000	TBD	Supervision and Administration for LTO at SWMUs 229 & 230
01	LTO/LTM	KWRD016004	Class I	$343,000	$350,000	$350,000	TBD	SWMU-139, SWMU-140, SWMU-229, SWMU-230
01	S&A	OS-005307	Class I	NA	$100,000	$100,000	TBD	Supervision and Administration for LTO at SWMUs 229 & 230 and LTM at SWMUs 139 & 140
03	LTM	KWRD036004	Class I	$48,000	$50,000	$50,000	TBD	SWMU-139, SWMU-140
03	S&A	OS-005308	Class I	NA	$50,000	$50,000	TBD	Supervision and Administration for LTM at SWMUs 139 & 140

Table 5-1

(Continued)

FY	Project Title	Project Number	ECP Fund Priority	RACER Estimate	Programmed Amount[a]	Current Working Estimate	Obligated Amount	Sites
05	LTM	KWRD056004	Class I	$48,000	$50,000	$50,000	TBD	SWMU-139, SWMU-140
05	S&A	OS-005309	Class I	NA	$25,000	$25,000	TBD	Supervision and Administration for LTM at SWMUs 139 & 140
07	LTM	KWRD076004	Class I	$48,000	$50,000	$50,000	TBD	SWMU-139, SWMU-140
07	S&A	OS-005310	Class I	NA	$25,000	$25,000	TBD	Supervision and Administration for LTM at SWMUs 139 & 140

[a] A-106 amount.

FY = Fiscal Year
CMS = Corrective Measures Study
CMI = Corrective Measures Implementation
LTO = Long-term Operation
LTM = Long-term Monitoring
NA = Not Applicable
SWMU = Solid Waste Management Unit
S&A = Supervision and Administration
TBD = To Be Determined

Table 5-2
ECP-Funded Corrective Action Project Schedule
1996 Corrective Measures Study

Task Name	Duration	Start	End
1996 CMS and S&A	**454.50 d**	**01/31/96**	**11/19/97**
Project Programming	67.00 d	01/31/96	05/03/96
Submit A-106 Input to ACC	0.00 d	01/31/96	01/31/96
ACC Validate Requirement	0.00 d	01/31/96	01/31/96
SOW Prepared	30.00 d	01/31/96	03/13/96
Request for Proposal	30.00 d	03/14/96	04/24/96
Contract Negotiation	7.00 d	04/25/96	05/03/96
Project Funding	0.00 d	05/03/96	05/03/96
Contract Award	0.00 d	05/03/96	05/03/96
SWMU 184 CMS	387.50 d	05/06/96	11/19/97
Prepare CMS Workplan	62.50 d	05/06/96	08/02/96
Submit CMS Workplan	0.00 d	08/02/96	08/02/96
Regulator Review	64.00 d	08/02/96	11/04/96
Conduct CMS	137.00 d	11/04/96	05/22/97
Prepare Final Report	47.00 d	05/22/97	07/30/97
Submit CMS Report	0.00 d	07/30/97	07/30/97
Regulator Review	77.00 d	07/30/97	11/19/97
Complete CMS	0.00 d	11/19/97	11/19/97

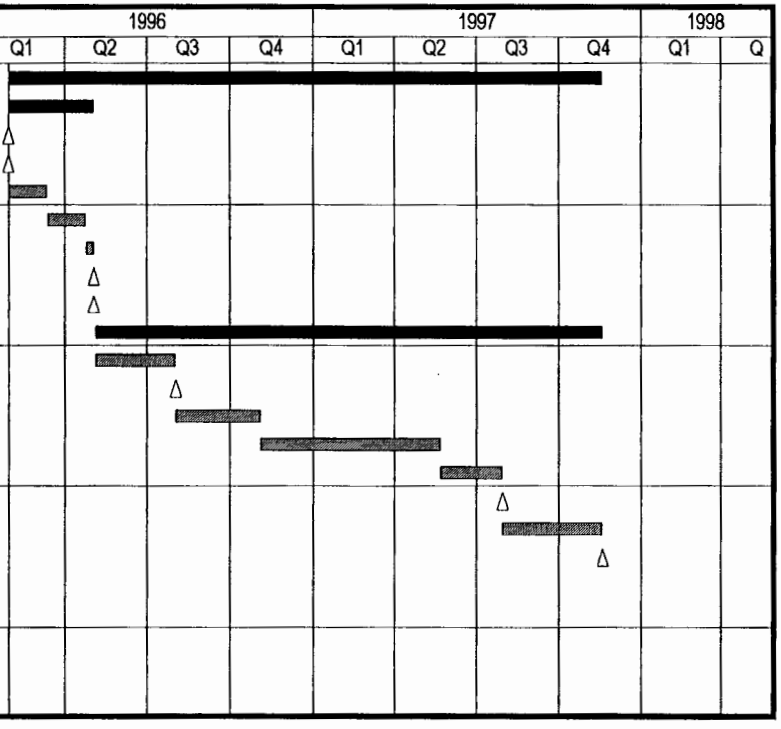


Table 5-3
ECP-Funded Corrective Action Project Schedule
1996 Corrective Measures Implementation

Task Name	Duration	Start	End
1996 CMI and S&A	**209.01 d**	**01/31/96**	**11/27/96**
Project Programming	67.00 d	01/31/96	05/03/96
Submit A-106 Input to ACC	0.00 d	01/31/96	01/31/96
ACC Validate Requirement	0.00 d	01/31/96	01/31/96
SOW Prepared	30.00 d	01/31/96	03/13/96
Request for Proposal	30.00 d	03/14/96	04/24/96
Contract Negotiation	7.00 d	04/25/96	05/03/96
Project Funding	0.00 d	05/03/96	05/03/96
Contract Award	0.00 d	05/03/96	05/03/96
SWMU 19 CMI	142.01 d	05/06/96	11/27/96
Excavation Work Plan	59.00 d	05/06/96	07/29/96
Excavation	34.00 d	07/30/96	09/16/96
Verification Sampling	0.00 d	08/24/96	08/24/96
Submit Report	0.00 d	11/27/96	11/27/96
SWMU 29 CMI	142.01 d	05/06/96	11/27/96
Excavation Work Plan	59.00 d	05/06/96	07/29/96
Excavation	34.00 d	07/30/96	09/16/96
Verification Sampling	0.00 d	08/24/96	08/24/96
Submit Report	0.00 d	11/27/96	11/27/96

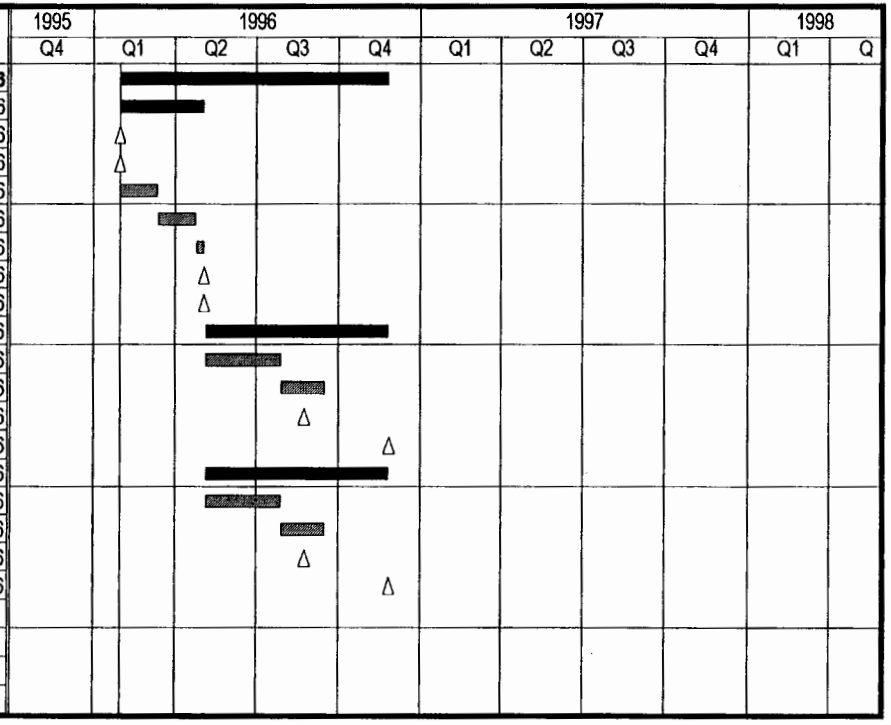


Table 5-4
ECP-Funded Corrective Action Project Schedule
1996 Long Term Monitoring/Long Term Operation

Task Name	Duration	Start	End
1996 LTM/LTO and S&A	**253.00 d**	**01/31/96**	**01/31/97**
Project Programming	67.00 d	01/31/96	05/03/96
Submit A-106 Input to ACC	0.00 d	01/31/96	01/31/96
ACC Validate Requirement	0.00 d	01/31/96	01/31/96
SOW Prepared	30.00 d	01/31/96	03/13/96
Request for Proposal	30.00 d	03/14/96	04/24/96
Contract Negotiation	7.00 d	04/25/96	05/03/96
Project Funding	0.00 d	05/03/96	05/03/96
Contract Award	0.00 d	05/03/96	05/03/96
SWMU 3 SVE Operation	253.00 d	01/31/96	01/31/97
SWMU 8 Biovent Operation	253.00 d	01/31/96	01/31/97
SWMU 27 Pump/Treat Operation	253.00 d	01/31/96	01/31/97
SWMU 36 Biovent Operation	253.00 d	01/31/96	01/31/97
SWMU 123 Biovent Operation	253.00 d	01/31/96	01/31/97
SWMU 136 Biovent Operation	253.00 d	01/31/96	01/31/97
SWMU 229 Dual-phase Operation	253.00 d	01/31/96	01/31/97
SWMU 230 Dual-phase Operation	253.00 d	01/31/96	01/31/97

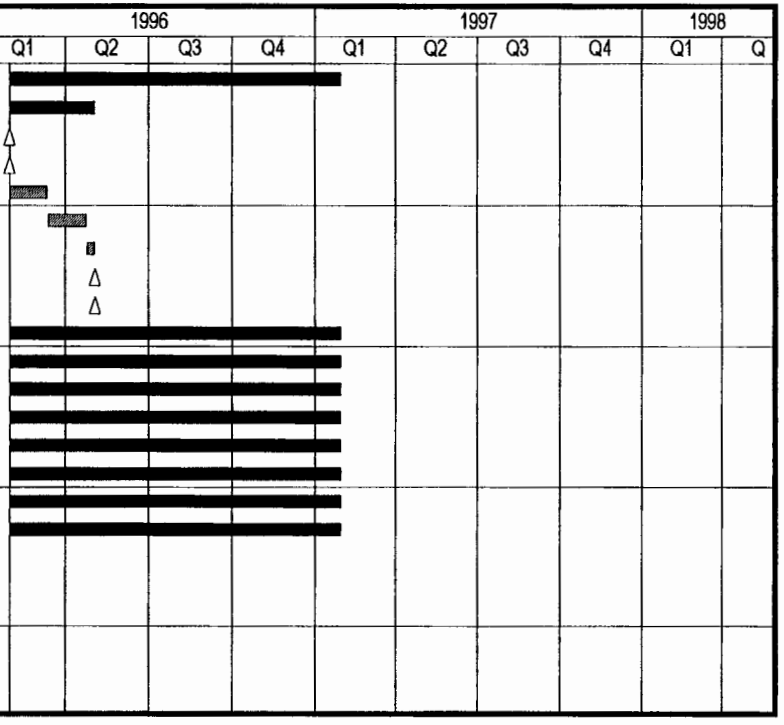


Table 5-5
ECP-Funded Corrective Action Project Schedule
1997 Corrective Measures Study

Task Name	Duration	Start	End
1997 CMS and S&A	**454.50 d**	**01/03/97**	**10/22/98**
Project Programming	67.00 d	01/03/97	04/09/97
Submit A-106 Input to ACC	0.00 d	01/03/97	01/03/97
ACC Validate Requirement	0.00 d	01/03/97	01/03/97
SOW Prepared	30.00 d	01/03/97	02/14/97
Request for Proposal	30.00 d	02/18/97	03/31/97
Contract Negotiation	7.00 d	04/01/97	04/09/97
Project Funding	0.00 d	04/09/97	04/09/97
Contract Award	0.00 d	04/09/97	04/09/97
SWMU 139 CMS	387.50 d	04/10/97	10/22/98
Prepare CMS Workplan	62.50 d	04/10/97	07/09/97
Submit CMS Workplan	0.00 d	07/09/97	07/09/97
Regulator Review	64.00 d	07/09/97	10/08/97
Conduct CMS	137.00 d	10/08/97	04/28/98
Prepare Final Report	47.00 d	04/28/98	07/03/98
Submit CMS Report	0.00 d	07/03/98	07/03/98
Regulator Review	77.00 d	07/03/98	10/22/98
Complete CMS	0.00 d	10/22/98	10/22/98
SWMU 140 CMS	387.50 d	04/10/97	10/22/98
Prepare CMS Workplan	62.50 d	04/10/97	07/09/97
Submit CMS Workplan	0.00 d	07/09/97	07/09/97
Regulator Review	64.00 d	07/09/97	10/08/97
Conduct CMS	137.00 d	10/08/97	04/28/98
Prepare Final Report	47.00 d	04/28/98	07/03/98
Submit CMS Report	0.00 d	07/03/98	07/03/98
Regulator Review	77.00 d	07/03/98	10/22/98
Complete CMS	0.00 d	10/22/98	10/22/98

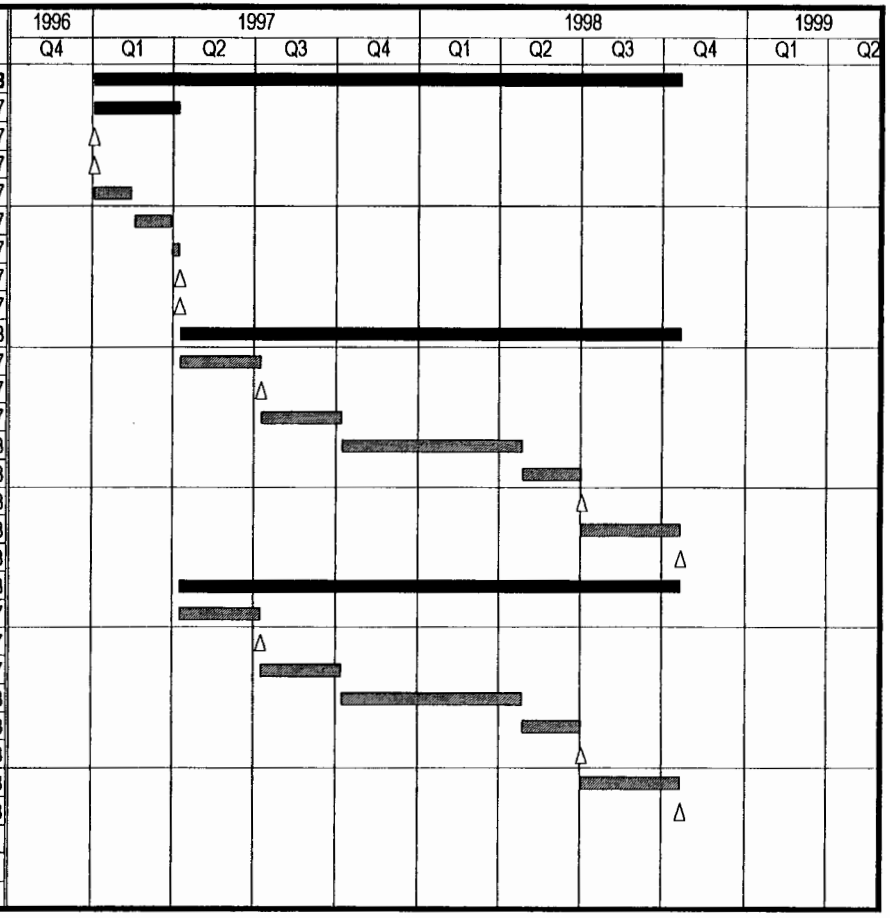


Table 5-6
ECP-Funded Corrective Action Project Schedule
1997 Corrective Measures Implementation

Task Name	Duration	Start	End
1997 CMI and S&A	**314.00 d**	**01/03/97**	**04/04/98**
Project Programming	67.00 d	01/03/97	04/09/97
Submit A-106 Input to ACC	0.00 d	01/03/97	01/03/97
ACC Validate Requirement	0.00 d	01/03/97	01/03/97
SOW Prepared	30.00 d	01/03/97	02/14/97
Request for Proposal	30.00 d	02/18/97	03/31/97
Contract Negotiation	7.00 d	04/01/97	04/09/97
Project Funding	0.00 d	04/09/97	04/09/97
Contract Award	0.00 d	04/09/97	04/09/97
SWMU 184 CMI	247.00 d	04/10/97	04/04/98
Excavation Work Plan	59.00 d	04/10/97	07/02/97
Excavation	125.00 d	07/03/97	01/02/98
Verification Sampling	0.00 d	01/02/98	01/02/98
Submit Report	0.00 d	04/04/98	04/04/98

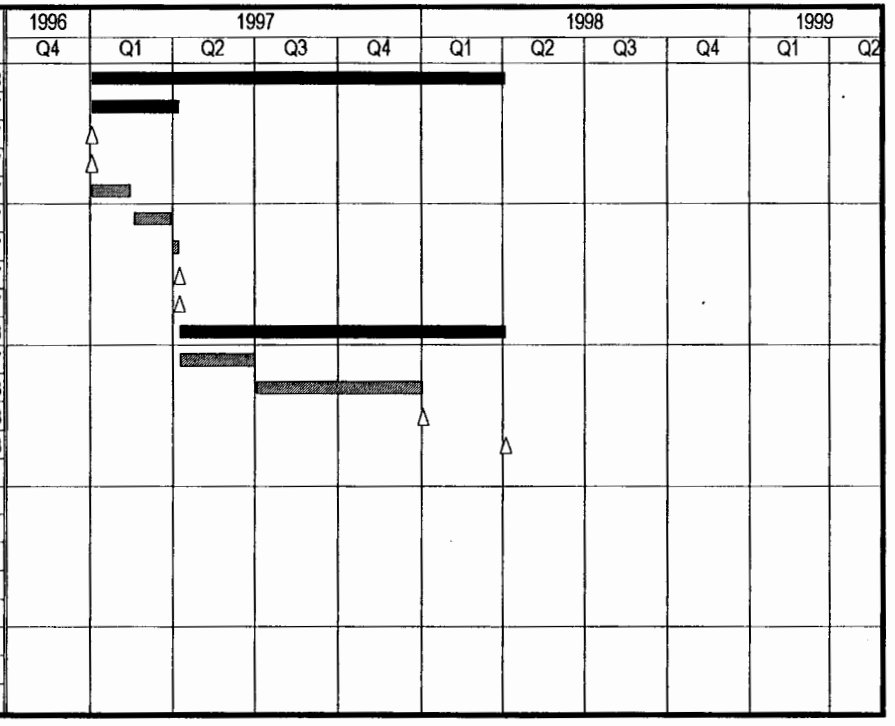


Table 5-7
ECP-Funded Corrective Action Project Schedule
1997 Long Term Operation/Long Term Monitoring

Task Name	Duration	Start	End
1997 LTO/LTM and S&A	**253.00 d**	**01/02/97**	**01/05/98**
Project Programming	67.00 d	01/04/97	04/10/97
Submit A-106 Input to ACC	0.00 d	01/04/97	01/04/97
ACC Validate Requirement	0.00 d	01/04/97	01/04/97
SOW Prepared	30.00 d	01/06/97	02/18/97
Request for Proposal	30.00 d	02/19/97	04/01/97
Contract Negotiation	7.00 d	04/02/97	04/10/97
Project Funding	0.00 d	04/10/97	04/10/97
Contract Award	0.00 d	04/10/97	04/10/97
SWMU 3 SVE Operation	253.00 d	01/02/97	01/05/98
SWMU 8 Biovent Operation	253.00 d	01/02/97	01/05/98
SWMU 27 Pump/Treat Operation	253.00 d	01/02/97	01/05/98
SWMU 36 Biovent Operation	253.00 d	01/02/97	01/05/98
SWMU 123 Biovent Operation	253.00 d	01/02/97	01/05/98
SWMU 136 Biovent Operation	253.00 d	01/02/97	01/05/98
SWMU 139 Monitoring	253.00 d	01/02/97	01/05/98
SWMU 140 Monitoring	253.00 d	01/02/97	01/05/98
SWMU 229 Dual-phase Operation	253.00 d	01/02/97	01/05/98
SWMU 230 Dual-phase Operation	253.00 d	01/02/97	01/05/98

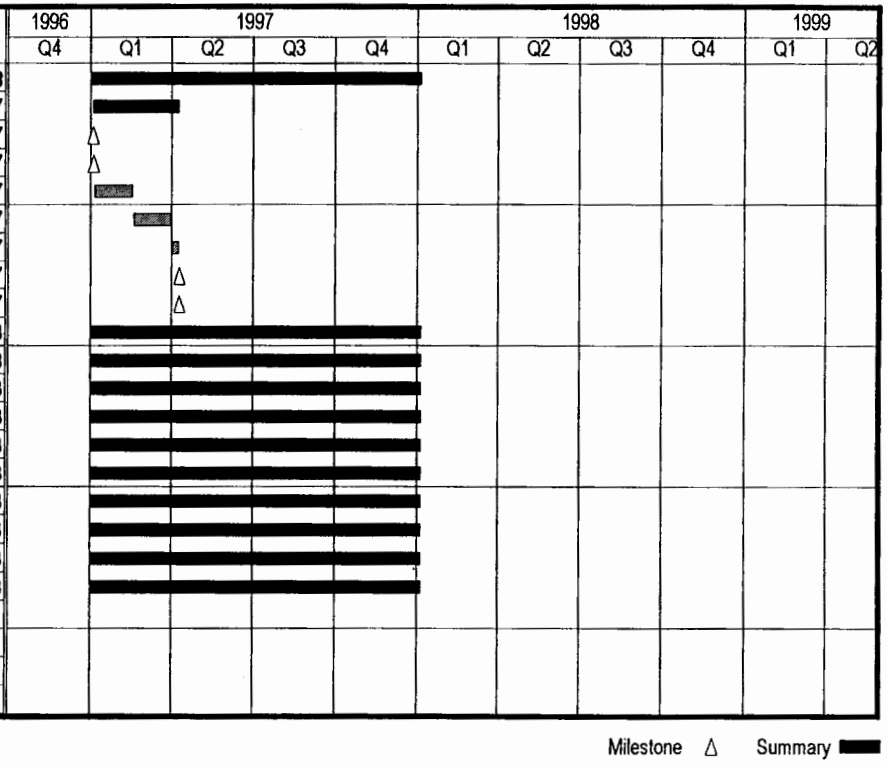


Table 5-8
ECP-Funded Corrective Action Project Schedule
1998,1999 Long Term Operation/Long Term Monitoring

Task Name	Duration	Start	End
1998 LTO/LTM and S&A	**253.00 d**	**01/01/98**	**01/04/99**
Project Programming	67.00 d	01/01/98	04/08/98
Submit A-106 Input to ACC	0.00 d	01/01/98	01/01/98
ACC Validate Requirement	0.00 d	01/01/98	01/01/98
SOW Prepared	30.00 d	01/02/98	02/13/98
Request for Proposal	30.00 d	02/17/98	03/30/98
Contract Negotiation	7.00 d	03/31/98	04/08/98
Project Funding	0.00 d	04/08/98	04/08/98
Contract Award	0.00 d	04/08/98	04/08/98
SWMU 229 Dual-phase Operation	253.00 d	01/02/98	01/04/99
SWMU 230 Dual-phase Operation	253.00 d	01/02/98	01/04/99
1999 LTO/LTM and S&A	**253.00 d**	**01/01/99**	**12/30/99**
Project Programming	67.00 d	01/01/99	04/08/99
Submit A-106 Input to ACC	0.00 d	01/01/99	01/01/99
ACC Validate Requirement	0.00 d	01/01/99	01/01/99
SOW Prepared	30.00 d	01/04/99	02/16/99
Request for Proposal	30.00 d	02/17/99	03/30/99
Contract Negotiation	7.00 d	03/31/99	04/08/99
Project Funding	0.00 d	04/08/99	04/08/99
Contract Award	0.00 d	04/08/99	04/08/99
SWMU 139 Monitoring	253.00 d	01/04/99	12/30/99
SWMU 140 Monitoring	253.00 d	01/04/99	12/30/99
SWMU 229 Dual-phase Operation	253.00 d	01/04/99	12/30/99
SWMU 230 Dual-phase Operation	253.00 d	01/04/99	12/30/99

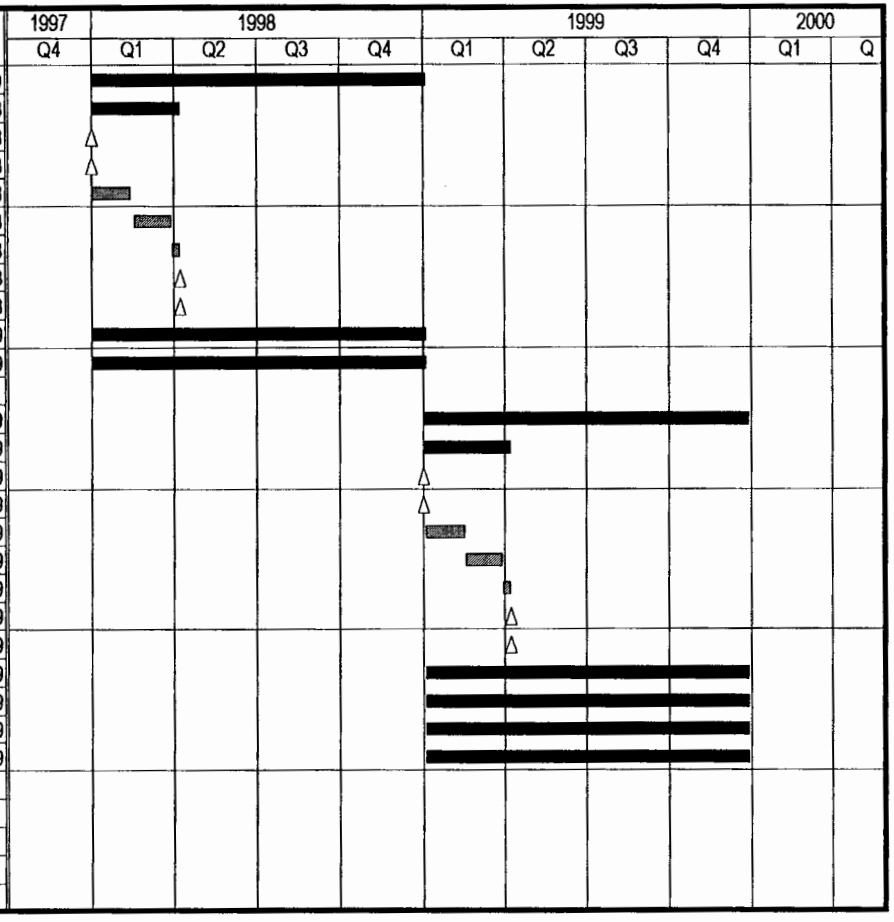


Table 5-9
ECP-Funded Corrective Action Project Schedule
2000, 2001 Long Term Operation/Long Term Monitoring

