

LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS

ADMINISTRATIVE RECORD

Volume 8 of 19

2010

Bate Stamp Numbers

00088905– 00089087

Prepared for

**Department of the Army
Longhorn Army Ammunition Plant**

1976 – 2010

***LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS
ADMINISTRATIVE RECORD – CHRONOLOGICAL INDEX***

VOLUME 8 of 19

2010

Note: Volume 8, Year 2010, Letter A is listed Out of Date in Sequence and should have been inserted in Year 2009.

A. Title: Letter – Army Response to Comments for LHAAP-35B(37), Chemical Laboratory and LHAAP-67, Aboveground Storage Tank Farm Draft ROD, Longhorn Army Ammunition Plant, Karnack, Texas, August 2009
Author(s): US Army Corps of Engineers
Recipient: USEPA
Date: August 12, 2009
Bate Stamp: 00088905 – 00088919

Note: Volume 8, Year 2010, Letters B and C is listed Out of Date in Sequence and should have been inserted in Volume 2, 2010.

B. Title: Letter – Final Explanation of Significant Differences, Burning Ground 3 and Unlined Evaporation Pond (Designated as LHAAP-18/24), Interim Remedial Action Record of Decision Dated May 1995, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): TCEQ
Recipient: Thomas E. Lederle, Branch Chief, US Army BRAC
Date: February 12, 2010
Bate Stamp: 00088920 – 00088936

C. Title: Presentation – Public Meeting on Proposed Plans for Longhorn Army Ammunition Plan for Former Pistol Range, LHAAP-49, LHAAP-35A(58), LHAAP-46, and LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): Shaw
Recipient: Public
Date: March 9, 2010
Bate Stamp: 00088937 – 00088986

D. Title: Letter – Industrial Solid Waste Notice of Nonresidential Land Use, Affidavit and County Recordation Documentation for LHAAP-06, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): US Army
Recipient: Patsy Cox, County Clerk, Harrison County/U.S. Army
Date: April 27, 2010
Bate Stamp: 00088987 – 00088993

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- E. Title: Letter – Industrial Solid Waste Notice of Nonresidential Land Use, Affidavit and County Recordation Documentation for LHAAP-07, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): US Army
Recipient: Patsy Cox, County Clerk, Harrison County/U.S. Army
Date: April 27, 2010
Bate Stamp: 00088994– 00089000
- F. Title: Letter – Industrial Solid Waste Notice of Nonresidential Land Use, Affidavit and County Recordation Documentation for LHAAP-51, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): US Army
Recipient: Patsy Cox, County Clerk, Harrison County/U.S. Army
Date: April 27, 2010
Bate Stamp: 00089001 – 00089007
- G. Title: Letter – Industrial Solid Waste Notice of Nonresidential Land Use, Affidavit and County Recordation Documentation for LHAAP-55, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): US Army
Recipient: Patsy Cox, County Clerk, Harrison County/U.S. Army
Date: April 27, 2010
Bate Stamp: 00089008 – 00089041
- H. Title: Letter – Industrial Solid Waste Notice of Nonresidential Land Use, Affidavit and County Recordation Documentation for LHAAP-60, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): US Army
Recipient: Patsy Cox, County Clerk, Harrison County/U.S. Army
Date: April 27, 2010
Bate Stamp: 00089042 – 00089057

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- I. Title: Letter – Industrial Solid Waste Notice of Nonresidential Land Use, Affidavit and County Recordation Documentation for LHAAP-64, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): US Army
Recipient: Patsy Cox, County Clerk, Harrison County/U.S. Army
Date: April 27, 2010
Bate Stamp: 00089058 – 00089064
- J. Title: Letter – Industrial Solid Waste Notice of Nonresidential Land Use, Affidavit and County Recordation Documentation for LHAAP-66, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): US Army
Recipient: Patsy Cox, County Clerk, Harrison County/U.S. Army
Date: April 27, 2010
Bate Stamp: 00089065 – 00089071
- K. Title: Letter – Industrial Solid Waste Notice of Nonresidential Land Use, Affidavit and County Recordation Documentation for LHAAP-68, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): US Army
Recipient: Patsy Cox, County Clerk, Harrison County/U.S. Army
Date: April 27, 2010
Bate Stamp: 00089072 – 00089078
- L. Title: Meeting Minutes – Longhorn AAP Monthly Manager's Meeting Minutes, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): Shaw Environmental, Inc., Houston Texas
Recipient: All Stakeholders
Date: April 27, 2010
Bate Stamp: 00089079– 00089087

Corps of Engineers

Date: August 12, 2009

TRANSMITTAL LETTER:

To: Mr. Praveen Srivastav
Address: Shaw Environmental, Inc.
ABB Lummus Building Suite 400
3010 Briarpark
Houston, TX 77042

Re: Army RTCs for LHAAP-35B (37), Chemical Laboratory and LHAAP-67, Aboveground Storage Tank Farm Draft ROD, Longhorn Army Ammunition Plant, Karnack, Texas, August 2009

From: Mr. Aaron Williams

For: Review ____ As Requested ____ Approval ____ Corrections ____ Submittal X Other ____

Item No:	No. of Copies	Date:	Document Title
1	1	August 2009	Army RTCs for LHAAP-35B (37), Chemical Laboratory and LHAAP-67, Aboveground Storage Tank Farm Draft ROD, Longhorn Army Ammunition Plant, Karnack, Texas, August 2009

Enclosed copy of Army's response to EPA comments for the above-named document for your files.

The document has been distributed as noted below.

Please call if there are any questions or comments.

Distribution List:

Ms. Rose Zeiler – BRAC-LHAAP
 Mr. M. Mechenes – AEC, MD
 Mr. P. Bruckwicks, Caddo Lake NWR, TX

Mr. D. Vodak, TCEQ, Tyler, TX
 Ms. F. Duke, TCEQ, Austin, TX
 Mr. S. Tzhone, EPA, Dallas, TX

1645 South 101st East Ave, Tulsa, Oklahoma 74128

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DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

August 11, 2009

DAIM-ODB-LO

Mr. Stephen Tzhone
US Environmental Protection Agency
Superfund Division (6SF-AT)
1445 Ross Avenue
Dallas, TX 75202-2733

Re: Army RTCs for LHAAP-35B (37), Chemical Laboratory and LHAAP-67, Aboveground
Storage Tank Farm Draft ROD, Longhorn Army Ammunition Plant, Karnack, Texas,
August 2009

Dear Mr. Tzhone,

The above-referenced document is being transmitted to you for your review.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or
by email at rose.zeiler@us.army.mil.

Sincerely,

A handwritten signature in black ink, reading "Rose M. Zeiler", is positioned above the typed name.

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
Matthew Mechenes, AEC, MD
Fay Duke, TCEQ, Austin, TX
Dale Vodak, TCEQ, Tyler, TX
Paul Bruckwicki, Caddo Lake NWR, TX
Aaron Williams, COE – Tulsa District, OK
John Lambert, COE – Tulsa District, OK
Praveen Srivastav, Shaw – Houston, TX (for project files)

ARMY RESPONSE TO REGION 6 US EPA COMMENTS

DRAFT FINAL RECORD OF DECISION FOR, LHAAP-35B(37) AND LHAAP-67
 Longhorn Army Ammunition Plant
 Karnack, Texas

1) Section 1.4 - Description of the Selected Remedy, 1st Paragraph - The last line of this paragraph should be modified to state, "...and returning the groundwater to its potential beneficial use as a drinking water wherever practicable."

The requested language will be incorporated in the Paragraph.

The language as worded here does not account for the fact that the contaminated groundwater is classified as drinking water. This is a common observation addressed throughout these comments. It appears from the overall tenor of this ROD that the Army would like for this ROD to read more as a containment remedy versus containment and restoration remedy. EPA cautions that 40 C.F.R. § 300.430(a)(1)(iii) (D) states that institutional controls shall not be a substitute for active response measures (e.g., ... "restoration of groundwaters to their beneficial uses") as the sole remedy unless such active measures are determined not to be practicable.

The selected MNA remedy achieves both containment and eventual reduction of groundwater contaminant concentrations to MCL within a reasonable time period. Army believes that it and EPA concur on the objectives and the expected final results of the selected remedy.

2) Section 1.4 - Description of the Selected Remedy, 4th Paragraph - This paragraph should not only state that the specific LUC implementation details will be included in the land use component of the remedial design, but also state that "this ROD identifies land use controls selected as well." See page p. 2-28, as it actually identifies LUCs that will be implemented.

This paragraph will be revised to state that specific LUC implementation details will be included in the land use component of the remedial design, and that this ROD identifies land use controls in Section 2.9.1.

3) Section 1.4 - Description of the Selected Remedy, Last Paragraph - Should be changed to state, "The Army shall consult with TCEQ to obtain concurrence prior to termination or significant modification of a LUC or land use change inconsistent with the LUC objectives and use assumptions of the remedy. The Army shall consult with EPA to obtain EPA's review and approval of any modification or termination of a LUC or land use change inconsistent with the LUC objectives and use assumptions of the remedy. In the event that EPA and the Army disagree with respect to any modification of the selected remedy, including the LUC component of the selected remedy, EPA shall make the remedy selection modification decision consistent with 40 C.F.R. § 300.430(f)(4)(iii) (B)."

The details on coordination with TCEQ and EPA concerning the termination, modification, and enforcement of LUCs will be included in the RD. The language in the ROD reflects how LUC issues will be addressed in a manner consistent with changes to the RD in consultation with

TCEQ and EPA and consistent with the FFA and the NCP. Enforcement of LUCs and changes in a LUC or land use are remedial implementation issues addressed under the RD. After consultation with TCEQ and EPA about a specific LUC concern, if a remedy change is necessary, the remedy will be modified consistent with the FFA and 40 CFR 300.435.

A sentence will be added as follows: In the event that TCEQ and/or EPA and the Army agree with respect to any modification of the selected remedy, including the LUC component of the selected remedy, the remedy will be changed consistent with the FFA and 40 C.F.R. § 300.435."

4) Section 1.4, Statutory Determinations – Since it is the intent of this ROD for MNA to satisfy the statutory preference for treatment (which MNA can), the ROD should state, "the selected remedy satisfies the statutory preference for treatment." and the language should go on to state something similar to the language used on p. 2-29 that discusses MNA as an active remedy that relies on natural biological, chemical and physical processes that act to reduce the groundwater contamination.

The text will be modified as requested.

5) Section 1.7 - Authorizing Signatures - Above the person's name signing for the Army should include the sentence, "As the lead agency responsible for issuance of this ROD which documents the selected remedy, the United States Army issues this ROD for LHAAP-35B(37) and LHAAP-67."

The signature for the EPA authorizing official should be placed below the signature of the Army. After the signature of the Army and above the signature of the EPA official, the following language should include, "The United States EPA approves the selected remedy as provided in the ROD for LHAAP-35B(37) and LHAAP-67.

Section 1.7 will be modified as requested.

6) General Comment – EPA agrees with the State of Texas comments concerning the designation of uses for water in the State. The draft ROD should be modified everywhere it contains statements inconsistent with how the State designates the use of its waters.

The ROD will be checked and edited for consistency with the State of Texas view of groundwater as a potential drinking water source.

7) Section 2.4 - Scope and Role of Response Action, First Paragraph - Starting with the second sentence, this paragraph should be changed to be more consistent with the NCP concerning representations made on behalf of EPA. The sentences should read something like, "Although groundwater at Longhorn is not currently used as a drinking water, its highest potential beneficial use as designated by the State of Texas is for use as a drinking water. While the future land use of the Site is reasonably anticipated to be a national wildlife refuge, the groundwater is a potential future drinking water supply based upon its beneficial use designation. The U.S. Army recognizes the USEPA's expectations as provided in the National Contingency Plan (NCP), to return usable groundwaters to their beneficial uses wherever practicable. The Army shall restore

the contaminated shallow drinking water aquifer at LHAAP-35(B) (37) and LHAAP-67 to its beneficial uses, which for purposes of this ROD is considered to be attainment of the Safe Drinking Water Act (SDWA) MCLs for all contaminants above the MCLs and attainment of MCLs for all contaminant by-products (daughter contaminants) above the MCLs."

Army concurs that the language may be revised to be more consistent with the NCP concerning groundwater potential future beneficial use.

The language will be revised as follows:

"Although groundwater at Longhorn is not currently being used as drinking water, nor may it be used in the future based on its reasonably anticipated use as a national wildlife refuge, when establishing the remedial action objectives for this response action, the U. S. Army has considered the NCP's expectation to return usable groundwaters to their potential beneficial uses wherever practicable and has also considered the State of Texas designation of all groundwater as potential drinking water, unless otherwise classified. The Army intends to return the contaminated shallow drinking water aquifer at LHAAP-35B (37) and LHAAP-67 to its potential beneficial uses, which for the purposes of this ROD is considered to be attainment of the Safe Drinking Water Act (SDWA) MCLs to the extent practicable. If a return to potential beneficial uses is not practicable, the NCP expectation is to prevent further migration of the plume, prevent exposure to the contaminated groundwater, and evaluate further risk reduction."

Army believes this statement is consistent with the NCP and is an adequate description of the scope of the response action.

This paragraph should delete its current representations made concerning how the State of Texas designates its groundwaters; it should also recognize that compliance with the SDWA MCLs as ARARs is a requirement not an intention; and it should recognize that usable groundwater will be restored, unless data and analysis show that it is not practicable; it should recognize that the selected remedy is restoration of the contaminated groundwater to drinking water levels and not just containment to prevent contamination of surface waters.

See Comment above.

