

# FY2011

## LONGHORN ARMY AMMUNITION PLANT

### Installation Action Plan

# Table of Contents

Statement Of Purpose.....	1
Acronyms.....	2
Installation Information.....	5
Cleanup Program Summary.....	7
5-Year / Periodic Review Summary.....	9
Land Use Control (LUC) Summary.....	10
Parcel Summary.....	11
Installation Restoration Program.....	16
IRP Summary.....	17
IRP Contamination Assessment.....	18
IRP Previous Studies.....	19
Installation Restoration Program Site Descriptions.....	25
LHAAP-012 ACTIVE LANDFILL (SWMU 12).....	26
LHAAP-016 OLD LANDFILL (SWMU 16).....	28
LHAAP-017 NO 2 FLASHING AREA BRN GROUND(SWMU 17).....	30
LHAAP-018 BURNING GROUND/WASHOUT POND(SWMU 18).....	31
LHAAP-024 FORMER UNLINED EVAP POND (SWMU 24).....	32
LHAAP-029 FORMER TNT PRODUCTION AREA(SWMU 29).....	33
LHAAP-050 FORMER WASTE DISPOSAL FACILITY.....	34
LHAAP-067 ABOVE GROUND STORAGE TANK.....	35
PBC Longhorn PBC at Longhorn.....	36
IRP Site Closeout (No Further Action) Summary.....	38
Installation Restoration Program Schedule.....	43
Installation Restoration Program Milestones.....	43
Installation Restoration Program Schedule Chart.....	46
Military Munitions Response Program.....	47
MMRP Summary.....	48
MMRP Contamination Assessment.....	49
MMRP Previous Studies.....	50

---

## Table of Contents

Military Munitions Response Program Site Descriptions.....	51
LHAAP-001-R-01 SOUTH TEST AREA / BOMB TEST AREA.....	52
LHAAP-003-R-01 GROUND SIGNAL TEST AREA.....	54
MMRP Site Closeout (No Further Action) Summary.....	55
Military Munitions Response Program Schedule.....	56
Military Munitions Response Program Milestones.....	56
Military Munitions Response Program Schedule Chart.....	57
Community Involvement.....	58

---

## Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multiyear cleanup program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern (AOC), and proposes a comprehensive, installation-wide approach, along with the costs and schedules associated with conducting investigations and taking the necessary remedial actions (RA).

In an effort to coordinate planning information between the restoration manager, Base Realignment and Closure (BRAC), the US Army Environmental Command (USAEC), Longhorn Army Ammunition Plant (LHAAP), the executing agencies, the regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and tentative budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

AEDB-R	Army Environmental Database- Restoration
AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirements
AST	Aboveground Storage Tank
BIP	Blow in Place
BRAC	Base Realignment and Closure
BRACO	Base Realignment and Closure Office
CERCLA	Comprehensive Environmental, Response, Compensation and Liability Act
CLI	Caddo Lake Institute
CS	Confirmatory Sampling
cy	cubic yards
DD	Decision Document
DERPMIS	Defense Environmental Restoration Program Management Information System
DoD	Department of Defense
EBS	Environmental Baseline Survey
EE/CA	Engineering Evaluation/Cost Analysis
EOD	Explosive Ordnance Disposal
ER,A	Environmental Restoration, Army (formerly DERA)
ESS	Explosives Safety Submission
FFA	Federal Facilities Agreement
FFS	Focused Feasibility Study
FRA	Final Remedial Action
FS	Feasibility Study
FWS (US)	Fish and Wildlife Service
FY	Fiscal Year
GWTP	Groundwater Treatment Plan
HTRW	Hazardous, Toxic and Radioactive Waste
IAP	Installation Action Plan
INF	Intermediate-Range Nuclear Force
IRA	Interim Remedial Action
IRP	Installation Restoration Program
ISC	Information Systems Command
K	thousand
LAP	Load, Assemble, and Pack
LHAAP	Longhorn Army Ammunition Plant
LTM	Long-Term Management
LUC	Land Use Controls
MC	Munitions Constituents
MEC	Munitions and Explosives of Concern
mm	millimeters
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
MOA	Memorandum of Agreement
MRSP	Munitions Response Site Prioritization Protocol
N/A	Not Applicable

NA	No Action
NFA	No Further Action
NPL	National Priorities List
ORIS	Operational Range Inventory - Sustainment
PA	Preliminary Assessment
PBA	Performance-Based Acquisition
PBC	Performance-Based Contract
PCB	Polychlorinated Biphenyls
POL	Petroleum, Oil, and Lubricants
PP	Proposed Plan
ppm	parts per million
Qtr	quarter
RA	Remedial Action
RA(C)	Remedial Action-Construction
RA(O)	Remedial Action - Operation
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RFA	RCRA Facility Assessment
RI	Remedial Investigation
RIP	Remedy-in-Place
RMIS	Restoration Management Information System
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
RTC	Response to Comments
SI	Site Inspection
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
TBD	To be determined
TCE	Trichloroethylene
TCEQ	Texas Commission on Environmental Quality
TERC	Total Environmental Restoration Contract
TNT	Trinitrotoluene
TRC	Technical Review Committee
TWC	Texas Water Commission
UEP	Unlined Evaporation Pond
ug/L	micrograms per liter
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Command
USAEHA	US Army Environmental Hygiene Agency
USATHAMA	US Army Toxic and Hazardous Materials Agency (currently called USAEC)
USEPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
USSR	Union of Soviet Socialist Republics

## Acronyms

VOC Volatile Organic Compound  
WP White Phosphorous  
WWII World War II  
WWTP Wastewater Treatment Plant

# Installation Information

## Installation Locale

Installation Size (Acreage): 8,416.00

City: Marshall

County: Harrison

State: Texas

## Other Locale Information

The Longhorn Army Ammunition Plant (LHAAP) is located in central east Texas, in the northeast corner of Harrison County, approximately 14 miles northeast of Marshall, Texas, and 40 miles west of Shreveport, LA. The closed installation currently occupies approximately 1,400 of its original 8,416 acres between State Highway 43 and the western shore of Caddo Lake. The area surrounding LHAAP is primarily rural and consists of forest lands, the small towns of Karnack and Uncertain, Texas, Caddo Lake, and Caddo Lake State Park.

## Installation Mission

The LHAAP was an Army Materiel Command installation which the Army declared excess to its needs in July 1997. While active, the installation's mission was the production of trinitrotoluene (TNT) [World War II (WWII) era only], pyrotechnic items, and rocket motors. In 2003, the BRAC Division was tasked with its disposal.

## Lead Organization

Base Realignment and Closure Division

## Lead Executing Agencies for Installation

US Army Corps of Engineers (USACE), Tulsa District

## Regulator Participation

Federal US Environmental Protection Agency (USEPA), Region VI

State Texas Commission on Environmental Quality (TCEQ)

## National Priorities List (NPL) Status

A score of 40 was recorded on 01-AUG-90.

Final RA(C) Completion Date: 201310

Date for NPL Deletion: TBD

## Installation Restoration Advisory Board (RAB)/Technical Review Committee (TRC)/Technical Assistance for Public Participation (TAPP) Status

RAB established 2004

## Installation Program Summaries

### IRP

Primary Contaminants of Concern: Explosives, Metals, Munitions constituents (MC), Perchlorate, Petroleum, Oil and Lubricants (POL), Volatiles (VOC)

Affected Media of Concern: Groundwater, Sediment, Soil, Surface Water



---

## Installation Information

### MMRP

Primary Contaminants of Concern: Explosives

Affected Media of Concern: Groundwater, Soil

# Cleanup Program Summary

## Installation Historic Activity

The LHAAP was established in October 1942, with the primary mission of producing 2,4,6-TNT flake. Monsanto Chemical Company was the first contract operator of the plant. Production of 2,4,6-TNT continued through WWII until August 1945, when the plant went on standby status until February 1952. From then until 1956, Universal Match Corporation was the contracting operator, producing such pyrotechnic ammunition as photoflash bombs, simulators, hand signals, and tracers for 40 millimeter (mm) ammunition. With the departure of Universal Match Corporation in 1956, Thiokol assumed this responsibility, along with rocket motor production. Production of rocket motors continued to be the primary mission of LHAAP until 1965, when the production of pyrotechnic and illuminating ammunition was re-established.

Prior to 1994 operations consisted of compounding pyrotechnic and propellant mixtures, load, assemble, and pack (LAP) activities, accommodating receipt and shipment of containerized cargo, and maintenance and/or layaway of standby facilities and equipment as they apply to mobilization planning. The installation was also responsible for the static firing and elimination of Pershing I and II rocket motors in compliance with the intermediate-range nuclear force (INF) treaty in effect between the US and the former Union of Soviet Socialist Republics (USSR). In October 1996, a lease in excess of 1,000 of the 8,416 acres was granted to the Caddo Lake Institute (CLI) for biological and ecological studies by local schools and universities.

In July 1997 the plant became inactive and excess to the Army's needs. In July 1998 the Army contracted EarthTech, Inc. to liquidate all personal property and specific installed property. That contract was completed in fiscal year (FY)00. In 1999 the Army contracted with Project Development Corporation to demolish specified structurally unsafe buildings. In 2003 the demolition of all remaining buildings began. The demolition of the power plant was completed in 2009. Only the transformers remaining, all planned demolition has taken place. A memorandum of agreement (MOA) between the Army and the US Fish and Wildlife Service (USFWS), was signed on Oct. 21, 2000 designating an area, consisting of approximately 7,200 acres, for establishment of a wildlife refuge overlay at LHAAP. In October 2002 LHAAP was transferred to the Base Realignment and Closure Office (BRACO) to manage as an excess property. In April 2004, the Army and the USFWS entered into an MOA that set forth the transfer process of LHAAP acreage. Since May 2004, approximately 7,000 LHAAP acres have been transferred to the USFWS. The USFWS manages these acres as the Caddo Lake National Wildlife Refuge within the perimeter fence of the former installation. Although the perimeter fence and gates remain functional, guards are no longer posted since the Army's security contract expired on March 14, 2007. The CLI lease with the Army was transferred to the USFWS with the affected acreage.

On Aug. 9, 1990 the LHAAP was placed on the NPL. After being listed on the NPL, LHAAP, the USEPA, and the Texas Water Commission (TWC) (now called the TCEQ) entered into a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 120 Agreement for remedial activities at LHAAP. The CERCLA Section 120 agreement, referred to as the federal facility agreement (FFA), became effective Dec. 30, 1991. The installation applied for a Resource Conservation and Recovery Act (RCRA) Part A permit.

In February 1992 a RCRA Part B permit was signed. As a result, a RCRA facility assessment (RFA) identified 57 potential sites of concern. Since that time, scrubbing of the list [removal of non-Environmental Restoration, Army (ER,A) eligible sites, redundancies, etc.] has resulted in the current Army Environmental Database - Restoration (AEDB-R) list of 50 sites. In late 2007, the USEPA Region VI clarified their view of the NPL status of LHAAP as consisting of only those sites listed in the FFA and any additional sites with significant contamination. During a meeting between the Army, the USEPA and the TCEQ held in February 2008 at TCEQ headquarters, regulators and the Army agreed on the sites that will be addressed as NPL, including those listed and those considered to be NPL-caliber. The NPL sites are LHAAP-04, LHAAP37, LHAAP-46, LHAAP-47, LHAAP-49, LHAAP-50, LHAAP-58, and LHAAP-67 as well as the following sites which are listed in the FFA: LHAAP-01, LHAAP-11, LHAAP-12, LHAAP-13, LHAAP-14, LHAAP-16, LHAAP-17, LHAAP-18, LHAAP-24, LHAAP-27, LHAAP-29, LHAAP-32, LHAAP-54. The USEPA will continue to provide review and concurrence on documents related to these sites and will co-sign records of decision (RODs). The schedule for each of these sites will be described in this IAP, which will serve as formal documentation of the resolution between the Army and USEPA.

