# INSTALLATION ACTION PLAN
## for
# LONGHORN ARMY AMMUNITION PLANT


**March 2001**

# PURPOSE

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year restoration program for an installation. The plan will define Installation Restoration Program (IRP) requirements and propose a comprehensive approach and associated costs to conduct future investigations and remedial actions at the installation.

In an effort to coordinate planning information between the IRP manager, major army commands (MACOMs), installations, executing agencies, regulatory agencies, and the public, an IAP has been completed for the Longhorn Army Ammunition Plant (LHAAP). The IAP is used to track requirements, schedules and tenative budgets for all major Army installation restoration programs.

All site specific funding and schedule information has been prepared according to projected overall Army funding levels and is therefore subject to change during the document's annual review. Under current project funding, all remedies (construction) will be in place or response complete at the LHAAP by the end of 2007. Long Term Monitoring and Operations will be required after this date.

# CONTRIBUTORS TO THIS YEAR'S IAP

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# LONGHORN ARMY AMMUNITION PLANT

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# INFORMATION SHARING

AMC, as well as MSCs and installations believe that it should make its environmental restoration information available openly. This Installation Action Plan was forwarded to the following people:

RAB Co-chair (document provided to all RAB members)

State Regulator

EPA Regulator

Installation RPM

# ACRONYMS & ABBREVIATIONS

| | |
|---|---|
| CERCLA | Comprehensive Environmental, Response, Compensation and Liability Act |
| cy | cubic yards |
| DERA | Defense Environmental Restoration Account |
| DERP | Defense Environmental Restoration Program |
| DERPMIS | Defense Environmental Restoration Program Management Information System |
| DRMS | Defense Reutilization and Marketing Service |
| DSERTS | Defense Site Environmental Restoration Tracking System |
| EPA | Environmental Protection Agency |
| ER,A | Environmental Restoration, Army (formally DERA) |
| FFA | Federal Facility Agreement |
| FS | Feasibility Study |
| FY | Fiscal Year |
| GWTP | Groundwater Treatment Plant |
| INF | Intermediate-Range Nuclear Force |
| IRA | Interim Remedial Action |
| IRP | Installation Restoration Program |
| ITR | Independent Technical Review |
| LAP | Load, Assemble, and Pack |
| LTM | Long Term Monitoring |
| MCL | Maximum Contaminant Level |
| MEC | Methylene Chloride |
| NE | Not Evaluated |
| NFA | No Further Action |
| NPDES | Nation Pollution Disposal and Elimination System |
| NPL | National Priorities List |
| OB/OD | Open Burn/Open Detonation |
| OSC | Operations Support Command (Replaced IOC) |
| PA | Preliminary Assessment |
| PCB | Polychlorinated Biphenyls |
| POL | Petroleum, Oil & Lubricants |
| PVC | Polyvinylchloride |
| RA | Remedial Action |
| RA(C) | Remedial Action - Construction |

# ACRONYMS & ABBREVIATIONS

***LIST OF ACRONYMS AND ABBREVIATIONS CONTINUED…***

| | |
|---|---|
| RA(O) | Remedial Action - Operation |
| RAB | Restoration Advisory Board |
| RC | Response Complete |
| RCRA | Resource Conservation and Recovery Act |
| RD | Remedial Design |
| REM | Removal |
| 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 |
| SI | Site Investigation |
| SVOC | Semi-Volatile Organic Compounds |
| SWMU | Solid Waste Management Unit |
| TAPP | Technical Assistance for Public Participation |
| TCE | Trichloroethylene |
| TNRCC | Texas Natural Resource Conservation Commission |
| TNT | Trinitrotoluene |
| TPH | Total Petroleum Hydrocarbons |
| TRC | Technical Review Committee |
| TWC | Texas Water Commission |
| UEP | Unlined Evaporation Pond |
| USACHPPM | United States Army Center for Health Promotion and Preventive Medicine |
| USAEC | United States Army Environmental Center |
| USFWS | United States Fish and Wildlife Service |
| UST | Underground Storage Tank |
| UXO | Unexploded Ordnance |
| VOC | Volatile Organic Compounds |

# SUMMARY

***STATUS:***

NPL Installation, HRS - 39.83, Listed August 1990. Confirmed Soil and Ground Water Contamination on Installation. No off-post contamination identified.

***NUMBER OF DSERTS SITES:***

47 DSERTS sites
- 11 Active ER,A Eligible Sites
- 36 Response Complete/No Further Action ER,A Eligible

***DIFFERENT DSERTS SITE TYPES:***

| | |
|---|---|
| 3 Burn Areas | 2 Disposal Pits/ Dry Wells |
| 7 Landfills | 14 Storage Areas |
| 2 Surface Impoundments/ Lagoons | 9 Spill Site Areas |
| 1 Above Ground Storage Tank | 2 Underground Storage Tanks |
| 2 Waste Lines | 4 Waste Treatment Plants |
| 1 Other (LHAAP-053) | |

***CONTAMINANTS OF CONCERN:***

Trichloroethene, Methylene Chloride, Explosives, Metals, Perchlorate

***MEDIA OF CONCERN :***

Groundwater, Soil, Surface Water, Sediment (Air is funded separately)

***COMPLETED REM/IRA/RA:***

UEP Sludge removed and pond capped, 1986, Total Cost: Closed under RCRA
Removal Action for Waste Sumps, 1997. Total Cost: $1.83 M
Landfills 12 & 16 Capped, 1997 & 1998, Total Cost: $5.3 M
Removal 30k cy Soil at Site 18, 1998, Total Cost: $6.5 M

***CURRENT IRP PHASES:***

RI/FS: LHAAP-12, 16, 17, 18, 24, 29, 35, 45, 50, 60
IRA: LHAAP-12, 16, 18, 24 RD/RA: LHAAP-16

***PROJECTED IRP PHASES:***

RI/FS 5 sites RD 6 sites RA 6 sites LTO 3 sites LTM 7 sites

***IDENTIFIED POSSIBLE REM/IRA/RA:***

RI/FS: LHAAP-35, 45, 50, 60
RD/RA: LHAAP-17, 24, 29, 35, 45, 50, 60
LTO/LTM: LHAAP-12, 16, 17, 18, 24, 29, 32, 35, 45, 50, 60

***FUNDING:***

| | |
|---|---|
| PRIOR YEAR THROUGH 2000: | $ 67,883.7 K |
| FY2001: | $ 5,894.0 K |
| FUTURE REQUIREMENTS: | $ 38,704.0 K |
| TOTAL: | $ 112,481.7K |

***DURATION:***

| | |
|---|---|
| YEAR OF IRP INCEPTION: | 1988 |
| YEAR OF REMOVAL FROM NPL: | 2010 |
| YEAR OF RA COMPLETION | 2037 |

# INSTALLATION INFORMATION

## LOCALE

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 approximately 40 miles west of Shreveport, Louisiana. The installation occupies 8,493 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.

## COMMAND ORGANIZATION

**MAJOR COMMAND:** U.S. Army Materiel Command; Engineering, Housing, Environmental and Installation Logistics, Environmental Quality Division

**MAJOR SUBORDINATE COMMAND:** U.S. Army Operations Support Command; Industrial Base Management Center; Restoration Management Team, Rock Island, IL

**INSTALLATION:** Louisiana/Longhorn Army Ammunition Plants

## INSTALLATION RESTORATION PROGRAM (IRP) EXECUTING AGENCY

Investigation Phase: U.S. Army Corps of Engineers (USACE), Tulsa District
Remedial Design/Action Phase: USACE, Tulsa District and Fort Worth District

## REGULATOR PARTICIPATION

**FEDERAL:** U.S. Environmental Protection Agency, Region VI

**STATE:** Texas Natural Resource Conservation Commission

## REGULATORY STATUS

- NPL listing August 1990
- Federal Facility Agreement, 1991

## MAJOR CHANGES TO ACTION PLAN FROM PREVIOUS YEAR (FY 00)

- Final RI for Site 16 completed.
- Perchlorate Investigation began.
- Completed Bench Scale Study and awarded contract for full scale perchlorate treatment.

# INSTALLATION DESCRIPTION

## HISTORIC/CURRENT ACTIVITIES

LHAAP was established in October 1942 with the primary mission of producing 2,4,6-trinitrotoluene (2,4,6-TNT) flake. Monsanto Chemical Company was the first contract operator of the plant. Production of 2,4,6-TNT continued through World War II until August 1945 when the plant went on standby status until February 1952. From 1952 until 1956, Universal Match Corporation was the contracting operator, producing such pyrotechnic ammunition as photoflash bombs, simulators, hand signals, and tracers for 40 mm ammunition. Thiokol assumed this responsibility along with rocket motor production with the departure of Universal Match Corporation in 1956. 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, 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 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 United States and the former USSR.

In October 1996, approximately 1,435 of the 8,493 acres were leased to the Caddo Lake Institute for biological and ecological studies by local schools and universities.

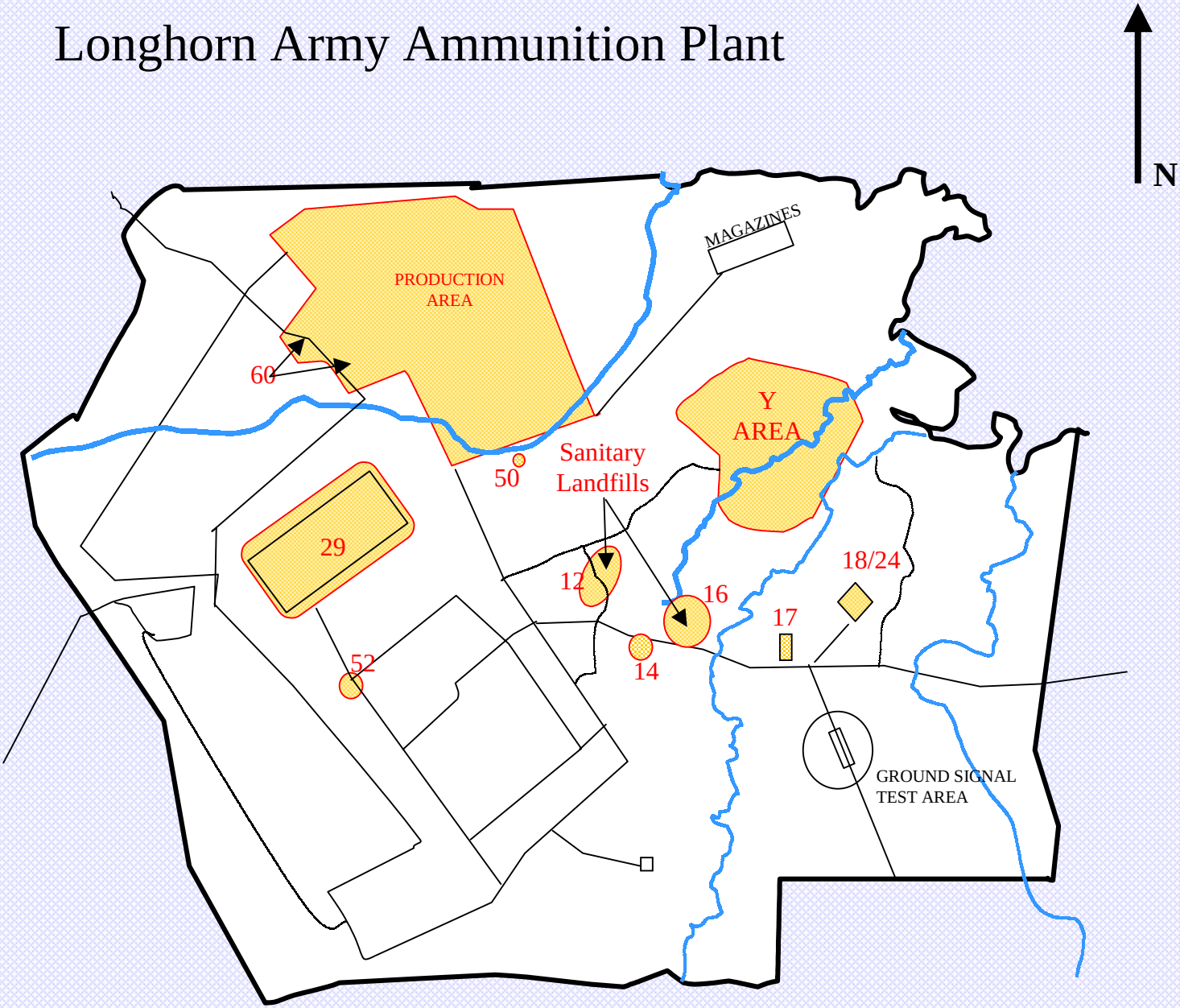
The plant became inactive and excess to the Army's needs in July 1997. In July 1998 the Army contracted Earth Tech, Inc. to liquidate all personal property and specific installed property. That contract was completed in Fiscal Year 2000.In 1999 the Army contracted with Project Development Corp. to demolish specific structurally unsafe buildings. A Memorandum of Agreement between the Army and USFWS was signed on 21 October 2000 designating an overlay consisting of approximately 7,100 acres for establishment of a wildlife refuge at LHAAP.