8) Section 2.5 Site Characteristics - This whole section fails to provide the details of what the data specifically states about the elevation of the contaminated groundwater levels in high flow and low flow seasons, in comparison to the elevation data and depth data regarding the creeks in question. The way the section is written appears self-serving as it seems to cloud the issues (e.g., on pp. 2-7 and 2-8 - creek elevation data indicate that the shallow groundwater may be several feet below the bottom of Goose Prairie Creek and Central Creek; also see p. 2-9 - it contains similar self-serving information in para. 2) instead of just providing what the data says (i.e., groundwater level or elevation during high flow/wet seasons and low flow/dry seasons), or pointing the relevant sections in the RI/FS that would allow the reader/reviewer to assess what the facts are.

The text will be revised to include the more significant field data (i.e., comparison with maximum and minimum groundwater elevations and creek bottom elevations) and references to relevant

sections (with specific section of page references) of supporting documents for other data and conclusions.

9) Comments on Section 2.5.1 Conceptual Site Model, LHAAP-35B(37):

First Paragraph - See comments under No. 7 that address the potential use of the contaminated groundwater. In addition, note that the ROD guidance addresses potential future use. Army's language concerning what it expects the contaminated groundwater to be used for in the future should be deleted to conform to the groundwater's potential future beneficial use based upon the State's use classification of the groundwater. In the alternative, the Army should add relevant language concerning the potential future beneficial use to the existing language.

Army will add relevant language concerning the potential future beneficial use as a drinking water source for maintenance workers because such potential exposure was assumed in the risk assessment. The Army will add the following language after the second sentence:

"The U. S. Army has also considered the NCP's expectation to return usable groundwaters to their potential beneficial uses wherever practicable and the State of Texas designation of all groundwater as potential drinking water, unless otherwise classified."

Third Para. - Seems to omit the data concerning the level of contamination in the intermediate groundwater zone; it only provides contaminant and level of contamination data for the shallow groundwater. In addition, this ROD does not address how the shallow zone and the intermediate zone interface with one another (e.g., does one serve as a conduit to contaminate the other; can the intermediate zone serve as a conduit of contamination to a lower zone)

The third paragraph will be revised to clarify that there is no contamination of the intermediate zone, and that although there is likely limited interconnectivity between the shallow and intermediate zones because of the laterally and vertically discontinuous nature of the channel sands, flow is predominantly horizontal through these units.

Fifth Para. - The TCE concentration number at the point of entry into Goose Prairie Creek appears inconsistent with the number of years cited for compliance with the TCE MCL on p. 1-2 (i.e., from 39-43 years before TCE MCL would be met for LHAAP-35B(37), while here it suggest the TCE MCL would be complied with in 10 - 15 years. These numbers need to be explained and reconciled.

Concur. The correct number is 39-43 years. The text will be revised.

10) Section 2.5.1 Conceptual Site Model, LHAAP-67, First Para. - See comments No. 7 and No. 9 concerning the failure to address the potential future beneficial use based upon the State of Texas use designation for the impacted groundwaters.

See response to Comment No. 9.

11) Section 2.6.3, Current and Potential Future Land and Resource Uses, Current and Future Groundwater Uses, Third Paragraph - This section fails to address the potential future beneficial uses as provided in Comment Nos. 7 and 9 regarding the potential future beneficial uses based upon the State of Texas designation of the ground water as a drinking water supply. As such, the third paragraph in this section should include the language recommended in Comment Nos. 7 and 9.

The first sentence of the third paragraph will be revised as follows:

"Although the anticipated future use of the facility as a wildlife refuge may not include the use of the groundwater at LHAAP-35B (37) and LHAAP-67 as a drinking water source, the State of Texas designates all groundwater as potential drinking water, unless otherwise classified."

12) Section 2.7.1.6, Notification and Recordation requirements - This section should be modified to include language similar to language used on pp. 1-2 and 1-3 regarding the Army's responsibility "for implementation, maintenance, periodic inspection and enforcement of LUCs in accordance with the RD. Although the Army may transfer these responsibilities to another party through property transfer agreement or other means, the Army will remain responsible for"

Army believes that modification of this section is not necessary. This recordation is not a remedy or remedy component, it is an administrative requirement for the State of Texas. For CERCLA, limited monitoring in the form of Five Year Reviews for waste left in place above unrestricted levels is required.

13) Section 2.8, Remedial Action Objectives - Modify the last remedial action objective to state, "Return of the groundwater to its State of Texas drinking water supply use designation level, wherever practicable"

Consistent with the Army's response to Comment 1, the RAO will be amended to "Return of groundwater to its potential beneficial uses as drinking water, wherever practicable."

14) Comments on Section 2.9.2, Description of Remedy Components:

Alternative 2, First Para. - The Army should be reminded that this ROD contains enforceable standards and not goals. The "goal" and "additional goal" language in this paragraph and throughout this document insofar as remedy selection is concerned, should be modified to clearly state that the "required objective" or "standard required is" when discussing remedy selection.

The first paragraph should also state that "this alternative will return the contaminated groundwater to its State of Texas drinking water supply use designation level wherever practicable".

Consistent with the Army response to Comment 13, the second sentence will be revised to read "The objectives of this alternative are to prevent contaminated groundwater from migrating into nearby surface water, to return groundwater to its potential beneficial use as drinking water,

wherever practicable , and to ensure no use of the groundwater as a drinking water source. "
The third sentence will remain the same. The fourth sentence will be deleted.

Because the ROD is an enforceable document, Army does not believe that is necessary to address the issue of what agreed-to objectives, standards, goals, etc are otherwise requirements or not requirements. However, Army will include such references where these do not detract from the clarity of the document.

The second paragraph should also be modified to include, "this alternative restores the contaminated shallow drinking water aquifer at LHAAP-35(B) (37) and LHAAP-67 to its beneficial use as a drinking water supply per the State of Texas use designation, which for purposes of this ROD is considered to be attainment of the Safe Drinking Water Act, MCLs for all contaminants above the MCLs and attainment of MCLs for all contaminant by-products (daughter contaminants) above the MCLs."

Army agrees to inclusion of the requested text with changes consistent with the Army response to Comment 7:

"this alternative returns the contaminated shallow drinking water aquifer at LHAAP-35B (37) and LHAAP-67 to its potential beneficial uses, which for the purposes of this ROD is considered to be attainment of the Safe Drinking Water Act (SDWA) MCLs to the extent practicable. If a return to potential beneficial uses is not practicable, this alternative would still meet the NCP expectation to prevent further migration of the plume, prevent exposure to the contaminated groundwater, and evaluate further risk reduction."

Third Paragraph should be modified to also state that the "monitoring activities associated with MNA would assure protection of human health and environment by documenting the return of the groundwater to its beneficial use as a drinking water supply, by documenting reduction of the containment mass and protection of surface water through containment of the plume."

Army agrees to inclusion of the requested text with the addition of the word "potential" prior to "beneficial uses."

Alternative 3 - The Army should be reminded that this ROD contains enforceable standards and not goals. The "goal" and "additional goal" language in this paragraph and throughout this document insofar as remedy selection is concerned, should be modified to clearly state that the "required objective" or "standard required is ..." when discussing remedy selection

Because the ROD is an enforceable document, Army does not believe that is necessary to address the issue of what agreed-to objectives, standards, goals, etc are otherwise requirements or not requirements. However, Army will include such references where these do not detract from the clarity of the document.

This Section should also state, "this alternative restores the contaminated shallow drinking water aquifer at LHAAP-35(B) (37) and LHAAP-67 to its beneficial use as a drinking water supply per the State of Texas use designation, which for purposes of this ROD is considered to be

attainment of the Safe Drinking Water Act, MCLs for all contaminants above the MCLs and attainment of MCLs for all contaminant by-products (daughter contaminants) above the MCLs."

Army agrees to inclusion of the requested text with changes consistent with the Army response to Comment 7:

"this alternative returns the contaminated shallow drinking water aquifer at LHAAP-35B (37) and LHAAP-67 to its potential beneficial uses, which for the purposes of this ROD is considered to be attainment of the Safe Drinking Water Act (SDWA) MCLs to the extent practicable. If a return to potential beneficial uses is not practicable, this alternative would still meet the NCP expectation to prevent further migration of the plume, prevent exposure to the contaminated groundwater, and evaluate further risk reduction.

Alternative 4 - The Army should be reminded that this ROD contains enforceable standards and not goals. The "goal" and "additional goal" language in this paragraph and throughout this document insofar as remedy selection is concerned, should be modified to clearly state that the "required objective" or "standard required is ..." when discussing remedy selection.

Because the ROD is an enforceable document, Army does not believe that is necessary to address the issue of what agreed-to objectives, standards, goals, etc are otherwise requirements or not requirements. However, Army will include such references where these do not detract from the clarity of the document.

This Section should also state, "this alternative restores the contaminated shallow drinking water aquifer at LHAAP-35(B) (37) and LHAAP-67 to its beneficial uses as a drinking water supply per the State of Texas use designation, which for purposes of this ROD is considered to be attainment of the Safe Drinking Water Act MCLs for all contaminants above the MCLs and attainment of MCLs for all contaminant by-products (daughter contaminants) above the MCLs."

Army agrees to inclusion of the requested text with changes consistent with the Army response to Comment 7:

"this alternative returns the contaminated shallow drinking water aquifer at LHAAP-35B (37) and LHAAP-67 to its potential beneficial uses as drinking water, which for the purposes of this ROD is considered to be attainment of the Safe Drinking Water Act (SDWA) MCLs to the extent practicable. If a return to potential beneficial uses is not practicable, this alternative would still meet the NCP expectation to prevent further migration of the plume, prevent exposure to the contaminated groundwater, and evaluate further risk reduction.

15) Comments on Section 2.10, Summary of Comparative Analysis of Alternatives:

1. Overall Protection of Human Health and the Environment - The second paragraph, second and third sentences, in this Section should be modified to include, "Alternatives 2, 3, and 4 also provide confirmation that human health and the environment will be protected because the monitoring will be conducted to ensure that MNA is restoring the contaminated shallow drinking water aquifer at LHAAP-35(B) (37) and LHAAP-67 to its beneficial use as a drinking water supply per the State of Texas use designation, and to document that the plumes are contained and

prevented from impacting Goose Prairie Creek and Central Creek at levels that could present a risk to human and the environment. Furthermore, LUCs would protect human health by preventing access to the contaminated groundwater until contaminants in the groundwater attain the Safe Drinking Water Act MCLs for all contaminants above the MCLs and attain the MCLs for all contaminant by-products (daughter contaminants) above the MCLs."

Army agrees to incorporate the requested language with the following clarifications: "... the environment will be protected because the monitoring will be conducted to ensure that MNA is returning the contaminated shallow groundwater zone at LHAAP-35(B) (37) and LHAAP-67 to its potential beneficial use as drinking water, wherever practicable, and to document that the plumes are contained and prevented from impacting Goose Prairie Creek and Central Creek at levels that could present a risk to human and the environment. Furthermore, LUCs would protect human health by preventing access to the contaminated groundwater until contaminants in the groundwater attain the Safe Drinking Water Act MCLs for all contaminants above the MCLs and attain the MCLs for all contaminant by-products (daughter contaminants) above the MCLs"

2. Compliance with ARARs, Paragraph 2 - This Section fails to address the fact that this selected remedy is a restoration and containment remedy instead of the containment remedy only. As such, this section has to include language to the effect that, "Alternatives 2, 3, and 4, all restore the contaminated shallow drinking water aquifer at LHAAP-35(B) (37) and LHAAP-67 to its beneficial uses as a drinking water supply per the State of Texas use designation, which for purposes of this ROD is considered to be attainment of the Safe Drinking Water Act, MCLs for all contaminants above the MCLs and attainment of MCLs for all contaminant by-products (daughter contaminants) above the MCLs." From there, the Army's language for alternatives 2, 3, and 4 can be used with respect to discussing containment and ARARs.

Army agrees to incorporate the requested language with the following clarifications: "return the contaminated shallow groundwater zone at LHAAP-35(B) (37) and LHAAP-67 to its potential beneficial use as drinking water, where ever practicable, which for the purposes of this ROD is considered to be attainment of the Safe Drinking Water Act (SDWA) MCLs to the extent practicable. If a return to potential beneficial uses is not practicable, this alternative would still meet the NCP expectation to prevent further migration of the plume, prevent exposure to the contaminated groundwater, and evaluate further risk reduction.

As currently drafted, this section only deals with surface water ARARs and not ARARs for the groundwater. This remedy has to make it clear that the SDWA MCLs will be attained in the groundwater. The SDWA MCLs are relevant and appropriate because the contaminated groundwater is designated as a drinking water supply by the State of Texas. Because this groundwater is usable as a potential future drinking water supply attainment of SDWA MCLs for the specified contaminants and by-products is needed to return the groundwater to its highest beneficial use. See 40 C.F.R. § 300.430(e)(2)(i)(B & C).

See previous response. The selected remedy attains SDWA MCLs. The Army considers the SDWA MCLs relevant and appropriate based upon the factors found in the NCP under 40 CFR 300.400(g)(2), to include state groundwater designation.

3. Long-term Effectiveness and Permanence - First Paragraph - This paragraph fails to mention or account for the long-term risks to workers exposed to the contaminated groundwater as a result of carrying out responsibilities related to long-term monitoring of the groundwater and long-term maintenance of the groundwater monitoring equipment.

Army disagrees that groundwater monitoring personnel will be subject to long-term risks as a result of assumed exposure to contaminated groundwater. The purpose of 29 CFR 120 hazardous waste operations and emergency response training is to adequately protect workers from the risk of exposure to hazardous substances. Both worker training and controls embodied in the sampling procedures will adequately protect workers during groundwater sampling. It is also not possible to assume a long-term risk to any particular worker because it is not possible to assume that the same worker will return to any particular well over a period of many years, or that a well will remain contaminated over a period of years instead of declining towards MCL concentrations as is the objective of the remedy. Therefore, it is not possible to assume a long-term exposure to workers sampling groundwater at Longhorn.

