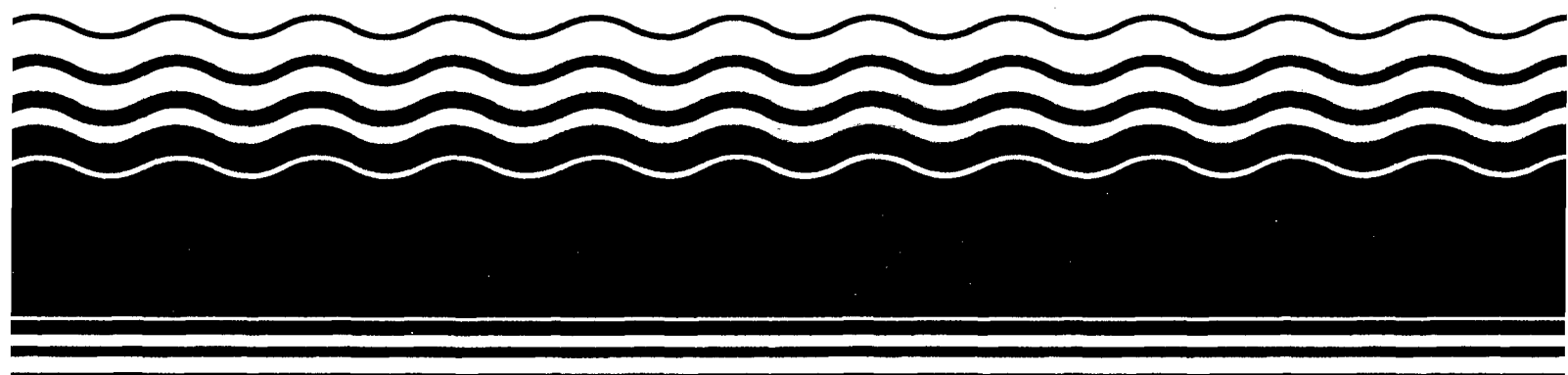


**PB96-964202
EPA/ROD/R06-96/100
March 1997**

**EPA Superfund
Record of Decision:**

**Longhorn Army Ammunition Plant,
(No Further Action at LHAAP 13 and 14)
Karnack, TX
2/14/1996**



RECORD OF DECISION

FOR

NO FURTHER ACTION

AT

LHAAP 13 AND 14

**LONGHORN
ARMY AMMUNITION PLANT**

KARNACK, TEXAS

FEBRUARY 1996

**LHAAP 13 AND 14
LONGHORN ARMY AMMUNITION PLANT
RECORD OF DECISION**

NO FURTHER ACTION

FEBRUARY 1996

A. SITE NAME AND LOCATION

LHAAP 13 and 14, Longhorn Army Ammunition Plant
Karnack, Texas

B. STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected No Further Action alternative for LHAAP 13 and 14, Longhorn Army Ammunition Plant (LHAAP), in Karnack, Texas. This selection is made in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the administrative record for this site.

The State of Texas concurs with the selected remedy. A copy of the concurrence letter is attached.

C. ASSESSMENT OF THE SITES

There are no actual or threatened releases of hazardous substances as a result of suspected previous activities from these sites that may present an imminent and substantial endangerment to public health, welfare, or the environment.

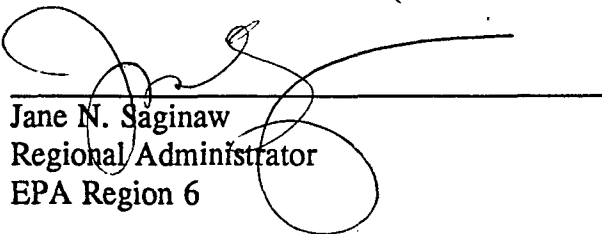
D. DESCRIPTION OF THE SELECTED REMEDY

The Record of Decision for the sites addresses No Further Action.

E. STATUTORY DETERMINATION

Based on previous studies and surveys, no remedial action is warranted to protect human health and the environment at LHAAP 13 and LHAAP 14. This decision complies with Federal and State applicable or relevant and appropriate requirements and is cost effective.

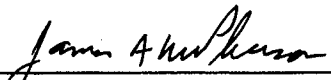
There will be no further action at LHAAP 13 and LHAAP 14.



Jane N. Saginaw
Regional Administrator
EPA Region 6

2/14/96
Date

Signature sheet for the foregoing LHAAP 13 and 14 No Further Action Record of Decision between the Department of the Army and the U.S. Environmental Protection Agency, with concurrence by the Texas Natural Resource Conservation Commission.



Mr. James A. McPherson
Commander's Representative,
Louisiana and Longhorn
Army Ammunition Plants

11 Dec 95
Date



Darrell Chinn
Captain, U.S. Army
Executive Officer
Longhorn Army Ammunition Plant

11 Dec 95
Date

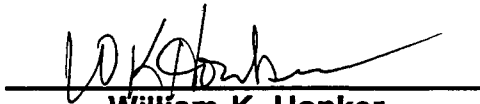
**Record of Decision
No Further Action
Sites LHAAP 13 and 14
Longhorn Army Ammunition Plant**



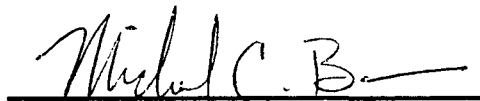
**Lisa Marie Price
ROD Peer Review**



**Gustavo Chavarria
Superfund Texas Section Chief (6SF-AT)**



**William K. Honker
AK/OK/TX Superfund Branch Chief (6FS-A)**



**Michael C. Barra
Litigation and Enforcement Branch (6SF-DL)**



**Mark Peycke
Litigation and Enforcement Branch (6SF-DL)**



**Myron O. Knudson
Superfund Division Director (6SF)**

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DECISION SUMMARY

A. Location and Description

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 (Figure 1). The installation occupies 8,493 acres between State Highway 43 and the western shore of Caddo Lake and is accessed by State Highways 43 and 134. LHAAP 13 and LHAAP 14 are located in the south-central portion of LHAAP (Figure 2).

LHAAP 13 encompasses approximately $\frac{1}{2}$ acre and is located in a clearing 130 feet north of Avenue Q. The site is an open area of grass bounded by heavy timber. LHAAP 14 is approximately 150 feet by 115 feet and is located approximately 330 feet southwest of the Retail Sales Area and 350 feet north-northwest of Building 49-W. The area contains a small 25 feet by 30 feet asphalt parking lot serving four or five vehicles. LHAAP 14 is bounded on the north by Avenue Q, on the east by the access road to Building 49-W, and on the south and west by a mowed grass strip separating it from heavy forest.