Task Name	Duration	Start	End
2000 LTO/LTM and S&A	**253.00 d**	**01/01/00**	**01/02/01**
Project Programming	67.00 d	01/01/00	04/06/00
Submit A-106 Input to ACC	0.00 d	01/01/00	01/01/00
ACC Validate Requirement	0.00 d	01/01/00	01/01/00
SOW Prepared	30.00 d	01/03/00	02/14/00
Request for Proposal	30.00 d	02/15/00	03/28/00
Contract Negotiation	7.00 d	03/29/00	04/06/00
Project Funding	0.00 d	04/06/00	04/06/00
Contract Award	0.00 d	04/06/00	04/06/00
SWMU 229 Dual-phase Operation	253.00 d	01/03/00	01/02/01
SWMU 230 Dual-phase Operation	253.00 d	01/03/00	01/02/01
2001 LTO/LTM and S&A	**253.00 d**	**01/01/01**	**01/02/02**
Project Programming	67.00 d	01/01/01	04/06/01
Submit A-106 Input to ACC	0.00 d	01/01/01	01/01/01
ACC Validate Requirement	0.00 d	01/01/01	01/01/01
SOW Prepared	30.00 d	01/02/01	02/13/01
Request for Proposal	30.00 d	02/14/01	03/28/01
Contract Negotiation	7.00 d	03/29/01	04/06/01
Project Funding	0.00 d	04/06/01	04/06/01
Contract Award	0.00 d	04/06/01	04/06/01
SWMU 139 Monitoring	253.00 d	01/02/01	01/02/02
SWMU 140 Monitoring	253.00 d	01/02/01	01/02/02
SWMU 229 Dual-phase Operation	253.00 d	01/02/01	01/02/02
SWMU 230 Dual-phase Operation	253.00 d	01/02/01	01/02/02

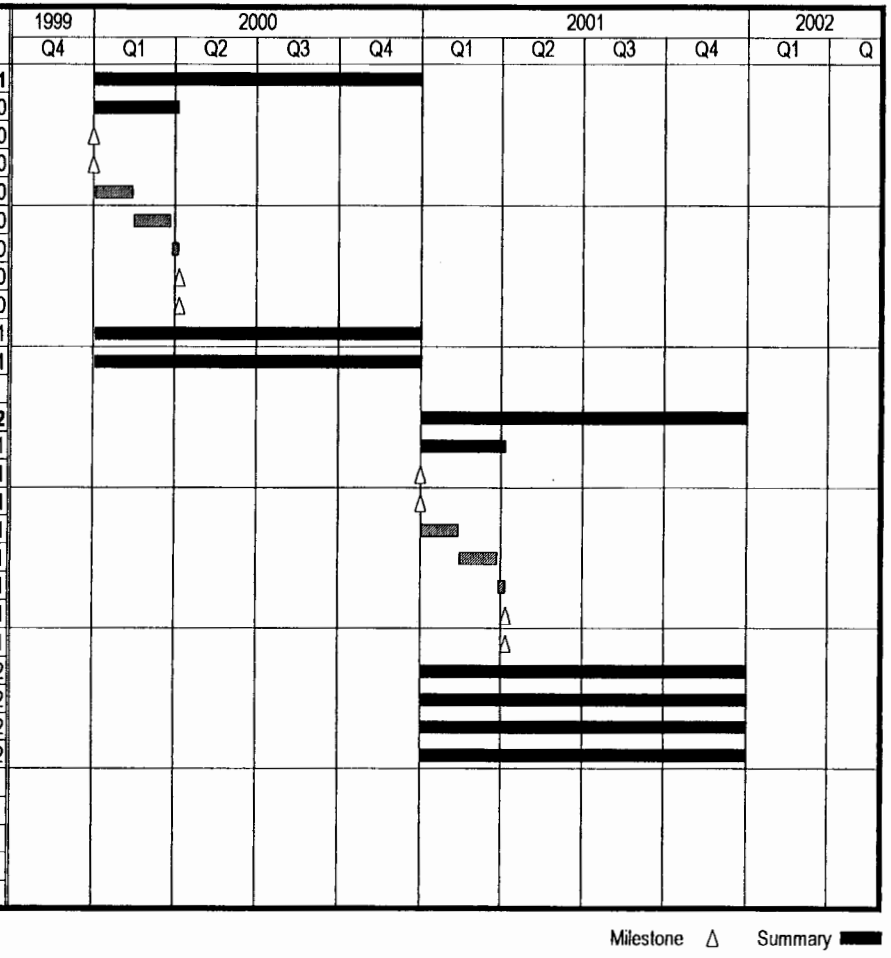


Table 5-10
ECP-Funded Corrective Action Project Schedule
2003, 2005 Long Term Operation/Long Term Monitoring

Task Name	Duration	Start	End
2003 LTO/LTM and S&A	**253.00 d**	**01/01/03**	**01/05/04**
Project Programming	67.00 d	01/01/03	04/08/03
Submit A-106 Input to ACC	0.00 d	01/01/03	01/01/03
ACC Validate Requirement	0.00 d	01/01/03	01/01/03
SOW Prepared	30.00 d	01/02/03	02/13/03
Request for Proposal	30.00 d	02/14/03	03/28/03
Contract Negotiation	7.00 d	03/31/03	04/08/03
Project Funding	0.00 d	04/08/03	04/08/03
Contract Award	0.00 d	04/08/03	04/08/03
SWMU 139 Monitoring	253.00 d	01/02/03	01/05/04
SWMU 140 Monitoring	253.00 d	01/02/03	01/05/04
2005 LTO/LTM and S&A	**253.00 d**	**01/01/05**	**01/02/06**
Project Programming	67.00 d	01/01/05	04/07/05
Submit A-106 Input to ACC	0.00 d	01/01/05	01/01/05
ACC Validate Requirement	0.00 d	01/01/05	01/01/05
SOW Prepared	30.00 d	01/03/05	02/14/05
Request for Proposal	30.00 d	02/15/05	03/29/05
Contract Negotiation	7.00 d	03/30/05	04/07/05
Project Funding	0.00 d	04/07/05	04/07/05
Contract Award	0.00 d	04/07/05	04/07/05
SWMU 139 Monitoring	253.00 d	01/03/05	01/02/06
SWMU 140 Monitoring	253.00 d	01/03/05	01/02/06

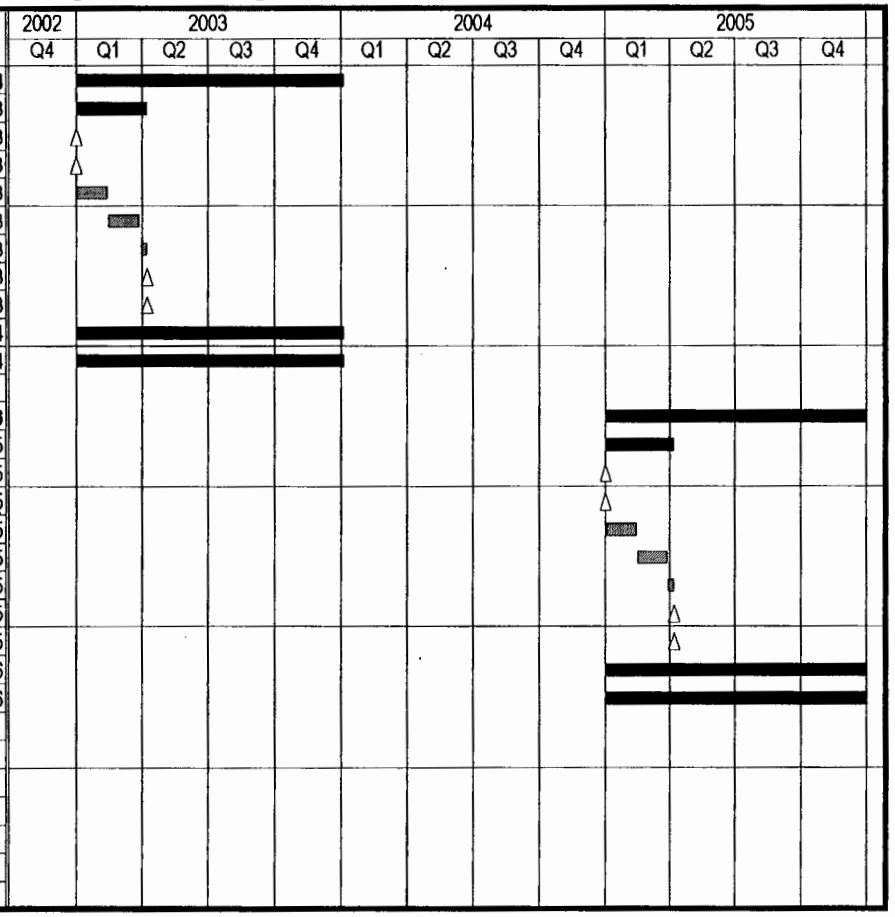
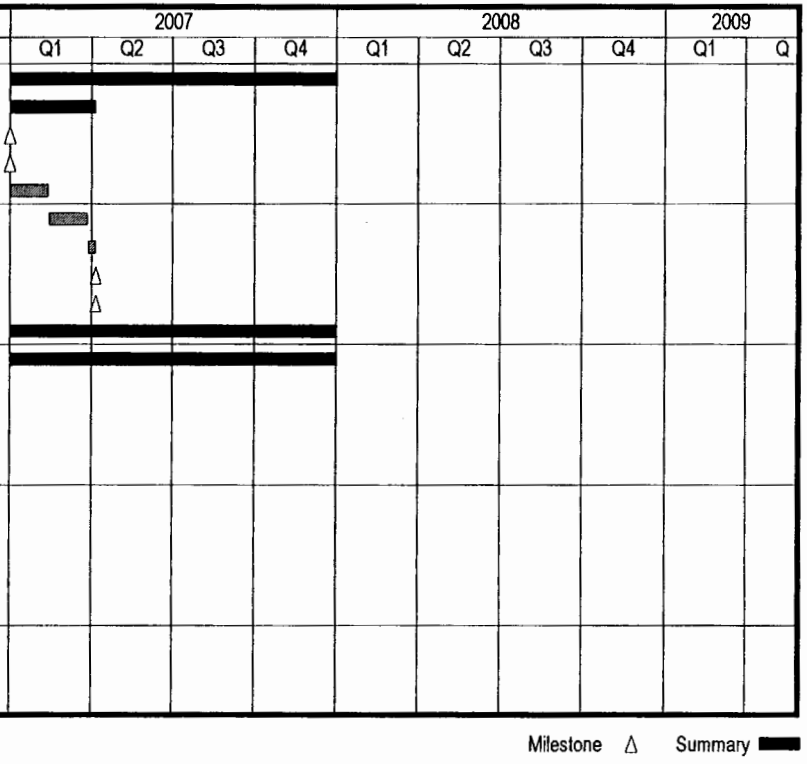


Table 5-11
ECP-Funded Corrective Action Project Schedule
2007 Long Term Monitoring/Long Term Operation

Task Name	Duration	Start	End
2007 LTO/LTM and S&A	**253.00 d**	**01/01/07**	**01/02/08**
Project Programming	67.00 d	01/01/07	04/06/07
Submit A-106 Input to ACC	0.00 d	01/01/07	01/01/07
ACC Validate Requirement	0.00 d	01/01/07	01/01/07
SOW Prepared	30.00 d	01/02/07	02/13/07
Request for Proposal	30.00 d	02/14/07	03/28/07
Contract Negotiation	7.00 d	03/29/07	04/06/07
Project Funding	0.00 d	04/06/07	04/06/07
Contract Award	0.00 d	04/06/07	04/06/07
SWMU 139 Monitoring	253.00 d	01/02/07	01/02/08
SWMU 140 Monitoring	253.00 d	01/02/07	01/02/08



coincides with the approval of a deliverable such as a work plan or report. Therefore, determining a start date for a future action depends on the on-time completion of the previous action. As a result of these uncertainties, it must be recognized that assumptions must be made regarding how long each step will take in order to build a schedule taking the entire process to completion. Assumptions built into the schedules presented in this CAMP are:

- Thirty- to 45-day regulatory review periods for scheduled deliverables;
- Holloman AFB receives full funding for all RCRA corrective action projects as per the schedule; and
- Ten sites will require long-term operation and monitoring of systems already installed.

Table 5-12 summarizes the projected cost by RCRA corrective action phase from FY 1996 through the year of completion. In accordance with the schedules presented in this CAMP, Holloman AFB anticipates completing all RCRA corrective action activities for all currently identified sites by the end of calendar year 2007.

Table 5-12

Cost to Complete RCRA Corrective Action by Phase, Holloman AFB

FY	S&A	RFI	CMS	CMI	LTO/LTM	Total
96	$450,000	$0	$100,000	$2,175,000	$1,300,000	$4,025,000
97	$350,000	$0	$200,000	$275,000	$650,000	$1,475,000
98	$150,000	$0	$0	$0	$300,000	$450,000
99	$125,000	$0	$0	$0	$350,000	$475,000
00	$100,000	$0	$0	$0	$300,000	$400,000
01	$100,000	$0	$0	$0	$350,000	$450,000
02	$0	$0	$0	$0	$0	$0
03	$50,000	$0	$0	$0	$50,000	$100,000
04	$0	$0	$0	$0	$0	$0
05	$25,000	$0	$0	$0	$50,000	$75,000
06	$0	$0	$0	$0	$0	$0
07	$25,000	$0	$0	$0	$50,000	$75,000
Total	$1,375,000	$0	$300,000	$2,450,000	$3,400,000	$7,525,000

FY = Fiscal Year
S&A = Supervision and Administration
RFI = RCRA Facility Investigation
CMS = Corrective Measures Study
CMI = Corrective Measures Implementation
LTO = Long-term Operation
LTM = Long-term Monitoring

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6. REFERENCES

Air Force Instruction 72-7001. *Environmental Budgeting*. 9 May 1994.

Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities; Proposed Rule (Proposed RCRA Subpart S Rule). Federal Register, Volume 55, No. 145. 27 July 1990.

Corrective Measures Study, T38 Test Cell (SS-59/SWMU 229) and Building 828 (SS-60/SWMU 230). Draft Final Report. FWEC and Radian Corporation, December 1994.

Decision Documents, Installation Restoration Program. FWEC and Radian Corporation, September 1995.

Decision Documents, Investigation, Study and Recommendation for 29 Waste Sites. Radian Corporation, September 1994.

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Letter from Allyn M. Davis, Director, Hazardous Waste Management Division, EPA Region VI, to Howard Moffitt, Deputy Base Engineer, Holloman AFB. NFA for SWMU 183. 21 July 1995.

Management Action Plan. Radian Corporation, February 1995.

Phase I RCRA Facility Investigation Report for Table 2 Solid Waste Management Units. Draft Final Report. Radian Corporation, July 1994.

Phase II RCRA Facility Investigation Report for Lakes Holloman and Stinky—Sewage Lagoons and Lakes Investigation. Draft Final Report. Radian Corporation, December 1993.

Phase II RCRA Facility Investigation Report for Table 1 Solid Waste Management Units. Draft Final Report. FWEC and Radian Corporation, June 1995.

RCRA Facility Assessment Report. Final Report. AT Kearny and DPRA, 1987.

Remedial Investigation Report, Holloman AFB, New Mexico. Walk, Haydel, and Associates, 1989.

Remedial Investigation Report—Investigation, Study, and Recommendation for 29 Waste Sites. Final Report. Radian Corporation, June 1992.

Risk Assessment Report for the Remedial Investigation—Investigation, Study, and Recommendation for 29 Waste Sites. Final Report. Radian, 1992.

SAF/MIQ Policy Memorandum. *Signing of Interagency Agreements for the Environmental Restoration of Air Force Installation.* 14 April 1993.

Site Characterization Report—Sewage Lagoons and Lakes Investigation. Radian Corporation, August 1992.

Table 3 RCRA Facility Investigation Report. Draft Final Report. FWEC and Radian Corporation, July 1995.

APPENDIX A

RCRA/HSWA PERMIT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202-2733

August 22, 1991

CERTIFIED MAIL: RETURN RECEIPT REQUESTED

Colonel Ira L. Hester
Commander
833CSG/CC
Holloman Air Force Base, New Mexico 88330

RE: Transmittal of Hazardous Waste Permit for
Holloman Air Force Base NM6572124422

Dear Colonel Hester:

Enclosed is a copy of your permit to operate a hazardous waste facility, under the Hazardous and Solid Waste Amendments of 1984 (HSWA). Also enclosed is EPA's response to the changes in the draft permit and response to comments.

The New Mexico Environment Department (NMED) and the Environmental Protection Agency (EPA) have entered into a joint permitting agreement, whereby permits may be issued in New Mexico in accordance with the New Mexico Hazardous Waste Management Act, as well as RCRA. The agreement will remain effective until the State hazardous waste program receives authorization under RCRA to administer HSWA. In order for an applicant to have a fully effective permit, both NMED and EPA must issue the permit.

This letter transmits a copy of your HSWA permit with the necessary signature for EPA approval for permit issuance. The RCRA part of the full permit will be sent to you by NMED. The permit will become effective on the date indicated. The provisions of this permit may be appealed within 30 days of issuance, pursuant to 40 CFR 124.19.

If you have any questions, please contact Bill Gallagher of my staff at (214) 655-6775.

Sincerely yours,

Jack Dinita

for Allyn M. Davis
Director
Hazardous Waste Management Division

Enclosures

cc: Ms. Judith Espinosa, Secretary
New Mexico Environment Department

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION 6

HAZARDOUS WASTE PERMIT
(HAZARDOUS AND SOLID WASTE AMENDMENTS, 1984)

PERMITTEE: Holloman Air Force Base

OWNER: United State Air Force

OPERATOR: Holloman Air Force Base

LOCATION: Holloman Air Force Base, New Mexico 88330

I.D. NUMBER: NM6572124422

EFFECTIVE DATE: September 25, 1991

EXPIRATION DATE: June 4, 2001

Pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA), as amended by the RCRA statute (42 U.S.C. 6901, et seq.), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), a permit is issued to Holloman Air Force Base (hereafter called the Permittee) to operate a hazardous waste disposal facility at the location stated above.

The Permittee must comply with all the terms and conditions of this permit. This permit consists of the conditions contained herein (including the attachments). Said conditions are needed to ensure that the Permittee's hazardous waste management activities comply with all applicable Federal statutory and regulatory requirements. Applicable requirements are those which are found in, referenced in, or incorporated into that version of RCRA or the regulations promulgated pursuant to RCRA that are in effect on the date this permit is issued. (See 40 CFR 270.32 (c).)

This permit is issued in part pursuant to the provisions of Section 201, 202, 203, 206, 207, 212, 215, and 224 of HSWA which modified Sections 3004 and 3005 of RCRA. These require corrective action for all releases of hazardous waste or hazardous constituents from any solid waste management unit at a treatment, storage, or disposal facility seeking a permit, regardless of the time at which the waste was placed in such unit and provides the authority to review and modify the permit at any time. The decision to issue this permit is based on the assumption that all information contained in the permit application is accurate and that the facility will be operated as specified in the permit application. Any inaccuracies found in the application may be grounds for termination or modification of this permit (see 40 CFR 270.41, 270.42 and 270.43) and potential enforcement action.

NOTICE OF PERMIT DECISION

HOLLOMAN AIR FORCE BASE

Pursuant to the Solid Waste Disposal Act, as amended by the Resource Conversation and Recovery Act of 1976 (RCRA), as amended by the RCRA statue (42 USC 6901 et seq., commonly known as RCRA) and regulations promulgated thereunder by the U.S. Environmental Protection Agency (EPA) (codified in Title 40 of the Code of Federal Regulations), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA) a permit is issued to the United States Department of Defense and the Holloman Air Force Base (HAFB), who operate a hazardous waste facility located in Alamogordo, New Mexico.

This Permit, in conjunction with the Hazardous Waste Permit issued by the State of New Mexico, constitutes the full RCRA permit for this facility. Any person who commented on this permit during the comment period may petition the Administrator to review any condition of this permit, within 30 days of issuance, pursuant to 40 CFR 124.19.

The Federal Law that has required permits for hazardous waste facilities is RCRA. The State of New Mexico has been authorized by EPA to carry out regulatory activities which were required by RCRA prior to November of 1984.

In November of 1984, Congress passed extensive changes to RCRA, known as the Hazardous and Solid Waste Amendments (HSWA), which resulted in additional permit requirements. The State has not yet been authorized to act in lieu of EPA for this portion of the program, and EPA has retained the authority for this portion of the permit.

This permit has been finalized under a joint effort between the State and EPA. The New Mexico Environmental Improvement Division (NMEID) developed the majority of the permit; however, EPA developed Module IV, which contains provisions to satisfy the HSWA. EPA will enforce this portion of the permit until the State is authorized to run this portion of the program.

This Module of the joint permit deals primarily with the investigation of Solid Waste Management Units (SWMU's) dating from the 1940's to 1980. This HSWA Module of the permit requires the Permittee to determine whether there have been any releases for hazardous waste or hazardous constituents from any SWMU regardless of the time at which waste was placed in such unit and to take appropriate corrective action for any such releases. Other provisions in this Module deal with waste minimization,notification requirements for new SWMU's and release from SWMU's, land ban requirements, and emission standards for process vents and equipment leaks.

RESPONSE TO COMMENTS
ON EPA DRAFTED HSWA
PERMIT - MODULE IV
OF RCRA PERMIT FOR
HOLLOMAN AIR FORCE BASE
EPA I.D. #NM6572124422

I. BACKGROUND INFORMATION

1. Facility location: Holloman Air Force Base (HAFB) is located in South Central New Mexico, southwest of and adjacent to the City of Alamogordo. The total area of the base is approximately 50,000 acres.

2. Facility Activities and Waste Handling: Holloman Air Force Base conducts a variety of military training and maintenance activities that generate many different hazardous wastes. At present they are stored in the hazardous waste storage building and its associated outdoor storage area which will become the permitted storage facility. All wastes are ultimately shipped off-site either to be reclaimed, or to be treated or disposed of at authorized hazardous waste facilities.

3. Public Notice: The public notice of the proposed permit satisfied the public notice requirements specified in 40 CFR 124.17. The public notice was published in the Alamogordo Daily News on February 11, 1991, and was broadcasted on the local radio station. The announcement was also sent to the facility, appropriate State agencies, and interested parties. The public comment period closed on March 28, 1991.

II. CHANGES MADE IN FINALIZING THE EPA PERMIT

Below are the changes which EPA made to the Holloman Air Force Base draft HSWA permit. Some provisions had minor word, typographical corrections, or sentence phrases changed.

The following SWMU's were added to Table 1 of the Permit from Table 2 and 3:

SWMU#	UNITS NAME
4	Bldg. 131 O/WS
21	Bldg. 702 O/WS
82	Bldg. 131 Washrack
111	Radioactive Waste Disposal Area
122	Bldg 702 Waste Oil Tank
133	Bldg 703 Washrack Discharge Area
134	Bldg 920-924 Drainage Ditch
192	CoCo Blockhouse Disposal Well

Also, added to Table 1 was a clarification statement for the Lake Holloman SWMU adding the earthen ditch carrying discharge to it to be investigated also.

The following SWMU's were taken from Table 2 and added to Table 3:

SWMU#	Unit Name
1	Bldg. 55 O/WS
2	Bldg. 121 O/WS
3	Bldg. 130 O/WS
5	Bldg. 137 O/WS
6	Bldg. 193 O/WS
7	Bldg. 198 O/WS
8	Bldg. 231 O/WS
9	Bldg. 282 O/WS
10	Bldg. 283 O/WS

The following SWMU's were taken from Table 3 and added to Table 2:

SWMU#	Unit Name
54	Bldg. 702 WAste Accumulation Area (WAA)
55	Bldg. 702A WAA
56	Bldg. 807 WAA
63	Bldg. 867 WAA
71	Bldg. 1178 WAA
75	DRMO Hazardous Waste Storage Area
78	Trim Pad 3 WAA
91	Bldg. 816 Washrack
AOC-L	Early Missile Test Site

III. RESPONSE TO COMMENTS

Holloman Air Force (HAFB) offered the following comments on Module IV of the HAFB draft HSWA permit.

1. Holloman AFB Comment:

Holloman AFB is requesting that Solid Waste Management Units (SWMUs) 106, 109, 130, 166, 170, 171, and AOC-P be removed from the requirements of a RCRA Facility Investigation. These sites have been studied under the Air Force's Installation Restoration Program (IRP). A baseline risk assessment of these sites indicated no significant public health or environmental risk.

EPA Response:

These SWMU's will not be removed from the permit until EPA review the of IRP studies/results. Investigation results from the IRP studies on the above mentioned SWMU's can be submitted in the appropriate RFI submittal. EPA will then review these results and make a determination on these SWMUs.

2. Holloman AFB Comment:

SWMUs 4, 21, 82, 111, 122, 133, 134, and 192 should be moved to Table 1. These sites are presently being studied under the Air Force's IRP. A Remedial Investigation/Feasibility Study on these sites is anticipated in fiscal year 93.

EPA Response:

These SWMU's have been moved to Table 1.

3. Holloman AFB Comment:

SWMU's 139 and 140 should be moved to Table 3 because we are addressing these sites under a Federal Facility Compliance Agreement. At this time we are preparing a sampling plan to sample the lagoons as well as Lake Holloman and Lake Stinky to determine the nature and extent of any contamination.

EPA Response:

The RFI Workplan for Table 3 SWMU's are due 30 months from the effective date of the permit. EPA feels that these SWMU's are some of the most environmentally significant on the base. Therefore, these sWMU's will remain in Table 1.

4. Holloman AFB Comment:

We request that all oil/water separators (O/WS) be placed on the same table. This request is required to allow for the ease of preparing a statement of work for these SWMUs.

EPA Response:

All oil/water separators have been moved to Table 3.

5. Holloman AFB Comment:

For your convenience, we are submitting revised Table 1-3 (Attachment 1) for incorporation into our Hazardous and Solid Waste Amendments permit. Your approval of these tables as presented will greatly assist us in meeting our permit requirements concurrently with our programming and budget constraints. We look forward to discussing this information on 13 March 91.

EPA Response:

Some of the requested changes were made while others were not. Please refer to the above responses and to Section II, changes to the draft HSWA permit.

Below is a comment offered by the public.

1. I believe the earthen ditch carrying discharge from the sewage treatment lagoons to the playa lakes should be considered a SWMU.

EPA Response:

This ditch has been added to Table 1 and has been included with the Lake Holloman SWMU.