Para. 2 - At the end of the paragraph, add the following sentence, "For purposes of this ROD, the long-term protection of human health and the environment will be served by returning the contaminated groundwater to its beneficial uses, which includes the attainment of the Safe Drinking Water Act MCLs for all contaminants above the MCLs and attainment of MCLs for all contaminant by-products (daughter contaminants) above the MCLs."

Army agrees to inclusion of the requested text with the addition of the word "potential" prior to "beneficial uses."

Para. 3 - Modify the last sentence by stating, "The implementation of Alternatives 2 and 4 would require a significant amount of more time than Alternative 3 in returning the contaminated groundwater to its beneficial use as a drinking water supply per the State of Texas use designation.

Army agrees to incorporate the requested language with the following clarifications: "The implementation of Alternatives 2 and 4 would require a significant amount of more time than Alternative 3 in returning the contaminated groundwater to its potential beneficial use as drinking water, wherever practicable.

4. Reduction of Toxicity, Mobility, or Volume through Treatment, First Para. - Please include references the Army relied on from the administrative record to reach this conclusion, "MNA has already been evaluated as effective." or delete.

The phrase will be deleted.

5. Short-Term Effectiveness, 4th Para. - Include the word, "currently" after the phrase, "does not" but before the word "impact."

Concur, the text will be revised.

6. Implementability, First Paragraph, last sentence - Modify this sentence to read, "Alternative 2 is easily implemented from a technical standpoint because no construction activities would be performed, although the Army would be responsible for long-term maintenance and enforcement of LUCs, long-term evaluation of MNA, long-term sampling; and long-term maintenance and operation of sampling equipment."

The text will be modified as requested.

16) Section 2.11, Principle Threat Waste – Please see Comment No. 4.

The text will be modified as requested.

17) Section 2.12.1, Summary of Rationale for the Selected Remedy, Third Sentence - The third sentence should be modified to reflect the fact that this remedy is in part, a restoration remedy. The sentence should be replaced with, "This alternative satisfies the RAOs for the sites through MNA and LUCs. MNA and LUCs serve to protect human health and the environment by monitoring the contaminated groundwater to ensure that MNA restores the contaminated groundwater at LHAAP-35(B) (37) and LHAAP-67 to its beneficial use as a drinking water supply per the State of Texas use designation, and to document that the plumes are contained and prevented from impacting Goose Prairie Creek and Central Creek at levels that could present a risk to human and the environment. Furthermore, LUCs would protect human health by preventing access to the contaminated groundwater until contaminants in the groundwater attain the Safe Drinking Water Act MCLs for all contaminants above the MCLs and attain the MCLs for all contaminant by-products (daughter contaminants) above the MCLs."

Army agrees to incorporate the requested language with the following clarifications: "... MNA returns the contaminated groundwater at LHAAP-35(B) (37) and LHAAP-67 to its potential beneficial use as drinking water, wherever practicable, and ...

18) Comments on Section 2.12.2, Description of the Selected Remedy:

1st Para. - The first sentence should be modified in a manner consistent with other comments concerning the fact that this remedy includes restoration and not just containment; the selected remedy included enforceable standards and requirements, not just goals. As such, the first sentence should be modified to read, "The standards required by the preferred alternative are to monitor the contaminated groundwater to ensure that MNA restores the contaminated groundwater at LHAAP-35(B) (37) and LHAAP-67 to its beneficial use as a drinking water supply per the State of Texas use designation, and to document that the plumes are contained and prevented from impacting Goose Prairie Creek and Central Creek at levels that could present a risk to human and the environment. Furthermore, LUCs would protect human health by preventing access to the contaminated groundwater until contaminants in the groundwater attain

the Safe Drinking Water Act MCLs for all contaminants above the MCLs and attain the MCLs for all contaminant by-products (daughter contaminants) above the MCLs.”

Army agrees to incorporate the requested language with the following clarifications: “... MNA returns the contaminated groundwater at LHAAP-35(B) (37) and LHAAP-67 to its potential beneficial use as drinking water, wherever practicable, and ...

1st Para., Second Sentence - If the intent of the ROD is to convey MNA as a treatment remedy then this sentence will not have to be modified; but the Statutory Determinations Sections (1.5 on p. 1-3; and 2.13 on p. 2-41) will have to be modified to state that the statutory preference for treatment is satisfied, and then state how MNA constitutes treatment.

The text in Sections 1.5 and 2.13 will be modified to state that the statutory preference for treatment is satisfied and a statement that MNA is an active remedy that relies on natural biological, chemical, and physical processes that act to reduce the mass and concentration of groundwater COCs under favorable conditions will be added.

4th Para. - After number (5) ensuring that the LUC objectives are met to protect the integrity of the remedy; add "and (6) the LUCs shall not be modified, changed, or terminated without the review and approval by EPA. In the event that EPA and the Army disagree with respect to any modification of the selected remedy, including the LUC component of the selected remedy, EPA shall make the remedy selection modification decision consistent with the FFA and 40 C.F.R. § 300.430(f)(4)(iii) (B)."

The details on coordination with TCEQ and EPA concerning the termination, modification and enforcement of LUCs will be included in the RD. The language in the ROD reflects how LUC issues will be addressed in a manner consistent with changes to the RD in consultation with TCEQ and EPA and consistent with the FFA and the NCP. Enforcement of LUCs and changes in a LUC or land use are remedial implementation issues addressed under the RD. After consultation with TCEQ and EPA about a specific LUC concern, if a remedy change is necessary, the remedy will be modified consistent with the FFA and 40 CFR 300.435.

A sentence will be added after (5) as follows:

“In the event that TCEQ and/or EPA and the Army agree with respect to any modification of the selected remedy, including the LUC component of the selected remedy, the remedy will be changed consistent with the FFA and 40 C.F.R. § 300.435.”

5th Para., beginning on bottom of p. 2-37, Third sentence - This sentence should be modified to read, "The groundwater restriction component of the LUCs shall be maintained until the concentrations of contaminants and by-product (daughter) contaminants have been reduced to below their respective MCLs under the SDWA to allow unrestricted use and unlimited exposure at LHAAP-35B (37) and LHAAP-67."

The text will be modified as requested.

6th Para. - This paragraph discusses termination of LUCs. EPA recommends deletion of this paragraph or adding a following sentence, "The Army shall consult with EPA to obtain EPA's review and approval of any modification or termination of a LUC or land use change inconsistent with the LUC objectives and use assumptions of the remedy."

"at which point LUCs may be terminated" will be deleted as recommended.

7th Para. – EPA recommends deletion of this paragraph, or modification to: "Although groundwater at Longhorn is not currently used as a drinking water, its highest potential beneficial use as designated by the State of Texas is for use as a drinking water. While the future land use of the Site is reasonably anticipated to be a national wildlife refuge, the groundwater is a potential future drinking water supply based upon its beneficial use designation. The U.S. Army recognizes the USEPA's expectations as provided in the National Contingency Plan (NCP), to return usable groundwaters to their beneficial uses wherever practicable. The Army shall restore the contaminated shallow drinking water aquifer at LHAAP-35(B) (37) and LHAAP-67 to its beneficial uses which for purposes of this ROD is considered to be attainment of the Safe Drinking Water Act (SDWA) MCLs for all contaminants above the MCLs and attainment of MCLs for all contaminant by-products (daughter contaminants) above the MCLs."

*Note: The reference to "unrestricted use" and "unlimited exposure" is incorrect. The correct reference is "unlimited use" and "unrestricted exposure" per the standards set under 40 C.F.R. § 300.430(f)(4)(ii). Regardless, EPA recommends deletion of this paragraph or modification to the suggested language.

The paragraph is redundant and will be deleted as requested.

19) Comments on Section 2.13, Statutory Determinations:

Protection of Human Health and the Environment, Second Para. - This section should also include language of account for "contaminants of concerns and contaminant by-products (daughter contaminants)" See Comment 18 regarding this issue. This paragraph addresses COCs and COC by-products as well. In addition, this Section does not account for restoration and should be modified to include the restoration language used in Comment No. 15 at '1. Overall Protection...'

The text will be revised to conform to the modifications discussed in response to the referenced comments.

Compliance with ARARs - include the language recommended for Comment No. 15 at '2. Compliance with...' The recommended language addresses groundwater and surface water ARARs, COCs and COC by-products. Include the recommended language here.

Army agrees to incorporate the requested language with the following clarifications: "... the environment will be protected because the monitoring will be conducted to ensure that MNA is returning the contaminated shallow groundwater zone at LHAAP-35(B) (37) and LHAAP-67 to its potential beneficial use as drinking water, wherever practicable , and to document that the

plumes are contained and prevented from impacting Goose Prairie Creek and Central Creek at levels that could present a risk to human and the environment. Furthermore, LUCs would protect human health by preventing access to the contaminated groundwater until contaminants in the groundwater attain the Safe Drinking Water Act MCLs for all contaminants above the MCLs and attain the MCLs for all contaminant by-products (daughter contaminants) above the MCLs”

Utilization of Permanent Solutions and Alternative Treatment Technologies - This section should address COCs and COC by-products consistent with previous comments already addressing this issue; this section should also include previous language provided in prior comments that address restoration (e.g., See Comment No. 18, 1st Para).

Army will address COCs and COC by-products consistent with the response to Comment No. 18, 1st Paragraph.

Preference for Treatment - This language should be modified to address comments provided in Comment No. 4.

Army will modify this language consistent with the response to Comment No. 4.

20) General Comment – EPA recommends that the ROD include language on contingency measures, such as adoption of alternative 3 if MNA does not result in the attainment of MCLs for COCs and COC by-products.

As noted above, in the event a return to beneficial uses is in the future determined to be not practicable, the Army still expects this remedy to prevent further migration of the plume, prevent exposure to the contaminated groundwater, and evaluate further risk reduction (40 CFR 300.430(a)(1)(iii)(F)). Army is considering contingent measures and anticipates including such additional language in the ROD.

Bryan W. Shaw, Ph.D., *Chairman*
Buddy Garcia, *Commissioner*
Carlos Rubinstein, *Commissioner*
Mark R. Vickery, P.G., *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 12, 2010

Mr. Thomas E. Lederle, Branch Chief
United States Army, BRAC
2530 Crystal Drive, Room 5000
Taylor Bldg / NC3
Arlington, VA 22202

Re: Final Explanation of Significant Differences, Burning Ground No. 3 and Unlined
Evaporation Pond (Designated as LHAAP-18/24), Interim Remedial Action Record of
Decision Dated May 1995
Longhorn Army Ammunition Plant (LHAAP) (SUP-126)

Dear Mr. Lederle:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the *Final Explanation of Significant Differences (ESD), Burning Ground No. 3 and Unlined Evaporation Pond (Designated as LHAAP-18/24), Interim Remedial Action Record of Decision Dated May 1995*. The TCEQ concurs with the changes made to the interim remedy as detailed in the ESD.

If you have any questions or need additional information, please feel free to contact me at (512) 239-2139.

Sincerely,

A handwritten signature in dark ink, appearing to read "Brent Wade", with a stylized flourish at the end.

Brent Wade, Director
Remediation Division

BW/FD/

cc: Ms. Rosen Zeiler, Army / BRAC Site Manager, Ratcliff, AR
Mr. Stephen L. Tzhone, U. S. Environmental Protection Agency Region 6, Dallas, TX

FINAL
EXPLANATION OF SIGNIFICANT DIFFERENCES
BURNING GROUND No. 3 AND UNLINED EVAPORATION POND
(DESIGNATED AS LHAAP-18/24)
INTERIM REMEDIAL ACTION RECORD OF DECISION DATED
MAY 1995
LONGHORN ARMY AMMUNITION PLANT



Prepared for:

Longhorn Army Ammunition Plant
Karnack, Texas

through the

United States Army Corps of Engineers
Tulsa, Oklahoma

August 2010

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APPENDIX A	Letter- Subject: Early Interim Remedial Action at Burning Ground No. 3 and Landfills 12 and 16- Remedial Action Completion, 31 August 1999, Bate Stamp 024580-024581
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LIST OF ACRONYMS/ABBREVIATIONS

BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
ESD	Explanation of Significant Differences
gpm	gallons per minute
GWTP	Groundwater Treatment Plant
HEW	Horizontal Extraction Well
ICT	Interceptor Collection Trenches
IRA	Interim Remedial Action
LHAAP	Longhorn Army Ammunition Plant
mg/kg	milligrams per kilogram
mg/l	milligrams per liter
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
TCEQ	Texas Commission on Environmental Quality
UEP	Unlined Evaporation Pond
USEPA	United States Environmental Protection Agency
VEW	Vertical Extraction Well
VOC	Volatile Organic Compound

FINAL
EXPLANATION OF SIGNIFICANT DIFFERENCES
BURNING GROUND No. 3 AND UNLINED EVAPORATION POND
(DESIGNATED AS LHAAP-18/24)
INTERIM REMEDIAL ACTION RECORD OF DECISION DATED MAY 1995
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS
OCTOBER 2009

1.0 INTRODUCTION AND STATEMENT OF PURPOSE

Site and Location: LHAAP-18/24 is a fenced, cleared area consisting of 34.5 acres in the southeastern section of LHAAP.