LHAAP is situated on gently rolling land with an average slope of 3 percent towards the northeast. Most of the terrain slopes 3 percent or less, but slopes as steep as 12 percent are common in the western and northwestern portions of the installation and along the Harrison Bayou floodplain. Elevations on LHAAP vary from 335 to 170 feet above mean sea level (msl).

LHAAP 13 is situated on a topographic high between the Harrison Bayou and the Central Creek drainage basins. The site is relatively flat with no ditches or surface drainage channels in the immediate vicinity to divert runoff. A good stand of vegetation surrounding the site inhibits any erosion of surface soils at the site.

LHAAP 14 topography is essentially flat with little or no surface drainage. Limited drainage existing at the site is toward the east in a ditch running along Avenue Q and eventually discharging into Harrison Bayou.

LHAAP is located in a region commonly called the Pineywoods, a deep inland extension of the Gulf Coastal Plain that extends into Texas, Louisiana, Arkansas, and Oklahoma. The area is characterized by mixed pine hardwood forests that cover gently rolling to hilly terrain. Mild temperatures and ample rainfall in east Texas provide excellent conditions to support an abundant and diverse plant community. This, in turn, provides a number of niches for a rich faunal

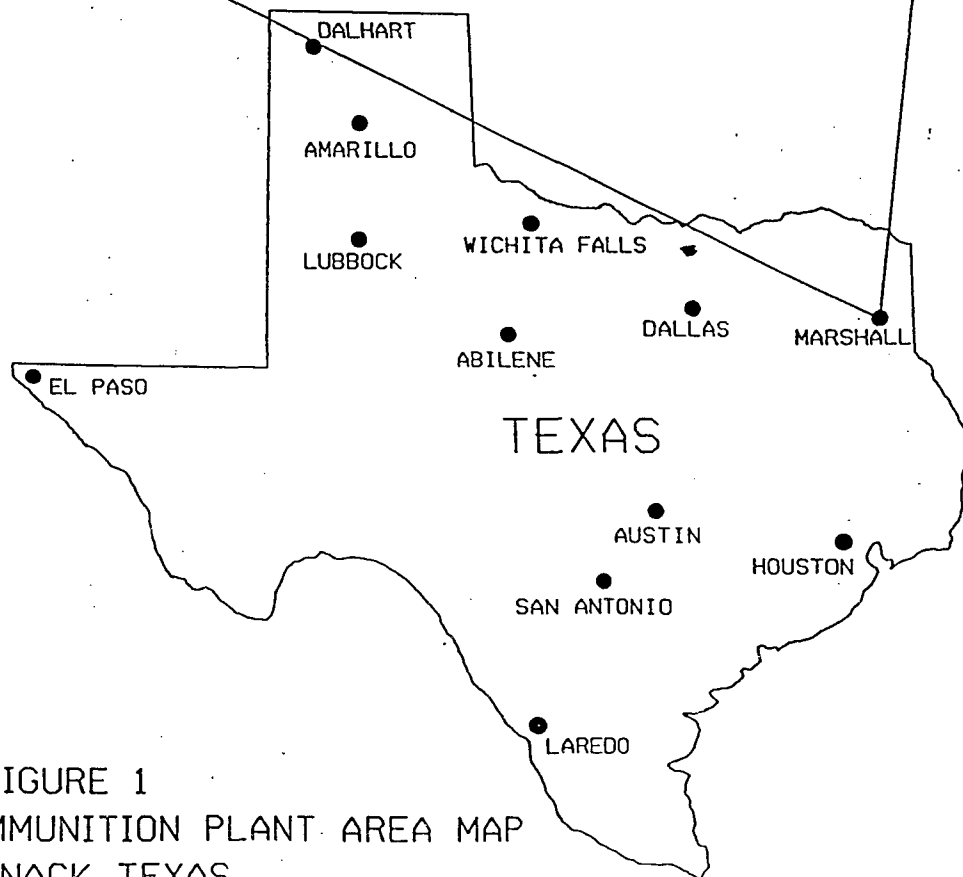
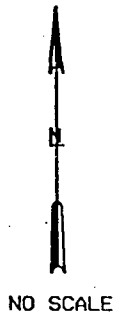
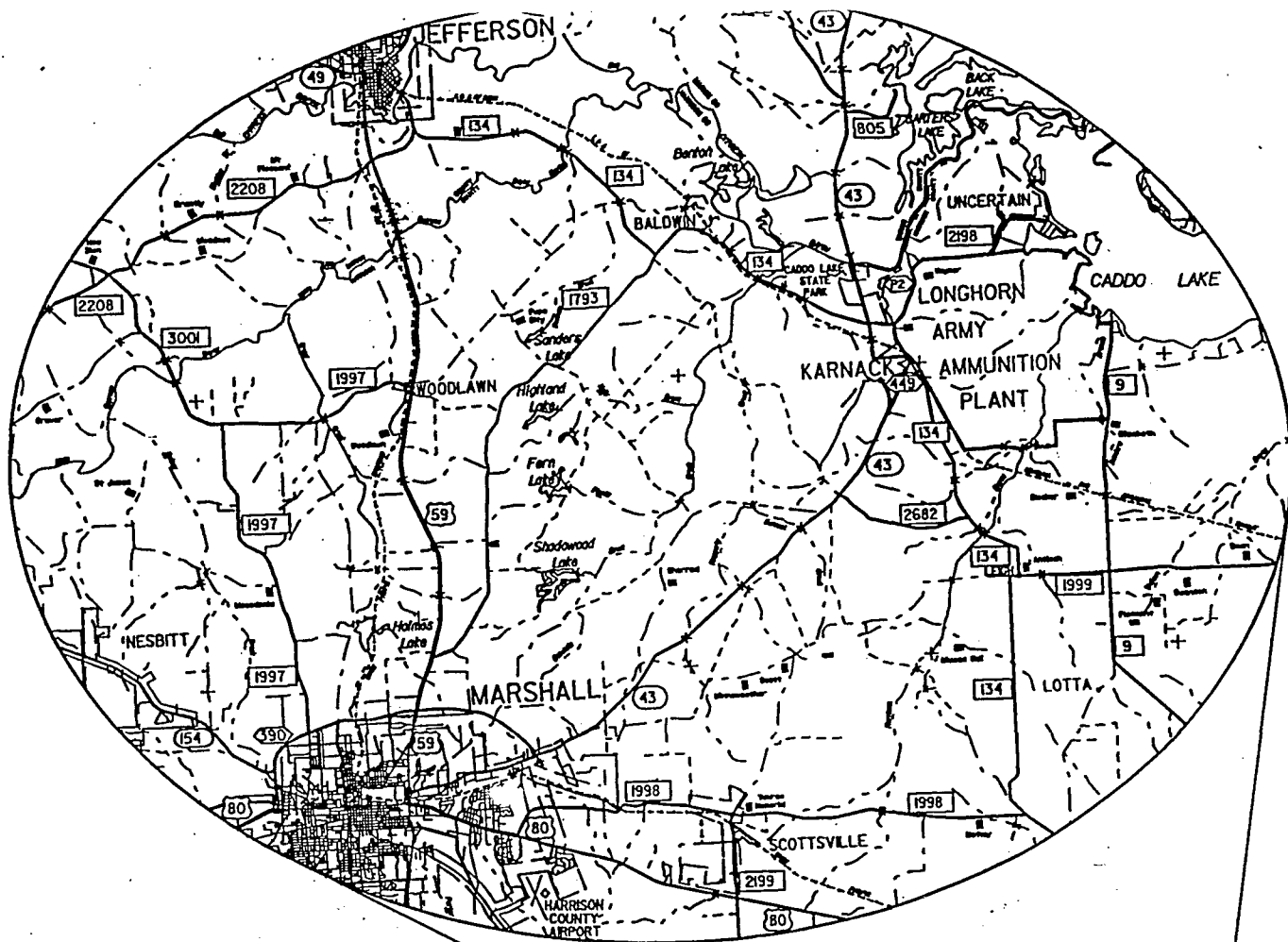