The non-NPL sites will be addressed through CERCLA, with RCRA issues addressed, as necessary, as applicable or relevant and appropriate requirements (ARARs), with the TCEQ as lead regulator. The USEPA will provide review; however, the decision documents (DDs) will be signed by the Army alone with the TCEQ providing a letter of concurrence. In addition to the site listing of the FFA, an installation assessment by the Army in February 1980 and the RFA in April 1988 identified additional potential sites of concern. The information management system used in the early-1990s [Defense Environmental Restoration Program Management Information system (DERPMIS)] identified 59 sites at that time. In the mid-1990s, the tracking system being used at the time [the restoration management information system (RMIS)] was updated to remove duplicate sites, sites contained within other sites, sites that were not a part of the restoration program, and sites that never existed.

## Cleanup Program Summary

Presented in Appendix A - LHAAP Environmental Site Status, is the resulting list of the LHAAP environmental sites, both NPL and non-NPL, with the associated DERPMS and RMIS numbers. Presented with the sites are their current status and completion dates or projected phase completion dates. At the time of IAP preparation, one site (LHAAP-65) was considered in a 'to be determined' (TBD) status (i.e., neither NPL nor non-NPL). Discussions are ongoing to assign a status.

The following sites have been transferred: LHAAP-001, LHAAP-005, LHAAP-009, LHAAP-011, LHAAP-013, LHAAP-014, LHAAP-015, LHAAP-034, LHAAP-045, LHAAP-052, LHAAP-057, LHAAP-061, and LHAAP-063. Site LHAAP-012 has been offered for transfer.

### Installation Program Cleanup Progress

#### IRP

Prior Year Progress: A no further action (NFA) DD was completed for LHAAP-35/36

Future Plan of Action: 1. Remedial action (operations) [RA(O)]/long-term management (LTM) will be implemented for LHAAP-37, LHAAP-46, LHAAP-50, LHAAP-58 and LHAAP-67  
2. A ROD will be completed for LHAAP-16, LHAAP-17, LHAAP-18/24, LHAAP-29, and LHAAP-47

#### MMRP

Prior Year Progress: The MC data summary report is under regulatory review.

Future Plan of Action: A ROD will be completed in FY11. The LTM phase will begin.

## 5-Year / Periodic Review Summary

### 5-Year / Periodic Review Summary

Status	Begin Date	End Date	End FY
Complete	200706	200706	2007
Complete	200206	200206	2002
Planned	201206	201206	2012

### Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
BURNING GROUND #3(LHAAP-018 & LHAAP-024)	LHAAP-018, LHAAP-024
CAPPING LANDFILLS 12 & 16	LHAAP-012, LHAAP-016

**Results** Interim RODs are satisfactory

**Actions** Implement Final RODs

**Plans** MNA

### Recommendations and Implementation Plans:

N/A

## Land Use Control (LUC) Summary

LUC title: LHAAP-037 & 067 GW

Site(s): LHAAP-067

ROD/DD title: Final ROD LHAAP-035B (037) & LHAAP-067

Location of LUC

LHAAP-037 and LHAAP-067 groundwater

Land Use Restriction: Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on Groundwater Withdrawal

Date in Place: 201110

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: USACE District

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: VOC

Additional Information

N/A

LUC title: LUC for LHAAP-012 Capping

Site(s): LHAAP-012

ROD/DD title: LHAAP-12 Final ROD

Location of LUC

Site LHAAP-012

Land Use Restriction: Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system, Landfill restriction - Prohibit excavation on LF cap or cover system, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes

Types of Engineering Controls: Fences, Signs

Types of Institutional Controls: Deed Restrictions, Dig Permits

Date in Place: 200706

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: USACE District

Record of LUC: Master Plan or Equivalent

Documentation Date: 200706

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: VOC

Additional Information

N/A

### Summary of Parcel Prioritization and Transfer Strategy

**Parcel Name:** Burning Ground (FWS)  
**Parcel Size:** 380.00  
**Associated Sites:** LHAAP-017, LHAAP-016, LHAAP-024, LHAAP-018  
**Transfer Date:** 201307  
**Current Land Use:** Other (under remediation)  
**Future Land Use:** Recreational  
**Encumbrances:** N/A  
**Leases/Permits/Licenses:** N/A  
**Transfer Strategy:** Transfer to Other Federal Agencies  
**Recipient Organization:** USFWS  
**Other Issues Affecting Transfer:** N/A

**Parcel Name:** Debris Landfill  
**Parcel Size:** 13.00  
**Associated Sites:**  
**Transfer Date:** 201207  
**Current Land Use:** Industrial  
**Future Land Use:** Recreational  
**Encumbrances:** N/A  
**Leases/Permits/Licenses:** N/A  
**Transfer Strategy:** Transfer to Other Federal Agencies  
**Recipient Organization:** N/A  
**Other Issues Affecting Transfer:** N/A

**Parcel Name:** East FIA I (FWS)  
**Parcel Size:** 182.00  
**Associated Sites:**  
**Transfer Date:** 200708  
**Current Land Use:** Recreational  
**Future Land Use:** Other (N/A)  
**Encumbrances:** N/A  
**Leases/Permits/Licenses:** N/A  
**Transfer Strategy:** Transfer to Other Federal Agencies  
**Recipient Organization:** USFWS  
**Other Issues Affecting Transfer:** N/A

## Parcel Summary

**Parcel Name:** East FIA II(FWS)

**Parcel Size:** 175.00

**Associated Sites:** PBC Longhorn

**Transfer Date:** 200909

**Current Land Use:** Industrial

**Future Land Use:** Recreational

**Encumbrances:** N/A

**Leases/Permits/Licenses:** N/A

**Transfer Strategy:** Transfer to Other Federal Agencies

**Recipient Organization:** USFWS

**Other Issues Affecting Transfer:** N/A

**Parcel Name:** Fire House (FWS)

**Parcel Size:** 2.98

**Associated Sites:**

**Transfer Date:** 200705

**Current Land Use:** Recreational

**Future Land Use:** Other (N/A)

**Encumbrances:** N/A

**Leases/Permits/Licenses:** N/A

**Transfer Strategy:** Transfer to Other Federal Agencies

**Recipient Organization:** USFWS

**Other Issues Affecting Transfer:** N/A

**Parcel Name:** Ground Signal Test (FWS)

**Parcel Size:** 80.00

**Associated Sites:** LHAAP-003-R-01

**Transfer Date:** 201301

**Current Land Use:** Other (Under remediation)

**Future Land Use:** Recreational

**Encumbrances:** N/A

**Leases/Permits/Licenses:** N/A

**Transfer Strategy:** Transfer to Other Federal Agencies

**Recipient Organization:** USFWS

**Other Issues Affecting Transfer:** N/A

## Parcel Summary

**Parcel Name:** LANDFILL 12 (FWS)

**Parcel Size:** 51.00

**Associated Sites:** LHAAP-012

**Transfer Date:** 201210

**Current Land Use:** Industrial

**Future Land Use:** Recreational

**Encumbrances:** N/A

**Leases/Permits/Licenses:** N/A

**Transfer Strategy:** Transfer to Other Federal Agencies

**Recipient Organization:** USFWS

**Other Issues Affecting Transfer:** Land Use Control/maintenance costs

**Parcel Name:** Pistol Range (FWS)

**Parcel Size:** 1.00

**Associated Sites:** PBC Longhorn

**Transfer Date:** 201210

**Current Land Use:** Other (under remediation)

**Future Land Use:** Recreational

**Encumbrances:** N/A

**Leases/Permits/Licenses:** N/A

**Transfer Strategy:** Transfer to Other Federal Agencies

**Recipient Organization:** USFWS

**Other Issues Affecting Transfer:** N/A

**Parcel Name:** Production Area II

**Parcel Size:** 467.00

**Associated Sites:** PBC Longhorn

**Transfer Date:** 201302

**Current Land Use:** Other (Under remediation)

**Future Land Use:** Recreational

**Encumbrances:** N/A

**Leases/Permits/Licenses:** N/A

**Transfer Strategy:** Transfer to Other Federal Agencies

**Recipient Organization:** USFWS

**Other Issues Affecting Transfer:** N/A



## Parcel Summary

**Parcel Name:** Production Area Ia (FWS)

**Parcel Size:** 456.72

**Associated Sites:** PBC Longhorn

**Transfer Date:** 200708

**Current Land Use:** Residential

**Future Land Use:** Other (N/A)

**Encumbrances:** N/A

**Leases/Permits/Licenses:** N/A

**Transfer Strategy:** Transfer to Other Federal Agencies

**Recipient Organization:** USFWS

**Other Issues Affecting Transfer:** N/A

**Parcel Name:** Production Area Ib (FWS)

**Parcel Size:** 107.59

**Associated Sites:** PBC Longhorn

**Transfer Date:** 200701

**Current Land Use:** Recreational

**Future Land Use:** Other (N/A)

**Encumbrances:** N/A

**Leases/Permits/Licenses:** N/A

**Transfer Strategy:** Transfer to Other Federal Agencies

**Recipient Organization:** USFWS

**Other Issues Affecting Transfer:** N/A

**Parcel Name:** South Test/Bomb (FWS)

**Parcel Size:** 72.00

**Associated Sites:** LHAAP-001-R-01

**Transfer Date:** 201301

**Current Land Use:** Other (Under remediation)

**Future Land Use:** Recreational

**Encumbrances:** N/A

**Leases/Permits/Licenses:** N/A

**Transfer Strategy:** Transfer to Other Federal Agencies

**Recipient Organization:** USFWS

**Other Issues Affecting Transfer:** N/A

## Parcel Summary

**Parcel Name:** Static Test (FWS)

**Parcel Size:** 55.00

**Associated Sites:**

**Transfer Date:** 201210

**Current Land Use:** Other (Under remediation)

**Future Land Use:** Recreational

**Encumbrances:** N/A

**Leases/Permits/Licenses:** N/A

**Transfer Strategy:** Transfer to Other Federal Agencies

**Recipient Organization:** USFWS

**Other Issues Affecting Transfer:** N/A

**Parcel Name:** Y Area (FWS)

**Parcel Size:** 17.00

**Associated Sites:**

**Transfer Date:** 201210

**Current Land Use:** Other (Under remediation)

**Future Land Use:** Recreational

**Encumbrances:** N/A

**Leases/Permits/Licenses:** N/A

**Transfer Strategy:** Transfer to Other Federal Agencies

**Recipient Organization:** USFWS

**Other Issues Affecting Transfer:** N/A

# LONGHORN ARMY AMMUNITION PLANT

## Non-BRAC Excess Installation Restoration Program

# IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 48/39

## Installation Site Types with Future and/or Underway Phases

- 1 Above Ground Storage Tank  
(LHAAP-067)
- 2 Burn Area  
(LHAAP-017, LHAAP-018)
- 1 Contaminated Ground Water  
(PBC Longhorn)
- 2 Landfill  
(LHAAP-012, LHAAP-016)
- 1 Surface Impoundment/Lagoon  
(LHAAP-024)
- 2 Waste Lines  
(LHAAP-029, LHAAP-050)

## Most Widespread Contaminants of Concern

Explosives, Metals, Munitions constituents (MC), Perchlorate, Petroleum, Oil and Lubricants (POL), Volatiles (VOC)

## Media of Concern

Groundwater, Sediment, Soil, Surface Water

## Completed Remedial Actions (Interim Remedial Actions / Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY	Cost
LHAAP-018	BURNING GROUND/WASHOUT POND(SWMU 18)	IRA	REMOVAL	1997	TBD
LHAAP-024	FORMER UNLINED EVAP POND (SWMU 24)	IRA	CAPPING	1997	TBD
LHAAP-024	FORMER UNLINED EVAP POND (SWMU 24)	IRA	REMOVAL	1997	TBD
LHAAP-012	ACTIVE LANDFILL (SWMU 12)	IRA	CAPPING	2005	\$5.0 K
LHAAP-016	OLD LANDFILL (SWMU 16)	IRA	CAPPING	2005	\$14.0 K
LHAAP-012	ACTIVE LANDFILL (SWMU 12)	FRA	NATURAL ATTENUATION	2007	TBD
LHAAP-012	ACTIVE LANDFILL (SWMU 12)	FRA	INSTITUTIONAL CONTROLS	2007	TBD
PBC Longhorn	PBC at Longhorn	FRA	OTHER	2007	TBD
LHAAP-067	ABOVE GROUND STORAGE TANK	FRA	NATURAL ATTENUATION	2008	TBD
LHAAP-035	SUMPS (145) VARIOUS	FRA	WASTE REMOVAL - SOILS	2009	TBD
LHAAP-018	BURNING GROUND/WASHOUT POND(SWMU 18)	IRA	GROUND WATER TREATMENT	2011	TBD
LHAAP-024	FORMER UNLINED EVAP POND (SWMU 24)	IRA	GROUND WATER TREATMENT	2011	TBD

## Duration of IRP

Year of IRP Inception: 197906  
 Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201310/204109  
 Date of IRP completion including Long Term Management (LTM): 204109

## IRP Contamination Assessment

### Contamination Assessment Overview

In early 2008 the installation-wide ecological risk assessment was completed. Work currently being conducted under a performance-based contract (PBC) includes conducting additional sampling activities at several sites and finalizing outstanding feasibility studies (FSs) and engineering evaluations/cost analyses (EE/CAs), with proposed plans (PPs) and a ROD to follow during calendar year 2011. Regulatory concurrence was obtained for reports recommending no action for these 11 sites: LHAAP-06, LHAAP-07, LHAAP-23, LHAAP-35, LHAAP-36, LHAAP-51, LHAAP-55, LHAAP-60, LHAAP-64, LHAAP-66, and LHAAP-68.