IV. SPECIAL CONDITIONS PURSUANT TO THE 1984 HAZARDOUS AND SOLID WASTE AMENDMENTS (HSWA) TO RCRA FOR HOLLOMAN AIR FORCE BASE - ALAMOGORDO - NM6572124422

A. DEFINITIONS

For purposes of Section IV, the following definitions shall apply:

"Facility" means all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA.

"Release" means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous constituents) into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents).

"Solid Waste Management Unit" (SWMU) means any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released.

"Hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. The term hazardous waste includes hazardous constituent as defined below.

"Hazardous constituent" means any constituent identified in Appendix VIII of 40 CFR Part 261, or any constituent identified in Appendix IX of 40 CFR Part 264.

"Administrative Authority" means the Director of the New Mexico Environmental Division or, in case of HSWA provisions (Module IV) for which the State is not authorized, the U.S. Environmental Protection Agency shall be the Administrative Authority.

If, subsequent to the issuance of this permit, these terms are redefined in promulgated regulations, the Administrative Authority may, at its discretion, apply the new definition to this permit.

B. SPECIFIC CONDITIONS

1. Waste Minimization

The Permittee shall submit a certified report to the Administrative Authority (according to 40 CFR 270.11) in writing annually by December 1, for the previous year ending September 30, that:

a. the Permittee has a program in place to reduce the volume and toxicity of all hazardous wastes which are generated by the Permittee's facility's operation to the degree determined to be economically practicable; and the proposed method of treatment, storage, or disposal is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment. This certified report must address the items below:

i) Any written policy or statement that outlines goals, objectives, and/or methods for source reduction and recycling of hazardous waste at the facility;

ii) Any employee training or incentive programs designed to identify and implement source reduction and recycling opportunities;

iii) Any source reduction and/or recycling measures implemented in the last five years or planned for the near future;

iv) An itemized list of the dollar amounts of capital expenditures (plant and equipment) and operating costs devoted to source reduction and recycling of hazardous waste;

v) Factors that have prevented implementation of source reduction and/or recycling;

vi) Sources of information on source reduction and/or recycling received at the facility (e.g., local government, trade associations, suppliers, etc.);

vii) An investigation of additional waste minimization efforts which could be implemented at the facility. This investigation shall analyze the potential for reducing the quantity and toxicity of

each waste stream through production reformulation, recycling, and all other appropriate means. The analysis shall include an assessment of the technical feasibility, cost and potential waste reduction for each option;

viii) The Permittee shall submit a flow chart or matrix detailing all hazardous wastes it produces, by quantity and type and by building/area;

The Permittee shall include this certified report in the operating record.

2. Dust Suppression

Pursuant to 40 CFR 266.23(b), the Permittee shall not use waste or used oil or any other material, which is contaminated with dioxin, polychlorinated biphenyls (PCBs), or any other hazardous waste (other than a waste identified solely on the basis of ignitability), for dust suppression or road treatment.

3. Permit Review

This Permit may be reviewed by the Administrative Authority five years after the date of permit issuance and may be modified as necessary as provided for in 40 CFR 270.41.

4. Compliance with Permit

Compliance with this Permit during its term constitutes compliance, for the purposes of enforcement, with 40 CFR Parts 264 and 266 only for those management practices specifically authorized by this permit. The Permittee is also required to comply with Parts 260, 261, 262, and 263 to the extent the requirements of those Parts are applicable.

5. Specific Waste Ban

a. The Permittee shall not place in any land disposal unit the wastes specified in RCRA Section 3004 after the effective date of the prohibition unless the Administrator has established disposal or treatment standards for the hazardous waste and the Permittee meets such standards and other applicable conditions of this permit.

b. The Permittee may store wastes restricted under 40 CFR 268 solely for the purpose of accumulating quantities necessary to facilitate proper recovery, treatment, or disposal provided that it meets the requirements of 40 CFR 268.50 (a)(2) including, but not limited to, clearly marking each tank or container.

c. The Permittee is required to comply with the all the requirements of 40 CFR 268.7 as amended. Changes to the waste analysis plan will be considered permit modifications at the request of the Permittee, pursuant to 40 CFR 270.42.

d. The Permittee shall perform a waste analysis at least annually or when a process changes, to determine whether the waste meets applicable treatment standards. Results shall be maintained in the operating record.

e. Compliance with a RCRA permit during its term constitutes compliance, for the purpose of enforcement, with Subtitle C of RCRA except for those requirements not included in the permit which become effective by statute, or which are promulgated under Part 268 of this chapter restricting the placement of hazardous wastes in or on the land.

C. LAND DISPOSAL CONDITIONS

1. Additional Waste Ban Requirements

The Permittee shall not land dispose any hazardous waste prohibited by 40 CFR 268 unless:

a. the waste meets treatment standards specified in 40 CFR 268.40, .41, .42, or .43;

b. a variance from the treatment standards has been granted pursuant to 40 CFR 268.44;

c. a petition has been granted on a case-by-case extension to the effective date pursuant to 40 CFR 268.5; or

d. a "no-migration" petition has been granted pursuant to 40 CFR 268.6.

2. Operation of Land Disposal

The Permittee shall not place hazardous waste in any surface impoundment or landfill unless such unit has a

permit meeting the Minimum Technological Requirements outlined in Section 3004(o) of the Resource Conservation and Recovery Act. The Administrative Authority must approve the plans and specifications for retrofitting prior to commencement of construction.

D. CORRECTIVE ACTION FOR CONTINUING RELEASES

1. Section 3004(u) of RCRA, as amended by HSWA, and 40 CFR 264.101 require that permits issued after November 8, 1984, address corrective action for releases of hazardous waste including hazardous constituents from any solid waste management unit (SWMU) at the facility, regardless of when the waste was placed in the unit.

   Section 3004 (v) of RCRA as amended by HSWA and Federal regulations promulgated as 40 CFR 264.101, require corrective action beyond the facility boundary, where necessary to protect human health and the environment, unless the owner or operator was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where offsite access is denied.

2. Failure to submit the information required in Section IV or falsification of any submitted information, is grounds for termination of this Permit (40 CFR 270.43). The Permittee shall ensure that all plans, reports, notifications, and other submissions to the Administrative Authority required in Section IV are signed and certified in accordance with 40 CFR 270.11. Two (2) copies and one (1) compatible disk copy each of these plans, reports, notifications or other submissions shall be submitted by Certified Mail or hand delivered to both:

   U.S. EPA, Region
   Hazardous Waste Division
   1445 Ross Avenue
   Dallas, Texas 75202-2733

   New Mexico Environmental Division
   1190 St. Francis Drive
   Harold Runnels Building
   Santa Fe, New Mexico 87503

3. All plans and schedules required by these conditions are, upon approval of the Administrative Authority, incorporated into this permit by reference and become an enforceable part of this permit. Any noncompliance with such approved plans and schedules shall be termed noncompliance with this Permit. Extensions of the due dates for submittals may be granted by the Administrative Authority in accordance with the permit modification process under 40 CFR 270.42.

The required information shall include each item specified under RFI Tasks I-V and CMS Tasks VI-IX. Since these required items are essential elements of this permit, failure to submit any of these elements or submission of inadequate or insufficient information may subject the Permittee to enforcement action under Section 3008 of RCRA which may include fines, suspension, or revocation of the permit.

If the Administrative Authority determines that further actions beyond those provided in Section IV or changes to that which is stated here in, are warranted, the Administrative Authority may modify Section IV either according to procedures in Condition IV.P. of this Permit or according to the permit modification processes under 40 CFR 270.41.

4. All raw data, such as laboratory reports, drilling logs, bench-scale or pilot-scale data, and other supporting information gathered or generated during activities undertaken pursuant to Section IV shall be maintained at the facility during the term of this Permit, including any reissued Permits.

5. For purposes of this Module IV, should the Permittee take exception to all or part of a disapproval, or conditional approval of any plan or report required by this module, the Permittee may invoke dispute resolution as outlined below:

   a. The parties shall in good faith attempt to resolve expeditiously and informally all disputes or differences of opinion. If the parties are unable to informally resolve the dispute within ten business days of the receipt of the disapproval decision or directive which is the subject of dispute, the permittee shall provide the written notice of the invocation of dispute resolution. The permittee shall provide the written notice no later than the twentieth calendar day after receipt of the disapproval decision or directive. The notice shall set forth the specific points of the dispute, the position the permittee is maintaining should be adopted as consistent with the permit's requirements, the basis therefore, and any matters which it considers necessary for the Administrative Authority's proper determination. Within ten business days of receipt of the written notice, the Administrative Authority will provide to the permittee a written statement of its decision on the pending dispute, which will be incorporated into the

final permit unless the permittee requests an opportunity for a conference in accordance with paragraph 2 of this section. The existence of a dispute as defined herein, and the consideration of such matters which are placed into dispute shall not excuse, toll or suspend any compliance obligation or deadline not in dispute during the pendency of the dispute resolution process.

b. If the permittee objects to any Administrative Authority determination regarding the disputed issue(s), the permittee shall within ten days of its receipt of the Administrative Authority's decision, pursuant to paragraph 1 of this section, notify the Administrative Authority in writing of its objections and may request the Director to convene an informal conference for the purpose of discussing the permittee's objections and the reasons for the Administrative Authority's determination. After this conference, the Director will state in writing his decision regarding the factual issues in dispute. Such decision shall be the final resolution of the dispute and shall be implemented immediately by the permittee.

E. REPORTING REQUIREMENTS

1. The Permittee shall submit to the Administrative Authority signed quarterly progress reports of all activities (i.e., SWMU Assessment, Interim Measures, RCRA Facility Investigation, Corrective Measures Study) conducted pursuant to the provisions of Section IV beginning no later than ninety (90) calendar days from the effective date of this permit. These reports shall contain:

   a. a description of the work completed;

   b. summaries of all findings, including summaries of laboratory data;

   c. summaries of all problems or potential problems encountered during the reporting period and actions taken to rectify problems; and

   d. projected work for the next reporting period.

2. Copies of other reports (e.g., inspection reports), drilling logs and laboratory data shall be made available to the Administrative Authority upon request.

3. As specified under Permit Conditions F.G., or K., the Administrative Authority may require the Permittee to conduct new or more extensive assessments, investigations, or studies, as needed, based on information provided in these progress reports or other supporting information.

4. The Permittee, in addition to the written reports, shall provide, at the request of the Administrative Authority, status review through semi-annual briefings with the Administrative Authority.

F. NOTIFICATION REQUIREMENTS FOR AND ASSESSMENT OF NEWLY-IDENTIFIED SOLID WASTE MANAGEMENT UNIT(s) (SWMUs)

1. The Permittee shall notify the Administrative Authority, in writing, of any newly-identified SWMU(s) (i.e., a unit not specifically identified during the RCRA Facility Assessment (RFA)), discovered during the course of ground water monitoring, field investigations, environmental audits, or other means, no later than fifteen (15) calendar days after discovery. The notification shall include the following items, to the extent available:

   a. The location of the newly-identified SWMU in relation to other SWMUs;

   b. The type and function of the unit;

   c. The general dimensions, capacities, and structural description of the unit (supply any available drawings);

   d. The period during which the unit was operated;

   e. The specifics on all wastes that have been or are being managed at the SWMU, to the extent available; and

   f. The results of any sampling and analysis required for the purpose of determining whether releases of hazardous wastes, including hazardous constituents, have occurred, are occurring, or are likely to occur from this unit.

2. Based on the results of this Notification, the Administrative Authority will determine the need for further investigations or corrective measures at any newly-identified SWMU(s) covered in the Notification. If the Administrative Authority determines that such investigations are needed, the Administrative Authority

may require the Permittee to prepare a plan for such investigations. This plan will be reviewed for approval as part of the RFI Work Plan under Condition IV.J. of this section.

G. NOTIFICATION REQUIREMENTS FOR NEWLY-DISCOVERED RELEASES AT SWMU(s)

The Permittee shall notify the Administrative Authority, in writing, of any release(s) of hazardous waste or hazardous constituents discovered during the course of ground water monitoring, field investigation, environmental auditing, or other activities undertaken after the commencement of the RFI, no later that fifteen (15) calendar days after discovery. Such newly-discovered releases may be from newly-identified units, from units for which, based on the findings of the RFA, the Administrative Authority has previously determined that no further investigation was necessary, or from units investigated as part of the RCRA Facility Investigation (RFI). The Administrative Authority may require further investigation and/or Interim Measures for the newly-identified release(s).

H. DESCRIPTION OF CURRENT CONDITIONS REPORT AND RCRA FACILITY INVESTIGATION (RFI) WORK PLAN

1. On or before one hundred eighty (180) days of the effective date of this Permit, the Permittee shall submit to the Administrative Authority a Description of Current Conditions Report (CCR) describing the current conditions at the facility as outlined in the RFI Scope of Work, Condition R, Task I. This Report may be limited to information not in the Part B or to recent information not addressed in the RCRA Facility Assessment (RFA). Results of any previous investigations and any other investigations required by state or local authorities may be included in this Report if they address any of the requirements of this Permit. The Report shall address the background information pertinent to the facility and the nature and extent of contamination.

   In addition to the above requirements, the Permittee shall also include in the CCR a narrative verifying whether SWMU numbers 194 thru 217 exist, (No.'s are from the A.T. Kearney RFA, September, 1988) and if they exist, a map showing their locations. SWMU's found to exist may be included in the RFI if the Administrative Authority deems necessary.

2. On or before one hundred eighty (180) days of the effective date of the permit, the Permittee shall conduct

a visual site inspection and send a findings report on the following SWMUs:

SWMU #	Unit Name
84	Bldg. 137 Washrack
86	Bldg. 304A Washrack
95	Bldg. 902 Washrack
158	PCB Storage Bunker

This findings report shall describe the integrity of each SWMU, and note any releases within or outside the SWMU boundary, and a justified recommendation (further action or no further action required).

The RFI Workplan shall be submitted in three (3) parts. The first part shall be submitted to the Administrative Authority within one hundred eighty (180) days of the effective date of this permit. This workplan shall address releases of hazardous waste, including hazardous constituents to all media for those units listed in Table 1. The SWMU numbers are from the RFA Report, prepared by A.T. Kearney, Inc., dated September 8, 1988.

The second RFI Workplan shall be submitted to the Administrative Authority within 18 months from the effective date of this permit, and shall address those units listed in Table 2.

The third RFI Workplan shall be submitted to the Administrative Authority within 30 months from the effective date of this permit, and shall address those units listed in Table 3.

TABLE 1

SWMU #	Unit Name
42	Building 1 Waste Accumulation Area
102	Acid Trailer Disposal Site
104	Former Army Landfill
105	Golf Course Landfill
106	Main Base Landfill
107	Main Base Substation PCB disposal Area
108	MOBBS Landfill Disposal Trench
109	Old Main Base Landfill
113	Sludge Disposal Trenches
114	TEL Disposal Site
115	West Area Landfill #1 PCB Disposal Area
116	West Area Landfill #2
170	Fire Department Training Area 1
171	Fire Department Training Area 2
178	Building 1191 Fuel Runoff Pits
212	Building 824 Waste Accumulation Area
130	Taxiway 4 Tank 28
132	Building 21 Entomology Leachfield
137	Building 1166 Test Track Drainfield
138	Building 1166 Oil/Water Separator Drainage Pit
139	Lake Holloman, which includes the earthen ditch carrying discharge from lagoon G to Lake Holloman
140	Lake Stinky
AOC-A	Building 21 Pesticide Rinsewater Spill Area
AOC-D	Building 882 Spills
AOC-O	Building 296 Fuel Tank Leaks
AOC-P	Building 301 Fuel Tank Leaks
AOC-T	POL Storage Tank Leaks
141	Pad 9 Drainage Pit
102	Acid Trailer Disposal Site
229	Former Entomology Shop
4	Bldg. 131 O/W5
21	Bldg. 702 O/W5
111	Radioactive Waste Disposal Area
122	Bldg. 702 Waste Oil Tank
133	Bldg. 703 Washrack Discharge Area
134	Bldgs. 920-924 Drainage Ditch
192	CoCo Block House Disposal Well

TABLE 2

SWMU #	Unit Name
118	Bldg. 21 Pesticide Holding Tank
119	Bldg. 121 Waste Oil Tank
120	Bldg. 309 Waste Oil Tank
121	Bldg. 316 Waste Oil Tank
123	Bldg. 704 Waste Oil Tank
124	Bldg. 752 Waste Oil Tank
125	Bldg. 868 Fire Water Tank
126	Bldg. 1000 Waste Oil Tank
127	Bldg. 1092 Waste Oil Tank
128	Bldg. 1166 Waste Oil Tank
129	Bldg. 1191 Spill Tank
135	Bldg. 1092 Oil/Water Separator (O/WS) Drainage Pit
136	Bldg. 1119 Washrack Drainage Area
155	Sludge Drying Beds
156	Imhoff Tanks (5)
AOC-G	Atlas Substation PCB Spill
AOC-U	Lost River Basin
164	Bldg. 1080 Pond
165	Bldg. 1176 Pond
166	MOBBS Drainage Lagoon
177	Bldg. 1176 Sumps
179	Discharge Box
181	Bldg 1176 Drainage Trough
183	Air Base Sewer System
184	Wastewater Recirculating Line
101	Bldg. 121 Landfill
54	Bldg. 702 Waste Accumulation Area (WAA)
55	Bldg. 702A WAA
56	Bldg. 807 WAA
63	Bldg. 867 WAA
71	Bldg. 1178 WAA
75	DRMO Hazardous Waste Storage Area
78	Trim Pad 3 WAA
91	Bldg. 816 Washrack
AOC-L	Early Missile Test Site

TABLE 3

SWMU #3	Unit Name
11	Bldg. 300 O/WS
12	Bldg. 304 O/WS
13	Bldg. 304A O/WS
14	Bldg. 306 O/WS
15	Bldg. 309 O/WS
16	Bldg. 315 O/WS
17	Bldg. 316 O/WS
18	Bldg. 500 O/WS
19	Bldg. 638 O/WS
20	Bldg. 639 O/WS
21	Bldg. 702 O/WS
22	Bldg. 704 O/WS
23	Bldg. 800 O/WS
24	Bldg. 801 O/WS
25	Bldg. 805 O/WS
26	Bldg. 809 O/WS
27	Bldg. 810 O/WS
28	Bldg. 822 O/WS
29	Bldg. 827 O/WS
30	Bldg. 830 O/WS
31	Bldg. 855 O/WS
32	Bldg. 868 O/WS
33	Bldg. 869 O/WS
34	Bldg. 902 O/WS
35	Bldg. 903 O/WS
36	Bldg. 1000 O/WS
37	Bldg. 1080 O/WS
38	Bldg. 1080A O/WS
39	Bldg. 1092 O/WS
40	Bldg. 1166 O/WS
41	Bldg. 1266 O/WS
1	Bldg. 55 O/WS
2	Bldg. 121 O/WS
3	Bldg. 130 O/WS
4	Bldg. 131 O/WS
5	Bldg. 137 O/WS
6	Bldg. 193 O/WS
7	Bldg. 198 O/WS
8	Bldg. 231 O/WS
9	Bldg. 282 O/WS
10	Bldg. 283 O/WS

a. The RFI Work Plan shall describe the objectives of the investigation and the overall technical and analytical approach to completing all actions necessary to characterize the nature, direction, rate, movement, and concentration of releases of hazardous waste or hazardous constituents from specific units or groups of units, and their actual or potential receptors. The RFI Workplan shall detail all proposed activities and procedures to be conducted at the facility, the schedule for implementing and completing such investigations, the qualifications of personnel performing or directing the investigations, including contractor personnel, and the overall management of the RFI. The Scope of Work for a RCRA Facility Investigation (RFI) is in Condition IV.R.

b. In addition, the RFI Work Plan shall discuss sampling and data collection, quality assurance and data management procedures, including formats for documenting and tracking data and other results of investigations, and health and safety procedures.

3. After the Permittee submits the RFI Work Plan, the Administrative Authority will either approve, disapprove, or modify the RFI Work Plan in writing.

If the Administrative Authority approves the plan, the Permittee shall immediately initiate implementation of the plan according to the schedule contained therein. All approved work plans become incorporated into this permit.

In the event of disapproval (in whole or in part) of the plan, the Administrative Authority will specify any deficiencies in writing. The Permittee shall modify the plan to correct these within 30 days of receipt of the disapproval by the Administrative Authority. The modified plan shall be submitted in writing to the Administrative Authority for review. Should the Permittee take exception to all or part of the disapproval, the Permittee shall invoke the dispute resolution clause under permit conditions D.5.a. and b. If disagreements cannot be resolved, the Administrative Authority may make further modifications as required. If the Administrative

Authority modifies the plan, this modified plan becomes the approved RFI Work Plan. The Permittee shall immediately initiate implementation of the approved RFI Work Plan according to the schedule contained therein.

4. The Administrative Authority will review for approval, as part of the RFI Work Plan, any plans developed pursuant to Section IV.F addressing further investigations of newly-identified SWMUs, or Section IV.G addressing new releases from previously-identified units. The Administrative Authority may modify this Permit either according to procedures in this Permit, or according to the permit modification procedures under 40 CFR 270.41, to incorporate these units and releases into the RFI Work Plan.

I. RCRA FACILITY INVESTIGATION WORK PLAN IMPLEMENTATION

Upon receipt of written approval from the Administrative Authority for the RFI Work Plan, the Permittee shall begin implementation of the RCRA Facility Investigation according to the Schedules specified in the RFI Work Plan. The RFI shall be conducted in accordance with the approved RFI Work Plan. The Permittee shall prepare the RFI Work Plan and undertake the facility investigation in accordance with the following:

1. Development of the RFI Work Plan and reporting of data shall be consistent with the RCRA Facility Investigation Guidance Document (OSWER Directive 9502.00-6 (D)) May 1989 or the equivalent thereof;

2. EPA and NMED reserve the right to split samples. The Permittee shall notify EPA and NMED at least 10 days prior to any sampling activity;

3. When developing ground water related investigations, the Permittee shall be consistent with the RCRA Groundwater Monitoring Technical Enforcement Guidance Document (EPA OSWER Directive 9950-1, September 1986) or the equivalent thereof to determine methods and materials that are acceptable to EPA;

4. Any deviations from the approved RFI Work Plan which are necessary during implementation of the investigations must be approved by the Administrative Authority and fully documented and described in the progress reports and in the RFI report.

J. RCRA FACILITY INVESTIGATION REPORT AND SUMMARY

1. As specified in the approved RFI Workplan, the Permittee shall submit an RFI Report and a Summary Report. The RFI Report shall describe the procedures, methods, and results of all investigations of SWMUs and their releases, including information on the type and extent of contamination at the facility, sources and migration pathways, and actual or potential receptors. The RFI Report shall present all information gathered under the approved RFI Work Plan. The Report must contain adequate information to support further corrective action decisions at the facility. The Summary shall describe more briefly the procedures, methods, and results from the facility investigation described in the Scope of Work for RFI, Task III.

2. After the Permittee submits the RFI Report and a Summary, the Administrative Authority will either approve or disapprove the Reports in writing.

   If the Administrative Authority approves the RFI Report and Summary, the Permittee shall mail the approved Summary Report to all individuals on the facility mailing list established pursuant to 40 CFR 124.10(c) (1)(ix), within fifteen (15) calendar days of receipt of approval.

   If the Administrative Authority determines the RFI Final Report and Summary do not fully detail the objectives stated under Condition IV.R. , the Administrative Authority may disapprove the RFI Final Report and Summary. If the Administrative Authority disapproves the Report, the Administrative Authority will notify the Permittee in writing of the Report's deficiencies and specify a due date for submittal of a revised Final Report and Summary. Once approved, the Summary shall be mailed to all individuals on the facility mailing list.

K. INTERIM MEASURES

1. If during the course of any activity initiated under Section IV of this Permit, the Administrative Authority determines that a release or potential release of hazardous constituents from a SWMU poses a threat to human health and the environment, the Administrative Authority may specify interim measures. The Administrative Authority may determine the specific measure, including potential permit modifications and the schedule for implementing the required measures. The Administrative Authority will notify the Permittee in writing of the requirement to perform such interim measures. The Administrative Authority will modify

Section IV of the Permit either according to procedures in this Permit, or according to the permit modification procedures under 40 CFR 270.41, to incorporate such interim measures into the Permit.

2. The following factors will be considered by the Administrative Authority in determining the need for interim measures:

   a. time required to develop and implement a final remedy;

   b. actual and potential exposure to human and environmental receptors;

   c. actual and potential contamination of drinking water supplies and sensitive ecosystems;

   d. the potential for further degradation of the medium absent interim measures;

   e. presence of hazardous waste in containers that may pose a threat of release;

   f. presence and concentration of hazardous waste including hazardous constituents in soil that have the potential to migrate to ground water or surface water;

   g. weather conditions that may affect the current levels of contamination;

   h. risks of fire, explosion, or accident; and

   i. other situations that may pose threats to human health and the environment.

L. DETERMINATION OF NO FURTHER ACTION

1. Based on the results of the RFI and other relevant information, the Permittee may submit an application to the Administrative Authority for a Class III permit modification under 40 CFR 270.42(c) to terminate the RFI/CMS process for a specific unit. This permit modification application must contain information demonstrating that there are no releases of hazardous wastes or hazardous constituents from a particular SWMU at the facility that poses a threat to human health and the environment, as well as information required in 40 CFR 270.42.(c), which incorporates by reference 40 CFR 270.13 through 270.21, 270.62, and 260.63.

If, based upon review of the Permittee's request for a permit modification, the results of the RFI, and other information, including comments received during the sixty (60) day public comment period required for Class III permit modifications, the Administrative Authority determines that releases or suspected releases which were investigated either are non-existent or do not pose a threat to human health and the environment, the Administrative Authority will grant the requested modification.

2. A determination of no further action shall not preclude the Administrative Authority from requiring continued or periodic monitoring of air, soil, ground water, or surface water, when site-specific circumstances indicate that release of hazardous wastes including hazardous constituents are likely to occur, if necessary to protect human health and the environment.

3. A determination of no further action shall not preclude the Administrative Authority from requiring further investigations, studies, or remediation at a later date, if new information or subsequent analysis indicates a release or likelihood of a release from a SWMU at the facility that is likely to pose a threat to human health or the environment. In such a case, the Administrative Authority may initiate either a modification to Section IV of this Permit according to procedures in this Permit, or a major permit modification according to 40 CFR 270.41, to rescind the determination made in accordance with Permit Condition IV.L.

M. CORRECTIVE MEASURES STUDY (CMS) PLAN

1. If the Administrative Authority has reason to believe that a SWMU has released concentrations of hazardous constituents, or if the Administrative Authority determines that contaminants present a threat to human health and the environment given site-specific exposure conditions, the Administrative Authority may require a Corrective Measures Study (CMS) and shall notify the Permittee in writing. The notification may also specify remedial alternatives to be evaluated by the Permittee during the CMS.

2. The Permittee shall submit a draft CMS Plan to the Administrative Authority within ninety (90) calendar days from notification of the requirement to conduct a CMS. The Scope of Work for a Corrective Measure Study (CMS) is in Section IV.S.