## REGULATORY STATUS

LHAAP was placed on the National Priorities List (NPL) on August 9, 1990. After being listed on the NPL, LHAAP, the U.S. Environmental Protection Agency (EPA), and the Texas Water Commission (TWC) (now called the Texas Natural Resource Conservation Commission [TNRCC]) 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 December 30, 1991. The Installation applied for a RCRA Part A Permit. A RCRA Part B Permit was signed in February 1992. As a result, a RCRA Facility Assessment (RFA) identified 57 potential sites of concern. Since that time, scrubbing of the list (removal of non-ER,A eligible sites, redundancies, etc.) has resulted in the current Defense Site Environmental Restoration Tracking System (DSERTS) list of 47 sites.

While the Army leads the IRP at LHAAP, a close working relationship with the regulatory community has been developed. Remedial Project Managers from TNRCC and EPA Region VI work closely with Army personnel in planning and implementing IRP goals and activities. A cooperative teamwork environment has proven helpful in accelerating IRP activities and focusing energies of all the stakeholders on achieving restoration goals**.**

# Longhorn Army Ammunition Plant



# CONTAMINATION ASSESSMENT

Various environmental investigations, studies, and reports have been conducted since 1980 to address possible contamination at LHAAP. A summary of the current project milestones, based on funding availability, for the remedial activities is given below. Approved regulatory schedules are included on the following pages to summarize submittal dates for primary and secondary documents.

Studies conducted at the installation identified volatile organic compounds (e.g. TCE, MEC), heavy metals, perchlorate, and explosives in on-site groundwater, surface water, sediment and soil.

Longhorn AAP currently has a total of 47 Defense Sites Environmental Restoration Tracking System (DSERTS) (see DSERTS chart in Schedule section) including inert and production landfills, burning areas, storage tanks, and production areas.

= 10 Sites are still active
= 37 Sites are Response Complete
- 6 closed by NFA ROD
- 2 closed after SI
- 10 closed under RCRA
- 19 closed after PA

Perchlorate Investigations addressed by the IRP in the future will be funded under LHAAP-35 and the number of open sites may change.

Interim remedial actions (IRAs) have been performed at four sites (LHAAP-12, 16, 18 and 24). Landfill caps were placed at LHAAP-12 and 16. LHAAP-18 and 24 have a groundwater treatment facility and interception collection trenches in place and in operation. At Burning Ground 3 (LHAAP-18, 24) approximately 30,000 cy of source material were removed. The production lines sumps were grouped together with investigation, characterization, removal and disposal action completed in FY97.

Investigations currently under way address contamination at Site 16, the Group 2 Sites (LHAAP-12, 17, 18, 24, 29 and 32) and Group 4 Sites (production area or LHAAP-35). Volatile organic compounds (primarily methylene chloride, trichloroethene and their daughter compounds) are the dominant contaminants in the soil and groundwater at LHAAP-12, 16, 18, 24 and 35. At LHAAP-17, 29, and 32 explosives in soil and the previously mentioned VOCs in soil and groundwater are the dominant contaminants of concern.

Measures have been implemented at LHAAP-16, 18 and 24 to intercept groundwater contaminated with VOCs that has the potential to flow to Harrison Bayou. At LHAAP-18 and 24, interception collection trenches installed as a part of the IRA were designed to collect groundwater flowing from the contaminated areas of those sites. That collected water is then pumped to the groundwater treatment plant where the contaminants are removed and the treated water is discharged to Harrison Bayou. At LHAAP-16 extraction wells were placed between the landfill and Harrison bayou to intercept the contaminated groundwater. The water taken from these wells is also treated at the LHAAP-18/24 Treatment Plant.

# PREVIOUS STUDIES

| Title | Author | Date |
|---|---|---|
| Assessment of Contaminant Migration, Longhorn Army Ammunition Plant, Harrison County, Texas. | The Robert H. Balter Co. | 1-Apr-79 |
| Installation Assessment of Longhorn Army Ammunition Plant, Report No. 150. | U.S. Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, MD | 1-Feb-80 |
| Land Disposal Study No. 38-26-0104-81, Longhorn Army Ammunition Plant, Marshall, Texas, 23 January - 8 February 1980. | USAEHA | 26-May-80 |
| Wastewater Engineering SpecialStudyNo. 32-62-0182-82. | USAEHA, Regional Div., South | 1-Sep-81 |
| Phase II, Hazardous Waste Management Special Study No. 39-26-0147-83, DARCOM Open-Burning/Open-Detonation Grounds Evaluation, Longhorn Army Ammunition Plant, Marshall, Texas, 31 July - 3 August 1981. | USAEHA | 1-Sep-83 |
| Closure of Unlined Evaporation Pond, Marshall, Texas. | Kindle, Stone and Associates, Longview, Texas | 15-Jun-84 |
| Longhorn Army Ammunition Plant Contamination Survey, Contract No. DAAA09-78-C-3004. | Environmental Protection Systems, Inc. | 1-Jun-84 |
| Closure Report, Unlined Evaporation Pond, Longhorn Army Ammunition Plant, Karnack, Texas . | U.S. Army Corps of Engineers, Tulsa | 1-Jun-86 |
| Interim Risk Assessment for Burning Ground 3 and Unlined Evaporation Pond Sites (18 & 24) | U.S. Army Corps of Engineers, Tulsa | 18-Jan-94 |
| Soil and Groundwater Background Concentration Study | U.S. Army Corps of Engineers, Tulsa | 12-May-94 |
| Remedial Investigation /Feasibility Study Report for Areas 13 & 14 | U.S. Army Corps of Engineers, Tulsa | 1-Jun-94 |
| Draft Final Workplan Addendum Soil and Groundwater Background Concentration Study | U.S. Army Corps of Engineers, Tulsa | 29-Jun-94 |
| Final Soil Background Concentration Report (Revised) | U.S. Army Corps of Engineers, Tulsa | 30-Mar-95 |
| Final Groundwater Background Concentration Report | U.S. Army Corps of Engineers, Tulsa | 9-May-95 |
| Final Hydrogeologic Assessment Report | U.S. Army Corps of Engineers, Tulsa | 11-May-95 |
| Final Prop Plan of Action for Sites 13 & 14 | U.S. Army Corps of Engineers, Tulsa | 21-Jun-95 |
| Groundwater Sampling Results-May 95, Interim Remedial Action-Phase III, Burning Ground 3 and UEP, LHAAP 18 & 24 | U.S. Army Corps of Engineers, Tulsa | 26-Jun-95 |
| Final Remedial Investigation/Feasibility Study Report for Sites 13 & 14 | U.S. Army Corps of Engineers, Tulsa | 28-Jun-95 |
| Final Record of Decision for Early Interim Remedial Action at Landfill Sites 12 & 16 | U.S. Army Corps of Engineers, Tulsa | 10-Jul-95 |
| Final Work Plan for Phase III Interim Remedial Action at Burning Ground 3 | U.S. Army Corps of Engineers, Tulsa | 3-Jan-96 |
| Group 4 Baseline Risk Assessment Work Plan | U.S. Army Corps of Engineers, Tulsa | 5-Feb-96 |
| Final Project Work Plans, Interim Remedial Action Landfills 12 & 16 Caps | U.S. Army Corps of Engineers, Tulsa | 10-Jun-96 |
| Group 4 Sumps Groundwater Monitoring Quarterly Report | U.S. Army Corps of Engineers, Tulsa | 13-Jun-96 |
| Draft Final Design Analysis Report for the Site 16 Time Critical Removal Action | U.S. Army Corps of Engineers, Tulsa | 28-Jun-96 |
| Draft Final Comprehensive Chemical Data Acquisition Plan for the RI/FS | U.S. Army Corps of Engineers, Tulsa | 3-Jul-96 |

# PREVIOUS STUDIES

| Title | Author | Date |
|---|---|---|
| Draft Final Field  Summary Report for the Phase II, Group 2 Sites Remedial Investigation | U.S. Army Corps of Engineers, Tulsa | 17-Jul-96 |
| Treatment Simulation and Toxicity Testing Results of Site 16 Groundwater | U.S. Army Corps of Engineers, Tulsa | 8-Aug-96 |
| Final Project  Construction Drawings, Interim Remedial Action, Landfill 12 & 16 Caps | U.S. Army Corps of Engineers, Tulsa | 21-Aug-96 |
| Final Remedial Investigation Report Group 1 Sites (Sites 1, 11, 27, and XX) and Vol. 2 Baseline Risk Assessment | U.S. Army Corps of Engineers, Tulsa | 30-Apr-97 |
| Final Record of Decision for Early Interim Remedial Action at Group 1 Sites | U.S. Army Corps of Engineers, Tulsa | Feb. 1998 |
| Environmental Baseline Study | U.S. Army Corps of Engineers, Tulsa | 1 April 1998 |
| Group 2 Final WorkPlan | U.S. Army Corps of Engineers, Tulsa | Mar-98 |
| Group 4 Final WorkPlan | U.S. Army Corps of Engineers, Tulsa | Jul-98 |

# ACTIVE DSERTS SITES

# LHAAP-2
# VACUUM TRUCK OVERNIGHT PARKING LOT

## SITE DESCRIPTION

This site was used as overnight parking for a vacuum truck. Tanker trucks containing industrial wastewater were sometimes left at this location overnight. This parking lot is located next to Building 704D (inside the LHAAP-35 area) and use was discontinued in 1995. Record searches indicated no spills occurred at this site. This site was identified as a Solid Waste Management Unit (SWMU) in the RFA.

## PROPOSED PLAN

This area is being monitored under LHAAP-35.

## IRP STATUS

**RRSE RATING:** Medium risk
**CONTAMINANTS OF CONCERN:**
Metals
**MEDIA OF CONCERN:**
Soil, Groundwater
**COMPLETED IRP PHASE:**
PA
**CURRENT IRP PHASE:**
RI/FS
**FUTURE IRP PHASE:**
RD/RA

# LHAAP-3
# WASTE COLLECTION AT PAINT SHOP

## SITE DESCRIPTION

This site was used for collection of waste (may have included paint thinner, paints, and kerosene) produced from the paint shop. The Paint Shop was located in Building 722, within the LHAAP-35 area. The site consisted of one 55-gallon drum set on a gravel pad in an open-sided shed, with a galvanized metal roof. Waste was put into the 55-gallon drum until the drum was full. The drum was then taken to Building 31-W (Hazardous Waste Storage). This site is no longer active. This site was identified as a SWMU in the RFA.

## PROPOSED PLAN

This area is being monitored under LHAAP-35.

## IRP STATUS

**RRSE RATING:** NE - Included in LHAAP-35
**CONTAMINANTS OF CONCERN:**
Solvents, Metals
**MEDIA OF CONCERN:**
Soil
**COMPLETED IRP PHASE:**
PA
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

# LHAAP-4
# PILOT WASTEWATER TREATMENT PLANT

## SITE DESCRIPTION

This plant received all the wastewater from all sumps on the installation. After settlement, the wastewater was transferred to one of two storage tanks and then pumped through a heat exchanger to an evaporation tower. Solids were shipped off-site, and sludges from the settling tank were blown down and drummed on a weekly basis and burned at Burning Ground No. 3.

The Pilot Wastewater Treatment Plant was removed and closed in 1998 under an Agreed Order with TNRCC.

Soil and groundwater contamination are being addressed under LHAAP-35

## IRP STATUS

**RRSE RATING:** NE
**CONTAMINANTS OF CONCERN:**
VOCs, Metals
**MEDIA OF CONCERN:**
Water
**COMPLETED IRP PHASE:**
PA
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

## PROPOSED PLAN

NFA

# LHAAP-6
# BUILDING 54F

## SITE DESCRIPTION

This site consisted of a rack outside of Building 54F (within the LHAAP-35 area). The site consisted of a single 55-gallon drum stored in a three-sided shed, approximately 8 by 10 feet in size, with fiberglass siding and a roof of galvanized metal and fiberglass. The shed was set on a curbless concrete pad. Full drums were taken to Building 31-W. This site was in operation until mid-1985.