In 2008 DDs were signed for sites LHAAP-6, 7, 48, 51, 55, 60, 64, 66, and 68. Also in 2008 the FSs were completed for all applicable total environmental restoration contract (TERC) sites including the three TERC NPL sites (LHAAP-32, LHAAP-37, and LHAAP-67) and a ROD document was signed for TERC NPL site LHAAP-32 in 2008. No action DDs were signed in 2008 for the remaining TERC sites (LHAAP-8, LHAAP-48, LHAAP-53, and LHAAP-59) and in 2010 the RODs were signed for LHAAP-37, LHAAP-46, LHAAP-49, LHAAP-50, LHAAP-58, LHAAP-67 and Pistol Range.

Sediment samples collected by the Army from Caddo Lake near the mouths of two branches of Goose Prairie Creek indicated elevated lead and mercury concentrations. The sampling locations are outside of the installation boundary. In 2004 an investigation of contaminants in fish tissue from three Caddo Lake sites, one of which is upgradient at Clinton Lake, was funded by the USEPA Region 6 and performed by the TCEQ Region 5. It concluded that mercury was present at elevated levels from all three sites, dioxin was also present, but highest at Clinton Lake (a lake upstream from LHAAP), and pesticides, polychlorinated biphenyls (PCBs) and perchlorate were not detected in either edible fish fillets or whole fish.

Approximately 7,000 acres of the plant have transferred to the USFWS and are being operated as the Caddo Lake National Wildlife Refuge. The remaining acreage is also expected to transfer to the USFWS as restoration activities are completed.

### Cleanup Exit Strategy

As RODs are finalized and remedial designs (RDs) and RAs are implemented, long-term remedial action (operation) (RA(O)) and monitoring will continue until ramp-down.

Ramp-down/exit strategies at the sites will continue to be based on human and environmental exposure.

## IRP Previous Studies

	Title	Author	Date
1979	Assessment of Contaminant Migration, Longhorn Army Ammunition Plant	Robert H. Balter Co	APR-1979
1980	Installation Assessment of Longhorn Army Ammunition Plant, Report No. 150	U.S. Army Toxic and Hazardous Materials Agency	FEB-1980
	Land Disposal Study No. 38-26-0104-81, LHAAP, 23 January - 8 February 1980	USAEHA	MAY-1980
1981	Wastewater Engineering Special Study No. 32-62-0182-82	Wastewater Engineering Special Study No. 32-62-0182-82	SEP-1981
1983	Phase II, Hazardous Waste Management Special Study No. 39-26-0147-83, DARCOM Open-Burning/Open-Detonation Grounds Evaluation, LHAAP, 31 July - 3 August 1981	USAEHA	SEP-1983
1984	Closure of Unlined Evaporation Pond	Kindle, Stone and Associates	JUN-1984
	Longhorn Army Ammunition Plant Contamination Survey, Contract # DAAA09-78-C-3004,	Environmental Protection Systems, Inc	JUN-1984
1986	Closure Report, Unlined Evaporation Pond, Longhorn Army Ammunition Plant	Army Corps of Engineers, Tulsa	JUN-1986
1994	Interim Risk Assessment for Burning Ground 3 & Unlined Evaporation Pond Sites (18 & 24)	Army Corps of Engineers, Tulsa	JAN-1994
	Soil and Groundwater Background Concentration Study	Army Corps of Engineers, Tulsa	MAY-1994
	Remedial Investigation /Feasibility Study Report for Areas 13 & 14	Army Corps of Engineers, Tulsa	JUN-1994
	Draft Final Workplan Addendum Soil and Groundwater Background Concentration Study	Army Corps of Engineers, Tulsa	JUN-1994
1995	Final Soil Background Concentration Report (Revised)	Army Corps of Engineers, Tulsa	MAR-1995
	Groundwater Background Concentration Report	Army Corps of Engineers, Tulsa	MAY-1995
	Final HydroGeologic Assessment Report	Army Corps of Engineers, Tulsa	MAY-1995
	Final Prop Plan of Action for Sites 13 & 14	Army Corps of Engineers, Tulsa	JUN-1995
	Groundwater Sampling Results-May 95, Interim Remedial Action-Phase III, Burning Ground 3 and UEP, LHAAP 18 & 24	Army Corps of Engineers, Tulsa	JUN-1995
	Remedial Investigation/Feasibility Study Report for Sites 13 & 14	Army Corps of Engineers, Tulsa	JUN-1995
	Final Record of Decision for Early Interim Remedial Action at Landfill Sites 12 & 16	Army Corps of Engineers, Tulsa	JUL-1995
1996			

## IRP Previous Studies

Year	Title	Author	Date
1996	Final Work Plan for Phase III Interim Remedial Action at Burning Ground 3	Army Corps of Engineers, Tulsa	JAN-1996
	Group 4 Baseline Risk Assessment Work Plan	Army Corps of Engineers, Tulsa	FEB-1996
	Final Project Work Plans, Interim Remedial Action Landfills 12 & 16 Caps	Army Corps of Engineers, Tulsa	JUN-1996
	Group 4 Sumps Groundwater Monitoring Quarterly Report	Army Corps of Engineers	JUN-1996
	Draft Final Design Analysis Report for the Site 16 Time Critical Removal Action	Army Corps of Engineers	JUN-1996
	Draft Final Comprehensive Chemical Data Acquisition Plan for the RI/FS	Army Corps of Engineers, Tulsa	JUL-1996
	Draft Final Field Summary Report for the Phase II, Group 2 Sites Remedial Investigation	Army Corps of Engineers, Tulsa	JUL-1996
	Treatment Simulation and Toxicity Testing Results of Site 16 Groundwater	Army Corps of Engineers, Tulsa	AUG-1996
	Final Project Construction Drawings, Interim Remedial Action, Landfill 12 & 16 Caps	Army Corps of Engineers, Tulsa	AUG-1996
	1997	Final Remedial Investigation Report Group 1 Sites (Sites 1, 11, 27, and XX) and Vol. 2 Baseline Risk Assessment	Army Corps of Engineers, Tulsa
1998	Final Record of Decision for Early Interim Remedial Action at Group 1 Sites	Army Corps of Engineers, Tulsa	FEB-1998
	Group 2 Final Workplan	Army Corps of Engineers, Tulsa	MAR-1998
	Environmental Baseline Study	Army Corps of Engineers, Tulsa	APR-1998
	Group 4 Final Workplan	Army Corps of Engineers, Tulsa	JUL-1998
2000	Site 16 Risk Assessment	Army Corps of Engineers, Tulsa	MAR-2000
	Hazardous and Medical Waste Study - Response Complete Verification and Relative Risk Site Evaluation for the Longhorn Army Ammunition Plant	USACHPPM	JUL-2000
	Final Site 16 Remedial Investigation Report	Army Corps of Engineers, Tulsa	OCT-2000
2001	Final Remedial Investigation Report for Group 2 Sites	Jacobs Engineering Group, Inc	APR-2001
	Baseline Risk Assessment: Human Health for Site 16 Landfill Remedial Investigation and Feasibility Study	Jacobs Engineering Group, Inc	JUN-2001
	Final Ecological Risk Assessment: Supplement to Site 16 Landfill Remedial Investigation Report	Jacobs Engineering Group, Inc	OCT-2001
2002	Final Group 4 Sites Remedial Investigation Report (Sites 35A, 35B, 46, 47, 48, 50, 60, and Goose Prairie Creek)	Jacobs Engineering Group, Inc	JAN-2002
	Final Group 4 Sites Remedial Investigation Addendum (Sites 04, 08, 67, and Hydrocarbon Study)	Jacobs Engineering Group, Inc	FEB-2002
	Final Group 2 Sites Remedial Investigation Report Addendum (Site 49)	Jacobs Engineering Group, Inc	FEB-2002

## IRP Previous Studies

	Title	Author	Date
2002	Final Feasibility Study for Site 16	Jacobs Engineering Group, Inc	MAR-2002
	Final Five-Year Review for Sites 18 & 24 (Burning Ground No. 3), Site 16 (Old Landfill), and Site 12 (Sanitary Landfill)	Complete Environmental Service	AUG-2002
	Group 2 Sites Baseline Human Health and Screening Ecological Risk Assessment (Sites 12, 17, 18/24, 29, 32, 49, Harrison Bayou, and Caddo Lake)	Jacobs Engineering Group, Inc	AUG-2002
2004	Final Installation-Wide Background Study Workplan	Shaw Environmental and Infrastructure	JAN-2004
	Final Groundwater Data Gaps Investigation Workplan (Groups 2 and 4)	Shaw Environmental and Infrastructure	FEB-2004
	Final Technical Memorandum: Modeling Approach for Derivation of Soil and Groundwater Concentrations Protective of Surface Water and Sediment	Shaw Environmental and Infrastructure	MAR-2004
	Final Sediment Sampling Report for Caddo Lake and Clinton Lake	Shaw Environmental and Infrastructure	APR-2004
	Final Environmental Condition of Property I	Shaw Environmental and Infrastructure	MAY-2004
	Final Background Soil Study Report	Shaw Environmental and Infrastructure	JUL-2004
	Final Evaluation of LHAAP-45 Surface Soil Analytical Data	Shaw Environmental and Infrastructure	SEP-2004
	Final Groundwater Data Gaps Investigation Workplan (Groups 2 and 4), Addenda 1 and 2	Shaw Environmental and Infrastructure	SEP-2004
	Final Environmental Condition of Property II	Army Corps of Engineers, Tulsa	NOV-2004
	2005	Final Site 12 Feasibility Study	Shaw Environmental and Infrastructure
Final Environmental Site Assessment Phase I and II Report		Plexus Scientific Corporation	FEB-2005
Final Feasibility Report for Site 12 Addendum (Revision 2)		Shaw Environmental and Infrastructure	MAR-2005
Final Proposed Plan for Landfill 12 (LHAAP-12),		Shaw Environmental and Infrastructure	MAR-2005
Final Project Report Plant-Wide Perchlorate Investigation		Solutions To Environmental Problems (STEP)	APR-2005
Final Site Inspection Report for the Military Munitions Response Program		Engineering-Environmental Management, Inc	JUN-2005
Final Feasibility Study for LHAAP-67 (Aboveground Storage Tank Farm),		Shaw Environmental and Infrastructure	AUG-2005
Final Feasibility Study for LHAAP-35B (37) (Chemical Laboratory)		Shaw Environmental and Infrastructure	OCT-2005
Final Site Evaluation Report for LHAAP-32 (Former Waste TNT Disposal Plant)		Shaw Environmental and Infrastructure	NOV-2005
2006		Final Installation-Wide Work Plan	Shaw Environmental and Infrastructure
	Decision Documentation for LHAAP-03 (Wastewater	Shaw Environmental and Infrastructure	JAN-2006