The CMS Plan shall provide the following information:

a. a description of the general approach to investigation and potential remedies;

b. a definition of the overall objectives of the study;

c. the specific plans for evaluating remedies to ensure compliance with remedy standards;

d. the schedules for conducting the study; and

e. the proposed format for the presentation of information.

3. After the Permittee submits the draft CMS Plan, the Administrative Authority will either approve or disapprove the Plan. If the Plan is not approved, the Administrative Authority will notify the Permittee in writing of the Plan's deficiencies and specify a due date for submittal of the revised Plan. If this Plan is not approved, the Administrative Authority may revise the Plan and notify the Permittee of the revisions. This Administrative Authority revised Plan becomes the approved Plan.

4. After the Permittee submits the CMS Plan, the Administrative Authority will either approve, disapprove, or modify the CMS Plan in writing.

If the Administrative Authority approves the CMS Plan, the Permittee shall immediately initiate implementation of the CMS Plan according to the schedule contained therein. The approved CMS Plans become incorporated into this permit.

In the event of disapproval (in whole or in part) of the plan, the Administrative Authority will specify any deficiencies in writing. The Permittee shall modify the plan to correct these within 30 days of receipt of the disapproval by the Administrative Authority. The modified CMS Plan shall be submitted in writing to the Administrative Authority for review. Should the permittee take exception to all or part of the disapproval, the Permittee shall submit to the Administrative Authority a written statement of the grounds for the exception within 15 days of receipt of the disapproval by the Administrative Authority. If disagreements cannot be resolved, the Administrative Authority may make further modifications as required.If the Administrative Authority modifies the CMS Plan, this modified CMS Plan becomes the approved CMS Plan. The

Permittee shall immediately initiate implementation of the approved CMS Plan according to the schedule contained therein.

N. CORRECTIVE MEASURES STUDY (CMS) IMPLEMENTATION

No later than fifteen (15) calendar days after the Permittee has received written approval from the Administrative Authority for the CMS Plan, the Permittee shall begin to implement the Corrective Measures Study according to the schedules specified in the CMS Plan. The CMS shall be conducted in accordance with the approved Plan.

O. CORRECTIVE MEASURES STUDY (CMS) FINAL REPORT

1. Within sixty (60) calendar days after the completion of the CMS, the Permittee shall submit a CMS Final Report. The CMS Final Report shall summarize the results of the investigations for each remedy studied and of any bench-scale or pilot tests conducted. The CMS Report must include an evaluation of each remedial alternative. The CMS Report shall present all information gathered under the approved CMS Plan. The final report must contain adequate information to support the Administrative Authority in the remedy selection decision-making process.

2. If the Administrative Authority determines that the CMS Final Report does not fully satisfy the information requirements specified under Permit Condition V.S, the Administrative Authority may disapprove the CMS Final Report. If the Administrative Authority disapproves the Final Report, the Administrative Authority will notify the Permittee in writing of deficiencies in the Report and specify a due date for submittal of a revised Final Report.

3. After the Permittee submits the Final CMS Report, the Administrative Authority will either approve or disapprove the Report. If the Report is not approved, the Administrative Authority will notify the Permittee in writing of the Report's deficiencies and specify a due date for submittal of the revised Report. If this Report is not approved, the Administrative Authority may revise the Report and notify the Permittee of the revisions. The CMS Report revised by the Administrative Authority becomes the approved Report.

4. Based on preliminary results and the final CMS report, the Administrative Authority may require the Permittee to evaluate additional remedies or particular elements of one or more proposed remedies.

P. MODIFICATION OF THE HSWA PERMIT

1. If at any time the Administrative Authority determines that modification of Section IV of this Permit is necessary, a modification may be initiated according to the procedures of 40 CFR 270.41 and 42.

2. Modifications to the Section IV of this Permit do not constitute a reissuance of the Permit.

Q. RFI/CMS SUBMISSION SUMMARY

Below is a summary of the planned reporting requirements of this Permit:

Actions	Due Date
Notification of newly-discovered SWMUs	fifteen (15) calendar days after discovery
Notification of newly-discovered releases	fifteen (15) calendar days after discovery
Progress reports on all activities	quarterly -- no later than ninety (90) calendar days after effective date of permit
Visual Site Findings Report	one hundred eighty (180) from effective date of permit
Description of Conditions Report	one hundred eighty (180) days from effective date of permit
RFI Workplan for SWMUs identified at time of permit issuance	one hundred eighty (180) calendar days after the effective date of the permit
RFI Report and Summary	As required in the approved RFI Workplan by the Administrative Authority

Actions	Due Date
Interim Measures Plan for interim measures required after permit issuance	thirty (30) calendar days after notification
CMS Plan	ninety (90) calendar days after notification of requirement to perform CMS
CMS Report	sixty (60) calendar days after completion of CMS
Revised CMS Report	thirty (30) calendar days after notification of deficiency

R. SCOPE OF WORK OF FOR A RCRA FACILITY INVESTIGATION (RFI)

PURPOSE

The purpose of this RCRA Facility Investigation is to determine the nature and extent of releases of hazardous waste or hazardous constituents from solid waste management units. The Permittee shall furnish all personnel, materials and services necessary for or incidental to, performing the RFI.

If the Permittee believes that certain requirements of the Scope of work are not applicable, the specific requirements shall be identified and the rationale for inapplicability shall be provided.

Information concerning any of the Solid Waste Management Units generated in response to any other Federal, State, or local programs may be used to address any of the requirements of Section IV of this Permit. The Administrative Authority will determine the acceptability of this information with regard to addressing the requirements of Section IV.R and Section IV.S.

SCOPE

The RCRA Facility Investigation consists of five tasks:

Task I: Description of Current Conditions

A. Facility Background
B. Nature and Extent of Contamination
C. Special Permit Conditions
D. Current and Past Interim Measures

Task II: RFI Workplan

A. Data Collection Quality Assurance Plan
B. Data Management Plan
C. Health and Safety Plan
D. Community Relations Plan

Task III: Facility Investigation

A. Environmental Setting
B. Source Characterization
C. Contamination Characterization
D. Potential Receptor Identification

Task IV: Investigative Analysis

A. Data Analysis
B. Protection Standards

TASK I: PRELIMINARY REPORT: DESCRIPTION OF CURRENT CONDITIONS

The Permittee shall submit to the Administrative Authority a Description of Current Conditions providing the background information pertinent to the facility, contamination and any type of on-going corrective action as set forth below. This report is limited to information not in the Part B permit application or to recent information not addressed in the RCRA Facility Assessment (RFA).

A. Facility Background

The report shall summarize the regional location,pertinent boundary features, general facility physiography, hydrogeology, and historical use of the facility for the treatment, storage or disposal of solid and hazardous waste. Information from existing reports and studies is acceptable for any requirement in this permit, as long as the source of this information is documented and it is pertinent and reflective of current conditions, and meets the format for the RFI investigations. The report shall include:

1. Map(s) depicting the following:

   a. General geographic location;

   b. Property lines, with the owners of all adjacent property clearly indicated;

   c. Topography, waterways, all wetlands, floodplains, water features, drainage patterns;

   d. All solid waste management units;

   e. All known past solid or hazardous waste treatment, storage and disposal areas regardless of whether they were active on November 19, 1980;

   f. Surrounding land uses (residential, commercial, agricultural, recreational); and

g. The location of all production and ground water monitoring wells. These wells shall be clearly labeled and ground and top of casing elevations included (these elevations may be included as an attachment).

All maps shall be of sufficient detail and accuracy to locate and report all current and future work performed at the site.

2. A history and description of ownership and operation, solid and hazardous waste generation, treatment, storage and disposal activities at the facility.

3. Approximate dates or periods of past waste spills, identification of the materials spilled, the amount spilled, the location where spilled, and a description of the response actions conducted (local, State, or Federal response units or private parties), including any inspection reports or technical reports generated as a result of the response.

4. Documentation of all interim measures which were or are being undertaken at the facility other than those specified in this permit.

5. A reference of all environmental, geologic, and hydrogeologic studies performed by all parties, at or near the facility, with a short summary of purpose scope and significant findings thereof.

6. A reference of all environmental permits, applied for and/or received, the purpose thereof, and a short summary of requirements.

B. Nature and Extent of Contamination

The Permittee shall include in the Preliminary Report the existing information on the nature and extent of contamination.

1. The Permittee's report shall summarize all possible source areas of contamination, including all solid waste management units. For each area, the Permittee shall identify the following:

a. location of unit/area (which shall be depicted on a facility map);

b. quantities of solid and hazardous wastes;

c. hazardous waste, radiochemical and hazardous constituents, to the extent know; and

d. identification of areas where additional information is necessary.

2. The Permittee shall prepare an assessment and description of the existing degree and extent of contamination. This should include:

a. available monitoring data and qualitative information on locations and levels of contamination at the facility;

b. all potential migration pathways including information on geology, pedology, hydrogeology, physiography, hydrology, water quality, meteorology, and air quality; and

c. the potential impact(s) on human health and the environment, including demography, ground water and surface water use, and land use.

C. Current and Past Interim Measures

The permittee shall document and report on all interim measures which were or being undertaken at the facility other than those specified in the permit. This shall include:

1. objectives of the interim measures (how the measure is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long term solution at the facility);

2. design, construction, operation, and maintenance requirements;

3. schedules for design, construction and monitoring; and

4. schedule for progress reports.

TASK II: RFI WORKPLAN REQUIREMENTS

The Permittee shall prepare an RFI Work Plan. The RFI Work Plan shall include the development of several plans, which shall be prepared concurrently. During the RFI, it may be necessary to revise the RFI Work Plan to increase or decrease the detail of information collected to accommodate the facility specific situation. The RFI Work Plan shall include the following:

A. Collection Quality Assurance Plan

1. The strategy section of the Data Collection Quality Assurance Plan shall include but not be limited to the following:

   a. description of the intended uses for the data, and the necessary level of precision and accuracy for these intended uses;

   b. description of methods and procedures to be used to assess the precision, accuracy and completeness of the measurement data;

2. Sampling and Field Measurements

   The Sampling Field Measurements Section of the Data Collection Quality Assurance Plan shall at least discuss:

   a. selecting appropriate sampling an field measurements locations, depths, etc;

   b. providing a statistically sufficient number of sampling and field measurements sites;

   c. determining conditions under which sampling or field measurements should be conducted;

   d. determining which parameters are to be measured and where;

   e. selecting the frequency of sampling and length of sampling period;

   f. selecting the types of sample (e.g., composites vs. grabs) and number of samples to be collected;

   g. measures to be taken to prevent contamination of sampling or field measurements equipment and cross contamination between sampling points;

   h. documenting field sampling operations and procedures;

i. selecting appropriate sample containers;

j. sample preservation; and

k. chain-of-custody.

3. The Sample Analysis shall include;

a. chain-of custody

b. sample storage procedures and holding times

c. sample preparation methods;

d. analytical procedures;

f. calibration procedures and frequency;

g. data reduction, validation and reporting; and

h. internal quality control checks, laboratory performance and systems audits and frequency.

B. Data Management Plan

The Permittee shall develop and initiate a Data Management Plan to document and tack investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation, such as:

1. Data Record;

2. Tabular Displays; and

3. Graphical Displays

C. Health and Safety Plan

The Permittee shall prepare a facility Health and Safety Plan.

1. Major elements of the Health and Safety Plan shall include:

   a. facility description including availability of resources such as roads, water supply electricity and telephone service.

   b. a description of the known hazards and evaluation of the risks associated with the incident and with each activity conducted;

   c. list key personnel and alternatives responsible for site safety, responses operations, and for protection of public health;

   d. delineate work area;

   e. describe levels of protection to be worn by personnel in work areas;

   f. establish procedures to control site access;

   g. describe decontamination procedures for personnel and equipment;

   h. establish site emergency procedures;

   i. address emergency medical care for injuries and toxicological problems;

   j. describe requirements for an environmental field monitoring program;

   k. specify any routine and special training required for responders; and

      1. establish procedures for protecting workers from weather-related problems.

      2. The Facility Health and Safety Plan shall be consistent with:

         a. NIOSH Occupation Safety and Health Guidance Manual for Hazardous Waste Site Activities 1985);

b. EPA Order 1440.1 - Respiratory Protection;

c. EPA Order 1440.3 - Health and Safety Requirements for Employees engaged in Field Activities;

d. Approved Facility Contingency Plan;

e. EPA Operating Safety Guide (1984);

f. OSHA regulations particularly in 29 CFR 1910 and 1926;

g. State and local regulations; and

h. other EPA guidance as provided.

D. Community Relations Plan

The Permittee shall prepare for the dissemination of information to the public regarding investigation activities and results.

E. Project Management Plan

The Permittee shall prepare a Project Management Plan which will include a discussion of the technical approach, schedules, budget, and key project personnel. The project management plan will also include a description of qualifications of key project personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RFI.

TASK III: FACILITY INVESTIGATION

The Permittee shall conduct those investigation of SWMUs previously identified with known or suspected releases of contamination as necessary to protect human health and the environment to: characterize the facility (Environmental Setting); define the source (Source Characterization); define the degree and extent of contamination (Contamination Characterization); and identify actual or potential receptors.

Investigations should result in data of adequate technical quality to support the development and evaluation of the corrective measure alternative or alternatives during the Corrective Measures Study, when necessary.

The facility investigation activities shall when conducted follow the plans set forth in Task II. All sampling and analyses shall be conducted in accordance with the Data Collection Quality Assurance Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

A. Environmental Setting

The Permittee shall collect information to supplement and verify existing information on the environmental setting at the facility. The Permittee shall characterize the following:

1. Hydrogeology

The Permittee shall conduct a program to evaluate hydrogeologic conditions at the facility. This program shall provide the following information:

a. A description of the regional and SWMU specific geologic and hydrogeologic chracteristics affecting ground water flow beneath the facility.

b. An analysis of any topographic features that might influence the ground water flow system. (Note: Stereographic analysis of aerial photographs may aid in this analysis).

c. Based on field data, tests, (e.g., gamma and neutron logging of existing and new wells, piezometers and borings) and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (i.e., the aquifers and any intervening saturated and unsaturated units).

d. Based on field studies and cores, structural geology and hydrogeologic cross sections showing the extend (depth, thickness, lateral extent) of hydrogeologic units which may be part of the migration pathways identifying:

   i) unconsolidated sand and gravel deposits;

   ii) zones of fracturing or channeling in consolidated or unconsolidated deposits; and

   iii) zones of high permeability that might direct and restrict the flow of contaminants.

e. Based on data obtained from ground water monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring.

f. A description of man-made influences that may affect the hydrogeology of the site.

2. Soils

The Permittee shall conduct a program to characterize the soil and rock units above the water table in the vicinity of the contaminant release(s). Such characterization shall include, but not be limited to, the following information:

a. Surface soil distribution;

b. Soil profile, including ASTM classification of soils;

c. Transects of soils stratigraphy;

d. Saturated hydraulic conductivity;

e. Porosity;

f. Cation exchange capacity (CEC);

g. Soil pH;

h. Particle size distribution;

i. Depth of water table;

j. Moisture;

k. Effect of stratification on unsaturated flow;

l. Infiltration

m. Evapotranspiration;

n. Residual concentration of contaminants in soil; and

o. Mineral and metal content.

B. Source Characterization

The Permittee shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, including: type; quantity; physical form; disposition (containment or nature of deposits); and the facility characteristics affecting release (e.g., facility security, and engineered barriers). This shall include quantification of the following specific characteristics, at each source area:

1. Unit/Disposal Area Characteristics:

a. Location of unit/disposal area;

b. Type of unit/disposal area;

c. Design features;

d. Operating practices (past and present);

e. Period of operation;

f. Age of unit/disposal area;

g. General physical conditions;

h. Method used to close the unit/disposal area.

2. Waste Characteristics:

a. Type of waste placed in unit;

b. Physical and chemical characteristics; and

c. Migration and dispersal characteristics of the waste.

The Permittee shall document the procedures used in making the above determinations.

C. Contamination Characteristics

The Permittee shall collect analytical data on ground water, soils, surface water, sediment, and subsurface gas contamination when necessary to characterize contamination from a SWMU. This data shall be sufficient to define the extent, origin, direction, and rate of movement of contaminant plumes. Data shall include time and location of sampling, media sampled, concentrations found, conditions during sampling, and the identity of the individual(s) performing the sampling and analysis. Each media must be investigated, if the Permittee believes certain media could not be affected by a release from a specific unit, a detailed justification for not investigating the media must be provided. The Permittee shall address the following types of contamination at the facility:

1. Ground Water Contamination

The Permittee shall conduct a Ground Water Investigation to characterize any plumes of contamination at the facility. This investigation shall, at a minimum, provide the following information:

a. A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the facility;

b. The horizontal and vertical direction of contamination movement;

c. The velocity of contaminant movement;

d. The horizontal and vertical concentration profiles of any Appendix IX constituents and radiochemical constituents in the plume (s);

e. An evaluation of factors influencing the plume movement; and

f. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations (e.g., well design, well construction, geophysics, modeling, etc.).

2. Soil Contamination

The Permittee shall conduct an investigation to characterize the contamination of the soil and rock units above the water table in the vicinity of the contaminant

release. The investigation shall include the following information:

a. A description of the vertical and horizontal extent of contamination;

b. A description of contaminant and soil chemical properties within the contaminant source area and plume migration and transformation;

c. Specific contaminant concentrations;

d. The velocity and direction of contaminant movement; and

e. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations.

3. Surface Water Contamination

The Permittee shall conduct a surface water investigation to characterize contamination in surface water bodies resulting from contaminant releases at the facility. The investigation shall include the following:

a. A description of the horizontal and vertical extent of any immiscible or dissolved plumes originating from the facility, and the extent of contamination in the underlying sediments;

b. The horizontal and vertical direction and velocity of contaminant movement;

c. An evaluation of the physical, biological, chemical, and radiochemical factors influencing contaminant movement;

d. An extrapolation of future contaminant movement;

e. A description of the chemistry and radiochemistry of the contaminated surface waters and sediments. This includes determining the pH, total dissolved solids, specific contaminant concentrations, etc.

The Permittee shall document the procedures used in making the above determinations.

4. Air Contamination

The Permittee shall conduct an investigation to characterize the particulate and gaseous contaminants released into the atmosphere.

This investigation shall provide the following information:

a. A description of the horizontal and vertical direction and velocity of contaminant movement;

b. The rate and amount of the release; and

c. The chemical, radiochemical, and physical composition of the contaminants releases, including horizontal and vertical concentration profiles.

5. Subsurface Gas

The Permittee shall provide information characterizing the nature, rate and extent of releases of reactive gases from the units. Such information shall include, but not be limited to: provisions for monitoring subsurface gases released from the unit; and an assessment of the potential for these releases to have a threat to human health and environment.

The Permittee shall document the procedures used in making the above determination.

D. Potential Receptors

The Permittee shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical and radiochemical analysis of biological samples may be needed. Data on observable effects in ecosystems may also be obtained.

TASK IV: INVESTIGATIVE ANALYSIS

The Permittee shall prepare an analysis and summary of all facility investigations and their results. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support the Corrective Measures Study, if one is required.

The Permittee shall analyze all facility investigation data outlined in Task III and prepare a report on the type and extent of contamination at the facility including sources and migration pathways. The report shall describe the extent of contamination (qualitative/quantitative) in relation to the background levels indicative for the area. The Permittee shall identify all relevant and applicable standards for the protection of human health and the environment (e.g. National Ambient Air Quality Standards, federally-approved State water quality standards, ground water protection standards, etc).

TASK V: REPORTS

A. Preliminary and Workplan

The Permittee shall submit to the Administrative Authority the Preliminary Report (Task I) and the RCRA Facility Investigation Workplan (Task II) as described in the Permit.

B. Progress

Within 90 days of the effective date of this permit, the Permittee shall provide the Administrative Authority with signed, quarterly progress reports containing:

1. A description and estimate of the percentage of the RFI completed;

2. Summary of contacts pertaining to corrective action or environmental matters with representatives of the local community, public interest groups or State government during the reporting period;

3. Summary of problems or potential problems encountered during the reporting period;

4. Actions being taken to rectify problems;

5. Changes in key project personnel during the reporting period;

6. Projected work for the next reporting period;

7. Summaries of all findings to date; and

8. Summaries of all changes made in the RFI during the reporting period.

C. Draft and Final

The RFI Report shall be developed in draft form for the Administrative Authority's review. The RFI Report shall be developed in final format incorporating comments received on the Draft RFI Report.

Two hard copies and one compatible disk copy of all reports, including the Task I report, Task II workplan and both the Draft and Final RFI Reports (Task III-IV) shall be provided by the Permittee to the Administrative Authority.

Facility Submission Summary

A summary of the information reporting requirements contained in the RCRA Facility Investigation Scope of Work is presented below:

Facility Submission	Due Date
Description of Current Conditions (Task I)	180 days*
RFI Workplan (Task II)	180 days
Draft RFI Report	As specified by the Administrative Authority
Final (Revised) RFI Report (Tasks III and IV)	As specified by the Administrative Authority
Progress reports on Tasks I through V and interim measures	Quarterly

* Dates are calculated from the effective date of this permit unless otherwise specified.

8. SCOPE OF WORK FOR A CORRECTIVE MEASURE STUDY (CMS)

PURPOSE

The purpose of this Corrective Measure Study (CMS) is to develop and evaluate the corrective action alternative or alternatives and to recommend the corrective measure or measures to be taken at Holloman Air Force Base - New Mexico.

The Permittee will furnish the personnel, materials, and services necessary to prepare the CMS, except as otherwise specified.

If the Permittee believes that certain requirements of the scope of work are not applicable, the specific requirements shall be identified and a detailed rationale for inapplicability shall be provided.

SCOPE

The Corrective Measure Study consists of four tasks:

Task VI: Identification and Development of the Corrective Measure Alternative or Alternatives

- A. Description of Current Situation
- B. Establishment of Corrective Action Objectives
- C. Laboratory and Bench-Scale Study
- D. Screening of Corrective Measures Technologies
- E. Identification of the Corrective Measure Alternative or Alternatives

Task VII: Evaluation of the Corrective Measure Alternative(s)

- A. Technical/Environmental/Human Health/Institutional
- B. Cost Estimate

Task VIII: Justification and Recommendation of the Corrective Measure(s)

- A. Technical
- B. Human Health
- C. Environmental

TASK VI: IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE ACTION ALTERNATIVE OR ALTERNATIVES

Based on the results of the RCRA Facility Investigation (RFI) and consideration of the identified Preliminary Corrective Measure Technologies (Task I) the Permittee shall identify, screen, and develop the alternative(s) for removal, containment, treatment and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Conditions

The Permittee shall submit an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RFI report. The Permittee shall provide an update to information presented in Task I of the RFI to the Administrative Authority regarding previous response activities and any interim measures which have or are being implemented at the facility. The Permittee shall also make a facility-specific statement of the purpose for the response, based on the results of the RFI. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Establishment of Corrective Action Objectives

The Permittee, in conjunction with the Administrative Authority, shall establish site specific objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the RCRA Facility Investigation, EPA guidance and the requirements of any applicable Federal statutes. At a minimum, all corrective actions concerning ground water releases from solid waste management units must be consistent with, and as stringent as, those required under 40 CFR 264.100.

C. Laboratory and Bench-Scale Study

When a new technology is being proposed or similar waste streams have not routinely been treated or disposed using the technology the Permittee shall conduct laboratory and/or bench-scale studies to determine the applicability of a corrective measure technology or technologies to the facility conditions. The Permittee shall analyze the technologies, based on literature review, vendor contracts, and past experience to determine the testing requirements.

The Permittee shall develop a testing plan identifying the type(s) and goal(s) of the study(ies), the level of effort needed, and the procedures to be used for data management and interpretation.

Upon completion of testing, the Permittee shall evaluate the testing results to assess the technology or technologies with respect to the site-specific questions identified in the test plan.

The Permittee shall prepare a report summarizing the testing program and its results, both positive and negative.

D. Screening of Corrective Measure Technologies

The Permittee shall review the results of the RFI and reassess the technologies specified in Task II and identify any additional technologies which are applicable to the facility. The Permittee shall screen the preliminary corrective measure technologies identified in Task II of the RFI and any supplemental technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Site Characteristics

Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration;

2. Waste Characteristics

Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site); and

3. Technology Limitations

The level of technology development, performance record, and inherent construction, operation and maintenance problems shall be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

E. Identification of the Corrective Measure Alternatives

The Permittee shall develop the corrective measure alternatives based on the corrective measure objectives and analysis of Preliminary Corrective Measure Technologies, as presented in Task I of the RFI as supplemented following the preparation of the RFI report. The Permittee shall rely on engineering practice to determine which of the previously identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action alternatives. The alternatives developed should represent a workable number of options that each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Permittee shall document the reasons for excluding technologies, identified in Task I, as supplemented in the development of the alternative.

TASK VII: EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVE OR ALTERNATIVES

The Permittee shall describe each corrective measure alternative that passed the Initial Screening in Task VI and evaluate each corrective measure alternative and it's components. The evaluation shall be based on technical, environmental, human health and institutional concerns. The Permittee shall also develop cost estimates for each corrective measure.

A. Technical/Environmental/Human Health/Institutional

The Permittee shall provide a description of each corrective measure alternative which includes but is not limited to the following preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. The Permittee shall evaluate each alternative in the four following areas:

1. Technical

The Permittee shall evaluate each corrective measure alternative based on performance, reliability, implementability and safety.

a. The Permittee shall evaluate performance based on the effectiveness and useful life of the corrective measure.

i) Effectiveness shall be evaluated in terms of the ability to perform intended functions such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies.

ii) Useful life is defined as the length of time the level of effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component

technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

b. The Permittee shall provide information on the reliability of each corrective measure including their operation and maintenance requirements and their demonstrated reliability:

i) Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and

ii) Demonstrated and expected reliability is a way of measuring the risk and effect of failure. The Permittee should evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.

c. The Permittee shall describe the implementability of each corrective measure including the relative ease of installation (constructibility) and the total time required to achieve a given level of response:

i) Constructibility is determined by conditions both internal and external to the facility conditions and includes such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the facility (i.e., remote location vs. a congested urban area). The Permittee shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation

include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities;

ii) Two components of time shall be addressed: the time it takes to implement a corrective measure and the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contamination to some acceptable, pre-established level.

d. The Permittee shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors to consider include fire, explosion, and exposure to hazardous substances.

2. Environmental

The Permittee shall perform an Environmental Assessment for each alternative. The Environmental Assessment shall focus on facility conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short- and long-term beneficial and adverse effects of the response alternative; any adverse effects on environmentally sensitive areas; and an analysis of measures to mitigate adverse impacts.

3. Human Health

The Permittee shall assess each alternative in terms of the extent which it mitigates short- and long-term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment will describe the levels and characterizations of contaminants on-site, potential exposure routes, and potentially affected populations. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or regulations acceptable to the Administrative Authority.