## IRP STATUS

**RRSE RATING:** NE - Included in LHAAP-35
**CONTAMINANTS OF CONCERN:**
Solvents, Acid
**MEDIA OF CONCERN:**
Groundwater, Soil
**COMPLETED IRP PHASE:**
PA
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

## PROPOSED PLAN

This area is being monitored under LHAAP-35. No future actions are necessary at LHAAP-6.

# LHAAP-7
# BUILDING 50G - DRUM PROCESSING

## SITE DESCRIPTION

This site was a washdown area for empty drums used in production (within the LHAAP-35 area). The site consisted of a wooden frame building 30 by 100 feet in size, set on concrete and having transite walls. Main washdown took place in a separate bay, 20 by 30 feet in size. All washdown water drained to a 3,000-gallon sump outside, Sump No. 70. This sump has been removed. Empty drums were either reused or flashed at the Air Curtain Destructor and sent to Building 49-W for disposal as scrap. This site ceased operation in 1995.

## PROPOSED PLAN

This area is being monitored under LHAAP-35. This area is being incorporated as part of the LHAAP-35 remediation.

## IRP STATUS

**RRSE RATING:** NE - Included in LHAAP-35

**CONTAMINANTS OF CONCERN:**

VOCs

**MEDIA OF CONCERN:**

Groundwater, Soil

**COMPLETED IRP PHASE:**

PA

**CURRENT IRP PHASE:**

RC

**FUTURE IRP PHASE:**

RC

# LHAAP-8
# SEWAGE TREATMENT PLANT

## SITE DESCRIPTION

This site is not eligible for ER,A funding.

This site is a sewage treatment plant consisting of an Imhoff tank, a sand filter, and three inactive sludge beds. Sludge was dried on sand beds then shipped to Landfill 16. This site has been active from 1942. Although this site was identified as a SWMU in the RFA, the TNRCC determined that there were no additional investigations required at this site.

The site was closed in 1999 under the requirements of the closure plan approved by TNRCC.

Soil and groundwater contamination are being addressed under LHAAP-35

## PROPOSED PLAN

NFA

## IRP STATUS

**RRSE RATING:** NE

**CONTAMINANTS OF CONCERN:**

Residues from production material

**MEDIA OF CONCERN:**

Groundwater, Soil

**COMPLETED IRP PHASE:**

PA

**CURRENT IRP PHASE:**

RC

**FUTURE IRP PHASE:**

RC

# LHAAP-12, SWMU 12
# LANDFILL 12

## SITE DESCRIPTION

Landfill 12 (previously called the Active Landfill) was used for disposal of non-hazardous industrial waste. The landfill was used intermittently since 1963. Continuous use of the landfill began in approximately 1978. The front section of the landfill closed in March 1994; the back section was closed previously.

Groundwater analyses showed some metals, chlorides, VOCs and explosive compounds were present. Surface water and sediment sample analyses showed similar contamination.

Site investigations conducted in 1993 concluded that an Early Interim Remedial Action (Landfill Cap) was necessary to reduce further contamination to the groundwater. The cap was completed in 1997. Cap maintenance started in 1998.

Note: Treated soil from LHAAP-18 was disposed of at this site.

## IRP STATUS

**RRSE RATING:** High Risk

**CONTAMINANTS OF CONCERN:**
VOCs, Metals, Chloride, Explosive Compounds

**MEDIA OF CONCERN:**
Groundwater

**COMPLETED IRP PHASE:**
PA/SI, IRA

**CURRENT IRP PHASE:**
RI/FS, IRA

**FUTURE IRP PHASE:**
LTM

## PROPOSED PLAN

Phase III RI/FS is expected to be completed in FY02. The RI/FS will include a groundwater to surface water interface model.

Cap maintenance will continue.

Perchlorate sampling for this site will be funded under LHAAP-35.

## CONSTRAINED COST TO COMPLETE

| PHASE | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007+ |
|---|---|---|---|---|---|---|---|
| RI/FS | 250 | 26 | | | | | |
| IRA | 66 | 90 | | | | | |
| RD | | | | | | | |
| RA(C) | | | | | | | |
| RA(O) | | | | | | | |
| LTM | | | 36 | 36 | 36 | 36 | 306 |

**Projected Total: $882,000**

# LHAAP-16
# LANDFILL 16

## SITE DESCRIPTION

Landfill 16 (formally called the Old Landfill) was originally used for disposal of products generated from the TNT Wastewater Treatment Plant. However, a variety of waste was disposed of in the landfill until the 1980's. 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 groundwater.

Site investigations conducted in 1993 concluded that an Early Interim Remedial Action (Landfill Cap) was necessary to reduce further contamination to the groundwater. The cap was completed in 1998. Eight extraction wells were installed in late1997 to contain contamination that was seeping from groundwater into Harrison Bayou. Groundwater extracted from the Landfill 16 containment system is piped to the LHAAP-18 GWTP.

Note: Treated soil from LHAAP-18 was disposed of at this site.

## IRP STATUS

**RRSE RATING:** High Risk

**CONTAMINANTS OF CONCERN:**

VOCs, Metals, Explosive Compounds, Sulfates

**MEDIA OF CONERN:**

Soil, Groundwater, Surface Water, Sediment

**COMPLETED IRP PHASE:**

PA/SI, IRA

**CURRENT IRP PHASE:**

RI/FS, IRA, RD, RA

**FUTURE IRP PHASE:**

LTM

## PROPOSED PLAN

Phase III RI/FS is expected to be completed in FY01. The RI/FS will include a groundwater to surface water interface model.

RD/RA for groundwater for this site will begin in FY01. Perchlorate sampling for this site is funded under LHAAP-35.

Cap maintenance will continue.

## CONSTRAINED COST TO COMPLETE

| PHASE | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007+ |
|---|---|---|---|---|---|---|---|
| RI/FS | 130 | | | | | | |
| IRA | 25 | 110 | 95 | 95 | 55 | | |
| RD | 300 | | | | | | |
| RA(C) | 3362 | | | | | | |
| RA(O) | | | | | | | |
| LTM | | | | | | | |

**Projected Total: $4,172,000**

# LHAAP-17
# NO. 2 FLASHING AREA/BURNING GROUND

## SITE DESCRIPTION

This site was used for burning bulk TNT, photoflash powder, and reject material from Universal Match Corporation's production processes. The site was operated as a burning ground from 1959 until 1980. TNT has been detected in surface soils. This site is situated approximately 400-500 feet southwest of Burning Ground No. 3.

Waste residues were removed in 1984 and the area grassed over. VOCs and explosive compounds were found in the groundwater. Explosive compounds were found in the soil.

## IRP STATUS

**RRSE RATING:** High Risk

**CONTAMINANTS OF CONCERN:**
Explosive Compounds, VOCs

**MEDIA OF CONCERN:**
Soil, Groundwater

**COMPLETED IRP PHASE:**
PA/SI

**CURRENT IRP PHASE:**
RI/FS

**FUTURE IRP PHASE:**
RD, RA, LTM

## PROPOSED PLAN

Phase III RI/FS is expected to be completed in FY01. The RI/FS will include a groundwater to surface water interface model.

Hot spot removal may be needed.

LTM will be needed.

Perchlorate sampling for this site will be funded under LHAAP-35.

## CONSTRAINED COST TO COMPLETE

| PHASE | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007+ |
|---|---|---|---|---|---|---|---|
| RI/FS | 25 | | | | | | |
| IRA | | | | | | | |
| RD | | | | | | | 10 |
| RA(C) | | | | | | | 100 |
| RA(O) | | | | | | | |
| LTM | | | | | | | 507 |

**Projected Total: $642,000**

# LHAAP-18

## BURNING GROUND NO. 3/UNLINED EVAPORATION POND

## SITE DESCRIPTION

Burning Ground No. 3 started operation 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) was constructed in 1963 within Burning Ground No. 3. Explosive compounds, VOCs, and metals were detected in soils and groundwater. In addition, perchlorate was detected in 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; some of this soil was placed in LHAAP12 & 18. A Groundwater Treatment Plant (GWTP) with approximately 5,000 feet of interception collection trench has been installed to control migration of contaminated groundwater. The extracted groundwater is discharged into Harrison Bayou after treatment.

## IRP STATUS

**RRSE RATING:** High Risk

**CONTAMINANTS OF CONCERN:**

VOCs, Heavy Metals

**MEDIA OF CONCERN:**

Soil, Groundwater, Surface Water

**COMPLETED IRP PHASE:**

PA/SI

**CURRENT IRP PHASE:**

RI/FS, IRA

**FUTURE IRP PHASE:**

RD, RA, LTO

## PROPOSED PLAN

The Phase III RI/FS is expected to be completed in FY01.

LTO for GWTP and cap maintenance will continue.

With current information, a RD/RA for groundwater is expected.

Perchlorate sampling for this site will be funded under LHAAP-35.

## CONSTRAINED COST TO COMPLETE

| PHASE | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007+ |
|---|---|---|---|---|---|---|---|
| RI/FS | 10 | | | | | | |
| IRA | 400 | 400 | 400 | 400 | 400 | 400 | |
| RD | | | | | 250 | | |
| RA(C) | | | | | 200 | 2724 | |
| RA(O) | | | | | | | 2162 |
| LTM | | | | | | | |

**Projected Total: $7,746,000**

# LHAAP- 24

## BURNING GROUND NO. 3/UNLINED EVAPORATION POND

## SITE DESCRIPTION

Burning Ground No. 3 started operation 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) was constructed in 1963 within Burning Ground No. 3. Explosive compounds, VOCs, and metals were detected in soils and groundwater. In addition, perchlorate was detected in 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; some of this soil was placed in LHAAP12 & 18. A Groundwater Treatment Plant (GWTP) with approximately 5,000 feet of interception collection trench has been installed to control migration of contaminated groundwater. The extracted groundwater is discharged into Harrison Bayou after treatment.

## IRP STATUS

**RRSE RATING:** High Risk

**CONTAMINANTS OF CONCERN:**
VOCs, Heavy Metals

**MEDIA OF CONCERN:**
Soil, Groundwater, Surface Water

**COMPLETED IRP PHASE:**
PA/SI

**CURRENT IRP PHASE:**
RI/FS, LTO

**FUTURE IRP PHASE:**
RD, RA, LTO

## PROPOSED PLAN

The Phase III RI/FS is expected to be completed in FY01.

LTO for GWTP and cap maintenance will continue.

With current information, a RD/RA for groundwater is expected.

Perchlorate sampling for this site will be funded under LHAAP-35.

## CONSTRAINED COST TO COMPLETE

| PHASE | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007+ |
|---|---|---|---|---|---|---|---|
| RI/FS | 15 | | | | | | |
| IRA | 400 | 400 | 1092 | 400 | 400 | 400 | |
| RD | | | | | 250 | | |
| RA(C) | | | | | 176 | 2000 | |
| RA(O) | | | | | | | 2089 |
| LTM | | | | | | | |

**Projected Total: $7,622,000**

# LHAAP-29
# FORMER TNT PRODUCTION AREA

## SITE DESCRIPTION

The Former TNT Production Area (appoximately 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. TNT waste-water (red water) from the production of the TNT was sent through wooden pipelines to a storage tank and pumphouse, and then to the TNT Wastewater Treatment Plant (LHAAP-32). Cooling water (blue water) from the production area ran through main lines and into an open ditch. The structures, except for the foundations, were demolished and removed in 1959.

In support of the Intermediate Nuclear Forces Treaty, a portion of the site (approximately 2 acres) was used for the washout of Pershing 1 and 2 rocket motor casings. One structure associated with this activity is still standing.

Explosive compounds have been detected in soil and surface water, sediment and groundwater samples. VOCs have also been detected in groundwater.

## IRP STATUS

**RRSE RATING:** High Risk

**CONTAMINANTS OF CONCERN:**
Explosives, VOCs

**MEDIA OF CONCERN:**
Groundwater, Soil, Surface Water, Sediment

**COMPLETED IRP PHASE:**
PA/SI

**CURRENT IRP PHASE:**
RI/FS

**FUTURE IRP PHASE:**
RD, RA, LTM

## PROPOSED PLAN

The Phase III RI/FS is expected to be completed in FY01.

A RD/RA of removal of Hot Spots and pipelines, is expected, followed by LTM.

Perchlorate sampling for this site will be funded under LHAAP-35.