Lead Agency and Supporting Agency:

Lead Agency – U.S. Army

Supporting Agency – U.S. Environmental Protection Agency Region 6 (USEPA)

Texas Commission on Environmental Quality as a Federal Facilities Agreement Partner

This ESD is in Compliance with CERCLA §117 (c) and NCP §300.435(c)(2)(I)

Date of ROD Interim Remedial Action (IRA ROD) Signature: May 1995,
Administrative Record, Bate Stamp 012681-012751

Need for ESD: The May 1995 IRA ROD, Section I., specified the pumping of contaminated shallow groundwater from about 5000 feet of Interceptor Collection Trenches and several Vertical Extraction Wells (VEW). However, the VEWs were not installed. The removal of one remedial technology component from the Interim Remedial Action prompted the request for the ESD by USEPA Region 6. Because the VEW component of the groundwater (extraction) remedy was the only change made from the IRA ROD remedy selection, discussion of the soil remedy will not be included in this ESD. In addition, perchlorate was not considered a contaminant at the time of the IRA ROD and thus the State of Texas current regulatory limit for perchlorate was not a consideration in approving the IRA remedy and will not be included in this ESD. The final remedy will attain all the State ARARs and SDWA MCLs, to the extent practicable, and consistent with 40 C.F.R. §300.430(e)(2)(i)(B&C).

This ESD will become part of the Administrative Record file in accordance with NCP 300.825(a)(2). The file will be located at the Marshall Public Library:

Marshall Public Library
300 South Alamo Blvd.
Marshall, TX 75670

Phone: 903.935.4465

Hours:

Monday, Wednesday, and Friday 10AM-6PM

Tuesday and Thursday 10AM-4PM

Saturday 10AM-4PM

2.0 SITE HISTORY, CONTAMINATION, AND SELECTED REMEDY

2.1 SITE HISTORY AND CONTAMINATION

LHAAP-18/24 had been used since 1955 as a burial and burning ground for various industrial wastes and hazardous wastes generated at LHAAP. Burned wastes included solvents, oil, and red phosphorus. Buried wastes include rocket motor washout residues, illuminating mixtures, oxidizing agents, solvents, oils, and detergents. The former unlined evaporation pond was constructed in 1963 to collect water from the washout of rocket motor casings and the process waste sumps. The water contained solvents, explosive compounds, and metal residues. The UEP was no longer used after 1984 and was closed under RCRA in 1986.

High concentrations of solvents (VOCs), primarily methylene chloride and trichloroethylene, and traces of heavy metals, such as barium, have been detected within subsurface soils, buried waste, and the uppermost water bearing-zone at the site. The concentrations of methylene chloride, as of April 1994, ranged from approximately 10,550 mg/l, near the center of the plume, to less than 0.005 mg/l, near the northwest edge of the plume. The concentration of trichloroethylene, as of April 1994, range from approximately 1,520 mg/l near the center of the plume, to less than 0.005 mg/l near the northwest edge of the plume. Soil samples from 1987 through 1989 detected Trichloroethylene with a maximum concentration of 1,000 mg/kg, methylene chloride with a maximum concentration of 742 mg/kg and acetone with a maximum concentration of 33 mg/kg. Barium, chromium, and lead have also been detected in site soil samples at concentrations exceeding expected background concentrations for the area. Site LHAAP-18/24 was identified as an NPL site and is in the Federal Facility Agreement signed by USEPA, TCEQ, and the Army and effective December 30, 1991(Administrative Record Bates Stamp 004404-004405).

2.2 SELECTED REMEDY

The selected remedy for the site includes extraction of shallow groundwater and treatment using metal precipitation, air stripping and off-gas treatment for VOCs, and excavation of source material and treatment using low temperature thermal desorption and off-gas treatment for VOCs. The following language is taken from the Section I., Performance Standards section of the IRA ROD for groundwater remedy.

The contaminated shallow groundwater will be pumped from about 5,000 feet of interceptor collection trenches and several vertical extraction wells. The estimated groundwater pumping rate from all extraction points is about 150,000 to 400,000 gallons per day. The hydraulic effectiveness of the extraction system will be evaluated by monitoring groundwater levels and quality in the shallow aquifer during the implementation of the selected remedy.

3.0 BASIS FOR THE DOCUMENT

The USEPA requested an ESD be submitted to address differences in the IRA implemented versus the IRA identified in the May 1995 IRA ROD. The Remedial Action Work Plan, 28 December 1995 (Administrative Record Bate Stamp 016353-016708), which was submitted following approval of the IRA ROD, included language in Section 1.6, to install up to eight VEWs only if required following installation and evaluation of ICT sections. The basis for evaluating the need for VEWs after evaluating ICT section performance stems from an Interim Remedial Action Phase II Pilot Study, 15 March 1995 (Administrative Record Bate Stamp 00073624-00073693), which tested the application of ICTs, VEWs and Horizontal Extraction Wells (HEWs). The results of the Phase II Pilot Study indicated that the ICT was the most effective of the extraction techniques for the shallow groundwater at the site. The vertical extraction well was also effective; however its extraction rate (0.8gpm) was significantly lower than the ICTs extraction rate (~4gpm). The horizontal extraction well was not successful in extracting the shallow groundwater at the site. The phase II extraction challenges were attributed to the low hydraulic conductivity of the soil at the Burning Ground No. 3. The follow-on decision to remove the VEWs from the remedy is supported by a Letter, dated 31 August 1999, from the EPA declaring the Interim Remedial Actions at Burning Ground No. 3 are complete (Administrative Record Bate Stamp 024580-024581). The basis for the finding, presented in the letter, is “the groundwater treatment plant has been operational since January 1997 and is continuing to operate”. A copy of the letter is located in Appendix A.

In addition, it is noted that the remedy is an Interim Remedial Action, the current contractor is evaluating and optimizing the Interim Remedial Action for the groundwater extraction and treatment system and the optimization study may include addition of VEWs for the Final Remedial Action.

4.0 DESCRIPTION OF SIGNIFICANT DIFFERENCES

IRA ROD Groundwater Remedy, Section G, paragraph 8:

A combination of 5,000 feet of interceptor collection trench and eight vertical extraction wells will be used to collect onsite shallow groundwater. These collection systems will be installed along the perimeter and inside Burning Ground No. 3. Between 150,000 and 400,000 gallons of contaminated shallow groundwater would be collected and treated daily during the implementation of the Early Interim Remedial Action. The methods of effective extraction of the shallow groundwater have been determined through the pilot study.

Change to Remedy Presented in the IRA ROD:

The only change to the remedy proposed in the IRA ROD is the removal of eight vertical extraction wells. The ICT collection systems were installed along the perimeter and inside Burning Ground No. 3, in accordance with the IRA ROD.

IRA ROD Performance Objectives for the Groundwater Remedy, Section I, Performance Standards, paragraph 1:

The contaminated shallow groundwater will be pumped from about 5,000 feet of interceptor collection trenches and several vertical extraction wells. The estimated groundwater pumping rate from all extraction points is about 150,000 to 400,000 gallons per day. The hydraulic effectiveness of the extraction system will be evaluated by monitoring groundwater levels and quality in the shallow aquifer during the implementation of the selected remedy.

Change to Performance Objectives:

No change in pumping rate performance are identified in the implemented IRA relative to the remedy identified in the IRA ROD based on estimated pumping rates from the Proof of Performance Test Results GWTP report, 22 June 1998 (Administrative Record Bate Stamp 023345-023388). The estimated groundwater pumping from all extraction points is about 100 to 280 gpm (equals 144,000 to 403,200 gallons per day), Section 1.3, Groundwater Treatment Plant Description, paragraph 1.

IRA ROD Implementability Determination, Section H, Implementability, paragraph 2:

Interceptor collection trenches and vertical extraction wells have been shown to effectively draw down the water table of the shallow groundwater, as well as produce a significant volume of water. The performance of these extraction methods meets the objective of restricting

or preventing migration of the contaminated water horizontally and vertically. In isolated pockets of contamination or in areas where the groundwater requiring extraction is deeper than 40 feet, it is more efficient to utilize vertical extraction wells.

Change to Implementability:

The efficiency loss for extracting isolated pockets of contamination deeper than 40 feet with the ICT sections as opposed to VEWs has not been evaluated however the overall efficiency of the ICT sections was shown to exceed the VEWs efficiency in the pilot study.

IRA ROD Protection of Human Health and the Environment, Section J, Protection of Human Health and the Environment, paragraph 1:

The extraction and treatment of contaminated groundwater is expected to mitigate lateral expansion of the plume and the migration of contaminants to lower water bearing zones at the burning ground.

Change to Protection of Human Health and the Environment:

No loss of IRA effectiveness in mitigating VOC plume migration is identified due to lack of VEWs. The February 2009 Draft Feasibility Study provides supporting evidence that the VOC plumes are shrinking.

Costs:

The following total cost was estimated in the Cost and Schedule presentation prepared by Dow Environmental Inc.:

ICT construction = \$2,998,631.

Change to Cost:

The cost for one vertical extraction well from Phase I and II work was \$89,494. Assuming no variation in cost, the LHAAP-18/24 IRA ESD's modified cost would be ~\$716,000 less expensive than the original cost of selected remedy in the IRA ROD.

5.0 SUPPORT AGENCY COMMENTS

The USEPA and TCEQ have reviewed this ESD and support the changes to the selected remedy.

6.0 STATUTORY DETERMINATIONS

The modified remedy satisfies CERCLA §121. The IRA is performing as intended to hydraulically contain the groundwater contaminants at the site until a remedy is selected and approved in a final ROD.

7.0 PUBLIC PARTICIPATION

A notice summarizing the ESD shall be published in the Marshall News Messenger upon finalization of the ESD. All public participation requirements set out in NCP §300.435(c)(2)(i) have been met.

The Proposed Plan for Early Interim Remedial Action at the site was released for public comments on 9 September 1994. The Proposed Plan identified the preferred alternative to be a combination of Alternatives 4, 6, and 8:

- Extraction of shallow groundwater and treatment using metal precipitation, air stripping and off-gas treatment for volatile organic compounds, and
- Excavation of source material and treatment using low temperature thermal desorption and off-gas treatment for volatile organic compounds.

The U.S. Army reviewed all written and oral comments submitted during the public comment period. There were no significant comments captured related to the groundwater extraction system.

Authorizing Signature:



Thomas E. Lederle
Industrial Branch Chief
BRAC Division, ACSIM
United States Army

Date: 23 Aug 2010

Concurrence Signature:

I have reviewed this document, and any comments I had have been addressed and/or incorporated:



Samuel Coleman, P.E.
Director
Superfund Division
U.S. Environmental Protection Agency, Region 6

Date: 9/20/10

8.0 REFERENCES

Dow Environmental, 1995. Interim Remedial Action Burning Ground No. 3 and Unlined Evaporation Pond, Longhorn Army Ammunition Plant, Karnack, Texas.

Dow Environmental, 1995. Interim Remedial Action, Burning Ground No. 3, Longhorn Army Ammunition Plant, Karnack, Texas.

Radian International LLC, 1998. Proof of Performance Test Results, Ground Water Treatment Plant Interim Remedial Action Burning Ground No. 3, Longhorn Army Ammunition Plant, Karnack, Texas

United States Environmental Protection Agency, 1991. Notices Of Effective Date Of Deferral Agreement, Longhorn Army Ammunition Plant, Marshall, Texas.

United States Environmental Protection Agency Region 6, 1999. Early Interim Remedial Action at Burning Ground No. 3 and Landfills 12 and 16- Remedial Action Completion, Dallas, Texas, U.S.

APPENDIX A



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

August 31, 1999

James A. McPherson, Commander's Representative
Longhorn/Louisiana Army Ammunition Plants
Attn: SIOLH-CR
P.O. Box 658
Doyline, LA 71023

Re: Longhorn Army Ammunition Plant
Remedial Action Completion
Early Interim Remedial Action at Burning Ground No. 3 and
Early Interim Remedial Action at Landfills 12 and 16

Dear Mr. McPherson:

This letter is to document that the U.S. Environmental Protection Agency (EPA) finds that the Interim Remedial Actions at the Burning Ground No. 3 and Landfills 12 and 16 are complete. The EPA defines completion of an operable unit remedial action as: conclusion of construction activities, performance of a final inspection, determination that the remedy is operational and functional, and preparation of an operable unit Remedial Action Report.

In regards to the Early Interim Remedial Action at Burning Ground No. 3, major components of the selected remedy included:

- Excavation and treatment of source material using low temperature thermal desorption and catalytic oxidation for the off-gas, and
- Extraction and treatment of contaminated shallow ground water using organic air stripping and off-gas treatment and metals precipitation.

The full-scale source treatment operation occurred from February through December 1997. The *Cost and Performance Report Low Temperature Thermal Desorption at Longhorn Army Ammunition Plant, Burning Ground No. 3* (U.S. Army Corps of Engineers, January 1999), which included all the elements required in a Remedial Action Report, has been reviewed and was approved by EPA on April 19, 1999. The ground water treatment plant has been operational since January 1997 and is continuing to operate.

In regards to the Early Interim Remedial Action at Landfills 12 and 16, the selected remedy consisted of the construction of multilayer caps which included the following components:

- Foundation soil layer,
- Sodium bentonite geocomposite liner,
- Geosynthetic membrane liner,
- Final soil cover, and
- Perimeter berms and drainage swales.

The landfill caps and the final inspections were completed in November 1998. Documentation of the landfill cap construction activities is provided in the *Final Construction Completion Report Interim Remedial Action Landfills 12 and 16 Cap Construction* (OHM Remediation Services Corporation, December 1998).

If you have any questions, feel free to contact Mr. Chris G. Villarreal of my staff at (214) 665-6758.