FIGURE 1
 LONGHORN ARMY AMMUNITION PLANT AREA MAP
 KARNACK, TEXAS

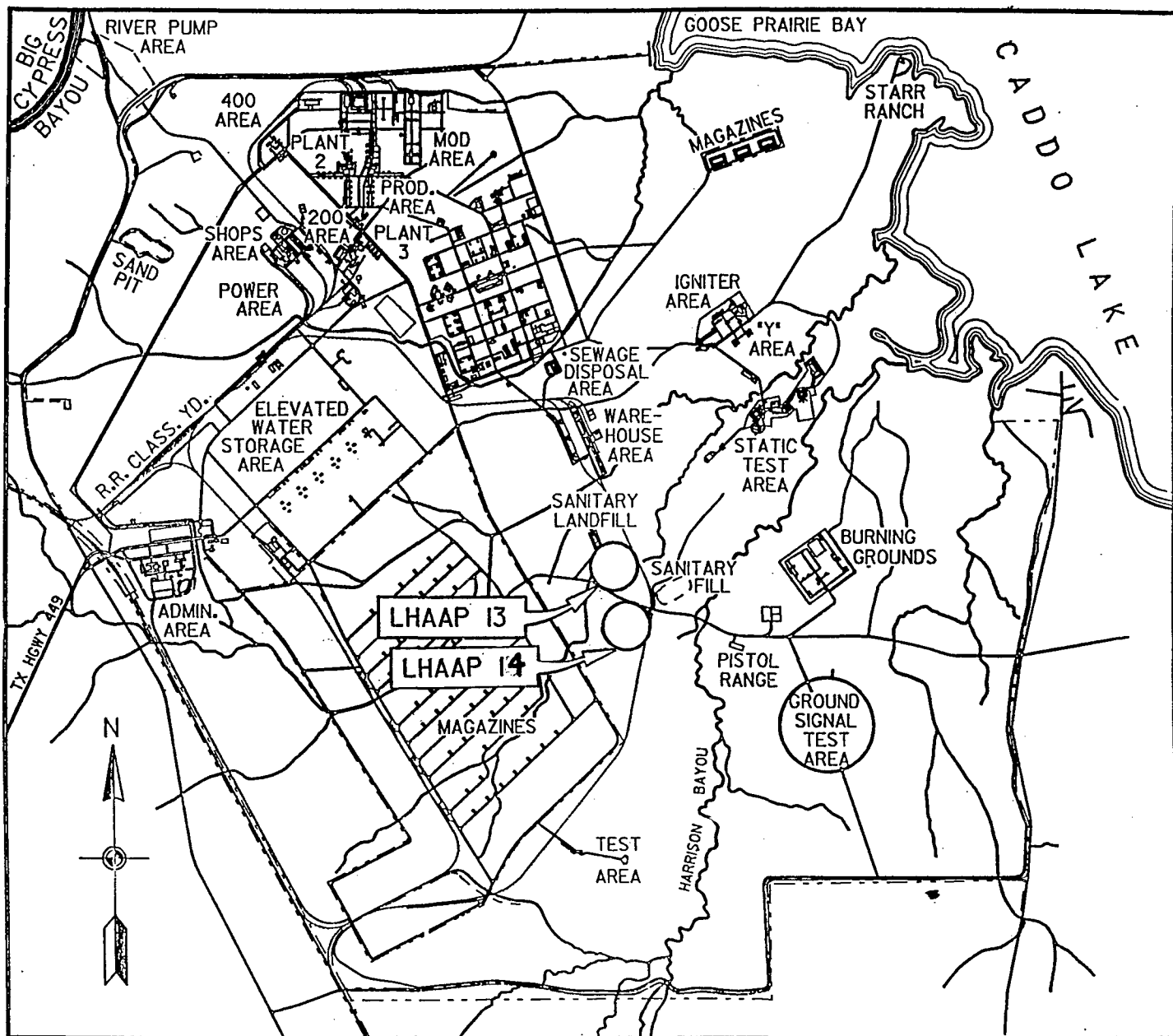
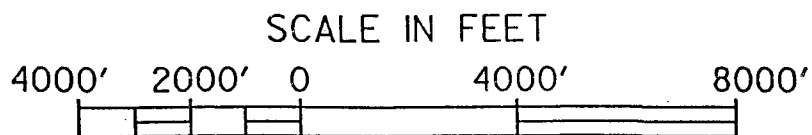


FIGURE 2 LOCATION MAP FOR LHAAP 13 & LHAAP 14



community. LHAAP is forested with loblolly and shortleaf pines, a variety of oaks, sweet gum, black tupelo, ash, bald cypress, and a few scattered willows. Pine trees predominate throughout the installation. Both LHAAP 13 and 14 are cleared areas within a heavily wooded section of LHAAP.

Caddo Lake, Caddo Lake State Park, and the small unincorporated town of Karnack border LHAAP. Other surrounding land is forested, with an oil and natural gas field located to the east of LHAAP along the Louisiana border. Caddo Lake State Park is located approximately 2.8 miles west-northwest of the installation. Other recreational facilities and nearby lake shore communities are within 5 miles. The town of Uncertain is 1.9 miles north of LHAAP.