## CONSTRAINED COST TO COMPLETE

| PHASE | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007+ |
|---|---|---|---|---|---|---|---|
| RI/FS | 10 | 30 | 30 | 300 | 30 | | |
| IRA | | | | | | | |
| RD | | | | | | 296 | 174 |
| RA(C) | | | | | | | 4500 |
| RA(O) | | | | | | | |
| LTM | | | | | | | 431 |

**Projected Total: $5,801,000**

# LHAAP-32
# FORMER TNT WASTEWATER TREATMENT PLANT

## SITE DESCRIPTION

The TNT Wastewater Treatment Plant was constructed in 1942 to treat and dispose of wastewater generated at the TNT Production Area (LHAAP-29). The plant was in operation from April 1943 until August 1945. In 1959, most of the facilities at the Wastewater Treatment Plant were removed. The suspected contaminants are explosive compounds and metals contained in explosive manufacturing residues.

Surface water, groundwater, soil and sediment samples were collected in the area. Explosive compounds were detected in soils and sediments along with some elevated levels of metals. A surface water sample was collected in 1991, and the analyses detected low levels of explosive compounds. Groundwater has had no detects.

## IRP STATUS

**RRSE RATING:** Medium Risk

**CONTAMINANTS OF CONCERN:**
Explosives, Metals

**MEDIA OF CONCERN:**
Sediment, Soil, Surface Water

**COMPLETED IRP PHASE:**
PA/SI

**CURRENT IRP PHASE:**
RI/FS

**FUTURE IRP PHASE:**
LTM

## PROPOSED PLAN

The Phase III RI/FS is expected to be completed in FY01.

Pipeline removal at this site is being funded under LHAAP-29.

After the pipelines have been removed, no further action is expected.

## CONSTRAINED COST TO COMPLETE

| PHASE | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007+ |
|---|---|---|---|---|---|---|---|
| RI/FS | | | | | | | |
| IRA | | | | | | | |
| RD | | | | | | | |
| RA(C) | | | | | | | |
| RA(O) | | | | | | | |
| LTM | | | 15 | 15 | 15 | 15 | 15 |

**Projected Total: $75,000**

# LHAAP-35
# PROCESS WASTEWATER SUMPS-VARIOUS

## SITE DESCRIPTION

This area of approximately 1,500 acres encompasses two major production areas, a maintenance area, two satellite production areas, chemical laboratory, and aboveground solvent tank farm. This site also contained 125 industrial wastewater sumps. The sumps were located in different production areas within LHAAP. All of the sumps were removed in 1996.

VOCs have been detected in groundwater at each area with 9 separate groundwater plumes having been identified. Metals contamination in groundwater has also been identified in several of these areas. Surface water and sediments in Goose Prairie Creek have also been impacted by VOCs as a result of inflows of contaminated groundwater.

Several buildings in this site have a history of perchlorate use. Perchlorate contamination has been identified in soil, surface water and groundwater. Interim measures are being implemented to minimize the runoff of perchlorate to Goose Prairie Creek.

All perchlorate sampling and related activites for LHAAP will be funded under this site.

## PROPOSED PLAN

The Phase III RI/FS for this site is expected to be completed in FY01.

The perchlorate assessment is expected to start in FY00.

LTM will be conducted at all areas. RD, RA and LTO will be conducted for groundwater contamination in the Plant 3 Area and maintenance areas.

Modifications and piping to the GWTP (LHAAP-18/24) may be needed to treat the contaminants from this site.

## IRP STATUS

**RRSE RATING:** High Risk

**CONTAMINANTS OF CONCERN:**
VOCs, Heavy Metals, Perchlorate

**MEDIA OF CONCERN:**
Groundwater, Surface Water, Soil, Sediments

**COMPLETED IRP PHASE:**
PA/SI, Removal

**CURRENT IRP PHASE:**
RI/FS, RD, RA

**FUTURE IRP PHASE:**
RA, LTM

## CONSTRAINED COST TO COMPLETE

| PHASE | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007+ |
|---|---|---|---|---|---|---|---|
| RI/FS | 901 | | | | | | |
| IRA | | | | | | | |
| RD | | 300 | 400 | | | | |
| RA(C) | | 1470 | 5069 | 2877 | 4199 | | |
| RA(O) | | | | | | | |
| LTM | | | | | | 120 | 488 |

**Projected Total: $15,824,000**

# LHAAP-36
# EXPLOSIVE WASTE PADS (20)

## SITE DESCRIPTION

This site is a compilation of 20 waste pads within the LHAAP-35 area. These wastes pads consist of a galvanized metal roof set over a concrete 4- by 8-foot pad with a 6-inch curb. The waste pads were drained by concrete troughs into sumps. Explosive waste was desensitized with diesel fuel and placed in 5-gallon, galvanized, lidded, metal garbage pails with plastic bag liners. Full garbage pails were stored in a metal rack approximately 1.5 feet above the ground. The site was in operation from 1985 until the early 1990's.

## IRP STATUS

**RRSE RATING:** NE - Included in LHAAP-35

**CONTAMINANTS OF CONCERN:**

Heavy Metals

**MEDIA OF CONCERN:**

Soil

**COMPLETED IRP PHASE:**

PA/SI

**CURRENT IRP PHASE:**

RC

**FUTURE IRP PHASE:**

RC

## PROPOSED PLAN

This area is being monitored under LHAAP-35. This area is being incorporated as part of the LHAAP-35 remediation.

# LHAAP-37
# CHEMICAL LABORATORY WASTE PAD

## SITE DESCRIPTION

This site served as a collection point for spent solvents from the Chemical Laboratory from 1985 to 1997. This site is within the LHAAP-35. The site held one 55-gallon, plastic, DOT-approved drum set on a concrete pad. Each full drum was sent to Building 31-W (Hazardous Waste Storage) for disposal.

## IRP STATUS

**RRSE RATING:** NE - Included in LHAAP-35

**CONTAMINANTS OF CONCERN:**

VOCs

**MEDIA OF CONCERN:**

Soil, Groundwater, Surface Water

**COMPLETED IRP PHASE:**

PA

**CURRENT IRP PHASE:**

RC

**FUTURE IRP PHASE:**

RC

## PROPOSED PLAN

This area is being monitored under LHAAP-35. This area is being incorporated as part of the LHAAP-35 remediation.

# LHAAP-45
# MAGAZINE AREA

## SITE DESCRIPTION

This site was used for the storage of munitions. The total enclosed area is over 800 acres, within this area are 58 bunkers 3 magazine buildings in the northeast corner, and 2 buildings. Each bunker consists of three concrete walls and a concrete-floored structure 26 by 60 by 10 feet, with a wooden roof and doors. Operations began in 1942 and ceased in 1995.

Recient PA sampling by USACHPPM found contamination. This site was rated and now requires remedial investigations.

## IRP STATUS

**RRSE RATING:** Medium Risk

**CONTAMINANTS OF CONCERN:**
Pentachlorophenol, Metals, Perchlorate

**MEDIA OF CONCERN:**
Soil

**COMPLETED IRP PHASE:**
PA

**CURRENT IRP PHASE:**
RI/FS

**FUTURE IRP PHASE:**
RD/RA

## PROPOSED PLAN

An RD/RA is expected.

## CONSTRAINED COST TO COMPLETE

| PHASE | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007+ |
|---|---|---|---|---|---|---|---|
| RI/FS | | | | | | | |
| IRA | | | | | | | |
| RD | | | | | | | |
| RA(C) | | | | | | | |
| RA(O) | | | | | | | |
| LTM | | | | | | | |

**Projected Total: $0**

# LHAAP-50
# FORMER WASTE DISPOSAL FACILITY

## SITE DESCRIPTION

This site received wastewater from several sumps at Plants 2 and 3 from 1955 to the early 1970's. Washout of ammonium perchlorate containers was performed on site.

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

## IRP STATUS

**RRSE RATING:** High Risk

**CONTAMINANTS OF CONCERN:**
Heavy Metals, Chlorinated Solvent, perchlorate

**MEDIA OF CONCERN:**
Groundwater, Soil

**COMPLETED IRP PHASE:**
PA/SI

**CURRENT IRP PHASE:**
RI/FS (funded under LHAAP-35)

**FUTURE IRP PHASE:**
RD, RA, LTM

## PROPOSED PLAN

The Phase III RI/FS is expected to be completed in FY02 and is being funded under LHAAP-35.

With current information, RD, RA, LTM is expected.

Perchlorate sampling for this site is funded under LHAAP-35.

## CONSTRAINED COST TO COMPLETE

| PHASE | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007+ |
|---|---|---|---|---|---|---|---|
| RI/FS | | | | | | | |
| IRA | | | | | | | |
| RD | | | | | | | 50 |
| RA(C) | | | | | | | 500 |
| RA(O) | | | | | | | |
| LTM | | | | | | | 174 |

**Projected Total: $724,000**

# LHAAP-58
# MAINTENANCE COMPLEX

## SITE DESCRIPTION

This site is a maintenance complex with concrete floors and no curbs at the doorways. Floor drains are connected to the sanitary sewer. Lubricants are stored on drum racks outside over a gravel surface. No curbing or other containment is present. Waste oil and solvents are transferred to Buildinf 31-W. The area is still being used by the company that is excessing the plant. This site is totally included in the Group 4 RI/FS study (LHAAP-35). Future action will be adressed under LHAAP-35.

Soil and groundwater are being addressed under Site 35.

## IRP STATUS

**RRSE RATING:** NE
**CONTAMINANTS OF CONCERN:**
POL, Solvents
**MEDIA OF CONCERN:**
Soil
**COMPLETED IRP PHASE:**
PA
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

## PROPOSED PLAN

This site requires NFA under the IRP.

# LHAAP-67
# ABOVE GROUND STORAGE TANK

## SITE DESCRIPTION

This site consists of seven aboveground storage tanks (ASTs) containing Number 2 fuel oil or kerosene. The ASTs have earthen dikes sufficient to contain potential spill. Motor fuel tanks were registered with the state and have been removed. There is no history of spills at this location.

LHAAP-67 is being addressed under LHAAP-35.

## IRP STATUS

**RRSE RATING:** Medium Risk
**CONTAMINANTS OF CONCERN:**
POL, Other
**MEDIA OF CONCERN:**
Soil
**COMPLETED IRP PHASE:**
PA
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

## PROPOSED PLAN

This site requires NFA under the IRP.

# LHAAP-60
# FORMER STORAGE BUILDING 411 & 714

## SITE DESCRIPTION

This site is comprised of Buildings 411, 411A and 714, formerly used for storage of pesticides and herbicides. Pesticides were originally stored in Building 714 but were moved to Buildings 411 and 411A in 1970. Buildings 411 and 714 have concrete floors. Building 411A has a dirt floor. None of the buildings have a curb at the doorways.

Pesticides were detected in soils at all three buildings.

## PROPOSED PLAN

The Phase III RI/FS is expected to be completed in FY02 and is being funded under LHAAP-35.

With current information, RD, RA, LTM is expected.

## IRP STATUS

**RRSE RATING:** Medium Risk

**CONTAMINANTS OF CONCERN:**
Pesticides

**MEDIA OF CONCERN:**
Soil

**COMPLETED IRP PHASE:**
PA/SI

**CURRENT IRP PHASE:**
RI/FS

**FUTURE IRP PHASE:**
RD, RA, LTM

## CONSTRAINED COST TO COMPLETE

| PHASE | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007+ |
|---|---|---|---|---|---|---|---|
| RI/FS | | | | | | | |
| IRA | | | | | | | |
| RD | | | | | | | 34 |
| RA(C) | | | | | | | 171 |
| RA(O) | | | | | | | |
| LTM | | | | | | | 70 |

**Projected Total: $275,000**

# LHAAP-68
# MOBILE STORAGE TANK PARKING AREA

## SITE DESCRIPTION

This site contains two mobile storage tank (600 gallon) compartments on tank trucks used prior to 1985. These vehicles are used throughout the facility and are parked on the asphalt surface at the maintenance complex. No curb or other containment is present at the parking facility. Mobile storage tanks contain Number 2 diesel and gasoline.

Findings from the Army's preliminary assessment conducted in 1988 concluded that no further action is necessary at this site. Regulators did not agree to NFA, so this site has been icluded in the Group 4 RI/FS, LHAAP-35.

## PROPOSED PLAN

This site requires NFA under the IRP.