## IRP Previous Studies

2006

Title	Author	Date
Collection At Paint Shop), LHAAP-06 (Building 54F), and LHAAP-23 (Building 707-C Storage Area for PCBs),	Infrastructure	
Final Work Plan for Engineering Evaluation / Cost Analysis for Military Munitions Response Program	CAPE	MAR-2006
Final Background Surface Water and Sediment Study Report	Shaw Environmental and Infrastructure	JUL-2006
Draft Final Proposed Plan, LHAAP-37 & 67	Shaw Environmental and Infrastructure	JUL-2006
Final Record of Decision, LHAAP-12	US Army	JUL-2006
Remainder of PBC docs that have been submitted :	Workplans; Summary report for 46 and pistol range (Draft); Evaluation Report for 02 (Draft)	SEP-2006
Draft Final Site Evaluation Report, LHAAP-02; Work Plan Addenda for LHAAP-04, 07, 46, 51, 35/36, 29, Pistol Range, and Chromium Specification;	Shaw Environmental and Infrastructure	SEP-2006
Draft Final Evaluation of Monitored Natural Attenuation, LHAAP-12, 37 & 67	Shaw Environmental and Infrastructure	DEC-2006

2007

Final Groundwater Monitoring Report Sites 12 and 16 (spring 2003, spring 2004 and winter 2004)	ALL Consulting	JAN-2007
Final Modeling Report, Derivation of Soil and Groundwater Concentrations Protective of Surface Water and Sediment, Rev. 01	Shaw Environmental and Infrastructure	FEB-2007
Final LHAAP-12 Well Abandonment and Installation Report Groundwater, Data Gaps Investigation Groups 2 and 4	Shaw Environmental, Inc.	APR-2007
Final Site Evaluation Report, LHAAP-48 & 53	Shaw Environmental and Infrastructure	APR-2007
Final Addendum 11 Monitored Natural Attenuation Sampling LHAAP-16, -17, -29, -46, -47, -50, 35A(58), Final Installation-Wide Work Plan	Shaw Environmental, Inc.	MAY-2007
Legal Notice - Industrial Solid Waste Notice of Land Use Controls at LHAAP-12	Rose Zeiler, LHAAP Site Manager	JUN-2007
Final Results of Modeling for Natural Attenuation of Trichloroethene at LHAAP-12	Shaw Environmental, Inc.	JUN-2007
Evaluation of Perimeter Well Data for Use as Groundwater Background	Shaw Environmental, Inc.	JUN-2007
Final Natural Attenuation Evaluation LHAAP-12, LHAAP-35B(37) and LHAAP-67 (Report and Appendix A)	Shaw Environmental, Inc.	JUN-2007
Remedial Design Addendum Landfill 12 (LHAAP-12)	Shaw Environmental, Inc.	JUN-2007
Baseline Ecological Risk Assessment Surface Water Sampling Plan for Goose Prairie Creek, Revision 01	Shaw Environmental, Inc.	JUL-2007
Final Results of Modeling for Natural Attenuation of Chlorinated Solvents in Groundwater at LHAAP-35B(37) & 67	Shaw Environmental, Inc.	JUL-2007
Final LHAAP-59 Site Investigation Report	Shaw Environmental, Inc.	AUG-2007
Draft Final Second Five year review Report, LHAAP-12, 16, 18 & 24	Shaw Environmental, Inc.	AUG-2007
Memorandum: Supplemental Groundwater Activities at LHAAP-37	Shaw Environmental, Inc.	SEP-2007

## IRP Previous Studies

Year	Title	Author	Date
2007	Final Landfill 12 (LHAAP-12) Operating Properly and Successfully Demonstration Report	Shaw Environmental, Inc.	SEP-2007
	Memorandum: Analysis of Soil Samples Collected from LHAAP-59 on September 14, 2007	Shaw Environmental, Inc.	OCT-2007
	Final Installation-Wide Baseline Ecological Risk Assessment Vols. I & II	Shaw Environmental, Inc.	NOV-2007
	Final Site Investigation Report: LHAAP-06, 07, 51, 55, 64, 66 and 68 (rev 1)	Shaw Environmental, Inc.	DEC-2007
2008	Final Proposed Plan, LHAAP-08	Shaw Environmental, Inc.	JAN-2008
	Final Data Evaluation Report Chemical Concentrations in soil Samples Associated with LHAAP-35/36 Sumps	Shaw Environmental, Inc.	JAN-2008
	Final Proposed Plan, LHAAP-32	Shaw Environmental, Inc.	JAN-2008
	Final Proposed Plan, LHAAP-48 & 53	Shaw Environmental, Inc.	JAN-2008
	Draft Final LHAAP-32 Record of Decision	Shaw Environmental, Inc.	MAR-2008
	Draft Final LHAAP-08, 48 & 53 Decision Document	Shaw Environmental, Inc.	MAR-2008
	Final Decision Document, LHAAP-6, 7, 51, 55, 64, 66 and 68	Shaw Environmental, Inc.	JUL-2008
	Final LHAAP-32 Record of Decision	Shaw Environmental, Inc.	AUG-2008
	Final LHAAP-59 Decision Document	Shaw Environmental, Inc.	SEP-2008
	Final Five-Year Review Second Five-Year Review Report for LHAAP-12, 16 and 18/24	Shaw Environmental Inc.	SEP-2008
	Final LHAAP-60 Decision Document	Shaw Environmental, Inc.	OCT-2008
Final LHAAP-8, 48, 53 and 002-R Decision Document	Shaw Environmental, Inc.	NOV-2008	
2009	Draft Site Evaluation Report and Soil Removal Report for LHAAP-49	Shaw Environmental, Inc.	JAN-2009
	Draft Final LHAAP-37/67 Record of Decision	Shaw Environmental, Inc.	JAN-2009
	Final Site Investigation Report, LHAAP-2	Shaw Environmental, Inc.	JAN-2009
	Final Engineering Evaluation/Cost Analysis, Former Pistol Range	Shaw Environmental, Inc.	FEB-2009
	Final Engineering Evaluation/Cost Analysis, LHAAP-4	Shaw Environmental, Inc.	MAR-2009
2010	Final Proposed Plan, LHAAP-46	Shaw Environmental, Inc.	JAN-2010
	Final Completion Report Non-Time-Critical Removal Action at the Former Pistol Range	Shaw Environmental, Inc.	JAN-2010
	Final Proposed Plan, LHAAP-35A(58)	Shaw Environmental, Inc.	JAN-2010
	Final Proposed Plan, LHAAP-50	Shaw Environmental, Inc.	JAN-2010
	Final Proposed Plan, Former Pistol Range	Shaw Environmental, Inc.	JAN-2010
	Final Proposed Plan, LHAAP-49	Shaw Environmental, Inc.	JAN-2010
	Final Proposed Plan, LHAAP-17	Shaw Environmental, Inc.	MAY-2010
	Final Record of Decision, LHAAP-37/67	US Army	JUN-2010
	Final Decision Document, LHAAP-02	Shaw Environmental, Inc.	JUL-2010
	Final Record of Decision, LHAAP-49	Shaw Environmental, Inc.	AUG-2010

## IRP Previous Studies

2010

Title	Author	Date
Final Record of Decision, Pistol Range	Shaw Environmental, Inc.	AUG-2010
Final Record of Decision, LHAAP-46	Shaw Environmental, Inc.	SEP-2010
Final Record of Decision, LHAAP-50	Shaw Environmental, Inc.	SEP-2010
Final Record of Decision, LHAAP-35A(58)	Shaw Environmental, Inc.	SEP-2010
Final Proposed Plan, LHAAP-16	Shaw Environmental, Inc.	SEP-2010
Final Decision Document, LHAAP-35/36	Shaw Environmental, Inc.	OCT-2010

# LONGHORN ARMY AMMUNITION PLANT

Non-BRAC Excess

Installation Restoration Program

Site Descriptions

Site ID: LHAAP-012

Site Name: ACTIVE LANDFILL (SWMU 12)

## STATUS

Parcel: LANDFILL 12 (FWS) (51 acres)

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA.....	197906.....	198705
SI.....	197906.....	198705
RI/FS.....	199008.....	200607
RD.....	200509.....	200706
IRA.....	199509.....	200509
RA(C).....	200509.....	200706
RA(O).....	200509.....	204109

RIP Date: 200706

RC Date: 204109

## SITE DESCRIPTION

Landfill 12 (previously called the active landfill), consisting of seven acres, was used for the disposal of non-hazardous industrial waste. The landfill had been used intermittently since 1963. Continuous use of the landfill began around 1978. Although the back section had been closed, the front section of the landfill continued to be used until its closure in March 1994. Site inspections (SIs) conducted in 1993 concluded that an early interim remedial action (IRA) (landfill cap) was necessary to reduce further contamination to the groundwater. In 1997 the cap was completed, using treated soils from LHAAP-18 as subgrade fill. Cap maintenance started in 1998, and in 2002 the first five-year review was completed. The second five-year review was completed in 2008.

In 2002 the remedial investigation (RI) was completed. Groundwater analysis showed that some metals, chlorides, VOCs, explosive compounds, and low levels of perchlorate were present. Surface water and sediment sample analysis showed similar contamination. Low levels of perchlorate were also detected in the soils. In three groundwater sampling rounds conducted in February 2003, February 2004, and December 2004, perchlorate was not detected with reporting limits of four micrograms per liter (ug/L) in the first two rounds, and only detected twice when a method with a lower reporting limit (0.2 ug/L) was used. Chromium in groundwater is now believed to be related to stainless steel well casings. In January 2006 the 12 wells with stainless steel casings and screen were removed. In 2006, five new wells were installed for long-term monitoring using polyvinyl chloride casing and screen. Results of subsequent groundwater sampling supported the postulation that the stainless steel casing in the monitoring wells was the source of the chromium.

In 2005 the feasibility study (FS) was finalized. The recommended final remedy is monitored natural attenuation (MNA) with land use controls (LUC) consisting of cap protective provisions and groundwater restrictions. In August 2006 sampling to support MNA began. The PP addressed human and ecological risk. The ROD has been signed (July 2006), and in June 2007 the RD addendum was signed. The surrounding sediment and surface water were evaluated as part of the plant-wide ecological risk assessment and no chemicals of concern were identified.

Post-performance-based acquisition (PBA) (FY15 and out-years) actions will include MNA with LUC consisting of cap protective provisions and groundwater restrictions.

## CLEANUP/EXIT STRATEGY

As a part of RA(O), cap maintenance, MNA, and five-year reviews will be funded under the PBA through August 2015. Post-PBA

Site ID: LHAAP-012  
Site Name: ACTIVE LANDFILL (SWMU 12)

activities will be limited to long-term RA(O) and five-year reviews to monitor MNA progress and any new site information.

Site ID: LHAAP-016

Site Name: OLD LANDFILL (SWMU 16)

## STATUS

Parcel: Burning Ground (FWS) (380 acres)

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Perchlorate, Volatiles (VOC)

Media of Concern: Groundwater, Soil, Surface Water

Phases	Start	End
PA.....	197906.....	198705
SI.....	197906.....	198705
RI/FS.....	199008.....	201003
RD.....	200508.....	201105
IRA.....	199410.....	200509
RA(C).....	200508.....	201201
RA(O).....	200508.....	203109
LTM.....	203109.....	204109
RIP Date:	201201	
RC Date:	203109	

## SITE DESCRIPTION

Landfill 16 (formally called the old landfill), consisting of about 22 acres, was originally used to dispose of products generated from the TNT wastewater treatment plant (WWTP); however, a variety of waste was disposed of in the landfill until the 1980s. This waste may have included burned rocket motor casings, substandard TNT, barrels of chemicals, oil, paint, scrap iron and wood. VOCs and metals above action levels have been found in the soil, surface water and groundwater around the site. Low levels of explosive compounds were detected in the groundwater.

SIs conducted in 1993 concluded that an early IRA (landfill cap) was necessary to reduce further contamination to the groundwater. The cap was completed in 1998, using treated soils from LHAAP-18 as subgrade fill. In late-1997, as part of the treatability study, eight extraction wells were installed to prevent contaminated groundwater from impacting Harrison Bayou. This system is still in operation; however, extracted water volume is low. Groundwater extracted from the Landfill 16 containment system is piped to the LHAAP-18 Groundwater Treatment Plant (GWTP).

Perchlorate was first detected in groundwater at this site in 2000. Volatiles and perchlorate have been detected in the surface water of Harrison Bayou.