Sincerely,



William K. Honker
Chief, AR/OK/ TX Branch
Superfund Division

00088937



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Public Meeting on Proposed Plans for Longhorn Army Ammunition Plant

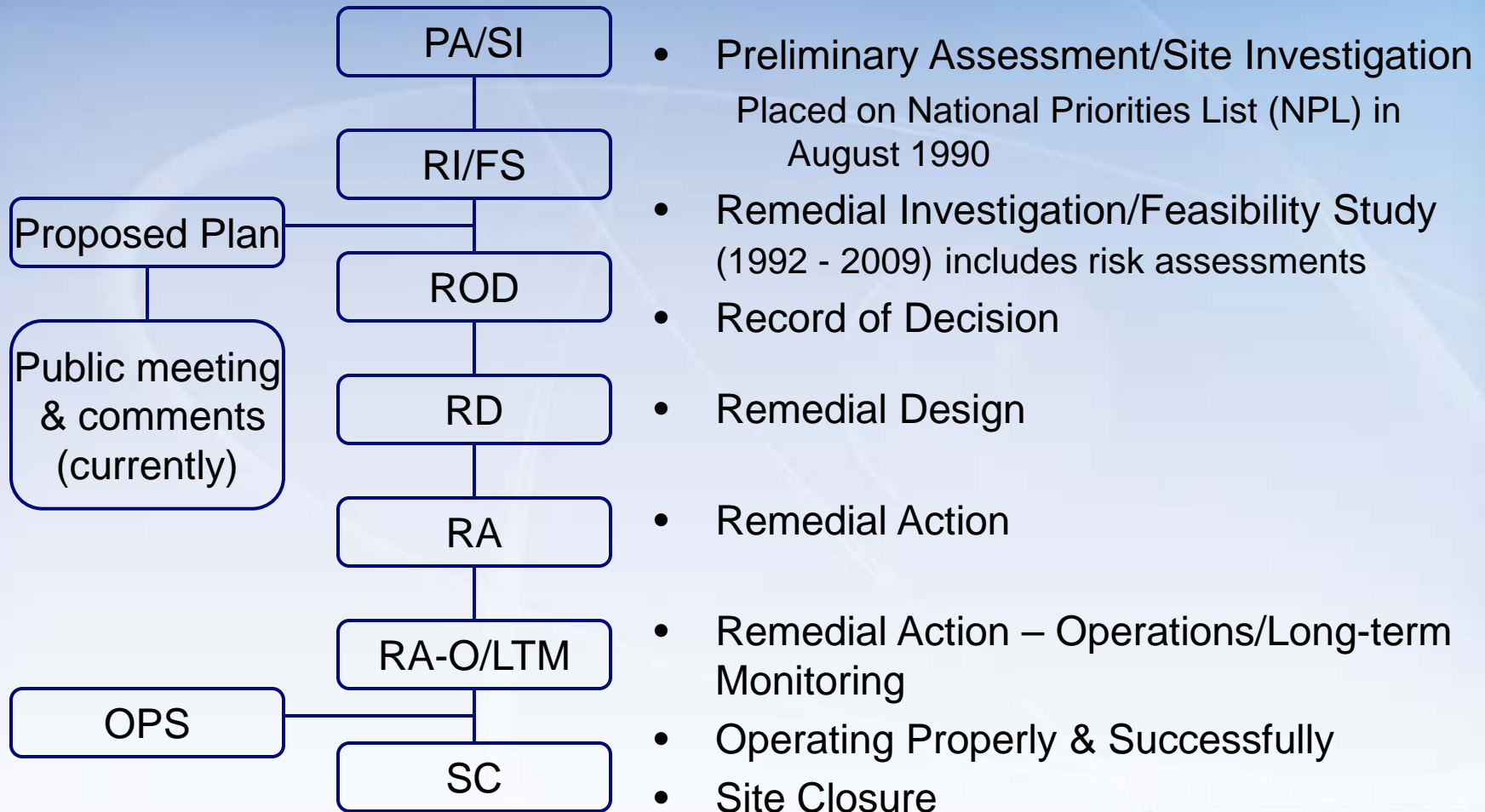
Former Pistol Range, LHAAP-49,
LHAAP-35A(58), LHAAP-46, and
LHAAP-50

March 9, 2010
Karnack Community Center

**A transcript will be made for questions and answers.
Please state your name and affiliation for the court reporter
before asking your question.**

Longhorn AAP is an NPL site

Outline of CERCLA* process for the cleanup of NPL sites



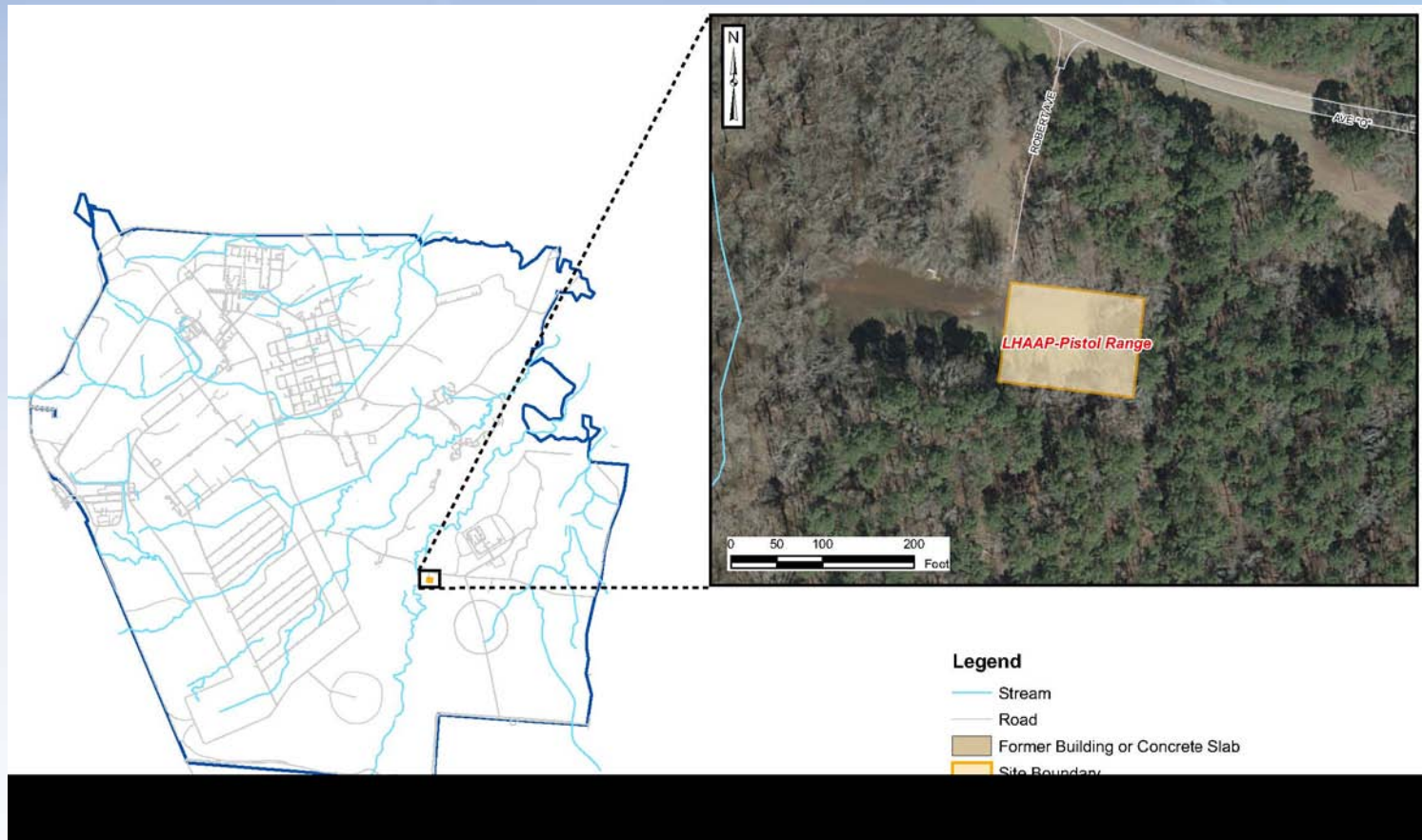
*Comprehensive Environmental Response, Compensation, and Liability Act

Risk Assessments Overview

- Risks to human health or the environment outside of the acceptable range are the drivers for remedial action
 - Cancer risk is expressed as a probability; risk acceptable to EPA is in the range of 1×10^{-6} to 1×10^{-4} or 1 in 1,000,000 to 1 in 10,000
 - Non-cancer hazard is expressed as the hazard index (HI); HI = intake dose/reference dose, summed for all contaminants; HI acceptable to EPA is < 1
 - If the risks are acceptable, proposed plan is for no further action
- Exposure depends on current and future land and groundwater use scenarios. For these sites:
 - Use scenario: industrial/recreational (national wildlife refuge)
 - Human receptor: Hypothetical future maintenance worker
- Baseline Ecological Risk Assessment (BERA) concluded that these five sites do not pose an ecological risk

Former Pistol Range

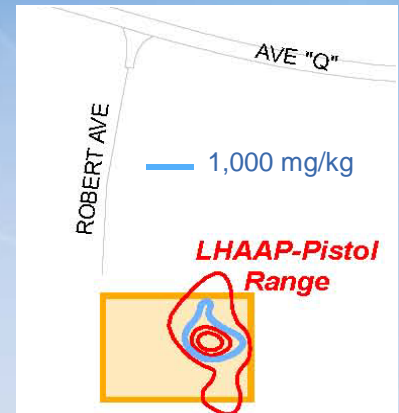
Proposed remedy: No further action



Former Pistol Range

Site Background and Characterization

- Background
 - Established before 1954; closed in 2005
 - Approximately 0.4 acres (150 ft x 110 ft)
 - Used for small arms practice and qualifying tests
- Medium and contaminant of concern:
 - Lead in soil exceeded the soil medium-specific concentration for industrial use (SAI-Ind)
 - SAI-Ind: 1,000 mg/kg; max. detected: 5,240 mg/kg
 - Groundwater is acceptable; below MCL (15 µg/L)
 - Investigation concluded soil would not adversely affect groundwater in the future



Former Pistol Range

August 2009 Removal Action

- Shaw completed a non-time critical removal action for lead-contaminated soil in August 2009
 - Objective: Remove lead-contaminated soil by excavation to satisfy the cleanup level
 - Cleanup level: 1,000 mg/kg (SAI-Ind)
- Excavated soil was taken to off-site disposal facilities; site was backfilled with clean soil
- Confirmation sample results showed remaining soil lead concentrations were below SAI-Ind

Former Pistol Range

Site Risks: Before and After

- Contamination was compared to industrial cleanup levels (based on future use as a national wildlife refuge).
- Exposure pathways: inhalation, ingestion, contact
- Before Removal Action:
Soil contamination exceeded standard;
groundwater was acceptable
- After Removal Action:
Soil and groundwater are acceptable

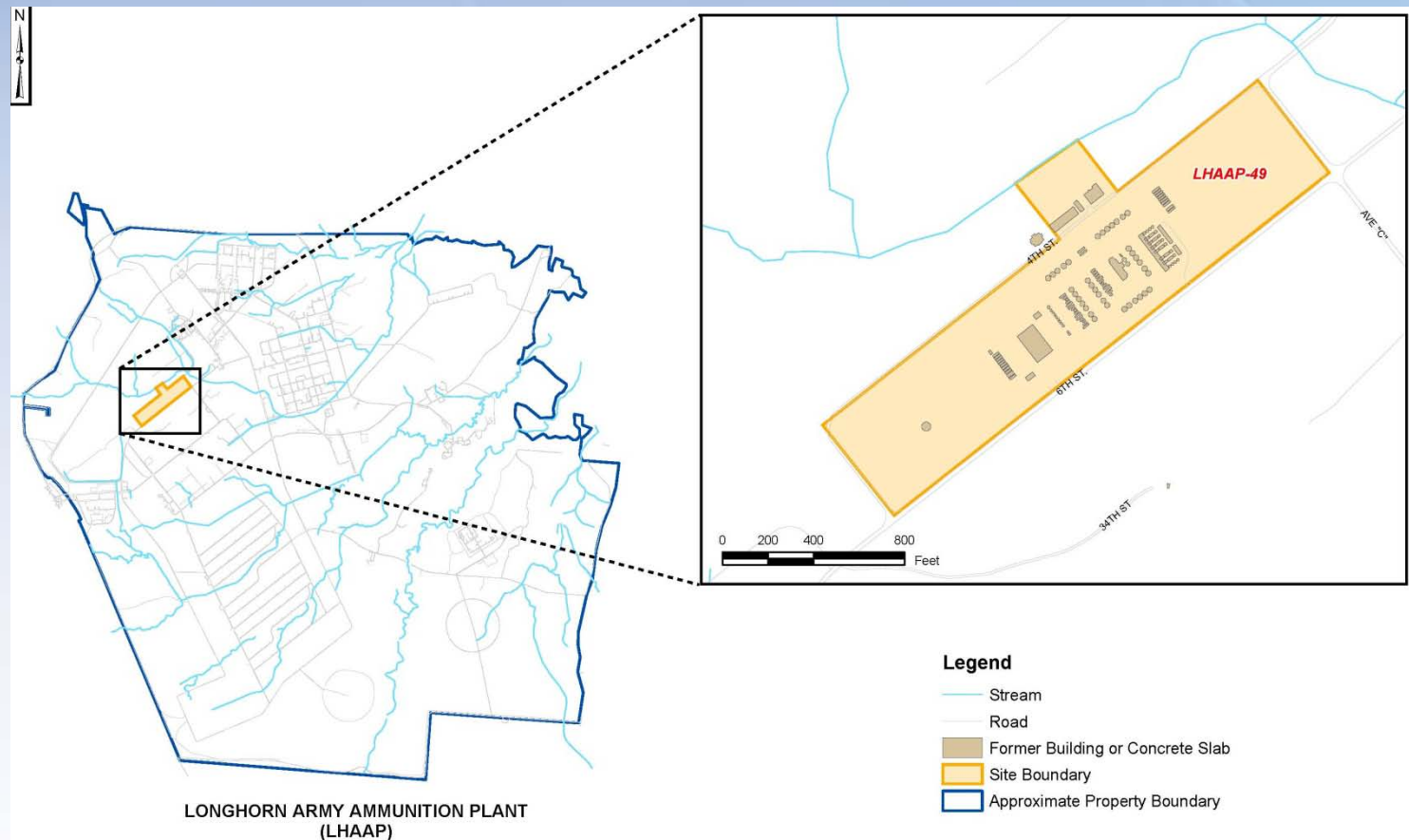
Former Pistol Range

Proposed Remedy: No Further Action

- Removal action eliminated the need to conduct further remedial action at the former Pistol Range
- The No Further Action remedy is protective of human health and the environment
- Land use: Nonresidential
Notification will be filed with Harrison County stating this. Limited monitoring will document that use of the site remains consistent with nonresidential use scenarios.