## IRP STATUS

**RRSE RATING:** NE

**CONTAMINANTS OF CONCERN:**

POL

**MEDIA OF CONCERN:**

Soil

**COMPLETED IRP PHASE:**

PA

**CURRENT IRP PHASE:**

RC

**FUTURE IRP PHASE:**

RC

# RESPONSE COMPLETE
# DSERTS SITES

# LHAAP-1, SWMU 1
# INERT BURNING GROUNDS

## SITE DESCRIPTION

This site was used for the burning of trash, ashes, scrap lumber, and waste from burned TNT. Universal Match Corporation used this site during the 1950's for burning photoflash powder and other discarded materials. In 1982, investigations at this site included completion and sampling of one groundwater well and three surface soil samples. Contamination by metals, chloride, sulfate, and two explosive compounds was detected. Trace explosive concentrations were detected in a down gradient well in 1988. This site is included in the FFA. A No Action ROD was signed in January 1998.

## IRP STATUS

**RRSE RATING:** Low Risk 3A

**CONTAMINANTS OF CONCERN:**

Explosive chemicals/inert materials

**MEDIA OF CONCERN:**

Soil, Groundwater

**COMPLETED IRP PHASE:**

PA/SI, RI/FS, ROD

**CURRENT IRP PHASE:**

RC

**FUTURE IRP PHASE:**

RC

## PROPOSED PLAN

This site requires NFA.

# LHAAP-5
# POWER HOUSE BOILER POND

## SITE DESCRIPTION

This site is not eligible for ER,A funding.

This site was in operation from 1978 to 1999. It consisted of a 4-foot-deep earthen lagoon lined with a polyvinylchloride (PVC) liner. The lagoon received approximately 3,000 gallons per day of backwash water from zeolite treatment units at the Building 401 Powerhouse. Water was either evaporated from the lagoon or discharged to the sewage treatment plant.

The site was closed in 1999, by removing the liner, filling with soil and seeding under the NPDES permit closure plan requirements.

## IRP STATUS

**RRSE RATING:** NE

**CONTAMINANTS OF CONCERN:**

None

**MEDIA OF CONCERN:**

None

**COMPLETED IRP PHASE:**

PA

**CURRENT IRP PHASE:**

RC

**FUTURE IRP PHASE:**

RC

## PROPOSED PLAN

NFA

# LHAAP-9
# BUILDING 31W- DRUM STORAGE

## SITE DESCRIPTION

This site is not eligible for ER,A funding.

Building 31-W was a storage area for containers of liquid hazardous waste, PCBs and various chemicals from the early 1950s to 1995. This site was closed in 1999.

Although this site was identified as a SWMU in the RFA, the TNRCC determined that there were no additional investigations required at this site.

## IRP STATUS

**RRSE RATING:** NE
**CONTAMINANTS OF CONCERN:**
None
**MEDIA OF CONCERN:**
None
**COMPLETED IRP PHASE:**
PA
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

## PROPOSED PLAN

This site is being closed under the current RCRA permit.

# LHAAP-11
# SUSPECTED TNT BURIAL SITE AT AVENUES P & O

## SITE DESCRIPTION

Burial of contaminated wastes occurred in the general area just north of Avenue Q, bounded by Avenue P on the west and the explosive burning ground on the east. An area near the intersection of Avenues Q and P was identified as a possible TNT disposal site in use during the 1940's.

A concrete block was discovered in this area during an assessment conducted in 1980, but its purpose was unknown. There is an area a few hectares in size located just west of the intersection of track 3-A and Avenue Q. This area was used during the late 1940's and early 1950's for the disposal of acids, building rubble, and other trash.

Surface and subsurface soil samples were collected in 1984 and 1988. Low levels of explosive contamination were detected in both soil sampling events. This site is included in the FFA. A No Action ROD was signed in January 1998.

## IRP STATUS

**RRSE RATING:** 3A Low Risk
**CONTAMINANTS OF CONCERN:**
Unknown, TNT
**MEDIA OF CONCERN:**
Groundwater, Soilr
**COMPLETED IRP PHASE:**
PA/SI, RI/FS, ROD
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

## PROPOSED PLAN

This site requires NFA under the IRP.

# LHAAP-13, SWMU 13
## SUSP. TNT BURIAL BETWEEN ACTIVE LANDFILL & OLD LANDFILL

### SITE DESCRIPTION

The Suspected TNT Burial Site/Acid Dump is an undocumented location where it is suspected that TNT or waste acids may have been disposed sometime during the history of the installation. Other than this suspected one-time disposal, no other activities have taken place at this site. Evidence of possible TNT burial or acid waste disposal at the site consisted of several areas of little or no vegetation that is consistent with the suspicion that some form of waste disposal has occurred at this location.

Examination of aerial photographs dated 1963 show these same locations stripped of vegetation with some type of activity being performed at the site. These locations were not evident in 1954 photos, and most of the area appears to be re-vegetated and inactive in 1970 photos. This site is included in the FFA. Completion of the remedial investigation fieldwork conducted in 1993 concluded that no further investgation was needed at this site. The final RI/FS report was submitted June 1995 and the No Action ROD was signed by EPA in February 1996.

### IRP STATUS

**RRSE RATING:** NE
**CONTAMINANTS OF CONCERN:**
Unknown, Waste Acid
**MEDIA OF CONCERN:**
Groundwater,Soil
**COMPLETED IRP PHASE:**
ROD
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

### PROPOSED PLAN

This site requires NFA under the IRP.

# LHAAP-14
# AREA 54 BURIAL GROUND

### SITE DESCRIPTION

The Area 54 Burial Ground is an undocumented location where it was suspected that demolition debris, building rubble, explosives, and acidic wastes were disposed during the 1940's and early 1950's. The disposal site is reportedly beneath the asphalt parking area adjacent to Building 49-W. Other than this period of operation, no other waste disposal activities have taken place at the site. This site is included in the FFA. Completion of remedial investigation fieldwork conducted in 1993 concluded that no further investgation was needed at this site. The final RI/FS report was submitted June 1995 and the No Action ROD was signed by EPA in February 1996.

### IRP STATUS

**RRSE RATING:** NE
**CONTAMINANTS OF CONCERN:**
Oil Ach
**MEDIA OF CONCERN:**
Groundwater, Soil
**COMPLETED IRP PHASE:**
PA
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

### PROPOSED PLAN

Future actions if necessary will be addressed under RCRA.

# LHAAP-15
# AREA 49W DRUM STORAGE

## SITE DESCRIPTION

This site is not eligible for ER,A funding.

This site is a drummed waste storage shed containing solid and hazardous waste. It consists of a metal building 50 feet by 100 feet by 10/16 feet (sloped), with a concrete floor. This site was in operation from 1984 to 1999. Although this site was identified as a SWMU in the RFA, LHAAP, with TNRCC concurrence, determined that there were no additional investigations required at this site.

## IRP STATUS

**RRSE RATING:** NE - Not eligible for ER,A funds

**CONTAMINANTS OF CONCERN:**

None

**MEDIA OF CONCERN:**

None

**COMPLETED IRP PHASE:**

PA

**CURRENT IRP PHASE:**

RC

**FUTURE IRP PHASE:**

RC

## PROPOSED PLAN

This site is being closed under the current RCRA permit.

# LHAAP-19
# CONSTRUCTION MATERIALS LANDFILL

## SITE DESCRIPTION

This is an active site, and therefore not eligible for ER,A funding.

This site is a fenced 400 x 800 feet landfill. The site began operations in 1985 for the disposal of construction debris.

## IRP STATUS

**RRSE RATING:** NE

**CONTAMINANTS OF CONCERN:**

None

**MEDIA OF CONCERN:**

None

**COMPLETED IRP PHASE:**

PA/SI

**CURRENT IRP PHASE:**

RC

**FUTURE IRP PHASE:**

RC

## PROPOSED PLAN

NFA

# LHAAP-23
# BUILDING 707-STORAGE AREA FOR PCBS

## SITE DESCRIPTION

This site is not eligible for ER,A funds.

This site consisted of a 30 by 150 feet, wooden, storage building, with shingle siding and a concrete floor. Drums or transformers containing PCB-contaminated oil were stored in galvanized steel cattle watering troughs inside the building. The building is empty except for the used cattle troughs. This site was in operation from 1980 until March 1986.

## IRP STATUS

**RRSE RATING:** NE
**CONTAMINANTS OF CONCERN:**
PCBs
**MEDIA OF CONCERN:**
Soil
**COMPLETED IRP PHASE:**
PA
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

## PROPOSED PLAN

The building is being closed under Minor Project Funding.

# LHAAP-27, SWMU 27
# SOUTH TEST AREA/BOMB TEST AREA

## SITE DESCRIPTION

The South Test Area was constructed in 1954 for testing of photoflash bombs. During the late 1950's, illuminating signal devices were also demilitarized within pits at the site. Until the early 1980's, photoflash cartridges were demilitarized in the area. This site is no longer in operation.

In 1982, investigations included installation and sampling of two wells and three shallow soil samples. Metals, explosives, chloride and sulfate were detected above background levels in the soil samples. Metals, chloride and sulfate were detected above back-ground, but below action levels in the groundwater.

This site is included in the FFA. A No Action ROD was signed in January 1998.

## IRP STATUS

**RRSE RATING:** Low Risk (3A)
**CONTAMINANTS OF CONCERN:**
Ordnance Components
**MEDIA OF CONCERN:**
Soil, Groundwater
**COMPLETED IRP PHASE:**
PA/SI, RI/FS, ROD
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

## PROPOSED PLAN

This site requires NFA under the IRP.

# LHAAP-34
# BUILDING 701 - PCB STORAGE

## SITE DESCRIPTION

This site is not eligible for ER,A funds.

This site consists of a building 701 that was used for storage of PCB-contaminated material from 1980 to 1984. The contaminated material from the cleanup of transformer spills was stored in 30- and 55-gallon drums in the north end of the building. The storage area was a wooden framed building with shingles and a concrete floor, approximately 25 x 110 feet in dimension. The building is currently not used.

Soil samples found no contamination.

## IRP STATUS

**RRSE RATING:** NE
**CONTAMINANTS OF CONCERN:**
PCBs
**MEDIA OF CONCERN:**
Soil
**COMPLETED IRP PHASE:**
PA/SI
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

## PROPOSED PLAN

This site is being closed under Minor Project Funding.

# LHAAP-39
# 25X WASHOUT PAD

## SITE DESCRIPTION

This site is located within Burning Ground No. 3 which is under IRA and RI/FS phases.

## IRP STATUS

**RRSE RATING:** NE - combined with LHAAP-18, 24
**CONTAMINANTS OF CONCERN:**
POL, Solvents, Heavy Metals
**MEDIA OF CONCERN:**
Soil, Groundwater, Surface Water
**COMPLETED IRP PHASE:**
PA/SI
**CURRENT IRP PHASE:**
RI/FS, IRA (EP,R#94-021)
**FUTURE IRP PHASE:**
RD/RA (EP,R#92-011)

## PROPOSED PLAN

This site was combined with sites LHAAP-18 & 24, therfor it requires NFA under the IRP.

# LHAAP-51
# PHOTOGRAPHIC LAB -BUILDING 60B

## SITE DESCRIPTION

Building 60B was the location for processing of x-ray film. The building has a concrete floor without a floor drain. Spent developing waste was drummed and transferred to Building 31-W for disposal. Findings from the Army's preliminary assessment conducted in 1988 concluded that no further action is necessary.

## IRP STATUS

**RRSE RATING:** NE

**CONTAMINANTS OF CONCERN:**

Acid, Base

**MEDIA OF CONCERN:**

Soil

**COMPLETED IRP PHASE:**

PA

**CURRENT IRP PHASE:**

RC

**FUTURE IRP PHASE:**

RC

## PROPOSED PLAN

This site requires NFA under the IRP.

# LHAAP-52
# MAGAZINE WASHOUT AREA

## SITE DESCRIPTION

The Plant 1 Magazine Area contains 58 Richmond-type magazines and two aboveground magazines, all of which had been used for the storage of TNT. A standpipe near the intersection of Avenue E and 19th Street was used to wash out trucks used for the transport of TNT. Wastewater from this operation may have flowed onto the ground.

Findings from the Army's preliminary assessment and recent re-evaluation concluded that a site investigation should be performed. The site investigation was conducted in FY96. Findings from the Army's site investigation concluded that no further action is necessary. EPA and TNRCC concurred with this conclusion.