4. Institutional

The Permittee shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, State, and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative.

B. Cost Estimate

The Permittee shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include capital, and operation and maintenance costs.

1. Capital costs consist of direct (construction) and indirect (nonconstruction and overhead) costs.

a. Direct capital costs include:

i) Construction costs: Cost of materials, labor (including fringe benefits and worker's compensation), and equipment required to install the corrective measure alternative.

ii) Equipment costs: Costs of treatment, containment, disposal and/or service equipment necessary to implement the action; these materials remain until the corrective action is completed;

iii) Land and site development costs: Expenses associated with purchase of land and development of existing property; and

iv) Building and services costs: Costs of process and nonprocess buildings, utility connections, purchased services, and disposal costs.

b. Indirect capital costs include:

i) Engineering expenses: Costs of administration, design construction supervision, drafting, and testing of corrective measure alternatives;

ii) Legal fees and license or permit costs: Administrative and technical costs necessary to obtain licenses and permits for installation and operation;

iii) Start-up and shakedown costs: Costs incurred during corrective measure start-up; and

iv) Contingency allowances: Funds to cover costs resulting from unforeseen circumstances, such as adverse weather conditions, strikes, and inadequate facility characterization.

2. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The Permittee shall consider the following operation and maintenance cost components:

a. Operating labor costs: Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for postconstruction operation;

b. Maintenance materials and labor costs: Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;

c. Auxiliary materials and energy: Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;

d. Purchased services: Sampling costs, laboratory fees, and professional fees for which the need can be predicted;

e. Disposal and treatment: Costs of transporting, treating, and disposing of waste materials, such as treatment plant residues generated during operation;

f. Administrative costs: Costs associated with administration of corrective measure operation and maintenance not included under other categories;

g. Insurance, taxes, and licensing costs: costs of such items as liability and sudden accidental insurance; real estate taxes on purchased land or rights-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;

h. Maintenance reserve and contingency funds: annual payments into escrow funds to cover (1) costs of anticipated replacement or rebuilding of equipment and (2) any large unanticipated operation and maintenance costs; and

i. Other costs: items that do not fit any of the above categories.

TASK VIII. JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE OR MEASURES

The Permittee shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Tradeoffs among health risks, environmental effects, and other pertinent factors shall be highlighted, and the corrective measure alternative or alternatives to be implemented based on the results of Tasks VI and VII must be approved by the Administrative Authority before implementation. At a minimum, the following criteria will be used to justify the final corrective measure or measures:

A. Technical

1. Performance - corrective measure or measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference;

2. Reliability - corrective measure or measures which do not require frequent or complex operation and maintenance activities and have proven effective under waste and facility conditions similar to those anticipated will be given preference;

3. Implementability - corrective measure or measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and

4. Safety - corrective measure or measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

B. Human Health

The corrective measure or measures must comply with existing U.S. EPA criteria, standards, or regulations for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

C. Environmental

The corrective measure or measures posing the least adverse impact (or greatest improvement) on the environment over the shortest period of time will be favored.

TASK IX: REPORTS

The Permittee shall prepare a Corrective Measure Study Report presenting the results of Tasks V through IX recommending a corrective measure alternative. Two (2) copies and a compatible disk copy of the draft and final reports shall be provided to the Administrative Authority by the Permittee.

A. Progress

The Permittee shall, at a minimum, provide the Administrative Authority with signed quarterly progress reports containing:

1. A description and estimate of the percentage of the CMS completed;

2. Summary of contacts relevant to corrective action with representatives of the local community, public interest groups or State government during the reporting period;

3. Summary of problems or potential problems relevant to corrective action encountered during the reporting period;

4. Actions being taken to rectify problems;

5. Changes in key project personnel during the reporting period;

6. Projected work for the next reporting period; and

7. Summaries of changes made in the CMS during the reporting period.

B. Draft

The Report shall, at a minimum, include:

1. A summary of the corrective measure or measures and rationale

   a. Description of the corrective measure or measures and rationale for selection;

   b. Performance expectations;

   c. Preliminary design criteria and rationale;

   d. General operation and maintenance requirements;

   e. Long-term monitoring requirements

2. Design and Implementation Precautions:

   a. Special technical problems;

   b. Additional engineering data required;

   c. Permits and regulatory requirements;

   d. Access, easements, right-of-way;

   e. Health and safety requirements; and

   f. Community relations activities.

3. Cost Estimates and Schedules:

   a. Capital cost estimate;

   b. Operation and maintenance cost estimate; and

   c. Project schedule (design, construction, operation).

C. Final

The Permittee shall finalize the Corrective Measure Study Report incorporating comments received from the Administrative Authority on the Draft Corrective Measure Study Report.

T. EMISSION STANDARDS FOR PROCESS VENTS AND EQUIPMENT LEAKS

1. The Permittee shall comply with the air emissions requirements of 40 CFR 264, Subpart AA (for process vents) and Subpart BB (for equipment leaks).

2. The Permittee shall submit to EPA, upon request, all of the information required under 264.1064 and 264.1035, as applicable, within 15 days of the request.

Under Federal Law, this permit is effective on the effective date specified above unless a petition to the Administrator of the U.S. Environmental Protection Agency is filed in accordance with the requirements of 40 CFR 124.19.

Issued this 22nd day of August, 1991

by /s/ Jack Dinita
Allyn M. Davis, Director
Hazardous Waste Management Division

APPENDIX B

ACC PROGRAM GUIDANCE

AIR COMBAT COMMAND
GUIDANCE ON PROGRAM MANAGEMENT
FOR RESOURCE CONVERVATION AND RECOVERY ACT (RCRA)
CORRECTIVE ACTIONS
29 June 95

1. PURPOSE: To provide HQ ACC guidance in the management of the RCRA Corrective Actions (RCA) program and how RCA relates to other environmental programs. This guidance defines the responsibilities of each ACC player and focuses on procedures that identify, validate, program, budget, and fund RCA program requirements. The guidance highlights key management strategies that can reduce RCA program scope and cost. The command's proposed funding and programming procedures for RCA program requirements are summarized and clarified.

2. RCRA BACKGROUND:

2.1. The RCRA Corrective Actions process is an environmental cleanup program funded by Environmental Compliance Program (ECP) funds that require hazardous waste generators to investigate and mitigate threats caused by releases of hazardous wastes or hazardous constituents from Solid Waste Management Units (SWMUs) or Areas of Concern (AOCs). In many cases, this overlaps previous and ongoing Defense Environmental Restoration Account (DERA) programs performed under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA or "Superfund"). The cleanup process and objectives remain the same regarding both regulatory programs -- to find, quantify, prioritize, and mitigate threats from contamination sources on our bases.

2.2. The Air Force uses its Installation Restoration Program (IRP) to manage the discovery, investigation, evaluation, and remedial actions of DERA eligible contaminated sites as a result of past releases on its bases. Derived from Defense Environmental Restoration Program (DERP) guidance, the AF IRP focused on CERCLA sites on the National Priority List (NPL) and other sites with high regulatory interest. Until recently, funding for these activities had been almost exclusively from the Defense Environmental Restoration Account (DERA), a strictly managed and separately accounted ("fenced") funding source with specific eligibility criteria for use.

2.2.1. RCRA's Hazardous and Solid Waste Amendments (HSWA), promulgated in 1984, mandated the investigation and cleanup of hazardous releases on all treatment, storage, and disposal facilities (TSDFs) permitted by RCRA.

2.2.2. Supplemental guidance on RCA was published in 1990 (EPA FR 30798) and regulators identified numerous SWMUs/AOCs for bases to investigate. Many of those units were not eligible for DERA funding support. Since the regulatory "trigger" driving the RCA program is a RCRA permit, funding support for RCA investigations and compliance with permit schedule dates had to come from the AF (ECP) Operations

and Maintenance (O&M) account. The most recent legislation that brought RCA into the spotlight was the Federal Facilities Compliance Act of 1992 (FFCA). The FFCA, an amendment to RCRA, now allows state regulators with delegated RCRA authority to issue fines and penalties to federal facilities found with RCRA violations.

2.2.3. As more bases were scheduled for RCRA Facility Assessments (RFAs) in conjunction with RCRA Part B permit applications or permit renewals, the resulting assessments identified many more SWMUs/AOCs for further investigation. The Defense Environmental Restoration Program Management Guidance from HQ USAF/CEV provides information to define which SWMU/AOC actions are eligible for DERA funding such that a funding differentiation (DERA vs. ECP) for further RCA actions can be made based on DERA eligibility of individual SWMUs/AOCs.

3. AUTHORITY: This guidance applies to all ACC installations in the continental United States that generate, store, or otherwise manage hazardous wastes subject to regulation by the Resource Conservation and Recovery Act (RCRA) and the subsequent Hazardous and Solid Waste Amendments (HSWA) of 1984. Although RCA have a primary focus on those installations ("facilities") with RCRA Part B permits for treatment, storage, and disposal of hazardous wastes, it also applies to those installations operating under either "Interim" or "Generator" status as defined by RCRA.

4. APPLICABILITY IN FOREIGN COUNTRIES: The applicable DoD Final Governing Standards (FGS) and AFI 32-7006 will be used in place of this command guidance for environmental compliance at ACC installations and operations in foreign countries. The requirements in this Guidance Document should be regarded for information only and not binding for compliance purposes; however, base environmental staff may use items in this Guidance Document to enhance their overseas installation's environmental program beyond FGS compliance.

5. RESPONSIBILITIES:

5.1. Base.

5.1.1. CEV. The Base Environmental Flight will: (1) provide centralized management of all RCRA Corrective Action requirements with guidance from HQ ACC/CEVC; (2) prepare programming documents for all RCRA requirements and submit to HQ ACC/CEVC; (3) provide program oversight, resource management, contract monitoring, external coordination; and management of significant negotiations with regulatory agencies; (4) ensure technical document deliverables are disseminated to base organizations for review and comment; (5) Track all legally binding dates required by RCRA schedules and coordinate with HQ ACC prior to committing to any new requirements; (6) in coordination with HQ ACC/CEVC develop execution plans for each validated project entered in the A-106 and have them available for review during the internal and external ECAMP; (7) prepare and submit to HQ ACC/CEVCM a monthly status report by project that addresses contractor performance, regulatory

issues, project schedules, and status of funds; (8) oversee preparation of draft work plans and draft permit modifications; (9) research applicable cleanup standards; and (10) prepare and review all documents required by environmental regulations.

5.1.2. JA. The Base Law Office, will: (1) provide legal counsel on issues pertaining to environmental cleanup; (2) negotiate and review action levels, cleanup levels, and risk assessments as submitted by the base environmental flight; (3) provide legal interpretation and applicability of environmental laws and regulations when requested by the base environmental flight; (4) review base compliance agreements and assist in RCRA schedule negotiations; (5) participate in public forums for RCRA corrective actions

5.1.3. PA. The Base Public Affairs Office, in conjunction with the Base Environmental Flight manager will: (1) participate and arrange all public media events related to RCRA corrective actions; (2) develop media articles for base release; (3) review and incorporate public affairs ACC policies for RCRA; and (4) review base compliance agreements as submitted by the Environmental Flight.

5.1.4. CER. The Resources Management Flight, will: (1) prepare and submit a copy of all financial planning documents (i.e., financial plan, unfundeds, etc.) to HQ ACC/CER; and (2) serve as liaison between program managers and the comptroller for all financial matters.

5.1.5. SGPB. The Bioenvironmental Engineering Office will provide technical guidance as outlined in AFI 48-119, ACC Supplement 1, dated 1 Jun 95, Medical Service Environmental Quality Programs

5.2. ACC.

5.2.1. HQ ACC/CEVC. The Environmental Compliance Branch, will: (1) provide RCA program technical guidance, and program management assistance to ACC bases; (2) perform requirement validation, management, and resource allocation actions for ECP eligible requirements as identified by bases; (3) review draft compliance agreements when provided by bases; (4) provide RCA policy guidance to bases, HQ ACC staff, and other agencies as required; (5) Budget (POM) for RCRA CA funding; (6) provide Command wide project priority list for purposes of allocation of funds; and (7) assist in RCA schedule negotiations with regulators.

5.2.2. ACC CES/ESV. The ACC Environmental Flight will: (1) receive copies of all program documentation; (2) provide program management as requested by the bases; and (3) at the request of ACC CEVC, provide technical program management assistance to include all aspects of technical project management required to execute validated RCRA projects.

5.2.3. HQ ACC/CER. The Resources Management Division, will: (1) ensure compliance with all financial regulatory guidance and will submit all financial planning documents (i.e., financial plan, unfundeds, etc.); and , (2) serve as liaison between program managers and the comptroller for all financial matters when necessary or requested by the base.

5.2.4 HQ ACC/JAV. The Command Environmental Law Branch, will upon request: (1) provide legal counsel on issues pertaining to RCA; (2) develop ACC policies in support of RCA goals; (3) review and provide direction on action levels, RCA cleanup levels, and risk assessments; (4) review environmental laws and regulations for interpretation and applicability; (5) assist as necessary in the review and negotiation of RCRA schedules; and (6) review base compliance agreements as submitted by base Staff Judge Advocate offices or HQ ACC/CEV or ACC CES/ESV.

5.2.5. HQ ACC/PAC. The Command Community Relations and Environmental Plans Branch, will: (1) provide guidance and information to base Public Affairs offices; (2) develop media articles for command and base release; and (3) review base compliance agreements as submitted by HQ ACC/CEV.

5.2.6. HQ ACC/SGPB. The Bioenvironmental Engineering Office will provide technical guidance as outlined in AFI 48-119, ACC Supplement 1, dated 1 Jun 95, Medical Service Environmental Quality Programs.

6. PROGRAM FOCUS:

6.1. The focus of the RCA program, must be on final results rather than on the completion of interim processes. Although completion of studies or sampling efforts can be a major accomplishment, it is the policy of HQ ACC to fund those actions that will reduce risk to human health.

6.2. The RCA program has a built-in "bias for action" that encourages interim/stabilization measures (ISMs) or voluntary cleanups whenever sufficient information from preliminary studies exists to define the nature and extent of contamination and to make a decision on how to proceed. The Environmental Protection Agency's (EPA) RCRA Corrective Actions Program (RCAP) guidance dated May 1994 allows permittees to implement corrective actions at any time during the RCA program, not only upon completion of study phases.

6.3. The goal of the RCA program is to eliminate SWMUs or AOCs from the requirement for further action. This saves unnecessary sampling, analysis, and risk assessment costs for smaller, low-threat SWMUs with known constituents. This goal may be accomplished through use of a Release Assessment (validates releases of hazardous constituents); voluntary cleanups; interim/stabilization measures; conditional remedies; and corrective measures.

7. PROGRAM MANAGEMENT OBJECTIVES:

The RCA objectives are to ensure consistency between RCA and IRP work at each base and to meet all regulatory requirements:

7.1. Centralized Management. Base CES/CEV oversees all RCRA corrective actions for their bases.

7.2. Project Accounting. Large comprehensive Phase I RFI Work Plan and Phase II RFI Sampling and Analysis requirements that involve many SWMUs/AOCs should be broken into two or more projects for programming purposes -- one DERA project for only those DERA-eligible SWMUs/AOCs and one or more projects for the remaining ECP-eligible units. RCA and IRP projects may be awarded under the same contract where practical to reduce cost or to expedite the corrective actions.

7.3. Base CES/CEV Project Planning: Using the base Compliance schedule: (1) identify each (SWMU/AOC) milestone, date, and the regulation, law, or agreement, that legally requires the Corrective Action; (2) in concert with regulators and Service Centers, prepare Statement of Work that defines in detail what contract action is necessary to satisfy the legal requirement; (3) using RACER, prepare programming cost estimates for each project; (4) complete the necessary programming documents and A-106 entries; and (5) submit programming documents to HQ ACC/CEVCM for validation with information copies to ACC CES/ESV

7.4. A-106 Database. Both DERA and ECP funding programs must have their requirements loaded into the Civil Engineering Work Information Management System--Environmental Subsystem (WIMS-ES) A-106 module. The base loads the ECP requirements. Once these requirements are loaded into the A-106 database and transmitted to HQ ACC, they are reviewed, validated, updated, and forwarded for funding actions. Documents are submitted to HQ ACC/CEVC with copies to ACC CES/ESV for functional review. Once complete, HQ ACC/CEVC validates the technical requirements, cost, and generates the command funding priority.

7.5. Documentation. The A-106 program will be used for validation purposes for the RCA ECP requirements up to and including $100,000. Because of the limited space of this narrative section, it is important to clearly explain the work to be performed and the compliance "driver" such as the permit's scheduled compliance date. For operations and service requirements exceeding $100,000, RCA narrative packages are required in the format specified by ACC CES/ESV in addition to the A-106 entries. This applies to the following RCA processes:

- RFA Preparation
- Release Assessments
- RFI Phase I Work Plans
- RFI Phase II Sampling and Analysis
- Risk Assessments and Bioassays
- Corrective Measures Studies (CMS)

7.6. ECP-eligible RCA projects are classified as "repair" (of the environment) and require DD Form 1391, Military Construction Project Data, project programming documents in addition to the A-106 entries. ECP funded projects include these RCA processes:

- ISMs
- Voluntary Cleanups
- Corrective Measures Implementation actions

8. FUNDING ALLOCATION. Funds will be distributed for RCA requirements in the same manner as for other ECP. ECP funds for validated projects are transmitted from HQ ACC to the bases. Bases are to forward funds to applicable service centers.

APPENDIX C

SITE DESCRIPTIONS AND SITE MAPS

ENVIRONMENTAL SETTING AT HOLLOMAN AFB

Holloman AFB is situated in south-central New Mexico just west of the city of Alamogordo and occupies 50,000 acres. Additional land extending north of the Base is occupied by White Sands Missile Range testing facilities. Privately and publicly owned lands border the remainder of the base. Alamogordo has a population of roughly 31,000 while the Base's population is approximately 5,500. The Base is located in the Tularosa Basin, which is bound by the San Andreas Mountains in the west and the Sacramento Mountains in the east. The Tularosa Basin is a bolson, or a basin that has no surface drainage outlet. Groundwater occurs under unconfined conditions in the unconsolidated bolson deposits, ranging from 5 ft to nearly 50 feet below ground level. The predominant groundwater flow direction is west-southwest. Groundwater quality in the Tularosa Basin is good near the recharge areas at the base of the mountains but progressively becomes more mineralized as it flows toward the interior of the basin. On the basis of New Mexico Water Quality Control Commission Regulations, the groundwater beneath Holloman AFB is designated as unfit for human consumption needs due to levels of total dissolved solids that exceed human health standards (>10,000 mg/L) and is classified as a Class III B aquifer. Summaries of each of the 13 ECP-funded SWMUs at Holloman AFB are presented on the following pages.

SWMU 3	**Building 130 Oil/Water Separator**
Period of Operation	Startup unknown - Early 1988
Unit Description:	SWMU 3 has a capacity of 150 gal. and is approximately 3 by 3 by 3 ft. The unit is installed below grade and is constructed of concrete. The top of the unit is at the ground surface, and the soil around the unit is uncovered. During its operation, waste oil collected from the unit was taken to the DRMO Nonhazardous Waste Storage Area (SWMU 76) for disposal.
Release History:	No releases have been documented from this SWMU, however, a visual site inspection conducted in 1988 noted stains on the east and west ends of the unit indicating a potential overflow.
Investigation Results:	SWMU 3 was originally scheduled for investigation under the Table 3 RFI conducted in the Fall of 1994. Because of the inactive status of the unit, however, the Base decided to forego a preliminary investigation and to voluntarily excavate the unit and remove any associated TRPH-contaminated soil under the Base-wide petroleum, oil, and lubricants (POL) remediation program. As part of this action, an estimated 2500 cubic yards of TRPH-contaminated soil around the SWMU was removed in August 1995. Confirmation samples collected from the side walls of the excavation, however indicated that TRPH-contaminated soil (TRPH > 1000 mg/kg) is still present at the site. Therefore, SWMU 3 will require further remediation.
Corrective Action Status:	Design is currently underway for a soil vapor extraction system to be installed at the site to remediate the existing TRPH-contaminated soil. The design and construction will be completed using FY95 funding, however, additional funding is necessary for the long-term operation and maintenance of the SVE system.

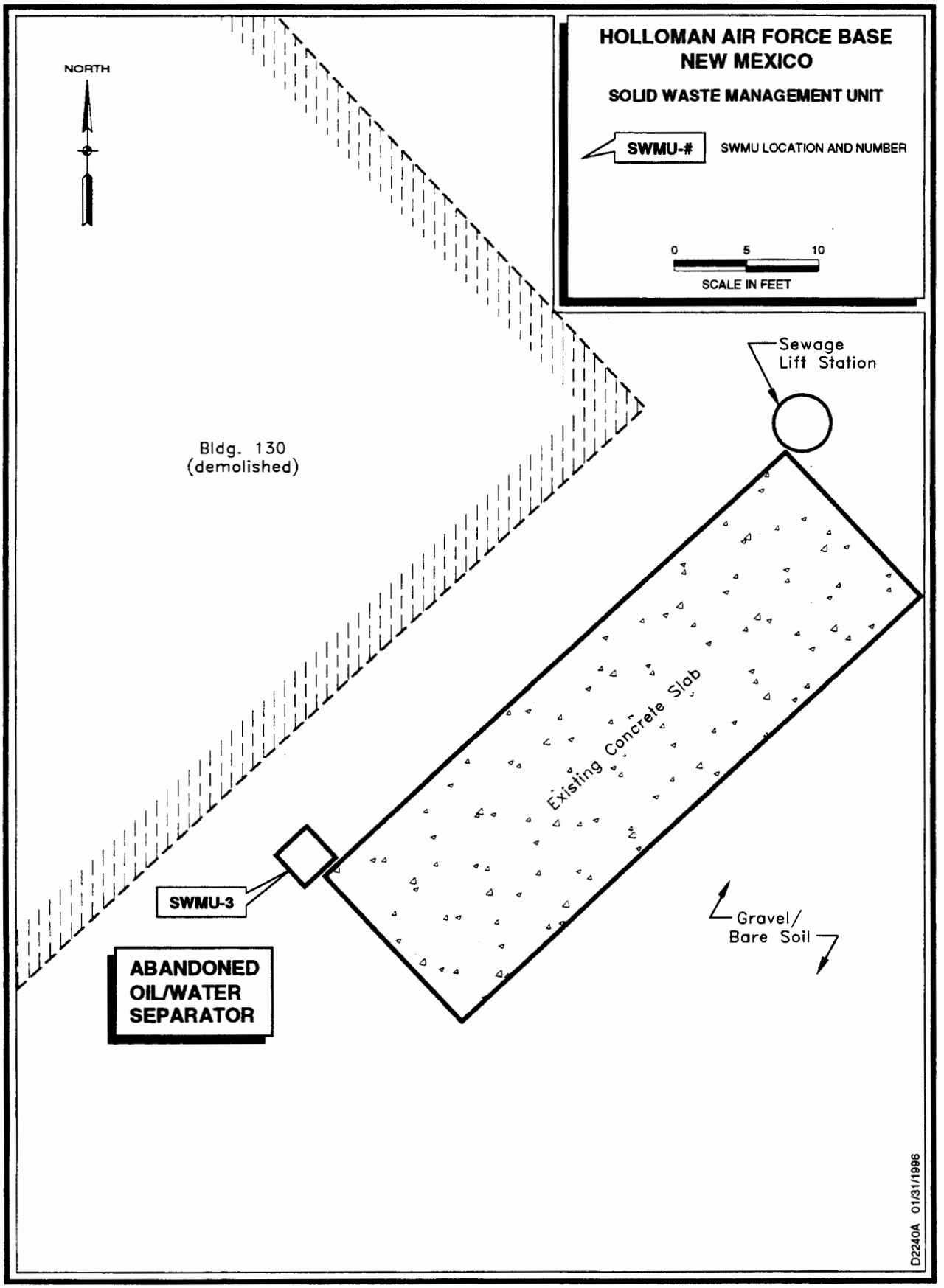


Figure C-1. SWMU 3--Building 130 Oil/Water Separator

SWMU 8 **Building 231 Oil/Water Separator**

Period of Operation: Unknown-Present

Unit Description: SWMU 8 was used to service the vehicle maintenance area in Building 231, the autocraft shop In 1992, the unit was abandoned in place and replaced with a new O/WS. SWMU 8 had an oil capacity of 300 gal. and was approximately 6 ft long by 4 ft wide by 4 ft deep. The unit was installed below grade and was constructed of concrete. The top of the unit was located a few inches above the ground surface, and the ground surface around the unit was covered with drain rock. During its operation, waste oil from the unit was taken to the DRMO Nonhazaradous Waste Storage Area (SWMU 76) for disposal.

Release History: Though no releases from this SWMU have been documented, a visual site inspection conducted in 1988 noted a release to soil and groundwater. Stained soil noticed on the north side of the unit.

Investigation Results: SWMU 8 was originally scheduled for investigation under the Table 3 RFI conducted in the Fall of 1994. Because of the inactive status of the unit, however, the Base decided to forego a preliminary investigation and to voluntarily excavate the unit and remove any associated TRPH-contaminated soil (> 1000 mg/kg) under the Base-wide petroleum, oil, and lubricants (POL) remediation program. As part of this action, an estimated 200 of TRPH-contaminated soil around the SWMU was removed in August 1995. Confirmation samples collected from the side walls of the excavation, however indicated that TRPH-contaminated soil (TRPH > 1000 mg/kg) is still present at the site. Therefore, SWMU 8 will require further remediation to address the remaining TRPH-contaminated soil.

Corrective Action Status: Design is currently underway for a bioventing system to be installed at the site to remediate the existing TRPH-contaminated soil. The design and construction will be completed using FY95 funding, however, additional funding is necessary for the long-term operation and maintenance of the bioventing system.