In 2002 the RI was completed along with a five-year review. In March 2002 a final interim FS for Site 16 was issued. Under the PBC, a draft FS addendum to the March 2002 interim FS was submitted in February 2007. The FS was finalized in March 2010. A preliminary MNA evaluation was completed in 2007. The second five-year review was completed in 2008. The proposed plan was finalized September 2010. Quarterly surface water sampling of the Harrison Bayou area has not shown significant contamination.

An environmental security technology certification program research and development project for enhanced in situ bioremediation (VOCs, perchlorate and explosives in groundwater) was started in 2003 and continued to 2008.

Ecological concerns most likely will be addressed with the final remedy at this site.

Post-PBA actions will include RA(O) and groundwater monitoring.

## CLEANUP/EXIT STRATEGY

Site ID: LHAAP-016  
Site Name: OLD LANDFILL (SWMU 16)

This site is being addressed under a PBA through August 2015. Actions to be completed before the PBA ends are completion of primary documents (ROD and RD), and accomplishment of RIP. The PP complete in 2010 and RD to be completed in 2011 selected the following remedies for this site: passive biobarriers, in situ bioremediation and MNA for groundwater, and LTM. At this time, it is expected that the post-PBA long-term RA(O) and LTM will involve monitoring MNA with maintenance of the cap and LUC.



Site ID: LHAAP-017

Site Name: NO 2 FLASHING AREA BRN GROUND(SWMU 17)

## STATUS

Parcel: Burning Ground (FWS) (380 acres)

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Explosives, Perchlorate, Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	197906.....	198705
SI.....	197906.....	198705
RI/FS.....	199008.....	201003
RD.....	200508.....	201104
RA(C).....	200508.....	201112
RA(O).....	200508.....	201609
LTM.....	201609.....	202209
RIP Date:	201112	
RC Date:	201609	

## SITE DESCRIPTION

This site (about 500 by 600 feet) was used to burn bulk TNT, photoflash powder, and reject material from Universal Match Corporation's production processes. From 1959 until 1980 the site was operated as a burning ground. In 1959 buildings razed at Site 29 (the former TNT production area) were burned at Burning Ground No. 2/Flashing Area (LHAAP-17). This site is situated about 400-500 feet southwest of Burning Ground No. 3.

In 1984 waste residues were removed and the area grassed over. Volatiles and explosive compounds were found in the groundwater. Explosive compounds were found in the soil. In 2000 perchlorate was detected at this site [in groundwater at 300 parts per million (ppm), but less in soil].

In 2002 the RI was completed and a draft FS was prepared. In 2004 additional data gap studies were completed. A revised draft FS was submitted in 2009 by the PBC and the FS was finalized in 2010. The PP was finalized in May 2010.

A research and development project for enhanced in situ-bioremediation (VOCs, perchlorate and explosives in soil and groundwater) was started in 2002 and completed in 2004. Results indicate that perchlorate contamination was reduced. An additional intermediate well was installed at the site in February 2008.

Post-PBA actions during LTM will involve monitoring of MNA.

## CLEANUP/EXIT STRATEGY

This site is being addressed under a PBA through August 2015. The remedy selected for this site is groundwater extraction, followed by MNA for groundwater, and excavation and disposal for soil. Tasks to be completed before August 2015 are completion of primary documents (ROD and RD), and accomplishment of RIP. At this time, it is expected that the post-PBC long-term RA(O) and LTM will involve monitoring of MNA.

Site ID: LHAAP-018

Site Name: BURNING GROUND/WASHOUT POND(SWMU 18)

## STATUS

Parcel: Burning Ground (FWS) (380 acres)

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Perchlorate, Volatiles (VOC)

Media of Concern: Groundwater, Soil, Surface Water

Phases	Start	End
PA.....	197906.....	198705
SI.....	197906.....	198705
RI/FS.....	199008.....	201102
RD.....	200508.....	201201
IRA.....	199503.....	201108
RA(C).....	200508.....	201209
RA(O).....	200508.....	203109
LTM.....	203109.....	204109

RIP Date: 201209

RC Date: 203109

## SITE DESCRIPTION

This site, also known as Burning Ground No. 3 (34.5 acres), began operations in 1955. It was used for the treatment, storage, and disposal of solid and liquid explosives, pyrotechnics, and combustible solvent wastes by open burning, open detonation, and burial. The unlined evaporation pond (UEP) (LHAAP-024) was constructed in 1963 within Burning Ground No. 3. Explosive compounds, VOCs, and metals were detected in the soils and groundwater. In 1998 perchlorate was detected in the groundwater. In 1986 sludge from the UEP was removed and the area was capped. Quarterly monitoring has been conducted at the site since closure of the UEP.

In May 1995 an IRA ROD was signed. This IRA addressed soil and shallow groundwater contamination. In 1997, 30,000 cubic yards (cy) of soil were excavated and treated. The treated soil was used as fill in LHAAP-012 and -016. A GWTP, with approximately 5,000 feet of interception collection trenches, has been installed to control migration of contaminated groundwater. After treatment the extracted groundwater is discharged into Harrison Bayou. In 1999 perchlorate was detected at this site and a fluidized bed reactor treatment system was installed.

In 2002 the RI was completed, followed by a draft FS. In September 2007 the PBC contractor began an optimization pilot study for the groundwater extraction system with a report completed in February 2009.

Post-PBA actions during LTM are expected to include monitoring of MNA.

## CLEANUP/EXIT STRATEGY

This site is being addressed under a PBA through August 2015. The remedy being considered for this site is optimization of the groundwater extraction system, bioaugmentation, and MNA. Tasks to be completed before August 2015 are completion of primary documents (FS, PP, ROD, RD) and accomplishment of RIP and continued RA(O).

The final remedy has not been selected yet for this site. At this time, the post-PBC long-term RA(O) and LTM are expected to include groundwater extraction and bioremediation.

Site ID: LHAAP-024

Site Name: FORMER UNLINED EVAP POND (SWMU 24)

## STATUS

Parcel: Burning Ground (FWS) (380 acres)

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Perchlorate, Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	199005.....	199005
SI.....	199005.....	199008
RI/FS.....	199008.....	201102
RD.....	200508.....	201201
IRA.....	199503.....	201108
RA(C).....	200508.....	201209
RA(O).....	200508.....	203109
LTM.....	203109.....	204109

RIP Date: 201209

RC Date: 203109

## SITE DESCRIPTION

This three-acre UEP was constructed in 1963 within Burning Ground No. 3. Explosive compounds, VOCs, and metals were detected in the soils and groundwater. In 1999, perchlorate was detected in the groundwater. In 1986, sludge from the UEP was removed and the area was capped. Quarterly monitoring has been conducted at the site since closure of the UEP.

In May 1995, an IRA ROD was signed. This IRA addressed soil and shallow groundwater contamination. In 1997, 30,000 cy of soil was excavated and treated. The treated soil was used as fill in LHAAP-012 and LHAAP-016. A GWTP, with approximately 5,000 feet of interception collection trenches, has been installed to control migration of contaminated groundwater. After treatment, the extracted groundwater is discharged into Harrison Bayou. In 1999 perchlorate was detected at this site and in 2001 a fluidized bed reactor treatment system was installed.

In 2002 the RI was completed, followed by a draft FS. In September 2007 the PBC contractor began an optimization study for the groundwater extraction system with a report on the results completed February 2009.

Post-PBA actions are currently expected to involve monitoring of MNA.

## CLEANUP/EXIT STRATEGY

This site is being addressed under a PBA through August 2015. As with LHAAP-18, the remedy being considered for this site is optimization of the groundwater extraction system, bioaugmentation and MNA. Tasks to be completed before August 2015 are completion of primary documents (FS, PP, ROD, RD) and accomplishment of RIP and continued RA(O).

The final remedy has not been selected yet for this site but the post-PBC long-term RA(O) and LTM are expected to include groundwater extraction and bioremediation.

Site Name: FORMER TNT PRODUCTION AREA(SWMU 29)

**STATUS**

Parcel: NONE

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Munitions constituents (MC), Perchlorate, Volatiles (VOC)

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA.....	197906.....	198705
SI.....	197906.....	198705
RI/FS.....	199008.....	201003
RD.....	200508.....	201107
RA(C).....	200508.....	201204
RA(O).....	200508.....	204009

RIP Date: 201204

RC Date: 204009

**SITE DESCRIPTION**

The former TNT production area consisting of about 85 acres, was in operation from April 1943 to August 1945 as a six-line plant, with a supporting acid plant. The plant produced 180 million kilograms of TNT throughout the period of operation. A bulk toluene storage area, servicing the TNT production area, was located adjacent to the production area. The TNT wastewater (red water) from the production of the TNT was sent through wooden pipelines to a storage tank and pump house, and then to the TNT WWTP (LHAAP-032). Cooling water (blue water) from the production area ran through main lines and into an open ditch. In 1959, the structures, except for the foundations, were demolished and removed. Through the late-1980s a portion of the northeast corner of the site (approximately two acres) was used for the washout of Pershing 1 and 2 rocket motor casings using trichloroethylene (TCE) and methylene chloride.

Explosive compounds have been detected in the soil, surface water, sediment, and groundwater samples. High concentrations of VOCs (including TCE and methylene chloride) have been detected in the groundwater with the highest concentrations in the intermediate hydrostratigraphic unit, and methylene chloride, dense non-aqueous phase liquid is suspected. In 2000 perchlorate was first detected in the soil and in the groundwater (at 88 ppm) at this site.

In 2002 the RI was completed and this site is included in the group 2 draft FS. In FY05 field sampling for soils was conducted. In FY06, six wells were installed and sampled. Sediment samples were also collected from waste lines and outfall ditches. A revised draft FS was submitted by the PBC in 2008 and was finalized in 2010.

LHAAP-49, the former acid plant (also known as former acid storage), was originally funded under LHAAP-29 due to the association in plant function. This was the location where acids were received and prepared for use in the TNT manufacturing process. The final site evaluation was finalized in 2009 and the ROD was finalized in 2010.

**CLEANUP/EXIT STRATEGY**

This site is being addressed under a PBA through August 2015. The remedy being considered for this site is in situ groundwater remediation followed by MNA, and excavation and disposal for soil and sediments. Tasks to be completed before August 2015 are completion of primary documents (PP, ROD, RD), and accomplishment of RIP. The final remedy has not been selected yet for this site. At this time, the post-PBA RA(O) is expected to involve monitoring MNA and LUC.

Site ID: LHAAP-050

Site Name: FORMER WASTE DISPOSAL FACILITY

## STATUS

Parcel: NONE

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Perchlorate, Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	199005.....	199008
SI.....	199506.....	199707
RI/FS.....	199801.....	201001
RD.....	200508.....	201102
RA(C).....	200508.....	201310
RA(O).....	200508.....	204009

RIP Date: 201310

RC Date: 204009

## SITE DESCRIPTION

This site of about one acre received wastewater from the sumps at Plants 2 and 3 from 1955 to the early-1970s. Washout of ammonium perchlorate containers was also performed on this site.

Volatiles and perchlorate were detected in the soil samples. VOCs, metals and perchlorate were detected in groundwater.

In 2002 the RI was completed and the FS was finalized in 2010. The ROD was finalized in 2010. The VOCs and perchlorates in groundwater pose an unacceptable risk. In 2004 an additional data gap sampling was completed and in February 2008 an additional shallow well was installed downgradient of this site.

## CLEANUP/EXIT STRATEGY

This site is being addressed under a PBA through August 2015. The remedy selected for this site is augmented MNA for groundwater, and excavation and disposal for soil. Tasks to be completed before August 2015 are completion of primary documents (RD), and accomplishment of RIP. The final remedy has been selected for this site. At this time, it is expected that the post-PBA RA(O) will involve monitoring MNA and LUC.

Site ID: LHAAP-067

Site Name: ABOVE GROUND STORAGE TANK

## STATUS

Parcel: NONE

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Petroleum, Oil and Lubricants (POL),  
Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	199005.....	199008
SI.....	199809.....	199906
RI/FS.....	200110.....	200809
RA(C).....	200609.....	200809
RA(O).....	200609.....	204109
RIP Date:	200809	
RC Date:	204109	

## SITE DESCRIPTION

This site consisted of seven aboveground storage tanks (ASTs) containing Number 2 fuel oil, kerosene or solvents. The ASTs had earthen dikes sufficient to contain a potential spill. Motor fuel tanks were registered with the state and have been removed. Central Creek runs to the south of this site.