All surface water from LHAAP drains into Caddo Lake via four drainage systems that cross portions of the installation (Figure 3). These systems are known as Saunders Branch, Harrison Bayou, Central Creek, and Goose Prairie Bayou.

The surface drainage at the LHAAP 13 is very limited. No water bodies or water courses run through the site. The site is relatively remote, with no signs of significant erosion or obvious signs of water leaching into nearby tributaries, and is not expected to be developed as a drainage way or for surface water use.

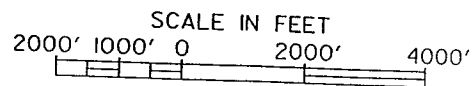
The surface drainage at the LHAAP 14 flows to the east. Runoff from the site may collect in the drainage ditch along Avenue Q and eventually flow into Harrison Bayou and then Caddo Lake. Erosion of surface soils during heavy rainfall could produce sediment that would be carried by surface water runoff into the collection ditch along Avenue Q where it could be deposited or be carried into Harrison Bayou. However, a good stand of vegetation at the site, as well as asphalt pavement, retains the soil and minimizes erosion by water or wind.

LHAAP, including LHAAP 13 and 14, is situated on an outcrop of the Wilcox Group, which crops out over a large part of the eastern half of Harrison County. The Wilcox consists mostly of fine- to medium-grained sands interbedded with a considerable amount of clay and seams of lignite. The Wilcox Group is underlain conformably by the predominantly calcareous clay of the Midway Group. Regional dip of the Wilcox is to the northwest into the East Texas Syncline, while the ground surface generally dips to the southeast.

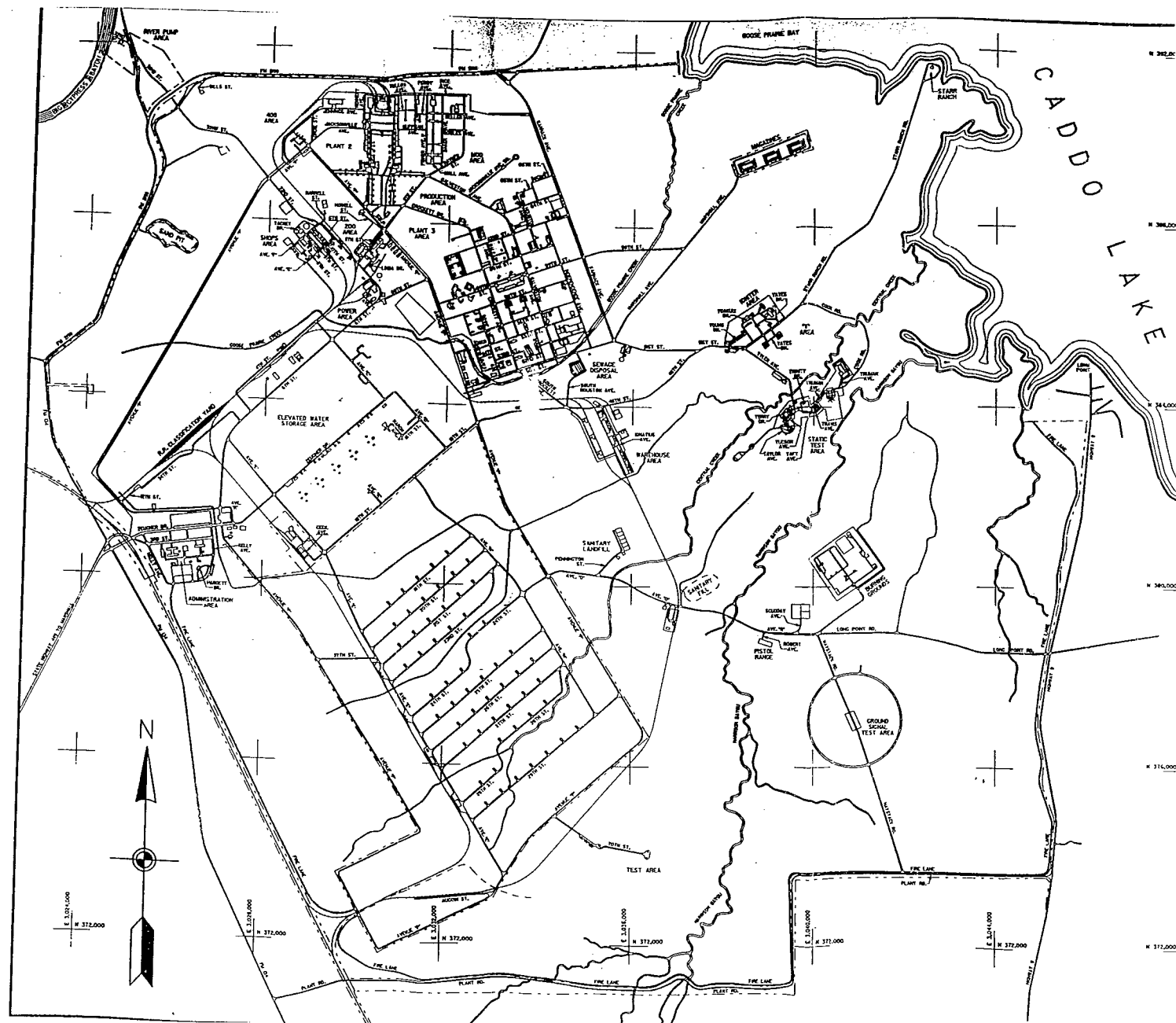
The Wilcox Group has been identified by the Texas Water Development Board as the basal unit of the regional Cypress aquifer, also known as the Carrizo-Wilcox aquifer. The Cypress aquifer outcrops over most of Harrison County and is comprised of, in ascending order, the Wilcox Group, the Carrizo Sand, the Reklaw Formation, and the Queen City Sand. All units are believed to be hydraulically connected. All of these units dip to the northwest into the East Texas Syncline. At LHAAP, only the Wilcox Group of the Cypress aquifer is present.

The availability of ground water in Harrison County is largely dependent on the hydrologic characteristics of the units comprising the Cypress aquifer. The Wilcox Group outcropping in the

U.S. ARMY CORPS OF ENGINEERS TULSA DISTRICT	
LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS	
DRAINAGE MAP	
Date: OCT 1994	Figure: 3



/ LHDRAIN2.DCH / 250CT94



area of LHAAP yields small (less than 50 gallons per minute (gpm) to moderate (50-500 gpm) quantities of fresh water to wells throughout the county. As the basal unit of the Cypress aquifer, the Wilcox is also considered as the base of fresh water in the area. The Midway Group, which does not yield usable quantities of water, tends to serve as a relatively impermeable basement to the overlying water-bearing Wilcox.