## IRP STATUS

**RRSE RATING:** Low Risk (3A)

**CONTAMINANTS OF CONCERN:**

Explosive Chemicals

**MEDIA OF CONCERN:**

Soil

**COMPLETED IRP PHASE:**

PA/SI

**CURRENT IRP PHASE:**

RC

**FUTURE IRP PHASE:**

RC

## PROPOSED PLAN

This site requires NFA under the IRP.

# LHAAP-53
# STATIC TEST AREA

## SITE DESCRIPTION

The site was formerly used for rocket motor, red phosphorus smoke wedge, and illuminating candle testing. This static test area also has a candle test area. This site is located next to the HMX Area and approximately one mile behind LHAAP-16. The last activity of this site was demilitarization by ignition of Pershing rocket motors performed on test stands in 1991.

Findings from the Army's preliminary assessment concluded that no further action is necessary.

## IRP STATUS

**RRSE RATING:** NE
**CONTAMINANTS OF CONCERN:**
Propellant, Explosive Chemicals
**MEDIA OF CONCERN:**
Groundwater, Soil
**COMPLETED IRP PHASE:**
PA
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

## PROPOSED PLAN

This site requires NFA under the IRP.

# LHAAP-54
# GROUND SIGNAL TEST AREA

## SITE DESCRIPTION

The Ground Signal Test Area is currently used for aerial and on-ground testing of pyrotechnic, illuminators, and signal devices manufactured at the facility. Since 1988, burnout of Pershing missiles has been conducted at this site in accordance with the Intermediate-Range Nuclear Forces Treaty. The site has been used intermittently since 1963 for various types of testing and destruction of many explosive devices.

In 1982, investigations included installation and sampling of two groundwater wells and three surface samples. Elevated levels of some metals were detected in the soil and groundwater. Elevated levels (above background, but below action levels) of chloride and sulfate were detected in the groundwater. This site is included in the FFA.

A No Action ROD was signed in January 1998.

## IRP STATUS

**RRSE RATING:** Low Risk (3A)
**CONTAMINANTS OF CONCERN:**
Propellant, Explosives
**MEDIA OF CONCERN:**
Groundwater, Soil
**COMPLETED IRP PHASE:**
ROD (no further action)
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

## PROPOSED PLAN

This site requires NFA under the IRP.

# LHAAP-55
# SEPTIC TANK

## SITE DESCRIPTION

This site contains ten septic tanks with outfalls to ditches, which serve outlying areas of the installation. Contents of septic tanks are pumped out and transferred to the sewage treatment plant as needed. The effluent is chlorinated prior to discharge. There is no history of industrial waste being put into these septic tanks.

Findings from the Army's preliminary assessment conducted in 1988 concluded that no further action is necessary. Regulators agreed.

## IRP STATUS

**RRSE RATING:** NE
**CONTAMINANTS OF CONCERN:**
Refuse without Hazardous Waste
**MEDIA OF CONCERN:**
Soil, Groundwater
**COMPLETED IRP PHASE:**
PA
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

## PROPOSED PLAN

No further action is planned in the IRP program.

# LHAAP-57
# RUBBLE BURIAL SITE

## SITE DESCRIPTION

This site is used for burial of inert materials that were cleared from property after acquisition.

Findings from the Army's preliminary assessment conducted in 1988 concluded that no further action is necessary. Regulators agreed.

## IRP STATUS

**RRSE RATING:** NE
**CONTAMINANTS OF CONCERN:**
Unknown
**MEDIA OF CONCERN:**
Soil
**COMPLETED IRP PHASE:**
PA
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

## PROPOSED PLAN

No further action is planned in the IRP program.

# LHAAP-61
## WATER TREATMENT PLANT EFFLUENT SETTLING POND

### SITE DESCRIPTION

This facility consists of two adjacent ponds each 0.1 hectare by 1.5 meters deep. The ponds are located just north of the shops area. Synthetic waterproof sheeting with soil cover constitutes the pond liner. The purpose of the facility is to settle out solids from the backwashing water treatment sand filters. Drainage is to Goose Prairie Bayou.

Findings from the Army's preliminary assessment concluded that no further action is necessary at this site.

### IRP STATUS

**RRSE RATING:** NE
**CONTAMINANTS OF CONCERN:**
Industrial Sludge
**MEDIA OF CONCERN:**
Groundwater, Soil
**COMPLETED IRP PHASE:**
PA
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

### PROPOSED PLAN

This site requires NFA under the IRP.

# LHAAP-63
## BURIAL PITS

### SITE DESCRIPTION

Pits are located along Bobby Jones Road approximately 30 meters north of Long Point Road and east of the explosive burning ground. These pits were used in the late 1950's for the detonation of Plant 3 reject materials of unknown composition.

### IRP STATUS

**RRSE RATING:** Low Risk (3A)
**CONTAMINANTS OF CONCERN:**
Explosives
**MEDIA OF CONCERN:**
Groundwater, Soil,
**COMPLETED IRP PHASE:**
PA/SI

### PROPOSED PLAN

This site requires NFA under the IRP.

# LHAAP-64
# TRANSFORMER STORAGE

## SITE DESCRIPTION

This site is used for storage of transformer oil. Approximately 20 out-of-service non-PCB transformers were stored on pallets outside, with no curb or other containment.

Findings from the Army's preliminary assessment conducted in 1988 concluded that no further action is necessary at this site.

## IRP STATUS

**RRSE RATING:** NE
**CONTAMINANTS OF CONCERN:**
POL, Polychlorinated Biphenyls
**MEDIA OF CONCERN:**
Soil, Groundwater
**COMPLETED IRP PHASE:**
PA
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

## PROPOSED PLAN

This site required NFA under the IRP.

# LHAAP-66
# TRANSFORMER AT BUILDING 401

## SITE DESCRIPTION

A transformer at Building 401 dripped oil continuously for approximately 1 year. The transformer did not contain any polychlorinated biphenyls.

Findings from the Army's preliminary assessment conducted in 1988 concluded that no action is necessary at this site.

## IRP STATUS

**RRSE RATING:** NE
**CONTAMINANTS OF CONCERN:**
Oil
**MEDIA OF CONCERN:**
Soil
**COMPLETED IRP PHASE:**
PA
**CURRENT IRP PHASE:**
RC
**FUTURE IRP PHASE:**
RC

## PROPOSED PLAN

This site required NFA under the IRP.

# LHAAP-69
# SERVICE STATION UST'S

## SITE DESCRIPTION

This site consisted of six leaking gasoline underground storage tanks (USTs) that were leak tested in 1989. The tanks were replaced in 1993, and the site has been remediated.

Since this site was still active at the time of the PA, it was not eligible for ER,A funds. All action was addressed under RCRA guildlines.

## IRP STATUS

**RRSE RATING:** NE

**CONTAMINANTS OF CONCERN:**

POL

**MEDIA OF CONCERN:**

Soil, Groundwater

**COMPLETED IRP PHASE:**

PA/SI, RI/FS, RD/RA

**CURRENT IRP PHASE:**

RC

**FUTURE IRP PHASE:**

RC

## PROPOSED PLAN

This site requires NFA under the IRP.

# LHAAP-70
# LOADING DOCK MAGAZINE AREA

## SITE DESCRIPTION

On December 18, 1952, improperly stacked 23-kilogram fiberboard boxes of TNT fell in magazine area 811-50 resulting in the spill of a large quantity of TNT and the injury of a workman. Findings from the Army's preliminary assessment conducted in 1988 concluded that no action is necessary at this site.

## IRP STATUS

**RRSE RATING:** NE

**CONTAMINANTS OF CONCERN:**

TNT, Explosive Chemicals

**MEDIA OF CONCERN:**

Soil, Groundwater

**COMPLETED IRP PHASE:**

PA

**CURRENT IRP PHASE:**

SI

**FUTURE IRP PHASE:**

RC

## PROPOSED PLAN

This site requires NFA under the IRP.

# LHAAP-71
# SPILL AT BUILDING 813

## SITE DESCRIPTION

An oil tank spill occurred at Building 813 in December 1978. The spill was contained before it reached Central Creek. Findings from the Army's preliminary assessment conducted in 1988 concluded that no action is necessary at this site.

## PROPOSED PLAN

This site requires NFA under the IRP.

## IRP STATUS

**RRSE RATING:** NE

**CONTAMINANTS OF CONCERN:**

POL

**MEDIA OF CONCERN:**

Soil, Groundwaterr

**COMPLETED IRP PHASE:**

SI

**CURRENT IRP PHASE:**

RC

**FUTURE IRP PHASE:**

RC

# SCHEDULE

## PAST MILESTONES

Various environmental investigations, studies, and reports have been conducted since 1980 to address possible contamination at LHAAP. LHAAP was progressing towards a RCRA permit when the installation was listed on the National Priority List (NPL). A FFA was signed in December 1991, and the RCRA permit was signed in February 1992. A summary of the current project milestones, based on funding availability, for the remedial activities is given below. Approved regulatory schedules which are part of the FFA are included on the following pages to summarize submittal dates for primary and secondary documents.

### 1986

IRA - Capping LHAAP-18
IRA - Soil Removal and Capping LHAAP-24

### 1988

| | |
|---|---|
| RFA Installation | APR |

### 1989

LTM - Groundwater Monitoring System installed at LHAAP 18 & 24

### 1992

| | |
|---|---|
| PA - Initiation at all sites | MAY |

### 1993

RI/FS - Initiated - Group 1 (LHAAP-1, 11, 27, 54)

### 1994

| | |
|---|---|
| IRA - 18 & 24 Design Initiated | OCT |

### 1995

| | |
|---|---|
| SI - Initiated - Group 5 (LHAAP-50, 52, 60, 63) | JAN |
| ROD - Early Interim Action, LHAAP 18 & 24 | MAR |
| ROD - Interim Action LHAAP 12 &16 | JUL |
| RI/FS - completed - Group 3 (LHAAP-13, 14) | JUL |

### 1996

| | |
|---|---|
| ROD - Group 3, NFA | FEB |

### 1997

| | |
|---|---|
| SI - Completed - Group 5 (LHAAP-50, 52, 60, 63) | JAN |
| RI/FS - Completed - Group 1 | JUL |
| ROD - Group 1 | OCT |

# SCHEDULE

**1998**

| | |
|---|---|
| IRA 12 & 16 Completed | DEC |

**1999**

| | |
|---|---|
| RI Completed - Site 16 | OCT |

**2000**

| | |
|---|---|
| RA Completed - Site 16 | MAR |

## PROJECTED MILESTONES

**2007**

RIP for all High Risk Sites

**2014**

RIP for all Medium Risk Sites

# SCHEDULE

## NO FURTHER ACTION SITES

The following sites currently require no further action under the ER,A program:

| | |
|---|---|
| LHAAP-01 | INERT BURNING GROUNDS - SWMU 1 |
| LHAAP-02 | VACUUM TRUCK OVERNIGHT PARKING LOT |
| LHAAP-03 | BUILDING 722- PAINT SHOP |
| LHAAP-04 | LHAAP PILOT WATEWATER TREATMENT PLANT |
| LHAAP-05 | POWER HOUSE BOILER POND |
| LHAAP-06 | BUILDING 54F SOLVENT |
| LHAAP-07 | BUILDING 50G DRUM PROCESSING |
| LHAAP-08 | SEWAGE TREATMENT PLANT |
| LHAAP-09 | BUILDING 31-W DRUM STORAGE |
| LHAAP-11 | SIS TNT BURIAL SITE AT AVE P & Q - SWMU 11 |
| LHAAP-13 | SUS TNT BET ACTIVE & OLD LANDFILL SWMU 13 |
| LHAAP-14 | AREA-54 BURIAL GROUND - SWMU 14 |
| LHAAP-15 | AREA 49W DRUM STORAGE |
| LHAAP-19 | CONSTRUCTION MATERIALS LANDFILL |
| LHAAP-23 | BUILDING 707-STORAGE AREA PCBS |
| LHAAP-27 | SOUTH TEST AREA/BOMB TEST AREA - SWMU 27 |
| LHAAP-34 | BUILDING 701 PCB STORAGE |
| LHAAP-36 | EXPLOSIVE WASTE PADS (27) |
| LHAAP-37 | QUALITY ASSURANCE LABORATORY BUILD. 29-A |
| LHAAP-39 | 25X WASHOUT PAD |
| LHAAP-51 | PHOTOGRAPHIC LABORATORY/BLDG #60B |
| LHAAP-52 | MAGAZINE AREA WASHOUT |
| LHAAP-53 | STATIC TEST AREA |
| LHAAP-54 | GRD SIGNAL TEST AREA |
| LHAAP-55 | SEPTIC TANK (10) |
| LHAAP-57 | RUBBLE BURIAL SITE |
| LHAAP-58 | MAINTENANCE COMPLEX |
| LHAAP-61 | POTABLE WTP SEDIMENT POND |
| LHAAP-63 | BURIAL PITS |
| LHAAP-64 | TRANSFORMER STORAGE |
| LHAAP-66 | TRANSFORMER AT BLD 401 |
| LHAAP-67 | ABOVE GROUND STORAGE TANK |
| LHAAP-68 | MOBILE STORAGE TANK PARKING AREA |
| LHAAP-69 | SERVICE STATION UST'S |
| LHAAP-70 | LOADING DOCK-MAGAZINE AREA |
| LHAAP-71 | OIL SPILL, BUILDING 813 |