In 2001 VOCs (TCE, 1,1-dichloroethene, 1,2-dichloroethane, 1,1,2-trichloroethane) were detected in the groundwater. The data indicates that the impact is limited.

In 2002 the RI was completed and in 2004 additional sampling was conducted, with the final FS completed in August 2005. The ROD was finalized in 2010. The RD is being drafted in 2010.

## CLEANUP/EXIT STRATEGY

A final ROD was signed in 2010. The remedy includes MNA and groundwater restrictions. RA(O) will be under the PBA until 2015. Post-PBA costs will be limited to long-term RA(O) and five-year reviews to monitor MNA progress and any new site information.

Site ID: PBC Longhorn  
Site Name: PBC at Longhorn

**STATUS**

Parcel: Pistol Range (FWS) (1 acres), East FIA II (FWS) (175 acres), Production Area II (467 acres), Production Area Ib (FWS) (107.59 acres), Production Area Ia (FWS) (456.72 acres)

Regulatory Driver: CERCLA  
RRSE: LOW

Contaminants of Concern: Explosives, Metals, Perchlorate, Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA.....	200501.....	200503
RD.....	200504.....	200508
RA(C).....	200508.....	200709
RA(O).....	200508.....	201604
RIP Date:	200709	
RC Date:	201604	

**SITE DESCRIPTION**

The PBC was awarded in September 2005 to Shaw Environmental. The goal was to achieve RIP by September 2007; however delays were encountered that prevented this. The following is the 2011 status of the sites.

- LHAAP-02: Vacuum Truck Overnight Parking Lot-NFA DD signed in 2010
- LHAAP-03: Building 722 Paint Shop-Draft Final Soil Removal Work Plan under review in 1st quarter (Qtr) 2011
- LHAAP-04: Pilot Wastewater Treatment Plant-Draft FS in progress in 1st Qtr 2011
- LHAAP-06: Building 54F Solvent-NFA DD signed in 2008
- LHAAP-07: Bldg 50G Drum Processing-NFA DD signed in 2008
- LHAAP-16: Old Landfill (Solid Waste Management Unit (SWMU) 16)-Draft ROD under review in the 1st Qtr 2011
- LHAAP-17: No. 2 Flashing Area/Burning Ground (SWMU 17)-Draft ROD under review in the 1st Qtr 2011
- LHAAP-18: Burning Ground/Washout Pond (SWMU 18)-Draft FS under review in the 1st Quarter 2011
- LHAAP-23: Building 707-C Storage Area for PCBs-Regulator approval received for No Action in 2006
- LHAAP-24: Former Unlined Evaporation Pond (SWMU 24)-Draft FS under review in the 1st Qtr 2011
- LHAAP-29: Former TNT Production Area (SWMU 29)-Draft PP under review in the 1st Qtr 2011
- LHAAP-35: Sumps (145) Various-NFA DD signed in 2010, Army seeking resolution for LHAAP-65
- LHAAP-36: Explosive Waste Pads (27)-NFA DD signed in 2010
- LHAAP-46: Plant 2/Pyrotechnic Operation-ROD signed in 2010
- LHAAP-47: Plant 3 Area, Solid Rocket Fuel Motor Production-Draft focused feasibility study (FFS) under review in the 1st Qtr 2011
- LHAAP-49: Former Acid Storage Area-NFA ROD signed in 2010
- LHAAP-50: Former Waste Disposal Facility-ROD signed in 2010
- LHAAP-51: Photographic Laboratory Building 60B-NFA DD signed in 2008
- LHAAP-55: Septic Tanks-NFA DD signed in 2008
- LHAAP-58: Maintenance Complex-ROD signed in 2010
- LHAAP-60: Former Storage Building 411 & 714-NFA DD signed in 2008
- LHAAP-64: Transformer Storage (Southwest Building of 707-B)-NFA DD signed in 2008
- LHAAP-66: Transformer at Building 401-NFA DD signed in 2008
- LHAAP-68: Mobile Storage Tank Parking Area-NFA DD signed in 2008
- Pistol Range-NFA ROD signed in 2010

Site ID: PBC Longhorn  
Site Name: PBC at Longhorn

## CLEANUP/EXIT STRATEGY

These sites are being addressed under a PBA through August 2015. Any follow-on actions will be funded under a separate contract mechanism.



## IRP Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
LHAAP-001	INERT BURNING GROUNDS (SWMU 1)	199801	ROD for NFA - signed January 1998 (Group 1). Seven wells (104, 01MW01, 01MW02, 01MW03, 01MW04, 01MW05, 01WW01) are present that need to be abandoned. The property has been transferred to the USFWS.
LHAAP-002	VACCUM TRUCK OVERNITE PARKING LOT	198705	Closure to be obtained under PBC. Final SI completed in 2009. A no action Decision Document signed in July 2010.
LHAAP-003	BUILDING 722-PAINT SHOP	198705	Closure to be obtained under PBC. Preparing RTCs to Draft Final SI. RC projected for June 2011.
LHAAP-004	LHAAP PILOT WASTEWATER TREATMENT PLANT	198705	Phase I investigation 1994; Closure of Sumps - completed 1998; WWTP Closed on 9/27/99; RI - completed February 2002; Closure to be obtained under PBC. Perchlorate contamination in soil. Well abandonment of five wells (LHSMW01, LHSMW02, 04WW01, 04WW02, 04WW03) to be performed under PBC. RC projected for September 2015.
LHAAP-005	POWER HOUSE BOILER POND	198705	RCRA Closure under NPDES Permit (1999). No further action planned. The property has been transferred to the USFWS.
LHAAP-006	BUILDING 54F SOLVENT	198705	Closure to be obtained under PBC. Final SI report completed in December 2007. A no action decision document signed in 2008.
LHAAP-007	BUILDING 50G DRUM PROCESSING	198705	Closed on 11/27/00; Under investigation. Closure to be obtained under PBC. Final SI report completed December 2007. A no action decision document was signed in 2008.
LHAAP-008	SEWAGE TREATMENT PLANT	198705	RCRA Closure (for the sludge drying beds but not the plant); FS completed. Closure to be obtained under current TERC. Proposed Plan finalized January 2008. NA decision document was signed in 2008. Although no remedy is being implemented, industrial use notification to be recorded in county and five-year reviews will be conducted. LTM/RAO to be handled under PBC through 2015. Two wells (08WW01, 08WW02) to be abandoned under PBC.
LHAAP-009	BUILDING 31-W DRUM STORAGE	198705	RCRA Closure, Closed on 11/18/99; (Complete Environmental Services, October 1999, Final Closure Report,

## IRP Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			Hazardous Waste Storage Area 31-W RCRA Permit 50195 Unit No. 001). No further remedial action planned. Transferred to USFWS May 2004.
LHAAP-011	SUS TNT BURIAL SITE AT AVE P&Q(SWMU 11)	199801	ROD for NFA - signed January 1998 (Group 1); Transferred to the USFWS May 2004. Three wells (11WW01, 11WW02, 11WW03) are present that need to be abandoned.
LHAAP-013	SUS TNT BET ACTIVE&OLD LANDFILL(SWMU 13)	199512	RI/FS - completed June 1995; PP - June 1995; ROD for NFA - signed February 1996(Group 3); Transferred to the USFWS May 2004. One well (13WW01) is present on this site that needs to be abandoned.
LHAAP-014	AREA 54 BURIAL GRND (SWMU 14)	199512	RI/FS - completed June 1995; PP - June 1995; ROD for NFA - signed February 1996 (Group 3); Transferred to the USFWS May 2004. One well (14WW01) is present on this site that needs to be abandoned.
LHAAP-015	AREA 49W DRUM STORAGE	198705	RCRA closure. Closed on 10/14/99; (Complete Environmental Services, October 1999, Final Closure Report, Hazardous Waste Storage Area 49-W RCRA Permit 50195 Unit No. 002). No further remedial action planned. Transferred to USFWS May 2004.
LHAAP-019	CONSTRUCTION MATERIALS LANDFILL	198705	PA/SI - NFA; DD Required; Landfill Closure Report finalized in 2010. Post Closure Care Plan includes 5 years of post closure inspections and maintenance of the landfill cap.
LHAAP-023	BUILDING 707-STORAGE AREA PCBS	198705	RCRA closure. Closed on 11/27/2000. No further action planned. Regulator concurrence of decision documentation provided in letters (USEPA Feb. 16, 2006; TCEQ May 1, 2006).
LHAAP-027	SOUTH TEST AREA/BOMB TEST AREA(SWMU 27)	199801	ROD for NFA - signed January 1998 (Group 1). Site currently being evaluated under MMRP as site LHAAP-001-R-01. Final MRRP EE/CA completed October 2007. Removal action was completed in November 2008. ROD is expected to be signed in January 2011. Six wells (131, 132, 27WW01, 27WW02, 27WW03, 27WW04) are present that need to be abandoned.
LHAAP-032	FORMER TNT WASTEWATER PLT(SWMU 32)	200809	ROD for NFA - signed September 2008

## IRP Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
LHAAP-034	BUILDING 701 PCB STORAGE	198705	PA/SI - NFA; RCRA Closure; Closed on 7/14/00; No further remedial action planned. Transferred to the USFWS May 2004
LHAAP-035	SUMPS (145) VARIOUS	200908	Closure to be obtained under PBC. Decision Document for NFA signed October 2010.
LHAAP-036	EXPLOSIVE WASTE PADS (27)	198705	Closure to be obtained under PBC. Decision Document for NFA signed in October 2010.
LHAAP-037	CHEMICAL LABORATORY WASTE PAD	199008	RI - completed in February 2002 (Group 4). Site originally funded under LHAAP-35 (Group 4 sites). Closure to be obtained under current TERC. Proposed plan was presented in June 2008. A ROD was signed in June 2010. LTM/RAO to be handled under PBC through 2015. Eight wells (LHSMW58, 35BWW01, 35BWW02, 35BWW03, 35BWW04, 35BWW05, 35BWW06, 35BWW07 and 35BWW08) are currently at site. 35BWW07 was installed in LHAAP-47 to define extent of LHAAP-37 GW plume.
LHAAP-039	25X WASHOUT PAD	199008	PP - September 1994; Combined with LHAAP-18/24 IRA - Capping Site 18 1986; IRA - Soil Removal and Capping 1986; LTM - Groundwater Monitoring System Installed 1989;
LHAAP-045	MAGAZINE AREA	200409	PA/SI NFA; USEPA concurrence letter for NFI dated Aug. 18, 2004. No further action planned. The property has been transferred to the USFWS.
LHAAP-051	PHOTOGRAPHIC LABORATORY/BLDG #60B	199008	PA/SI NFA; Closure to be handled under PBC. Additional sampling performed under PBC with SI report completed December 2007. Decision document was signed in 2008.
LHAAP-052	MAGAZINE AREA WASHOUT	199805	PA/SI NFA; USEPA NFI letter dated May 18, 1998 (Group 5). No further remedial action planned. The property has been transferred to the USFWS.
LHAAP-053	STATIC TEST AREA	200809	A no action decision document signed in 2008.
LHAAP-054	GRD SIGNAL TEST AREA (LHAAP-XX)	199801	ROD for NFA - signed January 1998 (Group 1). Site currently being evaluated under MMRP as site LHAAP-003-R-01. MMRP EE/CA completed October 2007. Removal action was completed in November

## IRP Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			2008. ROD is expected to be signed in January 2011. Two monitoring wells (127,128) are present that need to be abandoned.
LHAAP-055	SEPTIC TANK (10)	199008	PA/SI NFA; Closure to be handled under PBC. Additional sampling performed under PBC with SI report completed December 2007. A no action decision document was signed in 2008.
LHAAP-057	RUBBLE BURIAL SITE	199008	PA/SI NFA; No further remedial action planned. Transferred to the USFWS May 2004.
LHAAP-058	MAINTENANCE COMPLEX	199506	RI - completed in February 2002. Closure to be handled under PBC. Final ROD was signed in September 2010. RC projected for September 2015.
LHAAP-060	FORMER STORAGE BUILDING #411 & #714	200402	RI - completed in February 2002; Closure to be handled under PBC. A decision document was signed in December 2008.
LHAAP-061	POTABLE WTP SEDIMENT POND	199008	No Further Investigation is required. No further action planned. The property has been transferred to the USFWS.
LHAAP-063	BURIAL PITS	199805	PA/SI NFA; No further remedial action planned. Letter of concurrence from USEPA dated May 18, 1998;(Group 5) Transferred to the USFWS May 2004
LHAAP-064	TRANSFORMER STORAGE	199506	PA/SI NFA; Closure to be handled under PBC. Additional sampling performed under PBC with SI report in completed December 2007. A no action decision document was signed in 2008.
LHAAP-066	TRANSFORMER AT BLDG 401	199506	PA/SI NFA; Closure to be handled under PBC. Additional sampling performed under PBC with SI report completed December 2007. A no action decision document was signed in 2008.
LHAAP-068	MOBILE STORAGE TANK PARKING AREA	199008	Closure to be handled under PBC. Additional sampling performed under PBC with SI report completed December 2007. A no action decision document was signed in 2008.
LHAAP-069	SERVICE STATION UST'S	199306	Corrected under RCRA Guidelines. No further remedial action planned.
LHAAP-070	LOADING DOCK-MAGAZINE AREA	199506	PA/SI NFA; USEPA concurrence letter for NFI dated Aug. 18, 2004; No further remedial action planned. Transferred to the USFWS May 2004.