B. Site History and Enforcement Activities

Longhorn Army Ammunition Plant is a government-owned, contractor-operated (Longhorn Division of Thiokol Corporation) industrial facility under the jurisdiction of the U.S. Army Armaments, Munitions, and Chemical Command. Its primary mission is to load, assemble, and pack pyrotechnic and illuminating/signal ammunition and solid propellant rocket motors.

Longhorn Army Ammunition Plant was established in October 1942 with the primary mission of producing trinitrotoluene (TNT) flake in the Plant 1 area. Production of TNT continued through World War II until August 1945 when the plant went on standby status until February 1952. Pyrotechnic ammunition, such as photoflash bombs, simulators, hand signals, and tracers for 40mm ammunition were manufactured at LHAAP from 1952 until 1956. The Plant 3 area rocket motor facility began operation in November of 1955. 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.

Recent operations consist of compounding pyrotechnic and propellant mixtures; loading, assembling and packing 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 has also been responsible for the static firing and elimination of Pershing I and II rocket motors in compliance with the Intermediate-Range Nuclear Force Treaty in effect between the United States and the former Soviet Union.

Based on a records search by USAEHA, a one-time disposal of TNT or waste acid was suspected to have occurred at LHAAP 13. Other than this suspect incident, no other waste disposal activities have taken place at the site.

The Area 54 Burial Ground, LHAAP 14, was suspected of having demolition debris, building rubble, explosives, and acidic wastes 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 activities have taken place at the site.

As part of the U.S. Army Installation Restoration Program, the LHAAP began an environmental investigation of current and previously used waste disposal sites in 1976. The LHAAP installation was added to the National Priorities List (NPL) on August 30, 1990 (54 Federal Register 35509). After being listed on the NPL, The U.S. Army, U.S. Environmental Protection Agency (EPA),

and Texas Natural Resource Conservation Commission (TNRCC) - formerly known as the Texas Water Commission (TWC) - entered into a Comprehensive Environmental Response Compensation, and Liability Act (CERCLA) Section 120 Agreement for remedial activities at the facility. The CERCLA Section 120 Agreement, referred to as the Federal Facility Agreement (FFA), became effective on December 30, 1991.

C. Highlights of Community Participation

The U.S. Army, EPA, and TNRCC have provided public outreach to the community surrounding LHAAP concerning the LHAAP 13 and 14 and other sites on the facility. The outreach program has included fact sheets, media interviews, site visits, invitations to attend quarterly technical and regulatory review meetings, and public meetings.

Copies of the Administrative Record documents have been made available to the public at several information repository locations, including LHAAP, EPA Region VI Library, TNRCC, and Marshall Public Library. On August 1, 1995, the Administrative Record at LHAAP was moved to the Karnack High School Library to facilitate and encourage public review. Notice of this change was published in the Marshall Messenger. The Proposed Plan for No Further Action was released to the public on July 7, 1995. Copies of the Proposed Plan were placed at the Karnack Post Office, Marshall Library, Uncertain City Hall, and LHAAP. In addition, copies of the Proposed Plan were sent to members of the community that have shown interest in activities at LHAAP and attended other public meetings. Approximately 1,500 Fact Sheets identifying the sites under review, the preferred alternative, and the date of the public meeting were mailed to people living near LHAAP. Notice of the public meeting was also published in the Marshall Messenger. A public comment period was designated from July 7, 1995, to August 6, 1995, and a public meeting was held on July 18, 1995, at the Karnack High School. The purpose of the meeting was to discuss the proposed plan and to solicit public comments on the No Further Action alternative for LHAAP 13 and 14.

Representatives of the U.S. Army and TNRCC answered several questions at the public meeting. No written comments were received during the public comment period. Comments expressed at the public meeting are addressed in the Responsiveness Summary which is attached to the Record of Decision (ROD) as Appendix B.

D. Summary of Site Characteristics

Soils in the area consist predominantly of medium plasticity clays with some high plasticity zones (CL, CH) from the surface to a depth of 4 to 10 feet. Below the surface stratum, and extending to the total depth investigated of 35 feet, the soils are typically low plasticity clays (CL) or silty, clayey sands (SC, SM-SC). This stratum is distinguished from the surface stratum by typically being much sandier and less plastic; however, it does contain some medium to high plasticity clay zones.

There does not appear to be any layering of soils in the lower stratum. These materials are typical of the Wilcox Group.

Ground water at both sites generally occurs under unconfined conditions. The elevation of the ground water at both sites fluctuates with seasonal variations in rainfall. The ground water is encountered at depths of 7 to 8 feet below ground surface.

LHAAP 13 was first reported by the U.S. Army Environmental Hygiene Agency (AEHA) in 1987. The site was identified through review of aerial photographs showing changes in the site topography. LHAAP 14 was first reported by AEHA in 1980. Since then, several investigations have been performed and reports generated regarding LHAAP 13 and 14. Investigation results are provided in the Administrative Record.

Soil and water samples were taken at LHAAP 13 and 14 and analyzed for volatile organics, semi-volatile organics, explosives, metals (arsenic, barium, chromium, mercury, nickel, lead, selenium, and thallium), and anions. Nothing was detected at LHAAP 13, except metals, in the soil or groundwater. All metals in the soil and groundwater investigations at LHAAP 13 were below LHAAP background levels, established in the LHAAP Background Concentration Reports, June 1995, except for barium, selenium, and mercury in the soil. Although these constituents slightly exceeded established background levels, they occur naturally and are not indicative of soil contamination.

No contaminants were detected in the groundwater at LHAAP 14 except for some metals and anions. All metals in the groundwater investigation at LHAAP 14 were below LHAAP background levels except for chromium and nickel. Nitrate-nitrite was the only anion detected. Although the constituents slightly exceeded established background levels, they occur naturally and are not indicative of soil contamination.

No contaminants were detected in the soil at LHAAP 14 except for trace amounts of toluene, butyl benzyl phthalate and a few metals. All metals were below background levels, occur naturally and are not indicative of soil contamination. Butyl benzyl phthalate is a common plastic additive and is most likely a field contaminant resulting from the interaction of decontamination fluids with plastic gloves on the workers (leaching out the phthalate). Toluene is only found as a trace contaminant in one sample.

F. Summary of Site Risks

An evaluation of potential risks to human health and the environment from any site contaminants was conducted as part of a **risk analysis**. The Risk Analysis for Sites 13 and 14 is presented as part of the RI/FS and is available in the Administrative Record. A summary of the findings follows.