# Longhorn AAP IRP Schedule

(Based on current funding constraints)

Current Phase  Future Phase

| DSERTS # | PHASE | FY01 | FY02 | FY03 | FY04 | FY05 | FY06 | FY07+ |
|---|---|---|---|---|---|---|---|---|
| LHAAP-12 | RI/FS | | | | | | | |
| | LTO | | | | | | | |
| | LTM | | | | | | | |
| LHAAP-16 | RI/FS | | | | | | | |
| | IRA | | | | | | | |
| | RD | | | | | | | |
| | RA | | | | | | | |
| | LTO | | | | | | | |
| | LTM | | | | | | | |
| LHAAP-17 | RI/FS | | | | | | | |
| | RD | | | | | | | |
| | RA | | | | | | | |
| | LTM | | | | | | | |
| LHAAP-18 | RI/FS | | | | | | | |
| | IRA | | | | | | | |
| | RD | | | | | | | |
| | RA | | | | | | | |
| | LTO | | | | | | | |
| LHAAP-24 | RI/FS | | | | | | | |
| | | | | | | | | |
| | RD | | | | | | | |
| | RA | | | | | | | |
| | LTO | | | | | | | |
| LHAAP-29 | RI/FS | | | | | | | |
| | RD | | | | | | | |
| | RA | | | | | | | |
| | LTM | | | | | | | |
| LHAAP-32 | RI/FS | | | | | | | |
| | LTM | | | | | | | |
| LHAAP-35 | RI/FS | | | | | | | |
| | RD | | | | | | | |
| | RA | | | | | | | |
| | LTM | | | | | | | |
| LHAAP-45 | RI/FS | | | | | | | |
| | RD/RA | | | | | | | |
| | LTM | | | | | | | |
| LHAAP-50 | RD | | | | | | | |
| | RA | | | | | | | |
| | LTM | | | | | | | |
| LHAAP-60 | RD | | | | | | | |
| | RA | | | | | | | |
| | LTM | | | | | | | |

## DEFENSE SITE ENVIRONMENTAL RESTORATION TRACKING SYSTEM

**Site, 4. Installation Phase Summary Report**

**Installation: LONGHORN AAP** 1/4/01

**Programs:** BRAC I, BRAC II, BRAC III, BRAC IV, IRP

**Subprograms:** Compliance, Restoration, UXO

**Installation count for Programs:** 1

**NPL Options:** Delisted, No, Proposed, Yes

**Installations count for Programs and NPL:** 1

**Site count for Programs and NPL:** 47

**Phase / Status / Sites**

**PA**

| C | U | F | RC |
|---|---|---|---|
| 47 | 0 | 0 | 18 |

**SI**

| C | U | F | RC |
|---|---|---|---|
| 28 | 0 | 0 | 12 |

**RI / FS**

| C | U | F | RC |
|---|---|---|---|
| 6 | 10 | 0 | 6 |

**RD**

| C | U | F |
|---|---|---|
| 0 | 0 | 8 |

**RA(C)**

| C | U | F | RC |
|---|---|---|---|
| 1 | 0 | 8 | 1 |

**RA(O)**

| C | U | F | RC |
|---|---|---|---|
| 0 | 0 | 3 | 0 |

**LTM**

| C | U | F | N |
|---|---|---|---|
| 0 | 0 | 7 | 40 |

**Remedy / Status / Sites (Actions)**

**IRA**

| C | U | F |
|---|---|---|
| 0 ( 0 ) | 4 ( 4 ) | 0 ( 0 ) |

**FRA**

| C | U | F |
|---|---|---|
| 0 ( 0 ) | 0 ( 0 ) | 8 ( 9 ) |

**RIP Total:** 0

**RC Total:** 37

**Reporting Period End Date:** 09/30/2000

**DEFENSE SITE ENVIRONMENTAL RESTORATION TRACKING SYSTEM**

**Site, 9. RISK INSTALLATION ACTION PLAN REPORT** 01/04/2001

**Installation:** LONGHORN AAP
**Major Command:** AMC

**SubCommand:** OSC
**Program Options:** IRP, BRAC I, BRAC II, BRAC III, BRAC IV

**Subprogram Options:** Compliance, Restoration, UXO

| Site | RRSE | Media Evaluated | Phase (s) Completed | Phase (s) Underway | Phase (s) Future | #IRA Completed | #IRA Underway | #IRA Future | LTM Status | RIP Date | RC Date |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LHAAP-001 | 3A | GW | PA | | | | | | N | | 199801 |
| | | SL | RI | | | | | | | | |
| | | | SI | | | | | | | | |
| LHAAP-002 | NE | | PA | | | | | | N | | 198705 |
| LHAAP-003 | NE | | PA | | | | | | N | | 198705 |
| LHAAP-004 | NE | | PA | | | | | | N | | 198705 |
| LHAAP-005 | NE | | PA | | | | | | N | | 198705 |
| LHAAP-006 | NE | | PA | | | | | | N | | 198705 |
| LHAAP-007 | NE | | PA | | | | | | N | | 198705 |
| LHAAP-008 | NE | | PA | | | | | | N | | 198705 |
| LHAAP-009 | NE | | PA | | | | | | N | | 198705 |
| LHAAP-011 | 3A | SL | PA | | | | | | N | | 199801 |
| | | | RI | | | | | | | | |
| | | | SI | | | | | | | | |
| LHAAP-012 | 1A | GW | PA | RI | | | 1 | | F | | 200206 |
| | | SL | SI | | | | | | | | |
| | | WEF | | | | | | | | | |
| LHAAP-013 | 3A | GW | PA | | | | | | N | | 199512 |
| | | SL | RI | | | | | | | | |
| | | | SI | | | | | | | | |
| LHAAP-014 | 3A | GW | PA | | | | | | N | | 199512 |
| | | SL | RI | | | | | | | | |
| | | | SI | | | | | | | | |
| LHAAP-015 | NE | | PA | | | | | | N | | 198705 |
| LHAAP-016 | 1A | GW | PA | RI | RAC | | 1 | | N | 200609 | 203603 |
| | | SL | SI | | RAO | | | | | | |
| | | WEF | | | RD | | | | | | |

| Site | RRSE | Media Evaluated | Phase (s) Completed | Phase (s) Underway | Phase (s) Future | #IRA Completed | #IRA Underway | #IRA Future | LTM Status | RIP Date | RC Date |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LHAAP-017 | 1A | GW | PA | RI | RAC | | | | F | | 201009 |
| | | SL | SI | | RD | | | | | | |
| | | WEF | | | | | | | | | |
| LHAAP-018 | 1A | GW | PA | RI | RAC | | 1 | | N | 200610 | 203609 |
| | | WEF | SI | | RAO | | | | | | |
| | | | | | RD | | | | | | |
| LHAAP-019 | NE | | PA | | | | | | N | | 198705 |
| | | | SI | | | | | | | | |
| LHAAP-023 | NE | | PA | | | | | | N | | 198705 |
| | | | SI | | | | | | | | |
| LHAAP-024 | 1A | GW | PA | RI | RAC | | 1 | | N | 200610 | 203609 |
| | | WEF | SI | | RAO | | | | | | |
| | | | | | RD | | | | | | |
| LHAAP-027 | 3A | SL | PA | | | | | | N | | 199801 |
| | | | RI | | | | | | | | |
| | | | SI | | | | | | | | |
| LHAAP-029 | 1A | GW | PA | RI | RAC | | | | F | | 200708 |
| | | | SI | | RD | | | | | | |
| LHAAP-032 | 2A | GW | PA | RI | | | | | F | | 200112 |
| | | SL | SI | | | | | | | | |
| LHAAP-034 | NE | | PA | | | | | | N | | 198705 |
| | | | SI | | | | | | | | |
| LHAAP-035 | 1A | GW | PA | RI | RAC | | | | F | | 200509 |
| | | SL | SI | | RD | | | | | | |
| LHAAP-036 | NE | | PA | | | | | | N | | 198705 |
| | | | SI | | | | | | | | |
| LHAAP-037 | NE | | PA | | | | | | N | | 199008 |
| LHAAP-039 | NE | | PA | | | | | | N | | 199008 |
| LHAAP-045 | NE | | PA | | | | | | N | | 199008 |
| LHAAP-050 | 1A | GW | PA | RI | RAC | | | | F | | 200808 |
| | | SEF | SI | | RD | | | | | | |
| | | SL | | | | | | | | | |
| LHAAP-051 | NE | | PA | | | | | | N | | 199008 |
| LHAAP-052 | 3A | WH | PA | | | | | | N | | 199805 |
| | | | SI | | | | | | | | |
| LHAAP-053 | NE | | PA | | | | | | N | | 199008 |
| LHAAP-054 | 3A | SEF | PA | | | | | | N | | 199801 |
| | | SH | RI | | | | | | | | |
| | | SL | SI | | | | | | | | |

| Site | RRSE | Media Evaluated | Phase (s) Completed | Phase (s) Underway | Phase (s) Future | #IRA Completed | #IRA Underway | #IRA Future | LTM Status | RIP Date | RC Date |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LHAAP-055 | NE | | PA | | | | | | N | | 199008 |
| LHAAP-057 | NE | | PA | | | | | | N | | 199008 |
| LHAAP-058 | NE | | PA | | | | | | N | | 199506 |
| | | | SI | | | | | | | | |
| LHAAP-060 | 2A | SL | PA | RI | RAC | | | | F | | 200808 |
| | | | SI | | RD | | | | | | |
| LHAAP-061 | NE | | PA | | | | | | N | | 199008 |
| LHAAP-063 | 3A | SL | PA | | | | | | N | | 199805 |
| | | | SI | | | | | | | | |
| LHAAP-064 | NE | | PA | | | | | | N | | 199506 |
| | | | SI | | | | | | | | |
| LHAAP-066 | NE | | PA | | | | | | N | | 199506 |
| | | | SI | | | | | | | | |
| LHAAP-067 | NE | | PA | | | | | | N | | 199906 |
| | | | SI | | | | | | | | |
| LHAAP-068 | NE | | PA | | | | | | N | | 199008 |
| LHAAP-069 | NE | | PA | | | | | | N | | 199306 |
| | | | RAC | | | | | | | | |
| LHAAP-070 | NE | | PA | | | | | | N | | 199506 |
| | | | SI | | | | | | | | |
| LHAAP-071 | NE | | PA | | | | | | N | | 199506 |
| | | | SI | | | | | | | | |

RRSE - Relative Risk Site Evaluation; Risk Category - 1=High, 2=Medium, 3=Low;

Legal Agreement - A = with agreement, B = without agreement; C = Complete, U = Underway, F = Future, N = Not Applicable

**Reporting Period End Date:** 09/30/2000

# REM/IRA/RA ASSESSMENT

## PAST REM/IRA/RA

- LHAAP 18 & 24 - Burning Ground/Washout Ponds & Former Unlined Evaporation Pond Long Term Monitoring (LTM) System installed in 1989.

- LHAAP 18 & 24 - Burning Ground/Washout Ponds & Former Unlined Evaporation Pond Interim Remedial Action, Waste Removal and Capping accomplished in 1986.

- LHAAP 18 & 24 - Burning Ground/Washout Ponds & Former Unlined Evaporation Pond LTM System installed in 1989. Cost $90.0K.

- LHAAP 18 & 24 - Burning Ground/ Washout Ponds & former Unlined Evaporation Pond Installed Groundwater Treatment System for organic contamination and excavated soil. Construction began March 1995. Cost FY 93 through FY 00 $ 27M.

- LHAAP 12 & 16 – Active and Old Landfill
  Landfills were capped, treated soil from Inert Burning Ground (LHAAP-001) was placed on landfills prior to cap construction. Caps are to mitigate groundwater contamination from landfill leachate. Cost FY 95 through FY 98 is $5.5M.