## IRP Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
LHAAP-071	OIL SPILL, BLDG 813	199506	PA/SI NFA; Remedial action taken; No further remedial action planned. USEPA concurrence letter for NFI dated Aug. 18, 2004. Transferred to the USFWS May 2004.

# IRP Schedule

Date of IRP Inception: 197906

## Past Phase Completion Milestones

1984	
PA	(LHAAP-001 - INERT BURNING GROUNDS (SWMU 1))
SI	(LHAAP-001 - INERT BURNING GROUNDS (SWMU 1))
1987	
PA	(LHAAP-071 - OIL SPILL, BLDG 813, LHAAP-002 - VACCUM TRUCK OVERNITE PARKING LOT, LHAAP-006 - BUILDING 54F SOLVENT, LHAAP-011 - SUS TNT BURIAL SITE AT AVE P&Q(SWMU 11), LHAAP-012 - ACTIVE LANDFILL (SWMU 12), LHAAP-013 - SUS TNT BET ACTIVE&OLD LANDFILL(SWMU 13), LHAAP-014 - AREA 54 BURIAL GRND (SWMU 14), LHAAP-016 - OLD LANDFILL (SWMU 16), LHAAP-017 - NO 2 FLASHING AREA BRN GROUND(SWMU 17), LHAAP-018 - BURNING GROUND/WASHOUT POND(SWMU 18), LHAAP-027 - SOUTH TEST AREA/BOMB TEST AREA(SWMU 27), LHAAP-029 - FORMER TNT PRODUCTION AREA(SWMU 29), LHAAP-032 - FORMER TNT WASTEWATER PLT(SWMU 32), LHAAP-035 - SUMPS (145) VARIOUS)
RFA	(LHAAP-070 - LOADING DOCK-MAGAZINE AREA, LHAAP-003 - BUILDING 722-PAINT SHOP, LHAAP-004 - LHAAP PILOT WASTEWATER TREATMENT PLANT, LHAAP-005 - POWER HOUSE BOILER POND, LHAAP-007 - BUILDING 50G DRUM PROCESSING, LHAAP-008 - SEWAGE TREATMENT PLANT, LHAAP-009 - BUILDING 31-W DRUM STORAGE, LHAAP-015 - AREA 49W DRUM STORAGE, LHAAP-019 - CONSTRUCTION MATERIALS LANDFILL, LHAAP-023 - BUILDING 707-STORAGE AREA PCBS, LHAAP-034 - BUILDING 701 PCB STORAGE, LHAAP-036 - EXPLOSIVE WASTE PADS (27))
CS	(LHAAP-036 - EXPLOSIVE WASTE PADS (27), LHAAP-019 - CONSTRUCTION MATERIALS LANDFILL, LHAAP-023 - BUILDING 707-STORAGE AREA PCBS, LHAAP-034 - BUILDING 701 PCB STORAGE)
SI	(LHAAP-011 - SUS TNT BURIAL SITE AT AVE P&Q(SWMU 11), LHAAP-012 - ACTIVE LANDFILL (SWMU 12), LHAAP-013 - SUS TNT BET ACTIVE&OLD LANDFILL(SWMU 13), LHAAP-014 - AREA 54 BURIAL GRND (SWMU 14), LHAAP-016 - OLD LANDFILL (SWMU 16), LHAAP-017 - NO 2 FLASHING AREA BRN GROUND(SWMU 17), LHAAP-018 - BURNING GROUND/WASHOUT POND(SWMU 18), LHAAP-027 - SOUTH TEST AREA/BOMB TEST AREA(SWMU 27), LHAAP-029 - FORMER TNT PRODUCTION AREA(SWMU 29), LHAAP-032 - FORMER TNT WASTEWATER PLT(SWMU 32), LHAAP-035 - SUMPS (145) VARIOUS)
1990	
SI	(LHAAP-054 - GRD SIGNAL TEST AREA (LHAAP-XX), LHAAP-024 - FORMER UNLINED EVAP POND (SWMU 24))
ISC	(LHAAP-069 - SERVICE STATION UST'S)
PA	(LHAAP-045 - MAGAZINE AREA, LHAAP-050 - FORMER WASTE DISPOSAL FACILITY, LHAAP-052 - MAGAZINE AREA WASHOUT, LHAAP-054 - GRD SIGNAL TEST AREA (LHAAP-XX), LHAAP-060 - FORMER STORAGE BUILDING #411 & #714, LHAAP-061 - POTABLE WTP SEDIMENT POND, LHAAP-063 - BURIAL PITS, LHAAP-067 - ABOVE GROUND STORAGE TANK, LHAAP-068 - MOBILE STORAGE TANK PARKING AREA, LHAAP-024 - FORMER UNLINED EVAP POND (SWMU 24))
RFA	(LHAAP-037 - CHEMICAL LABORATORY WASTE PAD, LHAAP-039 - 25X WASHOUT PAD, LHAAP-051 - PHOTOGRAPHIC LABORATORY/BLDG #60B, LHAAP-053 - STATIC TEST AREA, LHAAP-055 - SEPTIC TANK (10), LHAAP-057 - RUBBLE BURIAL SITE, LHAAP-058 - MAINTENANCE COMPLEX, LHAAP-064 - TRANSFORMER STORAGE, LHAAP-066 - TRANSFORMER AT BLDG 401)
1995	
CS	(LHAAP-058 - MAINTENANCE COMPLEX, LHAAP-064 - TRANSFORMER STORAGE, LHAAP-066 - TRANSFORMER AT BLDG 401, LHAAP-070 - LOADING DOCK-MAGAZINE AREA)
SI	(LHAAP-071 - OIL SPILL, BLDG 813)
1996	
RI/FS	(LHAAP-013 - SUS TNT BET ACTIVE&OLD LANDFILL(SWMU 13), LHAAP-014 - AREA 54 BURIAL GRND (SWMU 14))

1997	
SI	(LHAAP-050 - FORMER WASTE DISPOSAL FACILITY, LHAAP-060 - FORMER STORAGE BUILDING #411 & #714)
1998	
RI/FS	(LHAAP-054 - GRD SIGNAL TEST AREA (LHAAP-XX), LHAAP-001 - INERT BURNING GROUNDS (SWMU 1), LHAAP-011 - SUS TNT BURIAL SITE AT AVE P&Q(SWMU 11), LHAAP-027 - SOUTH TEST AREA/BOMB TEST AREA(SWMU 27))
SI	(LHAAP-052 - MAGAZINE AREA WASHOUT, LHAAP-063 - BURIAL PITS)
1999	
SI	(LHAAP-067 - ABOVE GROUND STORAGE TANK)
2004	
RI/FS	(LHAAP-060 - FORMER STORAGE BUILDING #411 & #714)
SI	(LHAAP-045 - MAGAZINE AREA)
2005	
IRA	(LHAAP-012 - ACTIVE LANDFILL (SWMU 12), LHAAP-016 - OLD LANDFILL (SWMU 16))
PA	(PBC Longhorn - PBC at Longhorn)
RD	(PBC Longhorn - PBC at Longhorn)
2006	
RI/FS	(LHAAP-012 - ACTIVE LANDFILL (SWMU 12))
2007	
RA(C)	(PBC Longhorn - PBC at Longhorn, LHAAP-012 - ACTIVE LANDFILL (SWMU 12))
RI/FS	(LHAAP-032 - FORMER TNT WASTEWATER PLT(SWMU 32))
RD	(LHAAP-012 - ACTIVE LANDFILL (SWMU 12))
2008	
RA(C)	(LHAAP-067 - ABOVE GROUND STORAGE TANK)
LTM	(LHAAP-053 - STATIC TEST AREA, LHAAP-032 - FORMER TNT WASTEWATER PLT(SWMU 32))
RI/FS	(LHAAP-067 - ABOVE GROUND STORAGE TANK)
2009	
RA(C)	(LHAAP-035 - SUMPS (145) VARIOUS)
RI/FS	(LHAAP-035 - SUMPS (145) VARIOUS)
RD	(LHAAP-035 - SUMPS (145) VARIOUS)
RA(O)	(LHAAP-035 - SUMPS (145) VARIOUS)
2010	
RI/FS	(LHAAP-050 - FORMER WASTE DISPOSAL FACILITY, LHAAP-016 - OLD LANDFILL (SWMU 16), LHAAP-017 - NO 2 FLASHING AREA BRN GROUND(SWMU 17), LHAAP-029 - FORMER TNT PRODUCTION AREA(SWMU 29))

## Projected Phase Completion Milestones

See attached schedule

## IRP Schedule

### Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

Site ID	Site Name	ROD/DD Title	ROD/DD Date
LHAAP-017	NO 2 FLASHING AREA BRN GROUND(SWMU 17)	Flashing Area/Burning Grnd No 2:LHAAP-17	20110630

Final RA(C) Completion Date: 201310

Schedule for Next Five-Year Review: 2012

Estimated Completion Date of IRP at Installation (including LTM phase): 204109



## LONGHORN ARMY AMMUNITION PLANT IRP Schedule

█ = phase underway

SITE ID	SITE NAME	PHASE	FY12	FY13	FY14	FY15	FY16	FY17+
LHAAP-012	ACTIVE LANDFILL (SWMU 12)	RA(O)	█	█	█	█	█	█
SITE ID	SITE NAME	PHASE	FY12	FY13	FY14	FY15	FY16	FY17+
LHAAP-016	OLD LANDFILL (SWMU 16)	RA(C)	█					
		RA(O)	█	█	█	█	█	█
		LTM						█
SITE ID	SITE NAME	PHASE	FY12	FY13	FY14	FY15	FY16	FY17+
LHAAP-017	NO 2 FLASHING AREA BRN GROUND(SWMU 17)	RA(C)	█					
		RA(O)	█	█	█	█	█	
		LTM						█
SITE ID	SITE NAME	PHASE	FY12	FY13	FY14	FY15	FY16	FY17+
LHAAP-018	BURNING GROUND/WASHOUT POND(SWMU 18)	RD	█					
		RA(C)	█					
		RA(O)	█	█	█	█	█	█
		LTM						█
SITE ID	SITE NAME	PHASE	FY12	FY13	FY14	FY15	FY16	FY17+
LHAAP-024	FORMER UNLINED EVAP POND (SWMU 24)	RD	█					
		RA(C)	█					
		RA(O)	█	█	█	█	█	█
		LTM						█
SITE ID	SITE NAME	PHASE	FY12	FY13	FY14	FY15	FY16	FY17+
LHAAP-029	FORMER TNT PRODUCTION AREA(SWMU 29)	RA(C)	█					
		RA(O)	█	█	█	█	█	█
SITE ID	SITE NAME	PHASE	FY12	FY13	FY14	FY15	FY16	FY17+
LHAAP-050	FORMER WASTE DISPOSAL FACILITY	RA(C)	█	█	█			
		RA(O)	█	█	█	█	█	█
SITE ID	SITE NAME	PHASE	FY12	FY13	FY14	FY15	FY16	FY17+
LHAAP-067	ABOVE GROUND STORAGE TANK	RA(O)	█	█	█	█	█	█
SITE ID	SITE NAME	PHASE	FY12	FY13	FY14	FY15	FY16	FY17+
PBC Longhorn	PBC at Longhorn	RA(O)	█	█	█	█	█	