CURRENT AND FUTURE HEALTH RISKS

A human health risk analysis is a procedure which uses a combination of facts and assumptions to estimate the potential for adverse effects on human health from exposure to contaminants found at a particular site. Risks are determined by evaluating known chemical exposure limits and actual chemical concentrations at the site. The actual concentrations are compared to the exposure to a concentration known to have an adverse impact. Carcinogenic risks are expressed in terms of the chance of developing cancer after a lifetime of exposure to the contaminants. Non-carcinogenic risks are based on exposures to concentrations of contaminants greater than concentrations known to have an adverse lifetime non-cancerous impact. Conservative assumptions are used in calculation risks that weigh in favor of protecting human health.

The national risk, or probability, that an individual may develop some form of cancer from everyday sources, over a 70-year life span, is estimated at one-in-four. This one-in-four probability is considered the "natural incidence" of cancer in the United States. To protect human health, the EPA has set the range from one in ten thousand to one in one million (expressed as 1×10^{-4} to 1×10^{-6}) lifetime excess cancer incidents as the remedial goal for Superfund sites. A risk of one in one million means that one person out of one million people could develop cancer as a result of a lifetime exposure to the site contaminants.

The level of concern for non-carcinogenic contaminants is determined by calculating a **hazard index**. If the hazard index exceeds one (1), there may be concern for potential non-cancer effects for lifetime exposure to the site contaminants.

The site-specific risk assessment process begins by evaluating the current site risk, also called the **baseline risk**, posed to human health.

Site 13

Chemicals of Concern (Site Related Contaminants)

An initial step in selection of chemicals of potential concern is comparison of site data with background concentrations. Comparison of all Site 13 metals data from surface soils with background concentrations indicate that all metals in surface soils at the site approximate naturally-occurring levels. Concentrations of the two metals detected in groundwater (barium and selenium) are below background concentrations and are at or below established Maximum Contaminant Levels (MCLs) for these metals. These data, combined with extreme distances to potential human receptors for groundwater, do not justify selection of any chemicals of potential concern at Site 13.

Risk Analysis

Based on an analysis of site data, no findings of chemicals of concern, and criteria for performing a risk analysis, it was concluded that the site does not pose an unacceptable risk to human health.

Ecological Risk Assessment

Based on previous findings in the risk analysis for human health, it was determined that the site does not pose an unacceptable risk to ecological receptors.

LHAAP 14

Chemicals of Concern

Comparison of Site 14 metals data from surface soils with background concentrations indicates that all metals in surface soils at the site approximate naturally-occurring levels. The concentration of the one detected metal in groundwater (barium) most likely approximates background concentrations and is at or below established MCLs for this metal. The concentration of phthalates could be a result of field contamination due to sampling procedures. Toluene is found in a trace amount. These data, combined with extreme distances to potential human receptors for groundwater, do not justify selection of any chemicals of concern at Site 14.

Risk Analysis

Based on an analysis of site data, no findings of chemicals of concern, and criteria for performing a risk analysis, it was concluded that the site does not pose an unacceptable risk to human health.

Ecological Risk Assessment

Based on previous findings in the risk analysis for human health, it was determined that the site does not pose an unacceptable risk to ecological receptors.

G. Summary of The Comparative Analysis of Alternatives

CERCLA regulations require that remedial alternatives be evaluated against nine criteria to determine which alternative(s) provide the best balance between the criteria and, therefore, should be implemented at the site. The following presents an explanation of the criteria:

1. Overall Protection of Public Health and the Environment

This criteria addresses the way in which a potential remedy would reduce, eliminate, or control the risks posed by the site to human health and the environment. The methods used to achieve an adequate level of protection may be through engineering controls, treatment, techniques, or other controls such as restrictions on the future use of the site.

2. Compliance with ARARs

Compliance with applicable or relevant and appropriate requirements (ARARs) assures that a selected remedy will meet all related Federal, State, and local requirements. The requirements may specify maximum concentrations of chemicals that can remain at a site; design or performance requirements for treatment technologies; and restrictions that may limit potential remedial activities at a site because of its location.

3. Long-term Effectiveness or Permanence

This criteria addresses the ability of a potential option to reliably protect human health and the environment over time, after the cleanup goals have been accomplished.

4. Reduction of Toxicity, Mobility, or Volume of Contaminants

This criteria assesses how effectively a proposed remedy will address the contamination problem. Factors considered include: the nature of the treatment process; the amount of hazardous materials that will be destroyed by the treatment process; how effectively the process reduces the toxicity, mobility, and volume of waste; and the type and quantity of contamination that will remain after treatment.

5. Short-term Effectiveness

This criteria assesses short-term risks to the workers, the community, and the time factor. Cleanup technologies often require several years for implementation. A potential remedy is evaluated for the length of time required for implementation and the potential impact on human health and the environment during the remedial action.

6. Implementability

Implementability addresses the ease with which a potential remedy can be put in place. Factors such as technical feasibility and availability of materials and services are considered.

7. Cost

Costs (including estimated capital costs required for design and construction and projected long-term maintenance costs) are considered and compared to the benefit that will result from implementing the remedy.

8. State Acceptance

The State has an opportunity to review the documents in the Administrative Record and the Proposed Plan and offer comments. The State may agree with, oppose, or have no comment on the preferred alternatives.

9. Community Acceptance

During the public comment period, interested persons or organizations may comment on the alternatives. These comments are considered in making the final remedy selection. The comments are addressed in a document called Responsiveness Summary which is part of the Record of Decision.

The following is a narrative analysis for the alternatives considered:

Overall Protection of Human Health and the Environment: Based on an analysis of site data, no findings of chemicals of concern, and criteria for performing a risk analysis, it was concluded that the site does not pose an unacceptable risk to human health or the environment. There is no risk identified as a result of past activities.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs): The RI/FS was conducted in accordance with the CERCLA as amended by the SARA and the National Oil and Hazardous Substances Pollution Contingency Plan. Since no further action is being proposed, further compliance with ARARs is not necessary.

Long-term Effectiveness or Permanence: Since no chemical of concern was found, no future remedial activity is necessary. Therefore, this criterion is not applicable.

Reduction of Toxicity, Mobility or Volume through Treatment: This criteria is not applicable since no remedial action is warranted.

Short-Term Effectiveness: No short term risks were identified during the RI/FS. Since no further action is recommended, short term risks of exposure from future response actions are not present.

Implementability: Since no further action is recommended, implementability is not an issue.

Cost: Since no further action is recommended, cost is not an issue.

Regulatory Acceptance: TNRCC and EPA have been consulted throughout the investigations at Site 13 and 14. Both agencies have reviewed the Proposed Plan for No Further Action. The preferred alternative of No Further Action was fully evaluated during the public comment period, and support for the alternative has been indicated.