LHAAP-49 Former Acid Storage Area

Proposed remedy: No action



LHAAP-49 Former Acid Storage Area

Site Background

- Approximately 30 acres
- From 1942 to 1945, used for formulation and storage of acid (e.g., nitric and sulfuric acid) and acid mixtures
- Surface features: building foundations, concrete saddles and platforms that once supported aboveground storage tanks, grass, and woods
- A 2.5 acre parcel north of 4th St was included in the site boundaries based on elevated mercury concentrations in soil

LHAAP-49 Former Acid Storage Area

Site Investigations & Site Risk

- Soil: 1998 and 2000 investigations found elevated levels of metals in soil and sediment, especially lead and mercury. Later investigation found very high concentrations of mercury in two sample locations north of 4th Street.
- Groundwater: Investigations were conducted in 1998, 2000, 2005, 2007, 2008, and 2009. The later investigations focused on a few chemicals that were elevated in the earlier sampling. These were determined to be associated with background levels in the groundwater or with well construction/sampling rather than the groundwater itself.
- Baseline human health risk assessment (BHHRA): Original was based on 1998 and 2000 investigations. Shaw combined this data set with data subsequently collected by USFWS, USACE, and Shaw, and found that the new data did not cause the exposure concentrations to increase.

LHAAP-49 Former Acid Storage Area

Site Risk & Soil Excavation

- For a future maintenance worker under the industrial scenario:
 - Soil and groundwater cancer risk and soil hazard index (HI) are in the acceptable range
 - Groundwater HI of 2 (exceeds acceptable HI of 1) is due to various factors including: naturally occurring metals, corrosion products of stainless steel wells. The overall conclusion of the investigations was that no action was required for groundwater
 - No action needed to protect receptors
- October 2008: Shaw removed soil around the two samples north of 4th Street to a depth of 1 foot and backfilled with clean soil. This was done to satisfy TCEQ “hotspot” concerns. The overall risk assessment had already indicated that human health and ecological risks for the site’s soil were acceptable

LHAAP-49 Former Acid Storage Area

Proposed Remedy: No Action

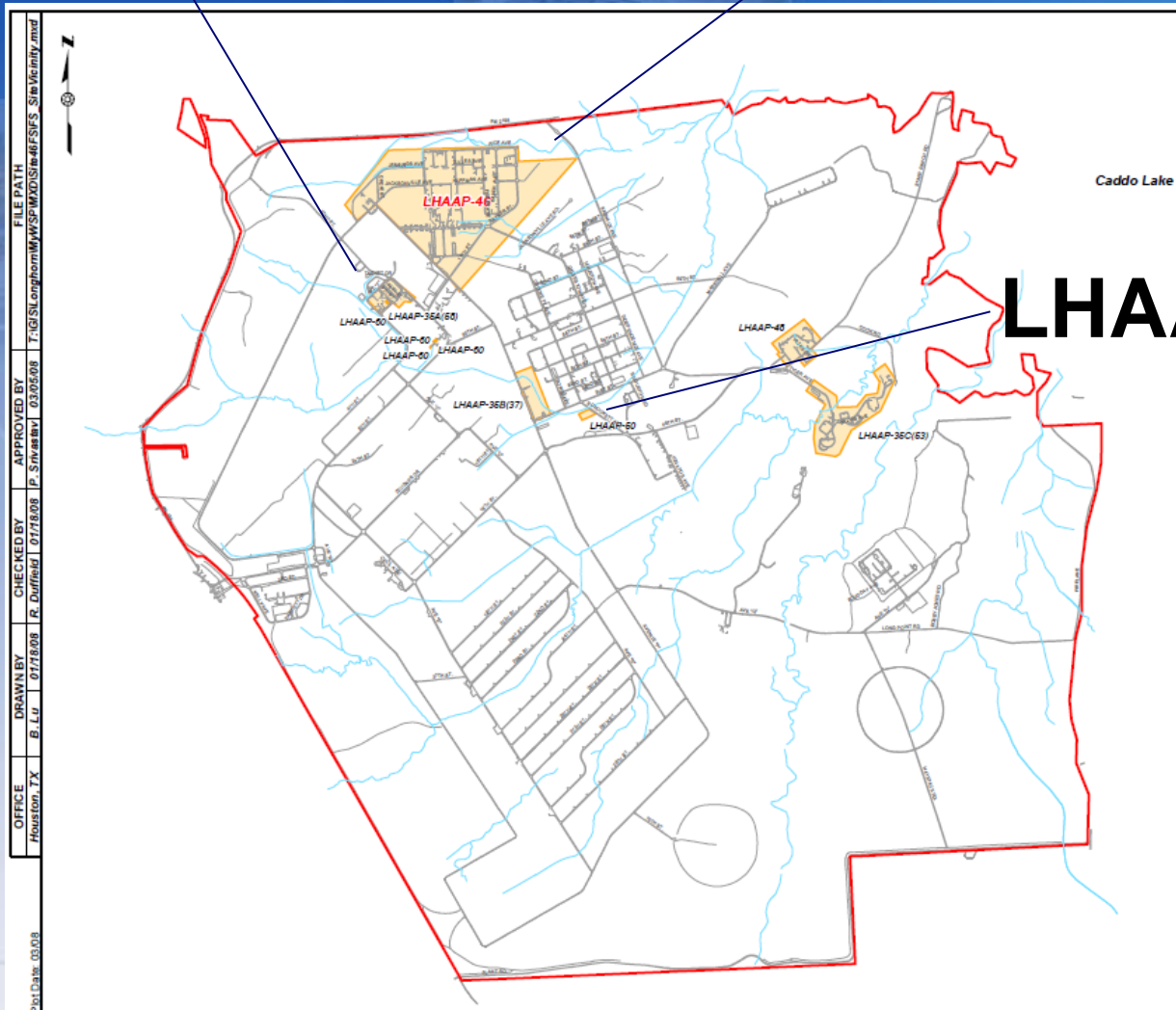
- No action is proposed based on the existing data and determination of no unacceptable risk to human health or ecological receptors
- Land use: nonresidential
Notification will be filed with Harrison County stating this. Limited monitoring will document that use of the site remains consistent with nonresidential use scenarios

Group 4 Sites

LHAAP-35A(58)