# LONGHORN ARMY AMMUNITION PLANT

## Non-BRAC Excess Military Munitions Response Program

# MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 3/1

## Installation Site Types with Future and/or Underway Phases

- 1 Explosive Ordnance Disposal Area  
(LHAAP-003-R-01)
- 1 Unexploded Munitions/Ordnance  
(LHAAP-001-R-01)

## Most Widespread Contaminants of Concern

Explosives

## Media of Concern

Groundwater, Soil

## Completed Remedial Actions (Interim Remedial Actions / Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY	Cost
LHAAP-001-R-01	SOUTH TEST AREA / BOMB TEST AREA	IRA	INSTITUTIONAL CONTROLS	2009	TBD
LHAAP-001-R-01	SOUTH TEST AREA / BOMB TEST AREA	IRA	UXO CLEARANCE	2009	TBD

## Duration of MMRP

Year of MMRP Inception: 200202

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201109/201109

Date of MMRP completion including Long Term Management (LTM): 201709

## MMRP Contamination Assessment

### Contamination Assessment Overview

In May 2003 the Phase 3 Army range inventory was completed at LHAAP. The inventory identified three sites as eligible for the Military Munitions Response Program (MMRP). The Phase 3 inventory serves as the preliminary assessment (PA) under CERCLA. In June 2005 an SI was completed. An engineering evaluation/cost analysis (EE/CA) was finalized on the three sites in October 2007. The EE/CA indicated that no Department of Defense (DoD) action was required for LHAAP-002-R-01. An interim removal action was funded for the two other sites and was completed in 2009. In March 2008 an explosives safety submission (ESS) was finalized for the three sites.

### Cleanup Exit Strategy

Five-year reviews are planned for both sites. These five-year reviews will ensure that the site is inspected, LUCs are still in place and that any new data regarding the condition of the site is reviewed.

## MMRP Previous Studies

	Title	Author	Date
2001	U.S. Army Active/Inactive Range Inventory, Longhorn AAP	Army Materiel Command	AUG-2001
2002	CTT Range Inventory		JAN-2002
2003	Phase 3 Army Range Inventory at Longhorn Army Ammunition Plant	e2M	MAY-2003
2005	Final Site Inspection Report, Military Munitions Response Program Site Inspection, Munitions Response Sites	e2M	JUN-2005
2006	Final Work Plan Engineering Evaluation/Cost Analysis at the Longhorn Army Ammunition Plant	CAPE	MAR-2006
	Draft Operational Range Inventory Sustainment (ORIS) for Longhorn AAP	US Army	NOV-2006
2007	Final Engineering Evaluation/Cost Analysis at the Longhorn Army Ammunition Plant	CAPE	OCT-2007
2008	Final Explosives Safety Submission - Munitions and Explosives of Concern Removal Action	USACE, Huntsville	FEB-2008
	Final Work Plan for MEC Removal Action at Former LHAAP LHAAP-001-R(Site 27) and LHAAP-003-R(Site 54)	EOD Technology, Inc.	JUL-2008
2009	Final Site-specific Final Report for MEC Removal Action, LHAAP-001-R(Site 27) and LHAAP-003-R(Site 54)	EOD Technology, Inc.	SEP-2009

# LONGHORN ARMY AMMUNITION PLANT

Non-BRAC Excess

Military Munitions Response Program

Site Descriptions

Site ID: LHAAP-001-R-01

Site Name: SOUTH TEST AREA / BOMB TEST AREA

## STATUS

Parcel: South Test/Bomb (FWS) (72 acres)

Regulatory Driver: CERCLA

MRSP Score: 04

Contaminants of Concern: Explosives

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200202.....	200305
SI.....	200402.....	200506
RI/FS.....	200503.....	201109
IRA.....	200710.....	200904
LTM.....	201109.....	201709
RIP Date:	N/A	
RC Date:	201109	

## SITE DESCRIPTION

This site is approximately 79 acres. It is also known as environmental site LHAAP-027 and is located southeast of Avenue P and the magazine area, at the end of 70th street, near the southern boundary of LHAAP. The site was constructed in 1954 and used by Universal Match Corporation to test photoflash bombs that were produced at the facility until about 1956. The bombs were tested by exploding them in the air over an elevated, semi-elliptical earthen test pad. Bombs awaiting testing were apparently stored in three earth-covered concrete bunkers. The bombs tested were 150-pound M120/M120A photoflash bombs, filled with photoflash powder and containing a black powder booster charge for bursting the bomb with a timed nose fuse.

The location of the site, for this purpose, was not ideally suited to the task, as fragments from this testing landed beyond the installation boundary. By June 1954, static testing of photoflash bombs had been discontinued because of the possibility of damage and injuries beyond the installation boundary. During the late-1950s, illuminating signal devices were also demilitarized within pits at this site. During the early-1960s, leaking production items were demilitarized in the area. The May 1997 Final RI Report for Group I Sites indicates approximately 52,000 one-half and one-pound photoflash cartridges were demilitarized at the site in the early-1980s.

In 1982 investigations included installation and sampling of two wells and three shallow soil samples. Explosives, metals, chloride and sulfate were detected above background levels in the soil samples. In January 1998, an NFA ROD was signed by the USEPA, based upon the site-specific risk analysis for human and ecological exposure to the contaminants of potential concern for the site.

In 2004 the explosive ordnance disposal (EOD) division at Fort Polk blew in place (BIP) one 155 mm white phosphorous (WP) round. The identification of this round as a live 155 mm WP round is suspect. Plexus, in the 2005 Environmental Baseline Survey (EBS) (page 46), states that "Confirmatory Sampling (CS) WP operations at LHAAP were assembly and packout operations only; no loading of these materials was conducted at the site. The WP rounds were stored and worked in the east line area of Plant 2 [US Army Toxic and Hazardous Materials Agency (USATHAMA), 1980]." Testing of the payload at LHAAP would not be part of the mission, since it was not manufactured at Longhorn. Others indicate that it was a 105 or 81 mm smoke round.

A reported demolition site was identified on the northwest perimeter of this site. This was added to the investigation. In FY08 an EE/CA report was completed, approved and signed. In October 2007 the report was finalized. An IRA has been funded with the final Explosives Safety Submission (ESS) completed in March 2008. The removal action was completed in 2009. Five-year reviews will be required following the removal action.

## CLEANUP/EXIT STRATEGY

Site ID: LHAAP-001-R-01  
Site Name: SOUTH TEST AREA / BOMB TEST AREA

Five-year reviews are planned for this site. These five-year reviews will ensure that the site is inspected and that any new data regarding the condition of the site is reviewed. The LUCs are in place and will be formally enforced upon ROD signature.



Site ID: LHAAP-003-R-01  
 Site Name: GROUND SIGNAL TEST AREA

**STATUS**

Parcel: Ground Signal Test (FWS) (80 acres)

Regulatory Driver: CERCLA

MRSP Score: 04

Contaminants of Concern: Explosives

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200202.....	200305
SI.....	200402.....	200506
RI/FS.....	200503.....	201109
IRA.....	200710.....	200904
LTM.....	201109.....	201709
RIP Date:	N/A	
RC Date:	201109	

**SITE DESCRIPTION**

This site, also known as environmental site LHAAP-054, encompasses approximately 80 acres and is located in the southeastern portion of LHAAP. Starting in April 1963 the site was used intermittently for aerial and on-ground testing and destruction of a variety of devices, including red phosphorus smoke wedges, infrared flares, illuminating 60 and 81 mm mortar shells, illuminating 40 to 155 mm cartridges, button bombs, and various types of explosive simulators. The site was also used intermittently over a 20-year period for testing and burnout of rocket motors from Nike-Hercules, Pershing, and Sergeant missiles. Around 1970, one of the Sergeant rocket motors exploded in an excavated pit near the center of the site. Debris was reportedly placed in the resulting crater and backfilled. From late-1988 through 1991, the site was also used for burnout of rocket motors in Pershing missiles destroyed in accordance with the INF Treaty between the US and the former Soviet Union. In January 1998 an NFA ROD for Hazardous, Toxic and Radioactive Waste (HTRW) under CERCLA was signed. The site is currently undeveloped.

In December 2004, the EOD unit at Fort Polk BIP 105 mm and 81 mm rounds. In FY08 an EE/CA report was completed, approved and signed. In October 2007 the report was finalized. An IRA has been funded with the final ESS completed in March 2008. The removal action was completed in 2009. Five-year reviews will be required following the removal action.

**CLEANUP/EXIT STRATEGY**

Five-year reviews are planned for this site. These five-year reviews will ensure that the site is inspected and that any new data regarding the condition of the site is reviewed. The LUCs are in place and will be formally enforced upon ROD signature.

## MMRP Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
LHAAP-002-R-01	STATIC TEST AREA	200811	A no action decision document signed in 2008.

## MMRP Schedule

Date of MMRP Inception: 200202

### Past Phase Completion Milestones

2003

PA (LHAAP-001-R-01 - SOUTH TEST AREA / BOMB TEST AREA, LHAAP-002-R-01 - STATIC TEST AREA, LHAAP-003-R-01 - GROUND SIGNAL TEST AREA)

2005

SI (LHAAP-001-R-01 - SOUTH TEST AREA / BOMB TEST AREA, LHAAP-002-R-01 - STATIC TEST AREA, LHAAP-003-R-01 - GROUND SIGNAL TEST AREA)

2008

RI/FS (LHAAP-002-R-01 - STATIC TEST AREA)

2009

IRA (LHAAP-001-R-01 - SOUTH TEST AREA / BOMB TEST AREA, LHAAP-003-R-01 - GROUND SIGNAL TEST AREA)

### Projected Phase Completion Milestones

See attached schedule

### Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

To Be Determined

Final RA(C) Completion Date:

Schedule for Next Five-Year Review: 2012

Estimated Completion Date of MMRP at Installation (including LTM phase): 201709

## LONGHORN ARMY AMMUNITION PLANT MMRP Schedule

  = phase underway

SITE ID	SITE NAME	PHASE	FY12	FY13	FY14	FY15	FY16	FY17+
LHAAP-001-R-0	SOUTH TEST AREA / BOMB TEST AREA	LTM						
SITE ID	SITE NAME	PHASE	FY12	FY13	FY14	FY15	FY16	FY17+
LHAAP-003-R-0	GROUND SIGNAL TEST AREA	LTM						

## Community Involvement

Technical Review Committee (TRC): 199203  
Community Involvement Plan (Date Published): 200309  
Restoration Advisory Board (RAB): RAB established 2004  
RAB Adjournment Date:  
RAB Adjournment Reason:

### Additional Community Involvement Information

While the Army leads the Installation Restoration Program (IRP) at LHAAP, a close working relationship with the regulatory community has been developed. The local public community has been involved in the past through the TRC process.

In April 1996 and in 1998 formation of a RAB was attempted; however, community involvement in the TRC process was determined to be sufficient for community needs. In September 2004, in response to public notices and private mailings, a group of citizens attended a RAB-interest meeting. Enthusiastic support resulted in the first RAB meeting in December 2004. It was well attended. The RAB has created its own symbol, finalized its charter, and elected a co-chair. The RAB meets quarterly and public meetings are held for each PP. These will continue as needed.

### Administrative Record is located at

Longhorn Army Trailer  
Groundwater Treatment Plant Compound  
Highway 134 and Spur 449  
Karnack, TX 75661

### Information Repository is located at

Marshall Texas Library  
300 South Alamo  
Marshall, TX 756

Current Technical Assistance for Public Participation (TAPP): 199909  
TAPP Title: Grnd/surf water migration  
Current Technical Assistance for Public Participation (TAPP): 200103  
TAPP Title: TAPP2  
Potential TAPP: N/A