- LHAAP 035 - Sumps (145) Various
  Waste sumps and their contents were sampled, removed as necessary, and disposed in accordance with regulatory standards. Cost FY95 through FY97 is $2.4M.

## CURRENT REM/IRA/RA

- LHAAP 12- IRA Landfill Cap

- LHAAP 16- RD/RA for groundwater for this site will begin in FY01. Perchlorate sampling for this site is funded under LHAAP-35. Cap maintenance will continue.

- LHAAP 18 & 24- IRA Groundwater Treatment Plant (GWTP) with approximately 5,000 feet of interception collection trench has been installed to control migration of contaminated groundwater.

# REM/IRA/RA ASSESSMENT

## FUTURE REM/IRA/RA

- LHAAP -60 With current information, RD, RA, LTM is expected.
- LHAAP -50With current information, RD, RA, LTM is expected.
- LHAAP -45With current information, RD, RA, LTM is expected.
- LHAAP -35 RD, RA and LTO will be conducted for groundwater contamination in the Plant 3 Area and maintenance areas. Modifications and piping to the GWTP (LHAAP-18/24) may be needed to treat the contaminants from this site.
- LHAAP -29 & 32 A RD/RA of removal of Hot Spots and pipelines, is expected, followed by LTM.
- LHAAP -18 & 24 With current information, a RD/RA for groundwater is expected.
- LHAAP -17 Hot spot removal may be needed.

# PRIOR YEAR FUNDING

## FY76-90

| | |
|---|---|
| RI/FS | $ 687.0K |

## FY91

| | |
|---|---|
| RI | $ 1,266.0K |

## FY92

| | |
|---|---|
| RI | $ 5,855.0K |

## FY93

| | |
|---|---|
| RI/FS | $ 2,332.0K |

## FY94

| | |
|---|---|
| RI/FS | $ 5,392.0K |
| RD- LANDFILL CAPS | $ 100.0K |
| RD - BURNING GROUNDS | $ 196.0K |
| IRA - BURNING GROUNDS | $ 16,866.0K |
| | ***$ 22,554.0K*** |

## FY95

| | |
|---|---|
| RI/FS | $ 2,797.0K |
| RD | $ 143.0K |
| IRA | $ 7,733.0K |
| | ***$ 10,673.0K*** |

## FY96

| | |
|---|---|
| PA.SI | $ 40.0K |
| RI/FS | $ 3,965.0K |
| IRA | $ 1,705.0K |
| | ***$ 5,710.0K*** |

## FY97

| | |
|---|---|
| RI/FS | $ 2,397.0K |
| RA/IRA | $ 3,995.0K |
| | ***$ 6,392.0K*** |

## FY98

| | |
|---|---|
| RI/FS | $ 4,434.0K |
| RA/IRA | $ 2,107.0K |
| | ***$ 6,541.0K*** |

## FY99

| | |
|---|---|
| RI/FS | $ 985.7K |
| RA/IRA | $ 1,330.0K |
| | ***$ 2,315.7K*** |

# FUNDING

## FY00

| | | |
|---|---|---|
| RI/FS | $ 2637K | |
| RA/IRA | $ 0 K | |
| LTM/LTO6+15+900 | $ 921K | |
| | ***$ 3,558 K*** | |
| **Total Prior Year ER,A Funds** | | **$ 67,883.7K** |
| **FY 2001 Funds** | | **$ 5,894.0 K** |
| **Expected Future Year Requirements (FY01 on)** | | **$ 44,598.0 K** |
| **Total Funding from Inception to Completion** | | **$ 112,481.7 K** |

# *LONGHORN AAP FY01 CONSTRAINED CTC*

| DSERTS # | SITE TITLE | PHASE | FY01 | FY02 | FY03 | FY04 | FY05 | FY06 | FY 07+ | PHASE TOTALS | SITE TOTAL | DESCRIPTION OF WORK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LHAAP-12 | Landfill 12 | RI/FS | 250 | 26 | | | | | | 276 | | Phase III RI/FS report & quarterly sampling (96K* & 50K for S&R), closure documents (226K), ** |
| | | IRA | 66 | 90 | | | | | | 156 | | |
| | | LTM | | | 36 | 36 | 36 | 36 | 306 | 450 | 882 | ~12 wells, starting with quarterly, reduce frequency |
| LHAAP-16 | Landfill 16 | RI/FS | 130 | | | | | | | 130 | | Phase III RI/FS report & quarterly sampling (300K & 50 for S&R), 80K quarterly sampling of Bayou, repair wells (52K), ** |
| | | IRA | 25 | 110 | 95 | 95 | 55 | | | 380 | | |
| | | RD | 300 | | | | | | | 300 | | Possible Groundwater Treatment, such as in-situ bio & reactive wall |
| | | RA | 3362 | | | | | | | 3362 | | Possible Groundwater Treatment, such as in-situ bio & reactive wall |
| | | LTO | | | | | | 155 | 600 | 755 | 4927 | cap maintenance, with 5 year reviews (10K), possible extra maintenance (5K) |
| LHAAP-17 | No. 2 Flash Area/ Burning Ground | RI/FS | 25 | | | | | | | 25 | | Phase III RI/FS report & quarterly sampling (150K* & 25K for S&R) ** |
| | | RD | | | | | | | 10 | 10 | | |
| | | RA | | | | | | | 100 | 100 | | Hot Spot removal ~100cy |
| | | LTM | | | | | | | 507 | 507 | 642 | ~15 wells, starting with quarterly, reduce frequency, 5 year reviews (10K), possible extra maintenance |
| LHAAP-18 | Burning Ground No 3/Unlined Evaporation Pond | RI/FS | 10 | | | | | | | 10 | | Phase III RI/FS report & quarterly sampling (150K* & 25K for S&R) ** |
| | | IRA | 400 | 400 | 400 | 400 | 400 | 400 | | 2400 | | |
| | | RD | | | | | 250 | | | 250 | | Soil/ Groundwater treatment at the UEP |
| | | RA | | | | | 200 | 2724 | | 2924 | | Soil/ Groundwater treatment at the UEP such as slurry wall |
| | | LTO | | | | | | | 2162 | 2162 | 7746 | GWTP Operation cost including long term monitoring, if this plant is treating water from other sites then the out year cost may increase |
| LHAAP-24 | Former TNT Production Area | RI/FS | 15 | | | | | | | 15 | | Phase III RI/FS report & quarterly sampling (50K* & 10K for S&R) ** |
| | | IRA | 400 | 400 | 400 | 1092 | 400 | 400 | | 3092 | | |
| | | RD | | | | | 250 | | | 250 | | Removal of pipelines, sediment and Hot Spots |
| | | RA | | | | | 176 | 2000 | | 2176 | | Removal of pipelines, sediment and Hot Spots |
| | | LTO | | | | | | | 2089 | 2089 | 7622 | ~39 wells, starting with quarterly, reduce frequency, 5 year reviews (10K), possible extra maintenance |
| LHAAP-29 | Former TNT Production Area | RI/FS | 10 | 30 | 30 | 380 | 30 | | | 480 | | Phase III RI/FS report & quarterly sampling (50K* & 10K for S&R) ** |
| | | RD | | | | | | 296 | 174 | 470 | | Removal of pipelines, sediment and Hot Spots |
| | | RA | | | | | | | 4500 | 4500 | | Removal of pipelines, sediment and Hot Spots |
| | | LTM | | | | | | | 431 | 431 | 5881 | ~39 wells, starting with quarterly, reduce frequency, 5 year reviews (10K), possible extra maintenance |
| LHAAP-32 | TNT Wastewater Treatment Plant | RI/FS | | | | | | | | | | Phase III RI/FS completion |
| | | LTM | | | 15 | 15 | 15 | 15 | 15 | 75 | 75 | LTM after pipeline is removed ~4 wells |
| LHAAP-35 | Process Wastewater Sumps - Various | RI/FS | 901 | | | | | | | 901 | | Sampling of Goose Prairie (350K), finalize RI/FS for LHAAP-35, 50, 60 (400K), Perchlorate sampling and treatability evaluation for all of LHAAP (see appendix A) (1.8M), follow on RI & S&R (700K) |
| | | RD | | 300 | 400 | | | | | 700 | | Plume treatment at Plant 3 & maintenance areas (800K) ~removal of source material, GW extraction (300K), in-situ treatment (100K), |
| | | RA | | 1470 | 5069 | 2877 | 4199 | | | 13615 | | Plume treatment at Plant 3 & maintenance areas (8M) ~removal of source material, GW extraction (3M), in-situ treatment (1M), |
| | | LTM | | | | | | 120 | 488 | 608 | 15824 | Quarterly sampling at Goose Prairie (start at 80K), LTM (start at 165K), 5 year reviews (10K) |
| LHAAP-45 | | RI/FS | | | | | | | | | | site opened - funding needed |
| LHAAP-50 | Former Waste Disposal Facility | RD | | | | | | | 50 | 50 | | Soil removal ** |
| | | RA | | | | | | | 500 | 500 | | Soil removal |
| | | LTM | | | | | | | 174 | 174 | 724 | LTM |
| LHAAP-60 | Former Storage Building 411, 411A & 714 | RD | | | | | | | 34 | 34 | | Soil removal |
| | | RA | | | | | | | 171 | 171 | | Soil removal |
| | | LTM | | | | | | | 70 | 70 | 275 | |
| | FISCAL YEAR TOTALS IN THOUSANDS OF DOLLARS | | $ 5,894 | $ 2,826 | $ 6,445 | $ 4,895 | $ 6,011 | $ 6,146 | $15,028 | $ 44,598 | $ 44,598 | |
| FY07 | LONGHORN AAP | ALL | 5,894 | 2,826 | 6,445 | 4,895 | 6,011 | 6,146 | 12500 | 44,717 | | |
| | | Difference | | | | | | | | $119 | | |

# COMMUNITY INVOLVEMENT

While the Army leads the IRP at LHAAP, a close working relationship with the regulatory community has been developed. The local community has been involved through the Technical Review Committee (TRC) process. The TRC has quarterly meetings at LHAAP that are regularly attended by the public. Executive Summaries are provided monthly to the LHAAP environmental team members and at each TRC meeting in an effort to keep the public informed.

A Technical Assistance Grant has been awarded to the Uncertain Audubon Society, a local group, and they have sought the assistance of Subra and Associates, Inc. under the grant. Wilma Subra has become a regular attendee of the Monthly Managers' Meetings in which the Army, EPA, and TNRCC discuss issues and make decisions regarding the environmental activities at LHAAP. Training and concensus process conducted by the Army (IAP Workshop, Independent Technical Review, Exit Stategy Planning, Data Quality Objectives on Perchlorate) have been attended by Ms. Subra. Ms. Subra also receives copies of all documents sent to EPA and TNRCC.

Public meetings were held periodically to advise the community on various issues on the facility. These will continue as needed.

Formation of a Restoration Advisory Board (RAB) was attempted in April 1996 and 1998. The community involement in the Technical Review Committee process was sufficient for community needs.

Technical Assisstance for Public Participation application was originally submitted to higher headquarters May 1998. A contract was awarded to B. Jones Environmental, Inc. for FY 00. Application has been submitted for FY01 to continue support from B. Jones Environmental Inc.

A Memorandum of Agreement between the Army and USFWS was signed on 21 October 2000 designating an overlay consisting of approximately 7,00 acres for establishment of a wildlife refuge at LHAAP. A Transition Management Group (TMG) is formed to facilitate transition of LHAAP to USFWS. The TMG consists of the Army, USFWS, and Caddo Lake Institute.

# DEFENSE SITE ENVIRONMENTAL RESTORATION TRACKING SYSTEM

**Installation, 7. RAB REPORT** 01/04/2001

**Command:** AMC **SubCommand:** OSC
**Installation:** LONGHORN AAP

**RAB Established Date:** **Reason RAB Not Establish:** The community has expressed no sufficient,
**RAB Adjourned Date:** **Reason RAB Adjourned:** sustained interest in a RAB.

**TRC Date:** 199203

**RAB Community Members:** **Total RAB Community Members:**

**RAB Government Members:** **Total RAB Government Members:**

**RAB Activities:**

**RAB Advice**

**TAPP Application Approval Date:** 199909
**TAPP Project Title:** Grnd/surf water migration 09/30/2000
**TAPP Project Description:** Interpret Technical Documents

**Purchase Order**

| Award Number | Award Date | Completion Date |
|---|---|---|
| 1 | 199910 | 200009 |