Community Acceptance: Community comments will be an important consideration in the final decision for the site. A public meeting was held July 18, 1995 and verbal public comments were received. No written comments were received during the public comment period. These comments have been addressed in the Responsiveness Summary included as Appendix B.

I. The Selected Remedy

Based on the information available and studies performed, the U.S. Army believes that no further remedial action is warranted at Sites 13 and 14.

J. Statutory Determination

The primary responsibility at CERCLA sites is to select actions that are protective of human health and the environment. Section 121 of CERCLA requires that the selected action for the site comply with applicable or relevant and appropriate environmental standards established under Federal and State environmental laws, unless a waiver is granted. The selected remedy must also be cost effective. The following sections discuss how the selected alternative for LHAAP 13 and 14 meet the statutory requirements.

Protection of Human Health and the Environment:

Based on an analysis of site data, no findings of chemicals of concern, and criteria for performing a risk analysis, it was concluded that the site does not pose an unacceptable risk to human health or the environment.

Compliance with Applicable or Relevant and Appropriate Requirements:

The RI/FS was conducted in accordance with the CERCLA as amended by the SARA and the National Oil and Hazardous Substances Pollution Contingency Plan. Since no further action is being proposed, further compliance with ARARs is not necessary.

Cost Effectiveness:

Since no further action is recommended, cost is not an issue.

Use of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable:

Since no further action is recommended, this is not an issue.

Preference for Treatment as a Principal Element:

Since no further action is recommended, this is not an issue.

APPENDIX A

**THE STATE OF TEXAS
LETTER OF CONCURRENCE**

Barry R. McBee, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
John M. Baker, *Commissioner*
Dan Pearson, *Executive Director*

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

October 30, 1995

Mr. Myron O. Knudson, P.E., Director
Superfund Division
U. S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, TX 75202-2733

RE: Record of Decision for Areas Referred to as Sites 13 and 14
Within the Longhorn Army Ammunition Plant


Dear Mr. Knudson:

We have reviewed the proposed Record of Decision (ROD) for the No Further Action at Sites 13 and 14 within the Longhorn Army Ammunition Plant (or "LHAAP"). We concur that the remedy described in the December 1995 ROD is the most appropriate for these sites.

Based on previous studies and surveys, no remedial action is warranted to protect human health and the environment at LHAAP Sites 13 and 14. This decision complies with Federal and State applicable or relevant and appropriate requirements and is cost effective.

Sincerely,



 Dan Pearson
Executive Director

DP/MM/mm

cc: David Tolbert, LHAAP (SIOLH-OR)
Jonna Polk, COE Tulsa District (CESWT-PP-EA)
Lisa Price, EPA Region 6 (6SF-AT)

APPENDIX B

RESPONSIVENESS SUMMARY

**NO FURTHER ACTION
LHAAP 13 & 14
LONGHORN ARMY AMMUNITION PLANT**

**NO FURTHER ACTION
LHAAP 13 & 14
LONGHORN ARMY AMMUNITION PLANT**

This Community Relations Responsiveness Summary provides written responses to comments submitted during the public comment period (6 July to 7 Aug 1995) regarding the Proposed Plan of Action for LHAAP 13 & 14.

Section I: Background of Community Involvement and Concerns. This section provides a brief history of community interest and concerns raised during the remedial planning activities at the sites.

Section II: Summary of Major Comments Received. The comments (both oral and written) are summarized. The U.S. Army responses are provided.

I. Background of Community Involvement and Concerns

The community surrounding the Longhorn Army Ammunition Plant (LHAAP) is aware of histories associated with Sites 13 & 14. This awareness is evident by the community participation in the public meeting held at Karnack High School on 18 July 1995, and by participation of local officials and community activists in the Technical Review Committee meetings held quarterly at LHAAP since 1992. The community has not expressed any opposition to the proposal for no further action at the sites. However, the community has raised some concerns through comments made during the public meeting. The comments received from the community concentrated mainly on technical aspects of the previous Remedial Investigation (RI).

II. Summary of Major Comments Received

The Proposed Plan of Action was released to the general public on 6 July 1995. The public comment period began 6 July and ended 7 August 1995. A public meeting was held on 18 July 1995 at Karnack High School. The purpose of the meeting was to discuss the proposed plan and to solicit public comments on no further action at LHAAP 13 & 14. Representatives of the U.S. Army made presentations about the history of the sites and answered public comments during the public meeting. Representatives of the Texas Natural Resource Conservation Commission (TNRCC) attended the meeting and assisted in the responses to public comments. Notice of the comment period and public meeting was given in the Marshal News Messenger and approximately 1,500 invitation letters and fact sheets were mailed to local citizens.

The following comments and questions were received during the public meeting. A full account of the public meeting can be found in the public meeting transcripts that are documented in the LHAAP Administrative Record. There were no written comments submitted during the public comment period.

1. Comment by Ms. Gail Masters:
What type of contaminants were you looking for? Was soil and water investigated?

Response:

The Remedial Investigation field work conducted in 1993 investigated soil and groundwater. Analytes tested were explosives, volatile organics, semi-volatile organics, eleven metals, and anions.

2. Comment by Ms. Gail Masters:
How far from the site do they test?

Response:

The area of investigation is based on interviews with past employees familiar with the site and from historical documentation (aerial photo's, etc.). Generally, if this information is limited initial field screening techniques are used to delineate the site. *The actual size of the sampling area (borings and monitoring wells) was 100' x75' for LHAAP 13 and 75'x50' for LHAAP 14.*¹

3. Comment by Ms. Ruth Culver:
Is it correct that there were three core samples taken from each suspected site?

Response:

There were four *soil* borings taken at LHAAP 13 and three *soil* borings taken at LHAAP 14.

4. Comment by Ms. Culver:
How do you decide within a suspected area where these soils borings will be placed?

Response:

Since these were *suspected sites with undocumented activities*, and the exact size and location of them are not known, the process for selecting boring locations was a random distribution across the suspect area.

5. Comment by Ms. Culver:
How deep are the borings? How big is it?

Response:

The borings were drilled with a 6 3/4" diameter hollow stem auger to depths of 35 feet.

¹*Text in italics are additions for clarification to original answers given at the public meeting.*

6. Comment by Mr. Rick Michaels:
When you say "suspected site," that is a suspected site because someone, a past employee, says they remember some time ago pouring or storing something there? Do you have any other documentation of site other than that?

Response:

No, that is the only information found in the search in the early 1980s.

7. Comment by Ms. Culver:
There were no aerial photographs?

Response:

Aerial photos were used in the initial investigations. The only things shown were minor changes in topography. Some years there were trees, and other years there weren't.