LHAAP-46

LHAAP-50

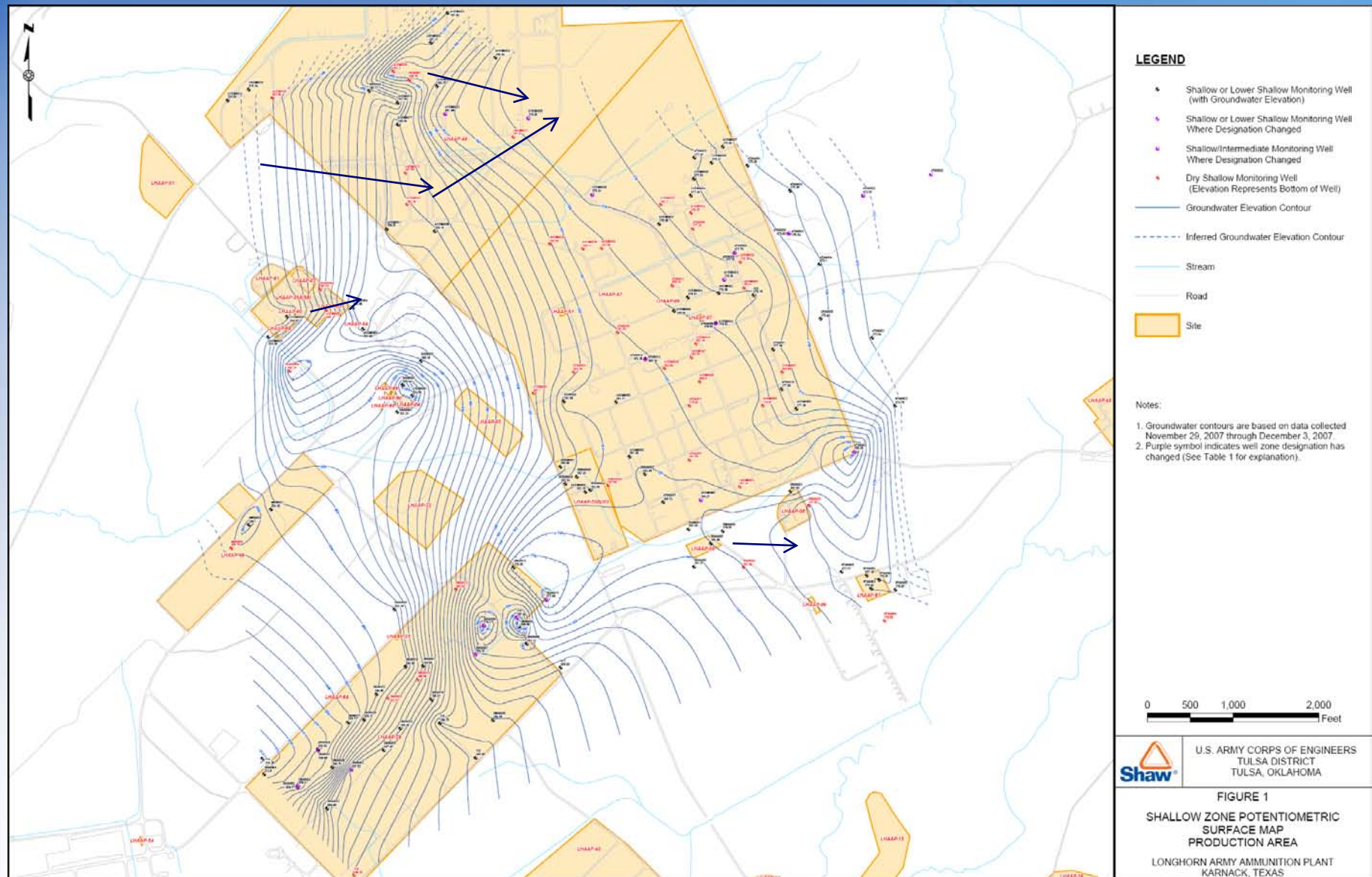


LHAAP-35A(58), LHAAP-46, LHAAP-50

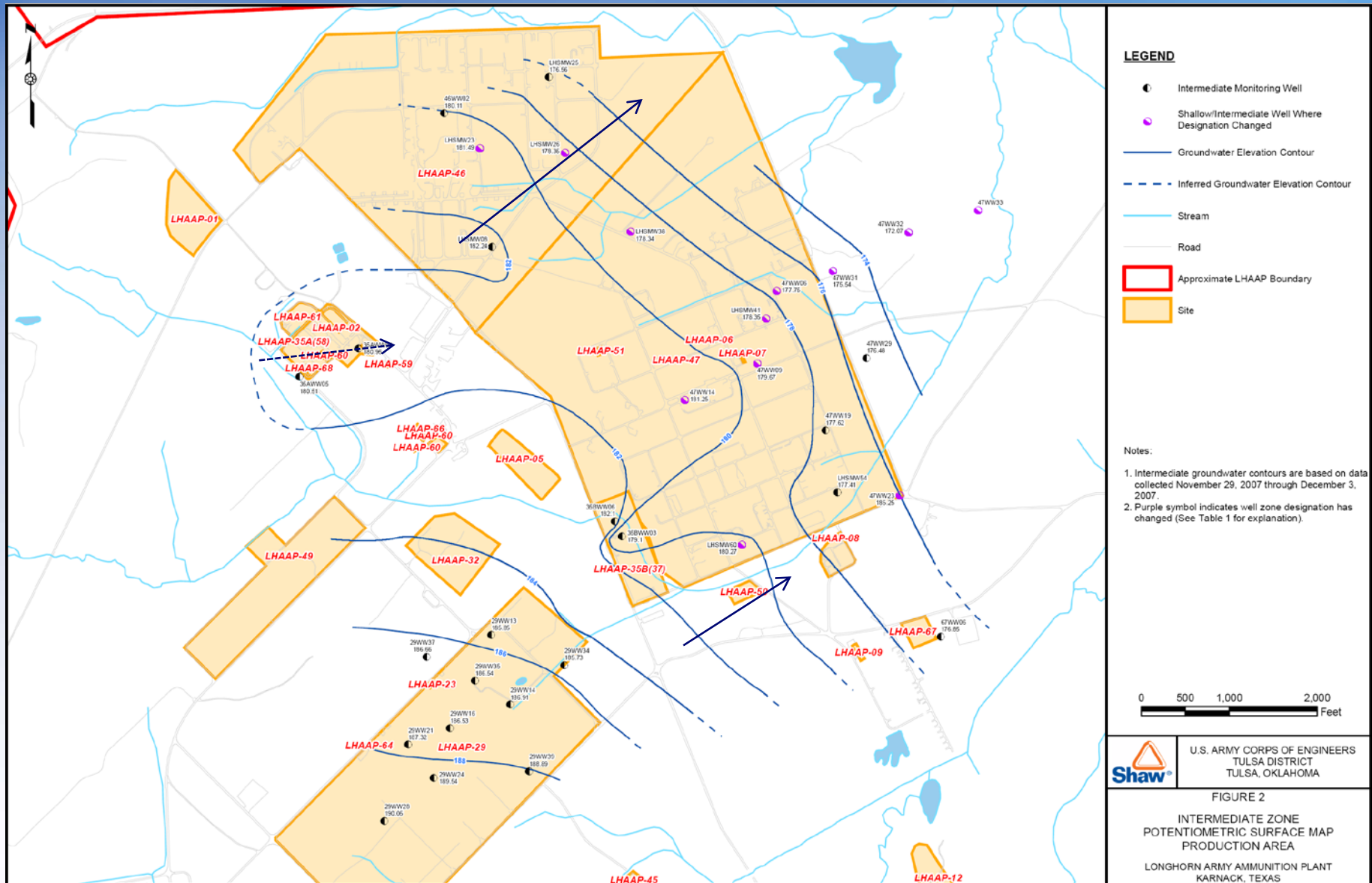
Investigations/Studies

- 2002 Multi-phase Remedial Investigation (RI) of Group 4 sites (covered investigations from 1992 to 2000)
- 2003 Baseline Human Health Risk Assessment (BHHRA)
- 2005 Plant-wide perchlorate investigation
- 2005 Phase II Environmental Site Assessment
- 2007 Baseline Ecological Risk Assessment (BERA)
- 2007 Data Gaps Report
- 2008 Sump Report (LHAAP-35/36)
- 2008 Groundwater Elevation/Flow Evaluated
- 2009 Feasibility Studies individual site evaluations, as needed:
 - groundwater modeling reports
 - natural attenuation and geochemical evaluations
 - additional soil and groundwater sampling

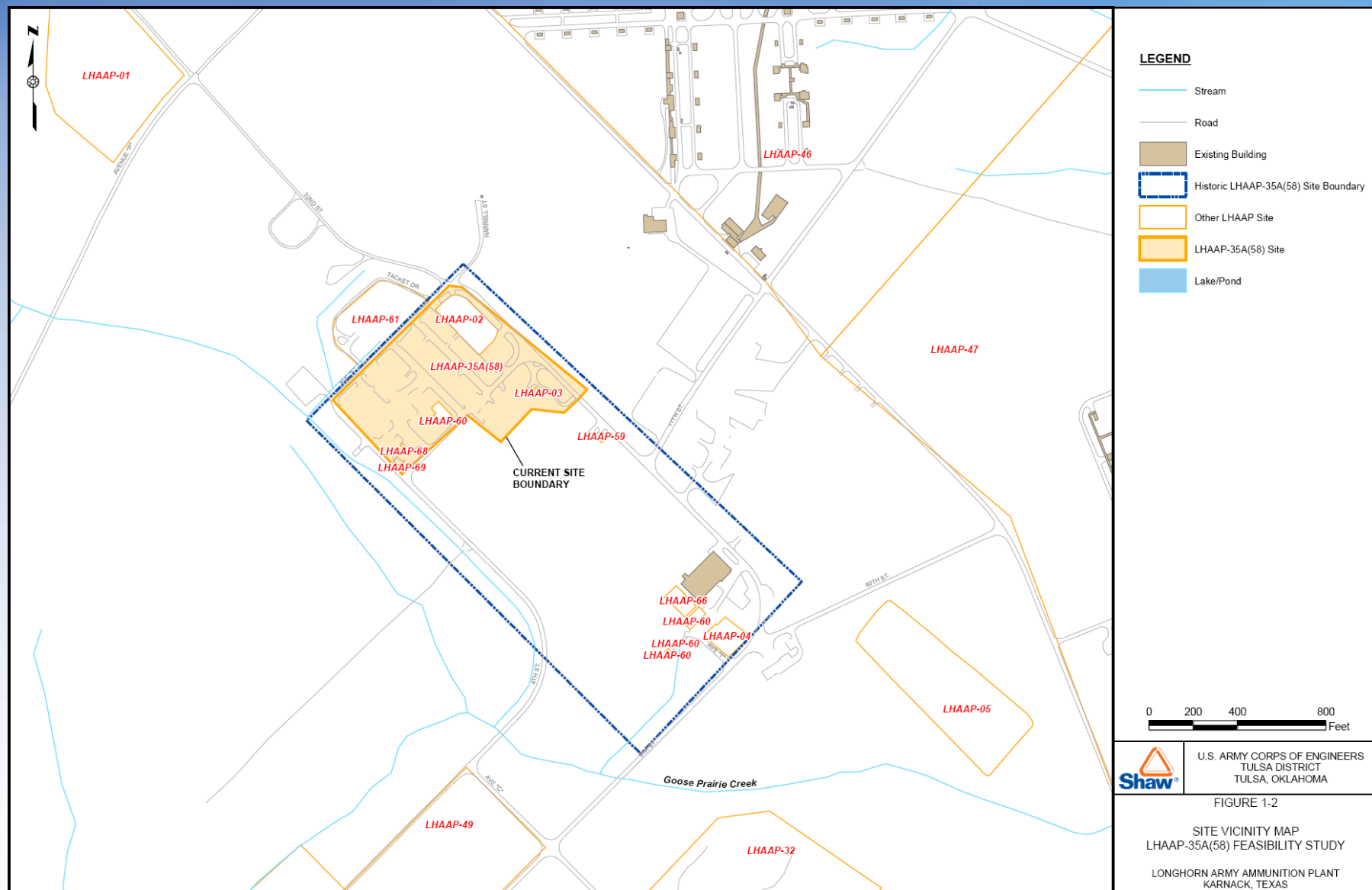
Groundwater flow in Shallow Zone



Groundwater flow in Intermediate Zone



LHAAP-35A(58) Shops Area



LHAAP-35A(58) Shops Area

Site Background

- Maintenance complex established in 1942 and closed in 1997 (operated 55 years)
- Provided various support services including: laundry, automotive, woodworking, metal-working, painting, refrigeration, and electrical
- Approximately 11 acres
- Within its boundaries are other sites that are being handled separately:
LHAAP-02, -03, -60, -68, and -69

LHAAP-35A(58) Shops Area

Site Characterization

- Surface features: asphalt-paved roads, parking area, and wooded and grassy vegetation-covered areas
- Topography: relatively flat with the surface drainage flowing into tributaries of Goose Prairie Creek which flow into Caddo Lake
- Geology: clays and silty clays with thin sand lenses (approximately 3 to 5 feet thick). The depth to the sand lenses varies across the site
- Groundwater zones:
 - Shallow zone ~10 to 25 ft bgs, flows east on the eastern side of the site, and southwest on the western side of the site
 - Intermediate zone ~60 to 71 ft below ground surface
 - Deep zone ~126 to 140 ft below ground surface

LHAAP-35A(58) Shops Area Risk Assessment and COCs

- Baseline human health risk assessment (BHHRA)
 - **Soil:** cancer risk and hazard index (HI) are acceptable
 - **Shallow zone groundwater:** cancer risk (1.6×10^{-2}) and HI (38) are not acceptable
 - **Intermediate and deep zones:** no contamination detected
- Chemicals of Concern (Shallow groundwater zone)
 - Tetrachloroethene (PCE)
 - Trichloroethene (TCE)
 - 1,2-Dichloroethene (DCE)
 - 1,1-DCE
 - Vinyl chloride (VC)

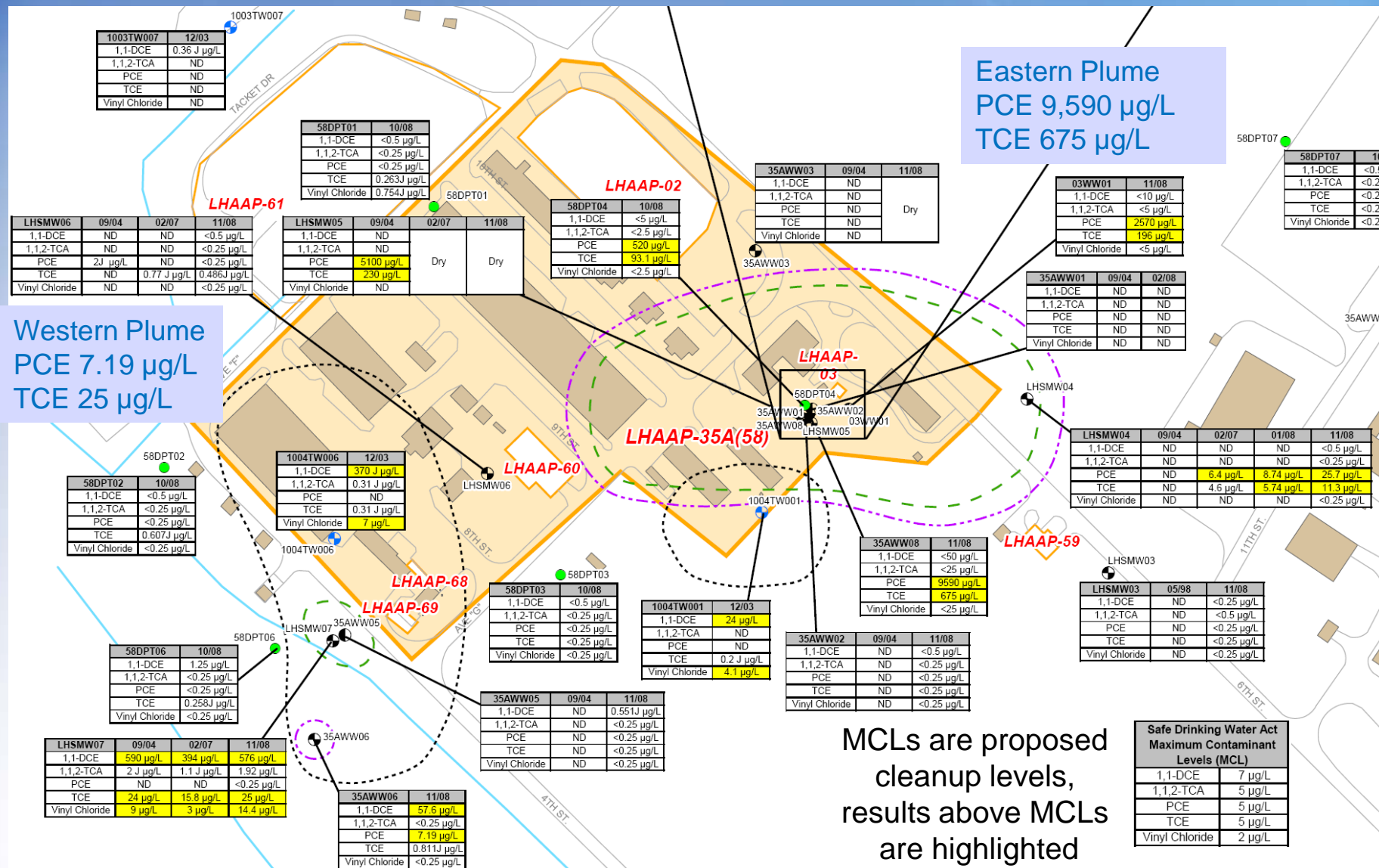
Daughter products of PCE

PCE → TCE → DCE → VC → Ethene

LHAAP-35A(58) Shops Area

Two Shallow Groundwater Zone Plumes

00088959



LHAAP-35A(58) Shops Area

Remedial Action Objectives (RAOs)

- Remedial Action Objectives
 - Prevent exposure to volatile organic compounds (VOC) contaminated groundwater
 - Prevent groundwater from impacting the nearby surface water
 - Return groundwater to its potential beneficial use as a drinking water, wherever practicable

LHAAP-35A(58) Shops Area Technologies Evaluated

- Monitored natural attenuation (MNA)
 - Passive treatment
 - Natural biological, chemical, and physical processes reduce contaminant mass in groundwater
 - Success depends on favorable conditions (e.g. level of dissolved oxygen, pH, groundwater composition)
- In situ bioremediation (ISB)
 - Active treatment
 - Injection of nutrients and/or microbes jump starts or expedites degradation of groundwater contaminants
 - Subsurface conditions are manipulated to be favorable to biodegradation

LHAAP-35A(58) Shops Area Remedial Alternatives

	Description	Estimated Present Worth
Alternative 1	No action (used as a comparative baseline)	\$0
Alternative 2	Both plumes: Monitored natural attenuation (MNA) with land use controls (LUCs)	\$492,800
Alternative 3	Both plumes: In situ bioremediation (ISB) with LUCs and long-term monitoring	\$1,343,000
Alternative 4	Eastern plume: ISB, MNA, and LUCs; Western plume: MNA and LUCs	\$785,000

Alternative 4 is the proposed remedy

Evaluation of Alternatives: EPA Guidance's Nine Criteria

1. **Overall protection** of human health and the environment
2. **Compliance** with applicable or relevant and appropriate requirements (ARARs): chemical-specific, location-specific, action-specific
3. **Long-term effectiveness** and permanence
4. **Reduction** of toxicity, mobility, or volume through treatment
5. **Short-term effectiveness**, especially protection of workers and the community during the action
6. **Implementability** (availability and reliability of resources)
7. **Cost**: capital, operating & maintenance, and present worth costs
8. **Agency acceptance** of proposed remedy
9. **Community acceptance** of proposed remedy