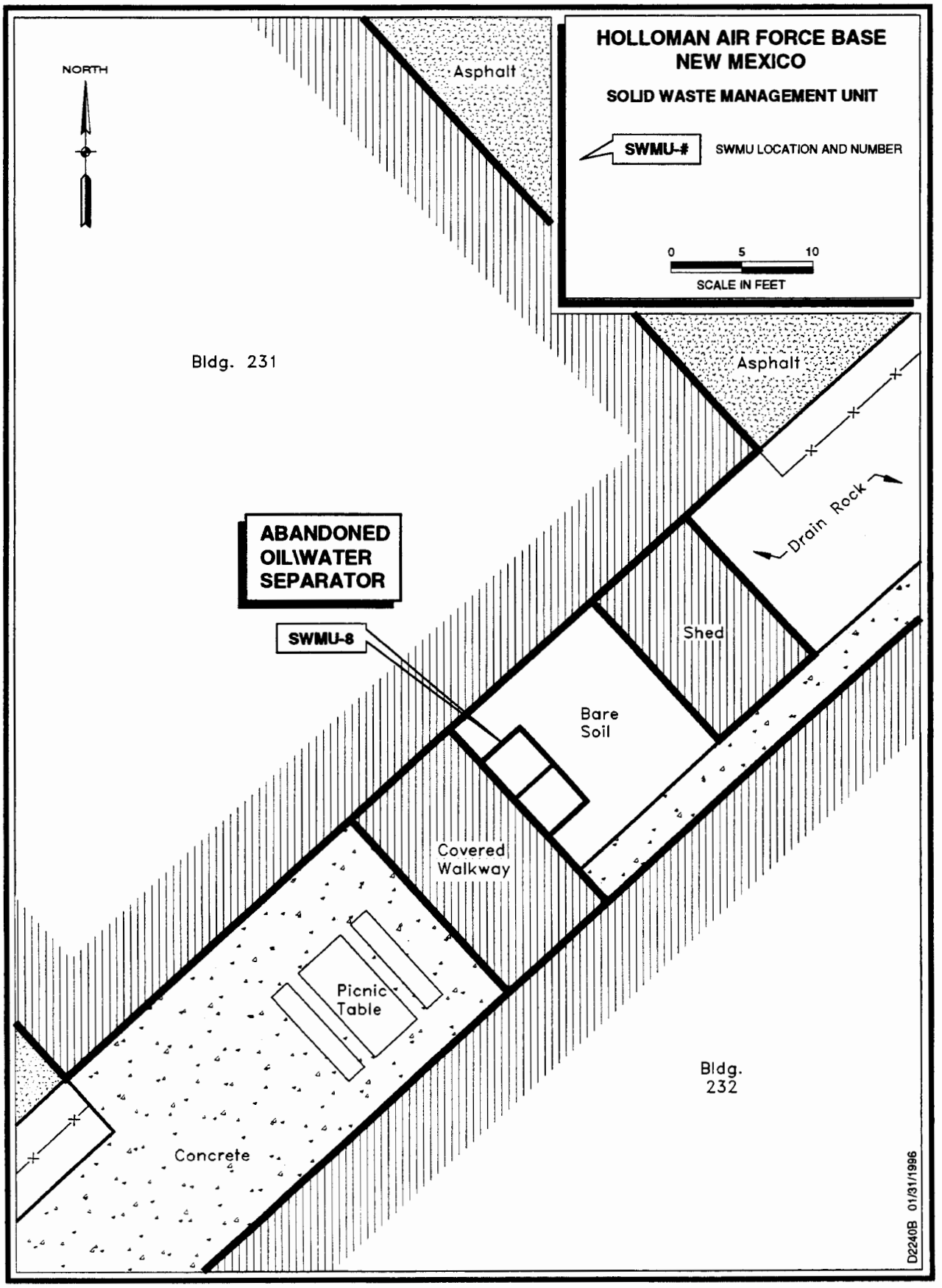


Figure C-2. SWMU 8--Building 231 Oil/Water Separator

SWMU 19 **Building 638 Oil/Water Separator**

Period of Operation: 1977-Present

Unit Description: SWMU 19 served as an oil/water separator for the engine test cell and aircraft maintenance operations in Building 639 until 1991 when it was replaced with a new oil/water separator and converted to a sediment trap. The total capacity of the unit is 400 gallons, and the oil capacity is 250 gallons. The unit is installed below grade and is constructed of steel. The top of the unit is approximately 4 in. above the ground surface, and the soil around the unit is uncovered on two sides and covered on the other two sides with asphalt. Waste oil from the unit was collected and taken to Building 638 Waste Accumulation Area (SWMU 53).

Release History: Though no releases from this SWMU have been documented, stained soil was discovered during the installation of a new O/WS at the site in 1991.

Investigation Results: The area surrounding SWMU 19 and its leach field was first investigated under the Phase I RFI at SWMU 229 (T-38 Test Cell Fuel Spill) for a 400,000-gallon JP-4 fuel spill discovered in 1993. The investigation identified the presence of approximately 1.7 million gallons of a LNAPL floating on the groundwater and related subsurface soil contamination associated with the fuel spill.

Eleven soil samples were collected near SWMU 19 for analysis of total recoverable petroleum hydrocarbons (TRPH) during the Table 3 Phase I RCRA Facility Investigation in 1994. Elevated levels of TRPH, distinct from the spill at SWMU 229, were detected in the shallow soils around SWMU 19. Given the literature search findings and what is known of the T-38 test cell operations, waste managed at SWMU 19 was predominantly fuel.

Corrective Action Status: On the basis of the site investigation results collected during the Table 3 RFI, CNFA was recommended for the SWMU. The condition of NFA is remediation of TRPH-contaminated soil. Additional funding is required to excavate and dispose of TRPH-contaminated soil.

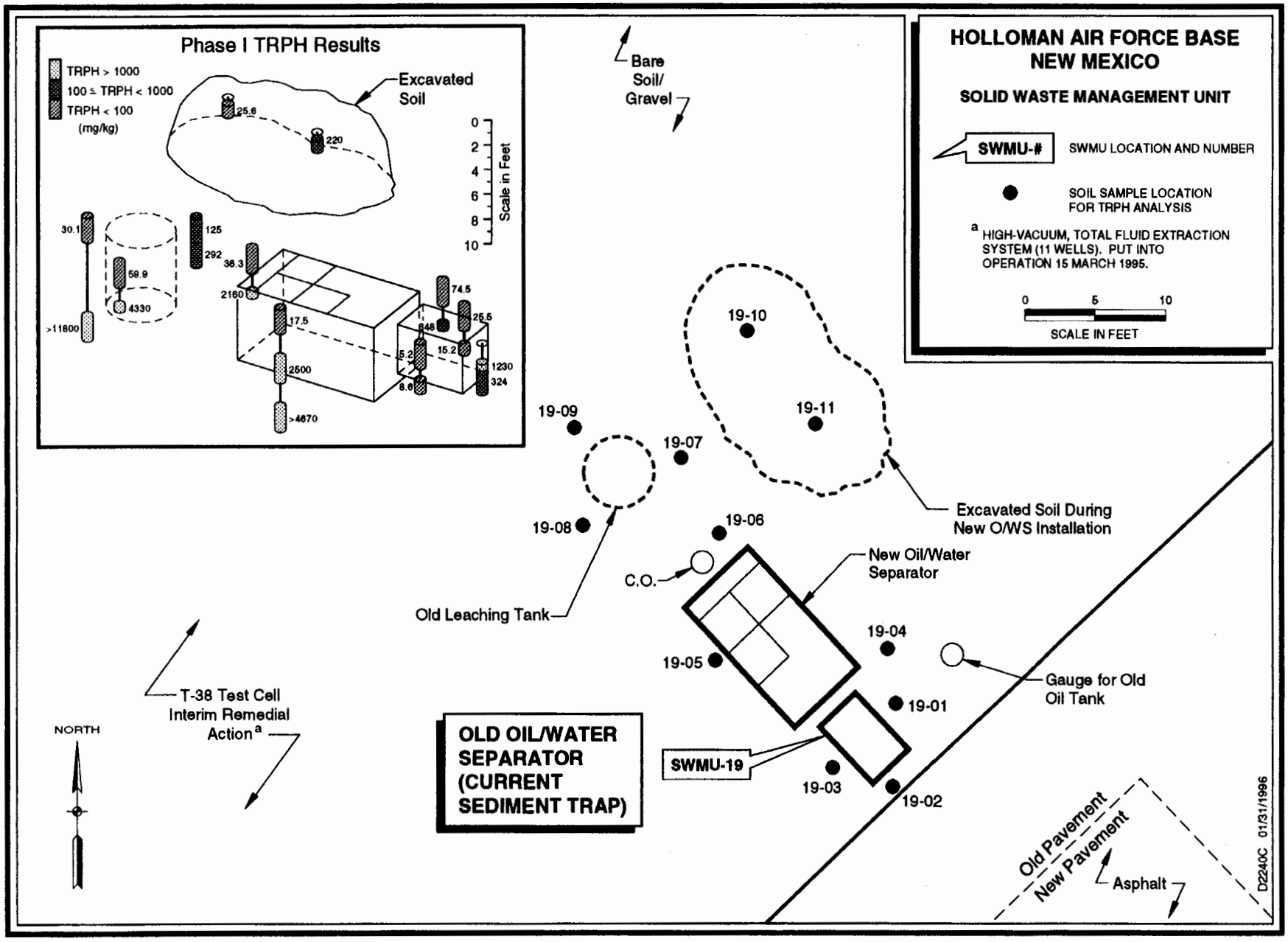


Figure C-3. SWMU 19--Building 638 Oil/Water Separator

SWMU 27 **Building 810 Oil/Water Separator**

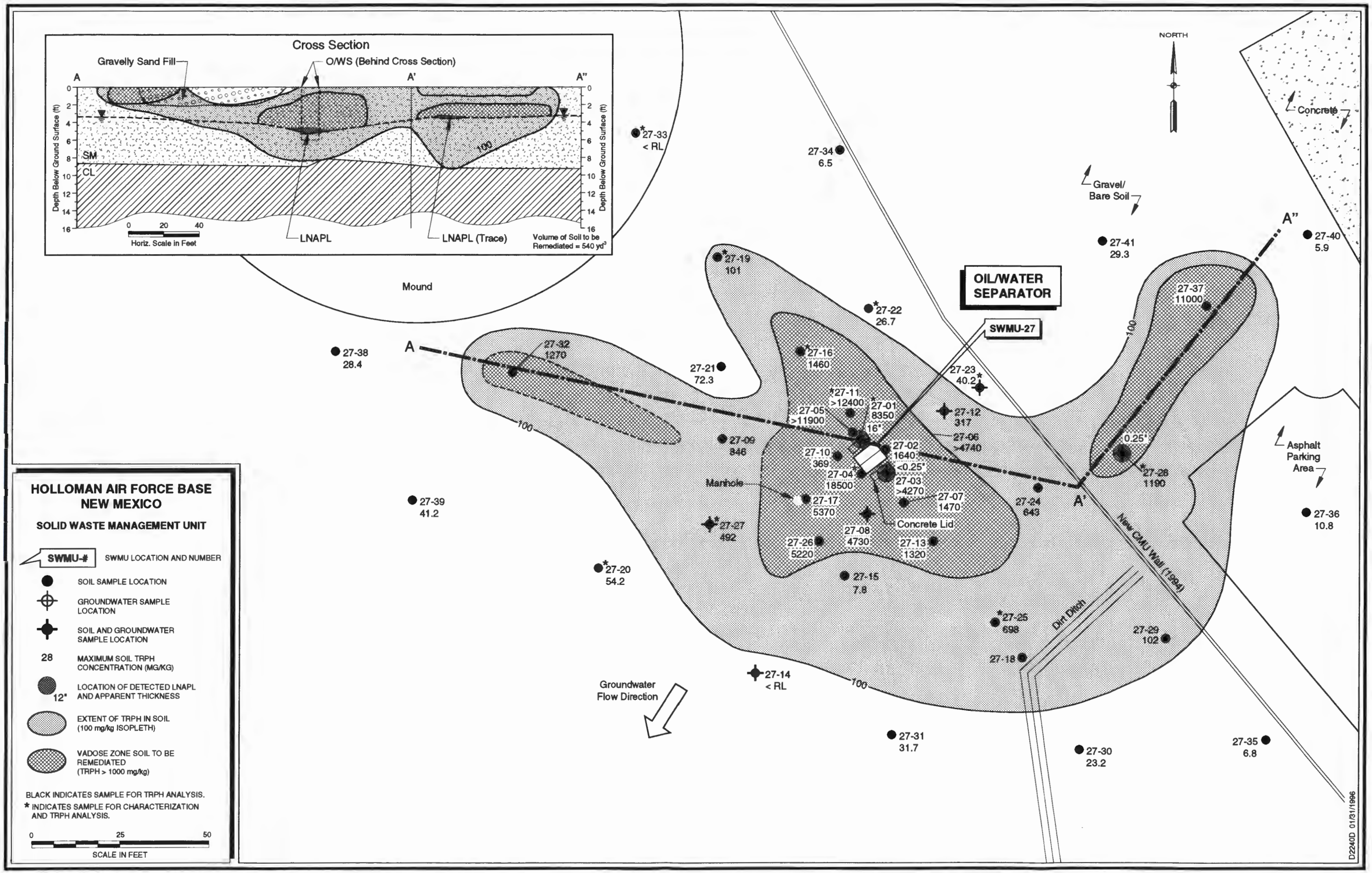
Period of Operation: 1977 - 1990

Unit Description: SWMU 27 operated as an O/WS servicing the F-15 engine test cell near Buildings 807 and the F-15 engine test cell near Buildings 807 and 810 between 1977 and 1990. The unit has an oil capacity of the unit is 520 gal., and is approximately 6 ft long by 4 ft wide by 4 ft deep. In 1990, it was abandoned in conjunction with the closure of Buildings 807 and 810. Between 1990 and 1994, the SWMU did not receive waste from these buildings, but was open and subject to potential overflow leaks. To prevent such an occurrence, the unit was filled with sand in 1994.

Release History: Three releases are reported to have occurred at SWMU 27 between 1985 and 1988. The unit overflowed once in August 1985 and again in January 1988. On both occasions, an unknown volume of oil and/or JP-4 jet fuel was released to the surface soil surrounding the unit. In February 1988, the discharge pipe from the oil/water separator was washed out causing the unit to leak into the surrounding subsurface sediments.

Investigation Results: To confirm reported releases from the unit in 1985 and 1988, SWMU 27 was investigated under the Table 3 RFI. During Phase I of the RFI, soil samples collected from the area immediately adjacent to the SWMU were shown to have TRPH concentrations above the release criteria of 100 mg/kg and above the Base-specific cleanup level of 1000 mg/kg; therefore it was confirmed that an overflow release had occurred. Phase II sampling was conducted to define the nature and extent of the release in the soil and groundwater. Three areas of soil with TRPH concentrations above the 1000 mg/kg Base-specific cleanup level were identified around the O/WS, and LNAPL was detected on the groundwater.

Corrective Action Status: On the basis of the Table 3 RFI results, CNFA was recommended for the SWMU. The condition of NFA is remediation of TRPH-contaminated soil and removal of LNAPL from the groundwater. The excavation and disposal of TRPH-contaminated soil and the design and construction of a groundwater pump and treat system will be completed using FY95 funding, however, additional funding is necessary for the long-term operation and maintenance of the groundwater pump and treat system.



HOLLOMAN AIR FORCE BASE
NEW MEXICO

SOLID WASTE MANAGEMENT UNIT

- SWMU-# — SWMU LOCATION AND NUMBER
- SOIL SAMPLE LOCATION
- GROUNDWATER SAMPLE LOCATION
- SOIL AND GROUNDWATER SAMPLE LOCATION
- 28 — MAXIMUM SOIL TRPH CONCENTRATION (MG/KG)
- 12" — LOCATION OF DETECTED LNAPL AND APPARENT THICKNESS
- EXTENT OF TRPH IN SOIL (100 mg/kg ISOPLETH)
- VADOSE ZONE SOIL TO BE REMEDIATED (TRPH > 1000 mg/kg)

BLACK INDICATES SAMPLE FOR TRPH ANALYSIS.
* INDICATES SAMPLE FOR CHARACTERIZATION AND TRPH ANALYSIS.

0 25 50
SCALE IN FEET

Figure C-4. SWMU 27--Building 810 Oil/Water Separator

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SWMU 29	**Building 827 Oil/Water Separator**
Period of Operation:	1977 - 1991
Unit Description:	SWMU 29 serviced the AGE washrack at Building 827 until 1991 when it was abandoned and replaced with a new O/WS. SWMU 29 was left in place and covered with asphalt. The unit has a capacity of 900 gallons and is constructed of concrete. The top of the unit is approximately 2 in. above the ground surface, and the soil around the unit is covered with asphalt. When in operation, waste oil from the unit was collected and taken to DRMO Nonhazaradous Waste Storage Area (SWMU 76)
Release History:	No releases from this SWMU have been documented.
Investigation Results:	Eight soil samples were collected near SWMU 29 and analyzed for total recoverable petroleum hydrocarbons (TRPH) as part of the Table 3 Phase I RCRA Facility Investigation in 1994. TRPH concentrations above the Base-specific cleanup level of 1000 mg/kg, were detected in seven of the eight samples collected. TRPH results in the surface soils suggest that there has been a historic release from SWMU 29. TRPH results measured from samples collected from below 6 ft bgl, however, could be elevated due to contaminant plumes associated with the Building 828 Fuel Spill (SWMU 230).
Corrective Action Status:	On the basis of the site investigation results collected during the Table 3 RFI, CNFA was recommended for the SWMU. The condition of NFA is remediation of TRPH-contaminated soil. Additional funding is required to excavate and dispose of TRPH-contaminated soil.

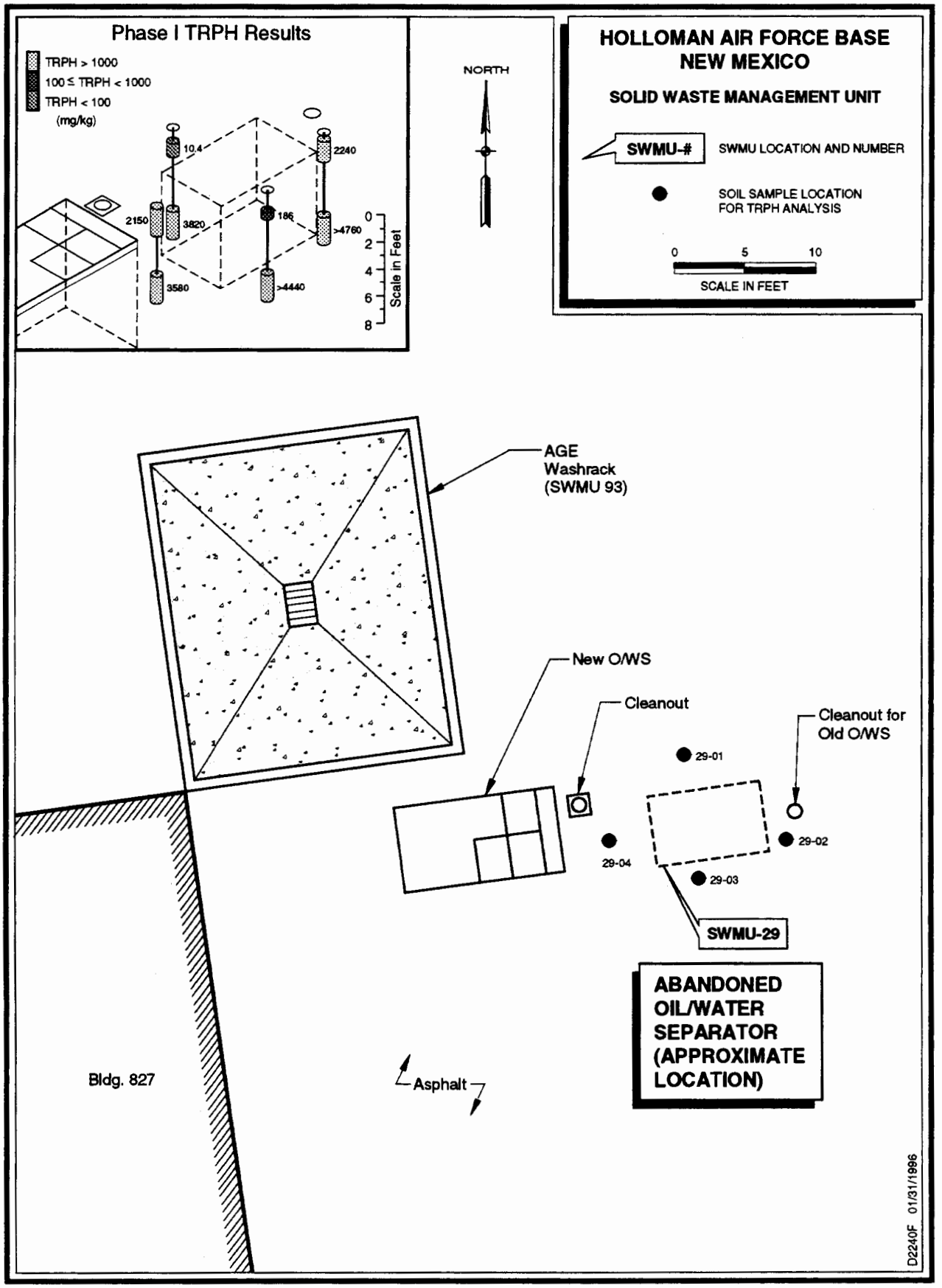

Figure C-5. SWMU 29--Building 827 Oil/Water Separator

SWMU 36 **Building 1001 Oil/Water Separator**

Period of Operation: 1982 - Present

Unit Description: SWMU 36 is located approximately 10 ft north of Building 1001. The unit is constructed of steel and has a capacity of approximately 350 gallons. During operation, the oil/water separator accepts rinsate water and waste oil from Building 1001. Waste oil skimmed from the water is transferred to an adjacent waste oil tank via a subsurface pipe, and water is discharged to the Base sewer system.

Release History: No past release from the SWMUs was identified through a literature search and an initial site visit. Stained soil observed from 5 to 7 ft bgl during the Table 2 RFI, however, indicates that an isolated release of TRPH from the oil/water separator has occurred.

Site Investigation: During the Table 2 Phase I RFI, two samples were collected from two borings at SWMU 36. Samples were collected from the base of the unit and from the zone immediately above the water table for analysis of TRPH, volatile organic compounds and metals. Several VOCs and metals were detected including acetone, methyl ethyl ketone, methylene chloride, barium, chromium, arsenic, lead, mercury, and selenium, although all were below trigger criteria. However, TRPH was detected above the Base specific cleanup level of 1000 mg/kg in the sample collected from 9-11 feet in one of the two borings at the site. The detection, correlated with stained soils noted during the sampling activities.

Corrective Action Status: On the basis of the site investigation results obtained from the Table 2 investigation, CNFA was recommended for SWMU 36. The condition of NFA is remediation of TRPH contaminated soil. Design is currently underway for a bioventing system to be installed at the site to remediate the existing TRPH-contaminated soil. the design and construction will be completed using FY95 funding, however, addition funding is necessary for the long-term operation and maintenance of the bioventing system.

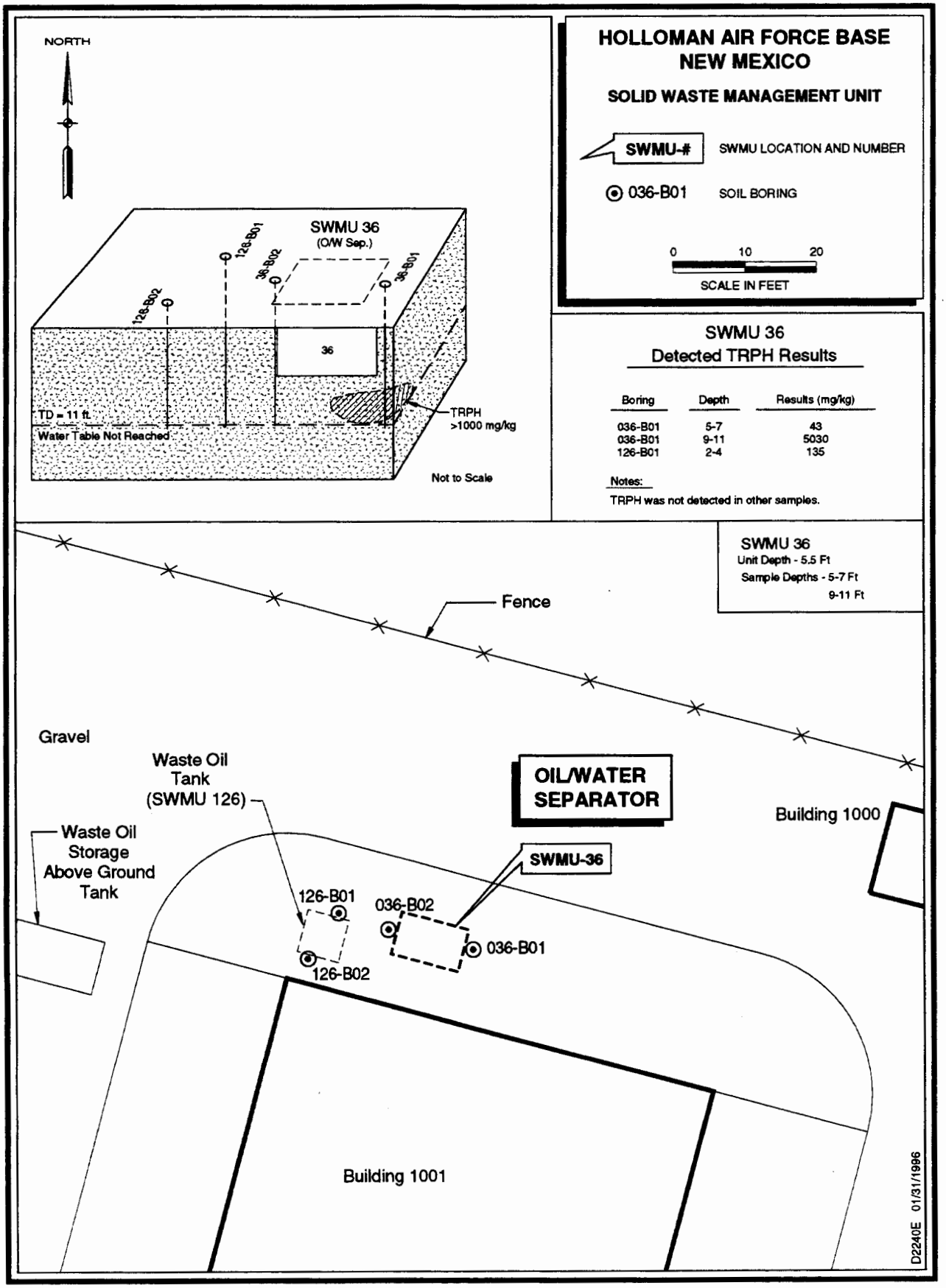

Figure C-6. SWMU 36--Building 1001 Oil/Water Separator

SWMU 123 **Building 704 Waste Oil Tank**

Period of Operation: Approximately 1980-1991

Unit Description: SWMU 123 is located adjacent to a POL washrack, approximately 50 ft south of Building 173. The tank is below ground surface and is covered with gravel. The size, construction material, integrity, and age of the tank is unknown. Washwater, waste oil, and fuels from the adjacent washrack were routed to adjacent oil/water separators for processing. The waste oil skimmed from the water was transferred by gravity to the tank via a subsurface pipe. Waste oil was pumped from the tank into drums on an as-needed basis and transported to the DRMO Waste Storage Area before reaching capacity.

Release History: No releases have been reported for SWMU 123.

Site Investigation: During the Table 2 Phase I RFI, two boreholes were drilled adjacent to each unit; two samples from each borehole were collected and analyzed for SW8240, SW8270, EPA 418.1, and total metals. Benzene, ethyl benzene, toluene, TRPH, chromium, lead, and mercury were detected in samples, however only benzene and TRPH exceeded trigger criteria in samples from the 4-6 ft and 8-10 ft intervals.