8. Comment by Mr. Michaels:
Is there access to these photos?

Response:

Aerial photos are located in the Thiokol Library . Mr. David Tolbert may be contacted for access to these.

9. Comment by Ms. Culver:
Is that the Thiokol or Longhorn library?

Response:

It is actually located at LHAAP in the Thiokol library.

10. Comment by Mr. Bill Robertson:
Do you have any speculation as to what happened to the material that was supposedly dumped here since there seems to be no evidence even under the ground?

Response:

The proximity of the suspected sites to Landfill 16 leads us to believe that the person interviewed could have been unsure of the locations of the landfill and indicated, erroneously, the new Sites LHAAP 13 and 14.

11. Comment by Mr. Robertson:
So, a "wild goose chase" sounds like a phrase that may have been used in this investigation.

Response:

Indications from former employees, regardless of how minute they may be, must be followed up on. It is better to search and find nothing now, than to delay the search and find out twenty years from now that there was something there.

12. Comment by Mr. Robertson:

With regard to the bare patches that show up on site 13, do these types of bare patches show up elsewhere on the plant site right now?

Response:

On the currently investigated sites, including LHAAP 13 and 14, *there are no bare patches*. Other areas on the plant *that have been reported to have activities are currently under investigation. However, other areas have not been surveyed.*

13. Comment by Mr. Baling:

Were the bare patches themselves analyzed? What was found?

Response:

The bare patches were analyzed and no contamination was found.

14. Comment by Ms. Culver:

There were 1,350 notices mailed out?

Response:

There were 1,350 Fact Sheets mailed out, along with notice of the meeting.

15. Comment by Ms. Culver:

What area do you mail those to?

Response:

Everyone in the 75661 zip code.

16. Comment by Ms. Culver:

Then why is the repository information put in the Marshall Library, when those people are not included in the notification?

Response:

Records are also located on LHAAP for people in this zip code.

17. Comment by Ms. Culver:

Access to those records are not readily accessible due to the level of security on the plant. I would like to make a suggestion that the Karnack High School library be used for the repository for this area. (If it is alright with the school).

Response:

The LHAAP copy could be moved to the school library. However, it would have to be investigated to assure that the library had sufficient room for the repository and not have a negative impact on the room needed for the students. Accessibility during summer break would also be difficult. *As of 1 August the Administrative Record is in the Karnack High School Library. Public notice of this change was in the Marshall Messenger 20 August 1995.*

18. Comment by Ms. Culver:

It was simply a suggestion. Wilma Subra, technical adviser for the community, and I spoke to the Marshall Lions Club today. Approximately 30 people were in attendance. Some of those in attendance expressed concern over not being notified personally of the meetings and other activities associated with the environmental program at LHAAP. I reminded them that notice was provided in the newspaper.

Response:

In addition to people in this zip code, people who have attended previous meetings and have provided their mailing address are notified. We will consider all options to providing better access to the public.

19. Comment by Ms. Culver:

For the record, I would like to emphasize the concern for using as many local people as possible for the work force in the environmental program at LHAAP.

Response:

An emphasis is placed on all our contractors to use as many local sub-contractors as possible. This is sometimes difficult, however, because of the degree of technical knowledge and safety requirements needed to work on environmental projects.

20. Comment by Ms. Culver:

We are talking about dirt haulers.

Response by citizen (R. Michaels):

You would be surprised at the level of training and certification that is required of even a "dirt hauler" on an environmental site.

21. Comment by Ms. Wilma Subra:

The following comments are based on a very limited review of the data from the RI for LHAAP 13 and 14.

A. Groundwater appears to be very shallow in some places, five to eight feet below ground surface. If the suspected waste such as explosive compounds, acidic waste, contaminated demolition and herbicide waste were previously dumped at the site, the potential exists for contamination that would impact the groundwater.

Response:

Monitoring wells were installed at each site. Groundwater was tested and no site related contaminants were found.

B. The borings that were reported from these two locations range from a depth of five to thirty-five feet. Not one boring encountered any visible signs of waste or contamination at either site. After a limited review, it is my opinion that additional borings should have been performed to further investigate the possibility of waste material at the sites.

Response:

Since this is a "suspected" site and no concrete information has been found to assure us that actual waste disposal activities occurred on either of these sites, the borings installed have adequately addressed any concern at this site.

C. The author of the RI report actually delineated the extent of each site, or the potential extent of each site, and it is quite a bit larger than the area where the borings performed to determine whether or not they encountered any visible traces.

Response:

The size of each site was a very "rough" estimate based on site interviews and limited aerial photographs. "Delineation of the extent" of each site is actually determined by the investigation of the site through chemical analysis of soil samples.

D. Site 13 was described as having bare patches. Five bare patches were actually delineated on the site map. I think that additional analysis of the parameters should be performed in order to determine what caused the lack of vegetation in the area called "bare spots."

Response:

Samples were taken and analyzed in the areas designated as "bare patches" (these no longer exist on the site). Contaminants related to suspected site activities were not found in these areas. Patches could have been a result of many activities, such as little rain or inadequate soil conditions.

E. In addition, soils at site 13 exceeded the background level for chromium and nickel. Now, these levels were not judged to be high enough to be a risk factor but they were higher than background.

F. At site 14, the chemicals that exceeded the background were barium, chromium, and nickel. The source of these contaminants should have been identified as part of this limited investigation.

Response:

E & F. These parameters slightly exceed calculated background levels. However, they are naturally occurring elements which exhibit a high degree of variability in the area

and as such the slightly elevated concentrations should not be considered a result of plant activities.

G. The Proposed Plan, RI/FS report section, made recommendations that no further action be performed at these two locations and a no further action decision document be prepared for each of these two sites. The report also recommended that the sites be removed from further consideration. I think these are pre-mature at this point. Prior to making the final decision on no further action, additional studies should be performed at each of these two sites. Additional studies should be performed at each of these two sites. Additional borings should be performed at each of the two sites to further investigate the possibility of physical waste material buried in these sites.

If physical waste is determined, then chemical analysis of the groundwater should be performed similar to ones performed on the four and three borings. Additional chemical parameters should be performed on the soil located in the bare spots. These analysis should determine without a doubt what caused the lack of vegetated growth.

Currently, the data appears inadequate to make a final decision of no further actions and recommendation that the sites be removed from further consideration.

Response:

Due to the sketchy information on the undocumented activities of these two sites, the proper amount of investigation has been accomplished at these sites. Soil borings were analyzed for suspected contaminants and nothing was found. If the suspected activities had taken place, contaminants would have shown up in the groundwater. However, none were detected. Based on the investigations performed, no further action is required at the two sites.

Additional written comments were not received.