Corrective Action Status: On the basis of the site investigation results collected during the Table 2 investigation, CNFA was recommended for the SWMU; the condition being remediation of TRPH-contaminated soil. Design is currently underway for a bioventing system to be installed at the site to remediate the existing TRPH-contaminated soil. The design and construction will be completed using FY95 funding, however, additional funding is necessary for the long-term operation and maintenance of the bioventing system.

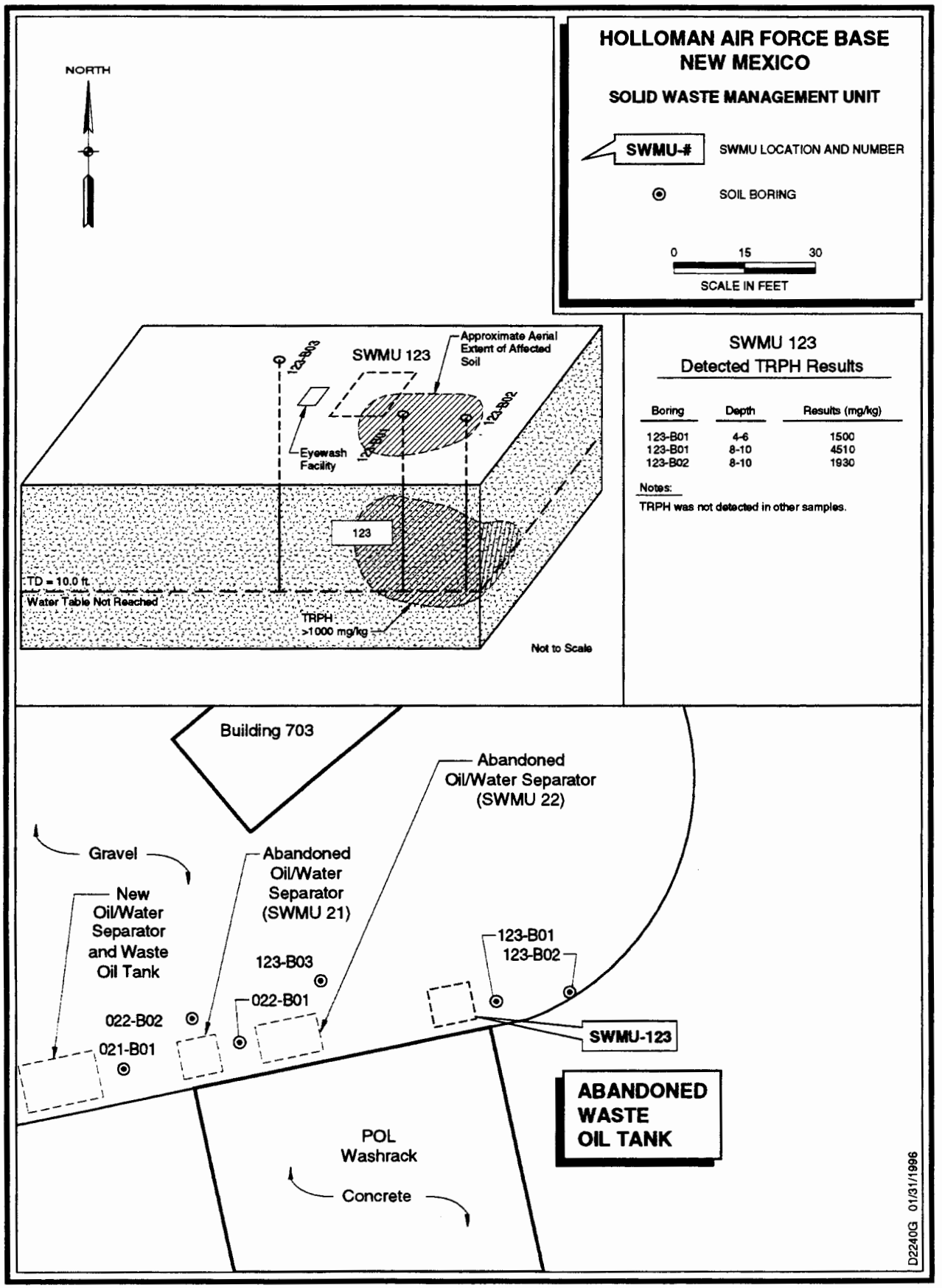

Figure C-7. SWMU 123--Building 704 Waste Oil Tank

SWMU 136 **Building 1119 Washrack Drainage Pit**

Period of Operation: 1980-1990

Unit Description: SWMU 136 is located approximately 75 ft west-southwest of Building 1119. The unit consists of a 7- by 12-ft drainage pit to the south of the Building 1119 Washrack. The pit has no liner or containment, and is made up of gravel- covered soil. During operation, rinsate containing waste fuel and oils from washing trucks and generators at the site was released directly into the soil. When use of the washrack was discontinued, the soil surrounding the pad was excavated to a depth of 8 ft, inspected for visible contamination, and then replaced in the excavation.

Release History: No releases have been reported for SWMU 136.

Site Investigation: During the Table 2 Phase I RFI, three samples each were taken from two soil borings at the site. One boring was placed in the pit; the second boring was located downslope of the pit, to the south. Samples were analyzed for SW8240, SW8270, EPA 418.1, and metals. Several VOCs and metals were detected, including 1,1,1-trichloroethane, acetone, ethyl benzene, toluene, and xylenes, barium, chromium, and lead, although all were below trigger criteria. However, TRPH was detected above trigger criteria in samples from the 6-8 ft and 14-16-ft intervals. These detections correlated with the observance of stained soils during drilling.

Corrective Action Status: On the basis of the site investigation results collected during the Table 2 investigation, CNFA was recommended for the SWMU; the condition being remediation of TRPH-contaminated soil. Design is currently underway for a bioventing system to be installed at the site to remediate the existing TRPH-contaminated soil. The design and construction will be completed using FY95 funding, however, additional funding is necessary for the long-term operation and maintenance of the bioventing system.

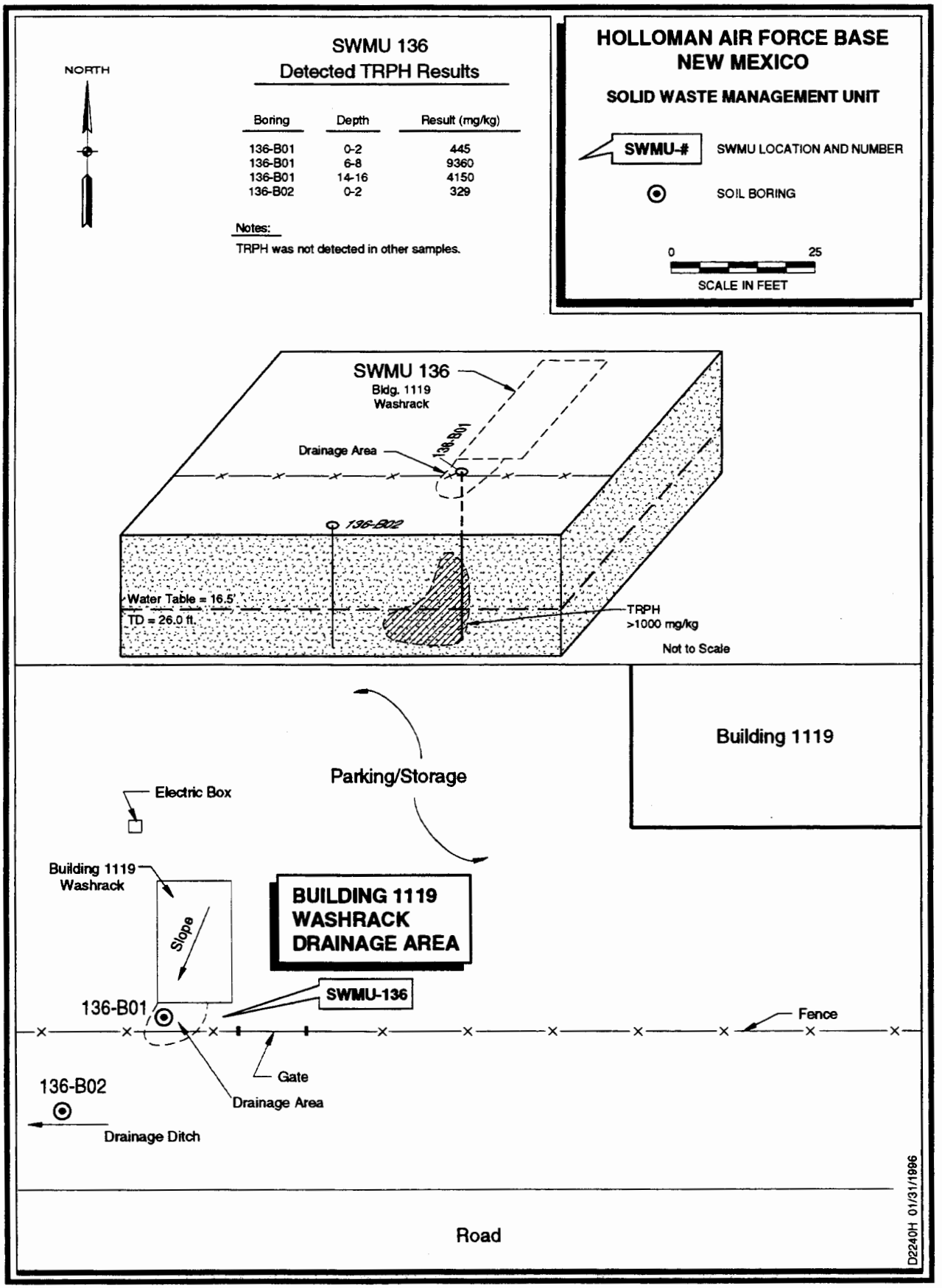

Figure C-8. SWMU 136--Building 1119 Washrack Drainage Pit

SWMU 139	**Lake Holloman**
Period of Operation:	1960s to Present
Unit Description:	Lake Holloman is a playa lake which formed when a dam was constructed to collect runoff and wastewater from the Base. The lake covers an area of approximately 150 acres and continues to receive stormwater runoff from the Base and effluent from the sewage lagoons. Effluent from the last in the chain of sewage lagoons (Pond G) is carried to Lake Holloman by an open ditch. Lake Holloman and the ditch comprise SWMU 139.
Release History:	As a body of water, Lake Holloman has had no documented releases; however, constituents detected in sediments and soils within Lake Holloman have been detected (at much lower levels) in groundwater samples taken downgradient of the lake.
Site Investigation:	Analyses on sludge and soil samples taken during Phase I RFI activities indicated the presence of organochlorine pesticides and metals. These same constituents were detected at lower levels in groundwater downgradient of the lake during the Phase II RFI. Additional data needs were identified during the performance of a site risk assessment, and supplementary sampling was performed in 1994. The additional sampling revealed no reportable concentrations of lead in surface water, and confirmed the presence of organochlorine pesticides and metals in the sludges and underlying soils within Lake Holloman.
Corrective Action Status:	SWMU 139 may require long-term groundwater monitoring and a corrective measures study to identify potential remedial alternatives to achieve site closeout. Currently it is anticipated that a corrective measures study would result in an NFA decision for the site.

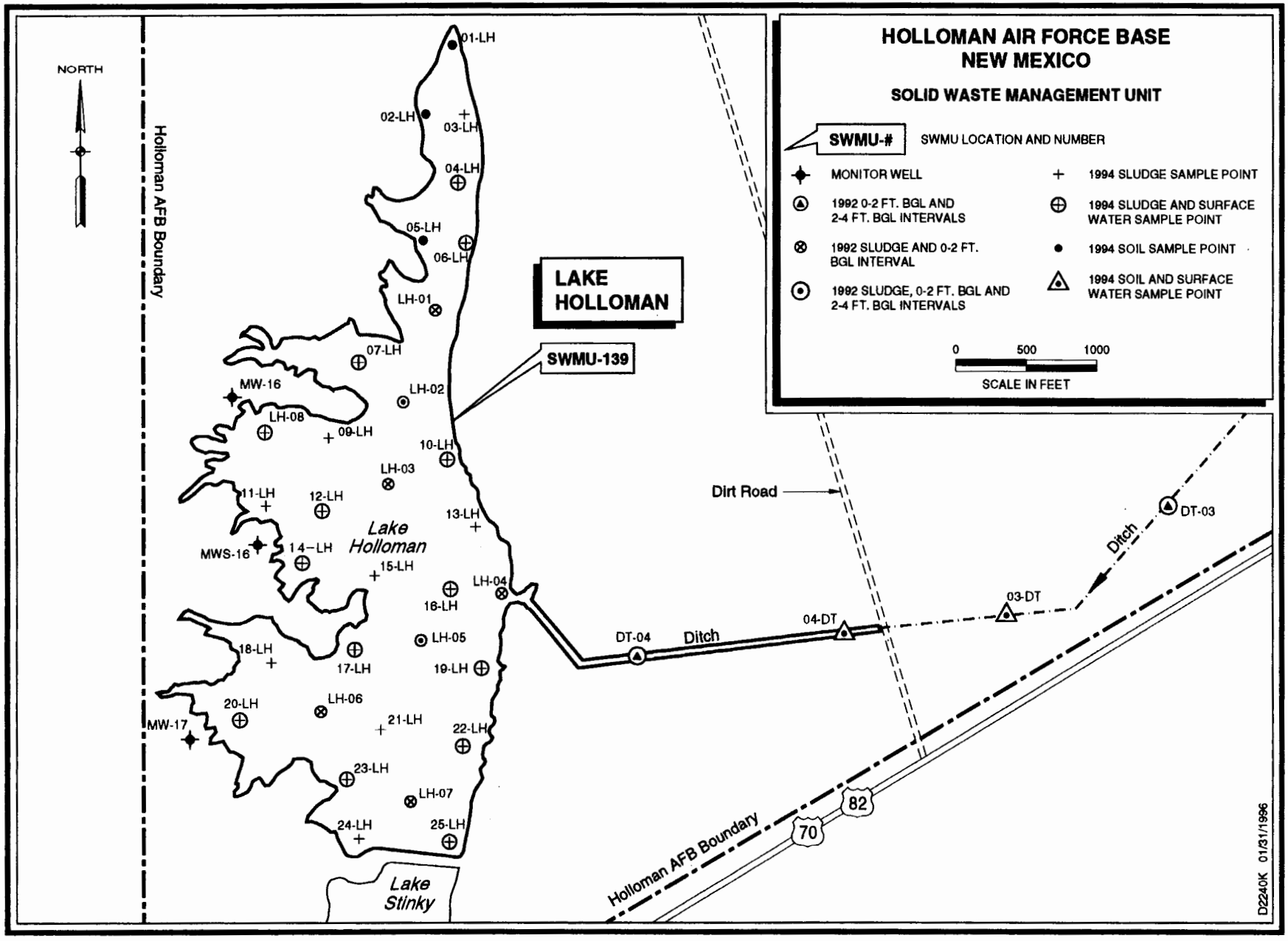

Figure C-9. SWMU 139--Lake Holloman

SWMU 140	**Lake Stinky**
Period of Operation:	1960s to present
Unit Description:	Lake Stinky is a small salina that receives overflow from Lake Holloman to the north during winter months and periods of high precipitation. Any water accumulated in Lake Stinky eventually evaporates. The lake covers approximately 38 acres.
Release History:	As a body of water, Lake Stinky has had no documented releases; however, constituents detected in soils within Lake Stinky have been detected (at much lower levels) in groundwater downgradient of the lake.
Site Investigation:	Analyses on sludge and soil samples taken during Phase I RFI activities indicated the presence of organochlorine pesticides and metals. These same constituents were detected at lower levels in groundwater downgradient of the lake during the Phase II RFI. Additional data needs were identified during the performance of a site risk assessment, and supplementary sampling was performed in 1994. The additional sampling confirmed the presence of metals and organochlorine pesticides in Lake Stinky.
Corrective Action Status:	SWMU 140 may require long-term groundwater monitoring and a corrective measures study to identify potential remedial alternatives to achieve site closeout. Currently it is anticipated that a corrective measures study would result in an NFA decision for the site.

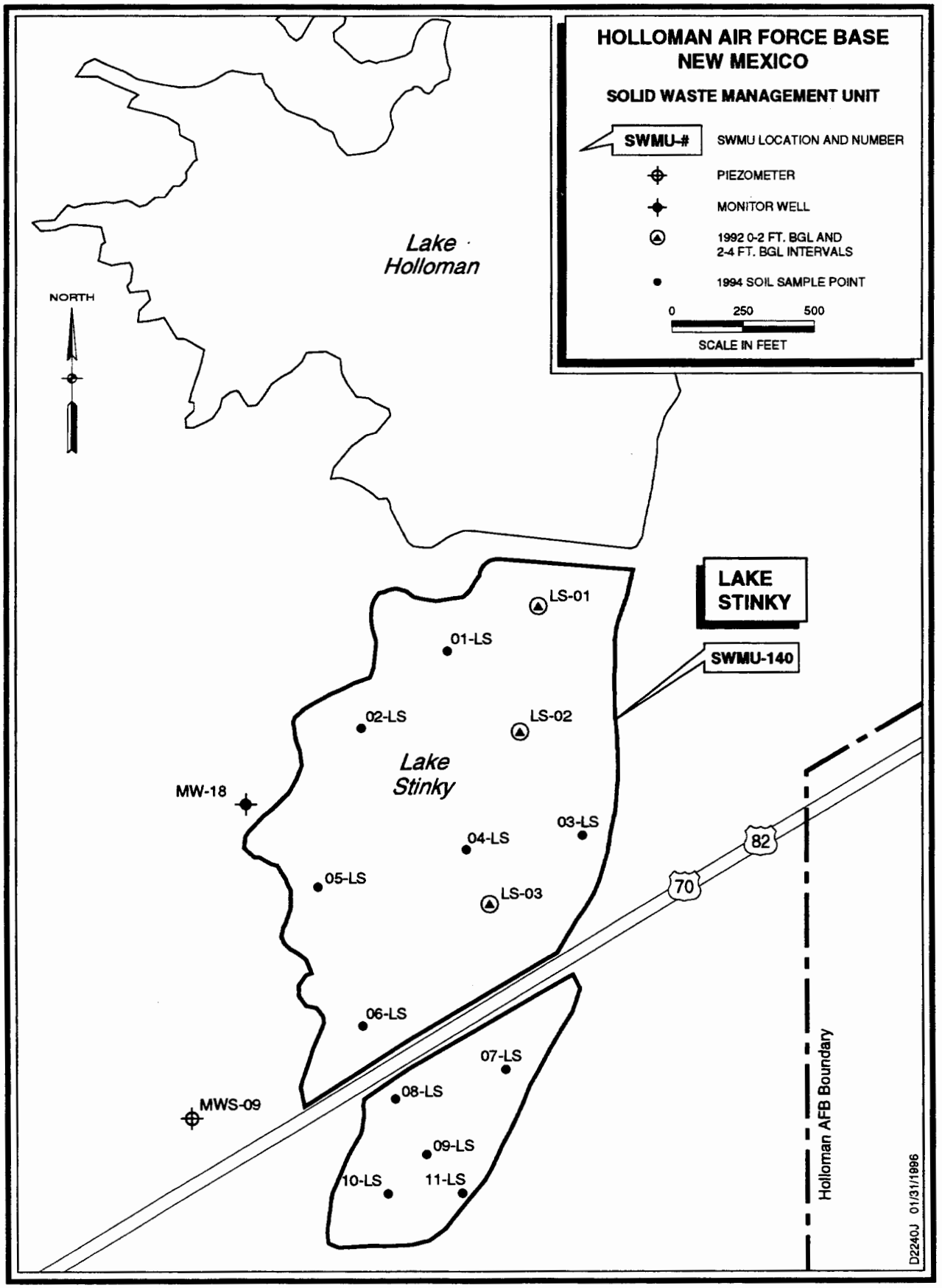

Figure C-10. SWMU 140--Lake Stinky

SWMU 184	**Wastewater Recirculation Line**
Period of Operation:	Not known
Unit Description:	The wastewater recirculation line runs between Pond F and the splitter box located near Pond B. The splitter box divides the flow between Ponds A and B. The purpose of the recirculation line is to increase the biological oxygen demand (BOD) content in the sewage in Ponds A and B. The age, construction, and integrity of the line are unknown; however, it is suspected that the pipeline is constructed of concrete or clay material.
Release History:	While in operation, wastewater containing sanitary wastes, dissolved hydrocarbons, solvents, industrial cleaners, paint stripper, methanol, acetone, formaldehyde, and a variety of listed wastes were processed by the treatment system. The present potential for release of wastes to the environment is unknown, though the potential for past releases could be high due to the possible concrete construction of the line.
Site Investigation:	No previous investigations have been conducted at SWMU 184.
Corrective Action Status:	Using FY95 funding, Holloman AFB will conduct a site-specific RFI at SWMU 184 in early 1996 to determine presence/absence and nature and extent of contamination in the vicinity of the wastewater recirculation line. Following completion of the RFI, a corrective measures study will be conducted to evaluate remedial alternatives to achieve NFA.

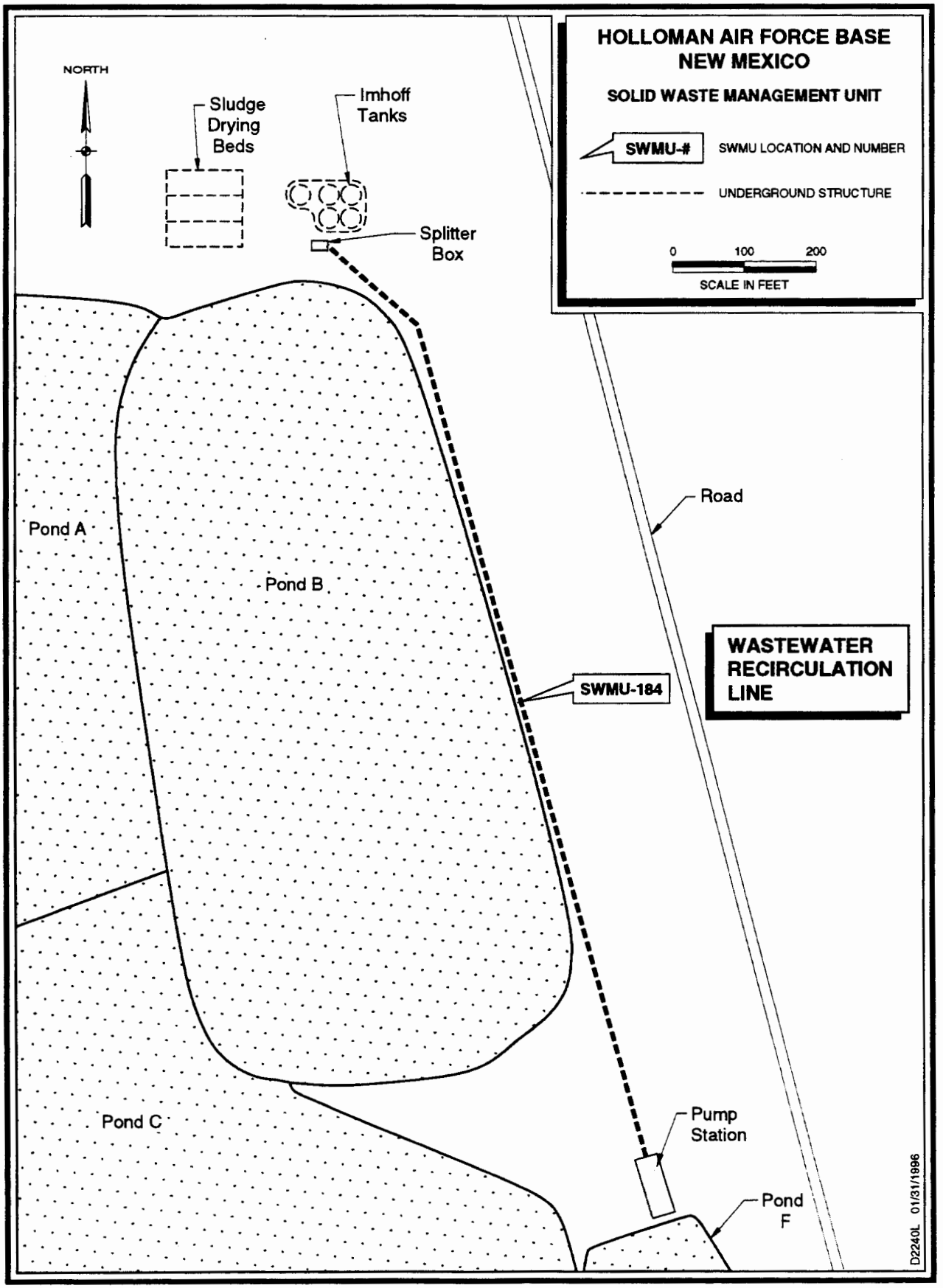

Figure C-11. SWMU 184--Wastewater Recirculation Line

SWMU 229 **T-38 Test Cell**

Period of Operation: 1966 - 1977

Unit Description: SWMU 229 was used between 1966 and 1977 as an F-4 trim pad and for testing F-4 aircraft engines. During this time, the cell used a water suppression system for the engine tests which consumed 80,000 gallons of water per minute from the nearby water tank. This was later converted to a dry suppression system. From 1979 to 1990, there were 125 T-38 located at Holloman AFB. During this time frame, there were 90-100 engine tests performed each month at the test cell. Presently, there are only 38 T-38 aircraft located at the Base. An engine is tested at the cell every two to three days. Review of as built drawings indicate that the T-38 Test Cell facility, as it stands today, has been in operation since about 1978.

Release History: In 1991, inventory records indicated that approximately 2,000 gallons of JP-4 had been lost. The cause of this release was identified as leaking underground piping connecting the tank to the test cell. Shortly after this discovery, the underground piping was replaced with above ground piping. Interviews with engine-testing contractor personnel (Dyne Corp.) during a site visit indicated that the leakage could have occurred at any point in the underground line directly beneath the test cell.

Site Investigation: Results of the initial Phase I investigation conducted in May 1993 indicate that there are other sources of contamination in the vicinity of the T-38 Test Cell other than a 1991 underground spill. Floating product was encountered in borings near the test cell and to the southwest and west. Measurable amounts of LNAPL were detected in three monitoring wells installed at the site. Headspace analysis and visual inspection in the field indicated that 16 of the 18 borings have fuel related contamination. Additional soil borings were taken, and three additional monitoring wells were installed in July 1993 to delineate the areal extent of soil contamination and to more clearly define the contamination plume. Preliminary calculations estimate there are 1.7 million gallons of free-floating product at the site.

Corrective Action Status: A Rapid Response measure is being implemented by the US Army Corps of Engineers at Omaha. A Vacuum Enhanced Pumping (VEP) System/Soil Vapor Extraction (SVE) Unit will be installed in the area of greatest contamination. A 19-hour pilot test study was conducted in November 1993 by IT Corporation. Full-scale implementation of the VEP/SVE system will begin in late 1995 or early 1996. The design and construction will be completed using FY95 funding, however, additional funding is necessary for the long-term operation and maintenance of the SVE system.

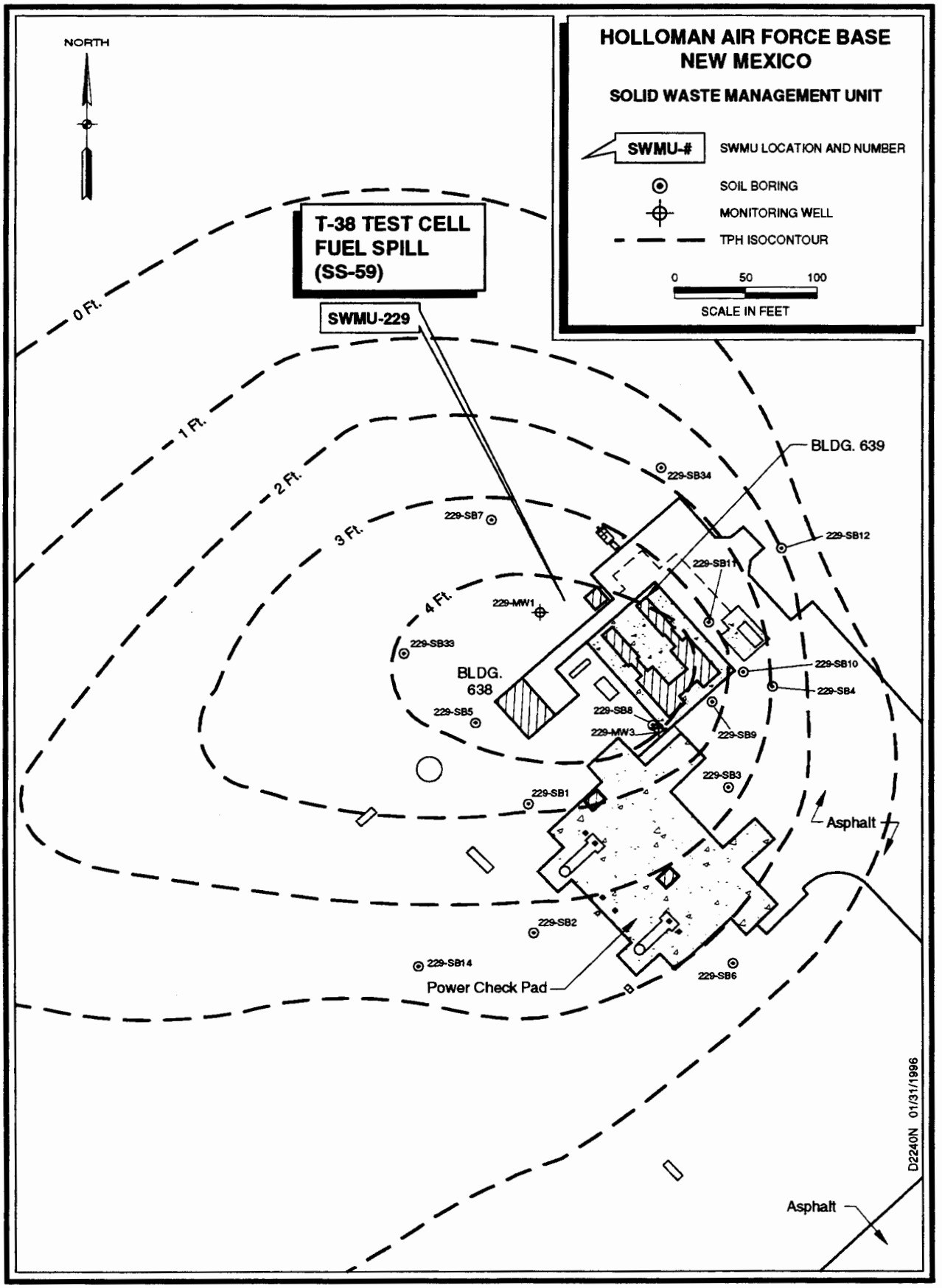

Figure C-12. SWMU 229--T-38 Test Cell

SWMU 230 **Building 828 Fuel Spill**

Period of Operation: Not applicable.

Unit Description: Building 828 is used by the 49th Maintenance Squadron to repair, maintain, and service aerospace ground equipment (AGE). The facility includes three fuel pumps for servicing assigned AGE. Other SWMUs in this area include Building 827 Oil/Water Separator (SWMU 29) and Building 827 Washrack (SWMU 93). The Building was placed in operation in 1977 as an AGE shop. Three underground storage tanks (USTs) were installed just east of the building. Their rated maximum capacities were 5,000 gallons and 3,000 gallons. The fuel pumps, located south of the building, dispensed unleaded, JP-4, and diesel fuel.

Release History: In November 1990, shop personnel detected a leak in the diesel UST. A lead in the JP-4 tank was detected two months later. Three aboveground tanks (6,000 gallons each) were installed, and use of the USTs ceased in June 1991. In October 1991, the gas pumps became operational. Shortly thereafter, shop personnel recorded a leak of approximately 4,700 gallons of unleaded fuel. Leak tests revealed that the unleaded and JP-4 USTs were leaking from the underground piping at the pump connections. In December 1992, an "odor" complaint prompted the Holloman AFB Bioenvironmental Engineering office to perform a gas survey at Building 827 located southwest of Building 828. Highest fuel readings were 2,300 ppm (commode) and 2,500 ppm (drain plug). New sewer connections have been installed at this location.

Site Investigation: SWMU 230 has been investigated for diesel, JP-4, and unleaded fuel leaks from the abandoned underground storage tanks (USTs) at Building 828 (SWMU 230). Significant fuel related contamination was detected in the soil and groundwater around the tanks and the pump island, and LNAPL is present on the groundwater. Most of the elevated constituents occur from 6-9 ft bgl.

Corrective Action Status: The proposed remedial system is currently in the design stage of a CMS/CMI, and construction is scheduled to commence in the summer of 1995. The corrective measure will consist of a dual-phase extraction system that will treat soil and groundwater across the site. The design and construction will be completed using FY95 funding, however, additional funding is necessary for the long-term operation and maintenance of the SVE system.

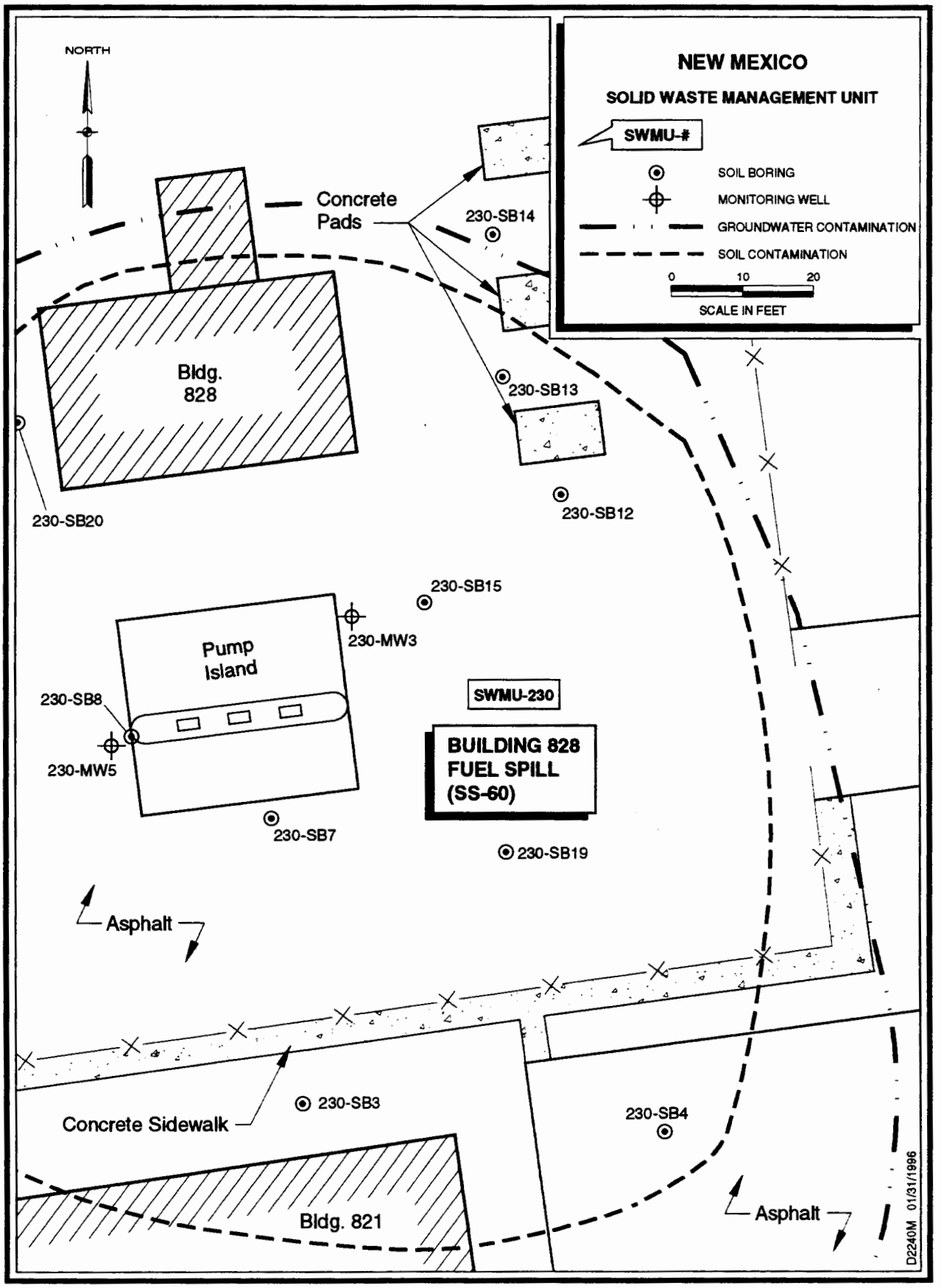

Figure C-13. SWMU 230--Building 828 Fuel Spill

APPENDIX D

A-106 PROJECT DATA

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ive                      A 1 0 6  (EPA Form 3 5 0 0 - 7)                    Page 1 - 3
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Base:     HOLLOMAN        MAJCOM:    ACC          PCMS # :
Project:  KWRD966XXX                              Module Ind.:   ECMP
Title:    RCRA TABLE 3 LTM / TABLE 2 CMI          Tracking #:
Pgm FY:          1996                             Base Pri:
Fund Type:       O&M      EEIC:         534 10    Cmd Pri:
Multiple Inst.:  N        Pgm Element:  27456     Dates (yyyymmdd)
Fund Account:    02       Project Costs           Released Base: 1994 02 22
Assessment:      H        Prg Amount:   $2700000  Released MAJC: 1994 03 10
Progress Code:   1        CWE:          $2700000  A/S Validated: 0000 00 00
Operable Unit:            Total Oblg:             EPA Submittal: 0000 00 00
Ownership Type:  FF       Expensed:               Project Milestones/Progress
Statutory Auth:  RC       MAJCOM Funded:          Design/Plan:   0000 00
Pollutant Cat.:  CORA     Total Sent:             Const. Start:  0000 00
Compl. Status:   ESDP                             Compliance Req 0000 00
Compl. Level:    1                                Const. Comp.:  0000 00
                                                  FY Completed:  0000
                                                        Update PCMS?
A project exists in PCMS.                  Last Modified: 1995/10/03 by VCC
 (1)Keys   (2)First  (3)Desc   (4)Prev   (5)Next                          (8)Find
 (9)Modify(10)Query (11)Add             (13)Help          (15)Print (16)Retrn
(17)ECAMP (18)PCMS  (19)Inadq (20)Copy
(25)Narrat(26)Remrks(27)Summry                                          (32)Exit
                  Printed By EVP on 95/11/16 at 13:29
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EPA 3500-7 -- N A R R A T I V E

Base: HOLLOMAN MAJCOM: ACC
Project Number: KWRD966XXX

Narrative

FUNDING PROVIDES FOR LONG TERM MONITORING FOR 41 S OLID WASTE MANAGEMENT UNITS (SWMU) ON HAFB. THIS W ILL REMOVE THE REMAINING CONTAMINATION TO A LEVEL THAT IS ACCEPTABLE BY THE EPA.

REGULATORY BASIS: RCRA SUBPART S & HWSA; ALSO, CER CLA AND NEW MEXICO HAZARDOUS WASTE MANAGEMENT REGU LATIONS VII

Criteria

Unique Field 1:	Unique Field 1:
Unique Field 2:	Unique Field 2:

The entire record is displayed.
(1)Keys (3)Desc
(9)Modify(10)Query (13)Help (15)Print (16)Retrn
(32)Exit

Printed By EVP on 95/11/16 at 13:29

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RCV BY:                    ; 1-31-96 ; 12:57 ;       505 475 5080→       RADIAN CORP:# 2
ive                    A 1 0 6  (EPA Form 3 5 0 0 - 7)              Page 1 - 3
E'PA, 'I'nternal Project, or 'O' O&S? O          EPA Number:
Base:     HOLLOMAN        MAJCOM:    ACC         PCMS # :
Project:  OS-005302                              Module Ind.:   ECMP
Title:    SUPERVISION AND ADMINISTRATION         Tracking #:
Pgm FY:          1996                            Base Pri:        1
Fund Type:       O&M     EEIC:          534 10    Cmd Pri:
Multiple Inst.: N        Pgm Element: 27456       Dates (yyyymmdd)
Fund Account:    02      Project Costs            Released Base: 0000 00 00
Assessment:      H       Prg Amount:   $450000    Released MAJC: 0000 00 00
Progress Code:   1       CWE:                     A/S Validated: 0000 00 00
Operable Unit:           Total Oblg:              EPA Submittal: 0000 00 00
Ownership Type: FF       Expensed:                Project Milestones/Progress
Statutory Auth: RC       MAJCOM Funded:           Design/Plan:   0000 00
Pollutant Cat.: OTHR     Total Sent:              Const. Start:  0000 00
Compl. Status:  O&S                               Compliance Req 0000 00
Compl. Level:                                     Const. Comp.:  0000 00
                                                  FY Completed:  0000
                                                         Update PCMS? Y

A project exists in PCMS.
 (1)Keys   (2)First  (3)Desc   (4)Prev   (5)Next                          (8)Find
          (10)Query                    (13)Help          (15)Print (16)Retrn
(17)ECAMP (18)PCMS
(25)Narrat(26)Remrks(27)Summry                                          (32)Exit
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RCV BY: ; 1-31-96 ; 12:58 ; 505 475 5080→ RADIAN CORP;# 2

EPA 3500-7 -- N A R R A T I V E

Base: HOLLOMAN MAJCOM: ACC
Project Number: OS-005302

Narrative SUPERVISION AND ADMINISTRATION OF RCRA CORRECTIVE ACTION PROJECTS MANAGED BY THE USACE.

	Unique Field 1:	Unique Field 1:
	Unique Field 2:	Unique Field 2:
Criteria		

The entire record is displayed.
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(32)Exit

Printed By EV4 on 96/01/31 at 07:25

Appendix D

A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	KWRD966001
Project Title:	CORRECTIVE MEASURES STUDY FOR SWMU 184
Program Year:	1996
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	1996 01
Programmed Amount:	$100,000
CWE:	$100,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.M, IV.N, AND IV.O OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT REQUIRES HOLLOMAN TO CONDUCT ALL NECESSARY CORRECTIVE MEASURES STUDY (CMS) ACTIVITIES. THE CMS TASK INCLUDES PREPARATION AND SUBMITTAL OF A CMS PLAN WITHIN 90 DAYS OF AGENCY NOTIFICATION OF REQUIREMENT. IAW THE PERMIT, HOLLOMAN MUST PREPARE A FORMAL CMS WITHIN 15 DAYS OF THE DATE THE CMS PLAN IS APPROVED BY THE EPA AND THE STATE.

Appendix D

A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	KWRD966002
Project Title:	CORRECTIVE MEASURES IMPLEMENTATION: SWMUs 19, 27, AND 29
Program Year:	1996
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	1996 01
Programmed Amount:	$175,000
CWE:	$175,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . FY 1996 CMI ACTIVITIES INCLUDE REMEDIAL ACTIONS FOR 3 SWMUs.

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A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	KWRD966004
Project Title:	LONG-TERM OPERATION/LONG-TERM MONITORING (LTO/LTM)
Program Year:	1996
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	1996 01
Programmed Amount:	$600,000
CWE:	$600,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . A COMPONENT OF CMI INCLUDES LONG-TERM OPERATION OF REMEDIAL SYSTEMS AND LONG-TERM MONITORING OF TREATMENT EFFECTIVENESS. FY 1996 LTO/LTM ACTIVITIES ARE FOR 8 SWMUs.

Appendix D

A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	KWRD976001
Project Title:	CORRECTIVE MEASURES STUDY FOR SWMUs 139 AND 140
Program Year:	1997
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	1997 01
Programmed Amount:	$200,000
CWE:	$200,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.M, IV.N, AND IV.O OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT REQUIRES HOLLOMAN TO CONDUCT ALL NECESSARY CORRECTIVE MEASURES STUDY (CMS) ACTIVITIES. THE CMS TASK INCLUDES PREPARATION AND SUBMITTAL OF A CMS PLAN WITHIN 90 DAYS OF AGENCY NOTIFICATION OF REQUIREMENT. IAW THE PERMIT, HOLLOMAN MUST PREPARE A FORMAL CMS WITHIN 15 DAYS OF THE DATE THE CMS PLAN IS APPROVED BY THE EPA AND THE STATE.

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A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	KWRD976002
Project Title:	CORRECTIVE MEASURES IMPLEMENTATION: SWMUs 27 AND 184
Program Year:	1997
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	1997 01
Programmed Amount:	$275,000
CWE:	$275,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . FY 1997 CMI ACTIVITIES INCLUDE REMEDIAL ACTIONS FOR 2 SWMUs.

Appendix D

A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	KWRD976004
Project Title:	LONG-TERM OPERATION/LONG-TERM MONITORING (LTO/LTM)
Program Year:	1997
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	1997 01
Programmed Amount:	$650,000
CWE:	$650,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . A COMPONENT OF CMI INCLUDES LONG-TERM OPERATION OF REMEDIAL SYSTEMS AND LONG-TERM MONITORING OF TREATMENT EFFECTIVENESS. FY 1997 LTO/LTM ACTIVITIES ARE FOR 10 SWMUs.

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A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	OS-005303
Project Title:	SUPERVISION AND ADMINISTRATION
Program Year:	1997
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	1997 01
Programmed Amount:	$350,000
CWE:	$350,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT REQUIRES HOLLOMAN TO CONDUCT ALL NECESSARY STUDIES, IMPLEMENT CORRECTIVE MEASURES, AND OPERATE/MONITOR ALL ONGOING REMEDIAL ACTIONS. FY 1997 SUPERVISION AND ADMINISTRATION ACTIVITIES ARE FOR A CMS FOR 2 SWMUS, CMI FOR 2 SWMUS, AND LONG-TERM OPERATIONAL/LONG-TERM MONITORING FOR 10 SWMUS.

Appendix D

A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	KWRD986004
Project Title:	LONG-TERM OPERATION FOR SWMUS 229 & 230
Program Year:	1998
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	1998 01
Programmed Amount:	$300,000
CWE:	$300,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . A COMPONENT OF CMI INCLUDES LONG-TERM OPERATION OF REMEDIAL SYSTEMS AND LONG-TERM MONITORING OF TREATMENT EFFECTIVENESS. FY 1998 LTO ACTIVITIES ARE FOR 2 SWMUs.

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A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	OS-005304
Project Title:	SUPERVISION AND ADMINISTRATION FOR LTO AT SWMUS 229 & 230
Program Year:	1998
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	1998 01
Programmed Amount:	$150,000
CWE:	$150,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . A COMPONENT OF CMI INCLUDES LONG-TERM OPERATION OF REMEDIAL SYSTEMS AND LONG-TERM MONITORING OF TREATMENT EFFECTIVENESS. FY 1998 LTO ACTIVITIES ARE FOR 2 SWMUs.

Appendix D

A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	KWRD996004
Project Title:	LONG-TERM OPERATION FOR SWMUS 229 & 230 LONG-TERM MONITORING FOR SWMUS 139 & 140
Program Year:	1999
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	1999 01
Programmed Amount:	$350,000
CWE:	$350,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . A COMPONENT OF CMI INCLUDES LONG-TERM OPERATION OF REMEDIAL SYSTEMS AND LONG-TERM MONITORING OF TREATMENT EFFECTIVENESS. FY 1999 LTO/LTM ACTIVITIES ARE FOR 4 SWMUs.

Appendix D

A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	OS-005305
Project Title:	SUPERVISION AND ADMINISTRATION FOR LTO AT SWMUS 229 & 230 AND LTM AT SWMUS 139 & 140
Program Year:	1999
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	1999 01
Programmed Amount:	$125,000
CWE:	$125,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . A COMPONENT OF CMI INCLUDES LONG-TERM OPERATION OF REMEDIAL SYSTEMS AND LONG-TERM MONITORING OF TREATMENT EFFECTIVENESS. FY 1999 LTO/LTM ACTIVITIES ARE FOR 4 SWMUs.

Appendix D

A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	KWRD006004
Project Title:	LONG-TERM OPERATION (LTO) FOR SWMUS 229 & 230
Program Year:	2000
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	2000 01
Programmed Amount:	$300,000
CWE:	$300,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . A COMPONENT OF CMI INCLUDES LONG-TERM OPERATION OF REMEDIAL SYSTEMS AND LONG-TERM MONITORING OF TREATMENT EFFECTIVENESS. FY 2000 LTO ACTIVITIES ARE FOR 2 SWMUs.

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A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	OS-005306
Project Title:	SUPERVISION AND ADMINISTRATION FOR LTO AT SWMUS 229 & 230
Program Year:	2000
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	2000 01
Programmed Amount:	$100,000
CWE:	$100,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . A COMPONENT OF CMI INCLUDES LONG-TERM OPERATION OF REMEDIAL SYSTEMS AND LONG-TERM MONITORING OF TREATMENT EFFECTIVENESS. FY 2000 LTO ACTIVITIES ARE FOR 2 SWMUs.

Appendix D

A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	KWRD016004
Project Title:	LONG-TERM OPERATION FOR SWMUS 229 & 230 LONG-TERM MONITORING FOR SWMUS 139 & 140
Program Year:	2001
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	2001 01
Programmed Amount:	$350,000
CWE:	$350,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . A COMPONENT OF CMI INCLUDES LONG-TERM OPERATION OF REMEDIAL SYSTEMS AND LONG-TERM MONITORING OF TREATMENT EFFECTIVENESS. FY 2001 LTO/LTM ACTIVITIES ARE FOR 4 SWMUs.

Appendix D

A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	OS-005307
Project Title:	SUPERVISION AND ADMINISTRATION FOR LTO AT SWMUS 229 & 230 AND LTM AT SWMUS 139 & 140
Program Year:	2001
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	2001 01
Programmed Amount:	$100,000
CWE:	$100,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . A COMPONENT OF CMI INCLUDES LONG-TERM OPERATION OF REMEDIAL SYSTEMS AND LONG-TERM MONITORING OF TREATMENT EFFECTIVENESS. FY 2001 LTO/LTM ACTIVITIES ARE FOR 4 SWMUs.

Appendix D

A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	KWRD036004
Project Title:	LONG-TERM MONITORING (LTM) FOR SWMUS 139 & 140
Program Year:	2003
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	2003 01
Programmed Amount:	$50,000
CWE:	$50,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . A COMPONENT OF CMI INCLUDES LONG-TERM OPERATION OF REMEDIAL SYSTEMS AND LONG-TERM MONITORING OF TREATMENT EFFECTIVENESS. FY 2003 LTM ACTIVITIES ARE FOR 2 SWMUs.

Appendix D

A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	OS-005308
Project Title:	SUPERVISION AND ADMINISTRATION FOR LTM AT SWMUS 139 & 140
Program Year:	2003
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	2003 01
Programmed Amount:	$50,000
CWE:	$50,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . A COMPONENT OF CMI INCLUDES LONG-TERM OPERATION OF REMEDIAL SYSTEMS AND LONG-TERM MONITORING OF TREATMENT EFFECTIVENESS. FY 2003 LTM ACTIVITIES ARE FOR 2 SWMUs.

Appendix D

A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	KWRD056004
Project Title:	LONG-TERM MONITORING (LTM) FOR SWMUS 139 & 140
Program Year:	2005
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	2005 01
Programmed Amount:	$50,000
CWE:	$50,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . A COMPONENT OF CMI INCLUDES LONG-TERM OPERATION OF REMEDIAL SYSTEMS AND LONG-TERM MONITORING OF TREATMENT EFFECTIVENESS. FY 2005 LTM ACTIVITIES ARE FOR 2 SWMUs.

Appendix D

A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	OS-005309
Project Title:	SUPERVISION AND ADMINISTRATION FOR LTM AT SWMUS 139 & 140
Program Year:	2005
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	2005 01
Programmed Amount:	$25,000
CWE:	$25,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . A COMPONENT OF CMI INCLUDES LONG-TERM OPERATION OF REMEDIAL SYSTEMS AND LONG-TERM MONITORING OF TREATMENT EFFECTIVENESS. FY 2005 LTM ACTIVITIES ARE FOR 2 SWMUs.

Appendix D

A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	KWRD076004
Project Title:	LONG-TERM MONITORING (LTM) FOR SWMUS 139 & 140
Program Year:	2007
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	2007 01
Programmed Amount:	$50,000
CWE:	$50,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . A COMPONENT OF CMI INCLUDES LONG-TERM OPERATION OF REMEDIAL SYSTEMS AND LONG-TERM MONITORING OF TREATMENT EFFECTIVENESS. FY 2007 LTM ACTIVITIES ARE FOR 2 SWMUs.

Appendix D

A-106 Module Summary
RCRA Corrective Action Projects for Holloman AFB

Project Number:	OS-005310
Project Title:	SUPERVISION AND ADMINISTRATION FOR LTM AT SWMUS 139 & 140
Program Year:	2007
Statutory Authority:	RC
Compliance Status:	ESDF
Compliance Level:	Level I
Compliance Requirement:	2007 01
Programmed Amount:	$25,000
CWE:	$25,000
Project Narrative:	PROJECT IS REQUIRED TO COMPLY WITH SEC. IV.D, IV.O, IV.P OF RCRA PERMIT, CORRECTIVE ACTION. PERMIT IMPLICITLY REQUIRES HOLLOMAN TO IMPLEMENT CORRECTIVE MEASURES (CMI) FOLLOWING A CMS AND NOTICE TO PROCEED FROM EPA AND THE STATE . A COMPONENT OF CMI INCLUDES LONG-TERM OPERATION OF REMEDIAL SYSTEMS AND LONG-TERM MONITORING OF TREATMENT EFFECTIVENESS. FY 2007 LTM ACTIVITIES ARE FOR 2 SWMUs.