LHAAP-35A(58) Shops Area

Why Alternative 4 is Proposed

- Implementable
- Utilizes statutory preference for treatment
- Expected to attain remedial action objectives
- Will have long-term effectiveness and permanence with minimal short-term impacts
- Cost

LHAAP-35A(58) Shops Area

Proposed Remedy: Alternative 4

- Western plume: Monitored Natural Attenuation
 - MNA performance will be evaluated for 2 years (8 quarters)
 - If not effective after the 2 years, contingency remedy (i.e. in situ bioremediation) would be implemented, if required
 - If effective, monitoring frequency will be changed to semiannual for 3 years, then annual until the next 5-year review
- Eastern plume: Active treatment (In situ bioremediation)
 - Target area expected to require 5 injection points
- Estimated time to achieve cleanup levels in both plumes: ~200 years
- Land use controls will restrict groundwater use until cleanup levels are achieved
- Based on groundwater flow rates, no adverse impact is expected to the surface water during treatment time
- Groundwater monitoring will continue every 5 years until MCLs are met

85M102006D



LHAAP- 46 Characteristics

- Industrial area where pyrotechnic and illumination devices were produced from early 1940s to 1997 (almost 60 years)
- Currently buildings have been demolished and portions of old concrete foundations are remaining with overgrown vegetation
- Topography is relatively flat with surface runoff going to the east towards Goose Prairie Creek
- About 190 acres

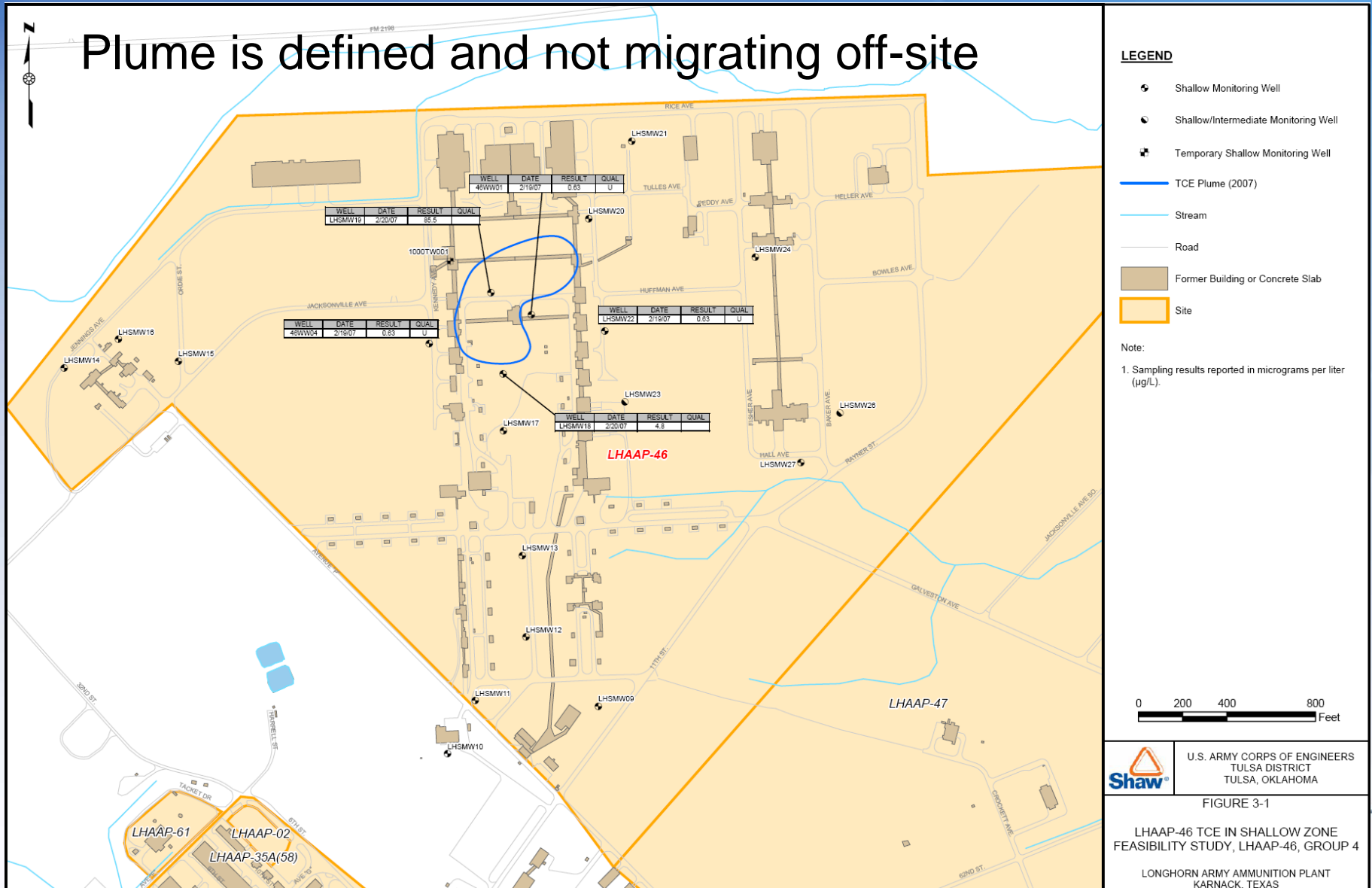
LHAAP-46 Risk Assessment Summary

- Baseline Human Health Risk Assessment (BHHRA)
 - **Soil:** cancer risk and hazard index (HI) are acceptable
 - **Groundwater:** cancer risk in the acceptable range; HI of 31 is not acceptable
- Chemicals of concern and MCLs
 - TCE (5 µg/L)
 - cis-1,2-DCE (70 µg/L)
 - VC (2 µg/L)

} Daughter products of TCE

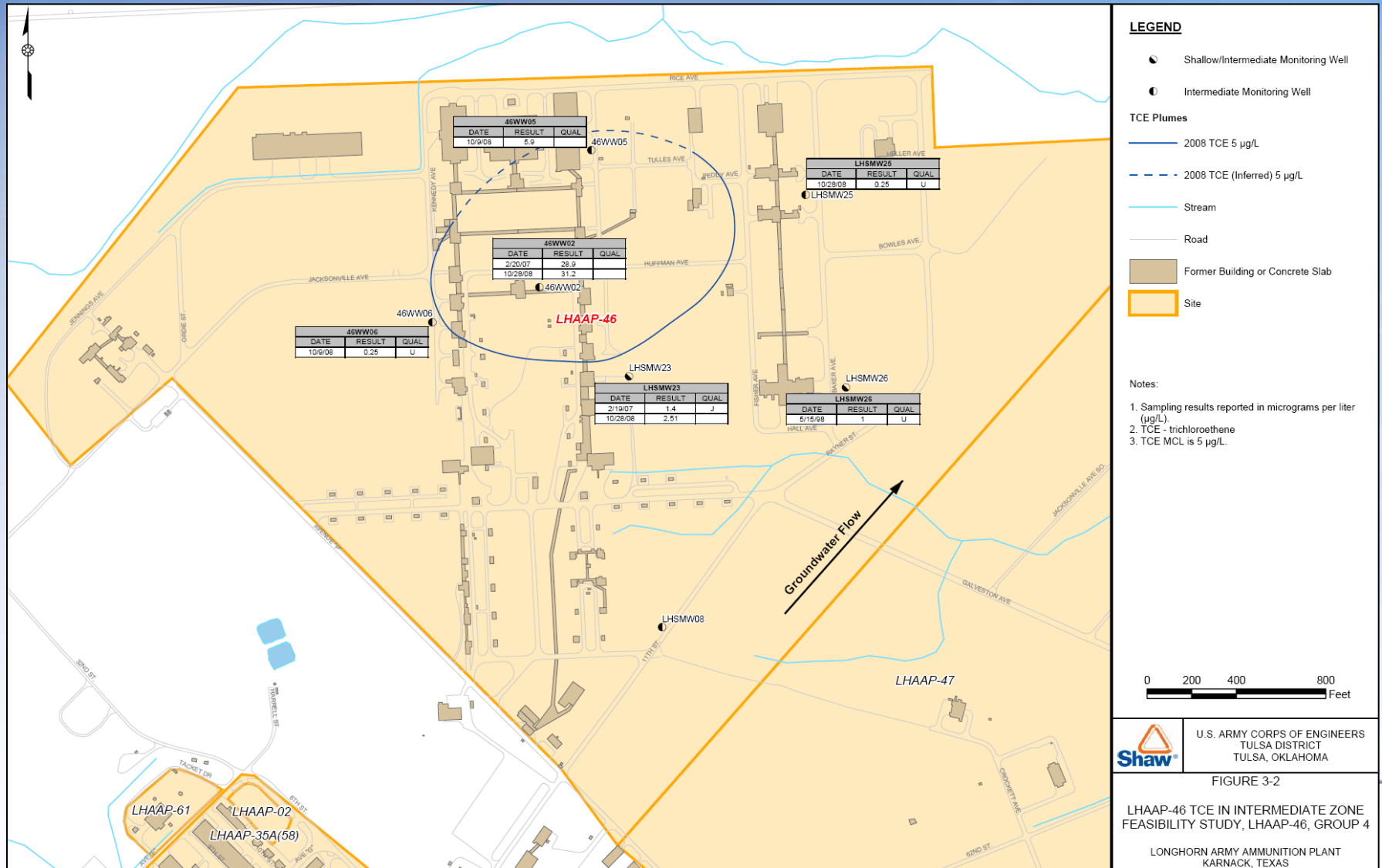
Shallow Groundwater Contamination

Plume is defined and not migrating off-site



Intermediate Groundwater Zone Contamination

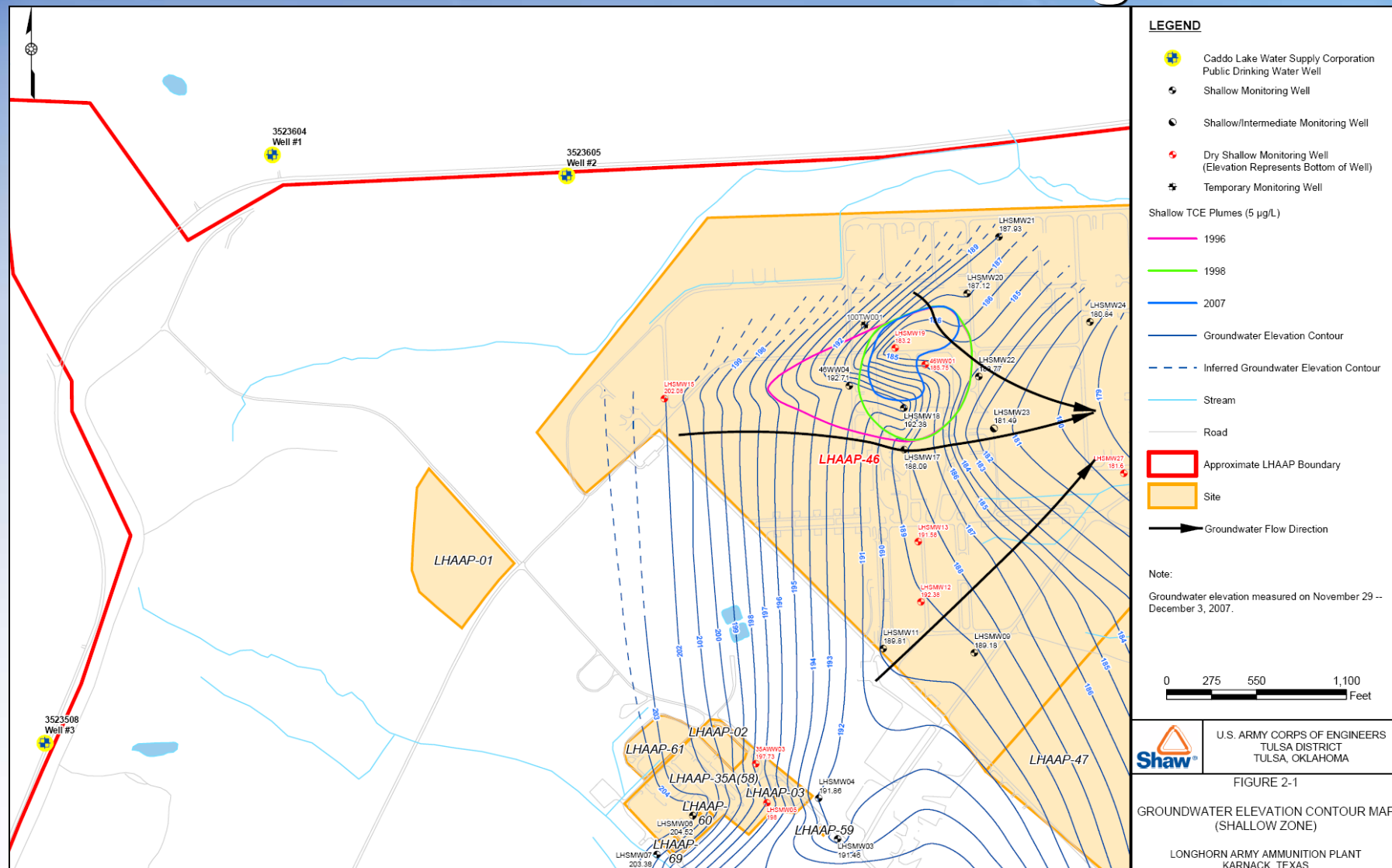
00088970



Groundwater Flow

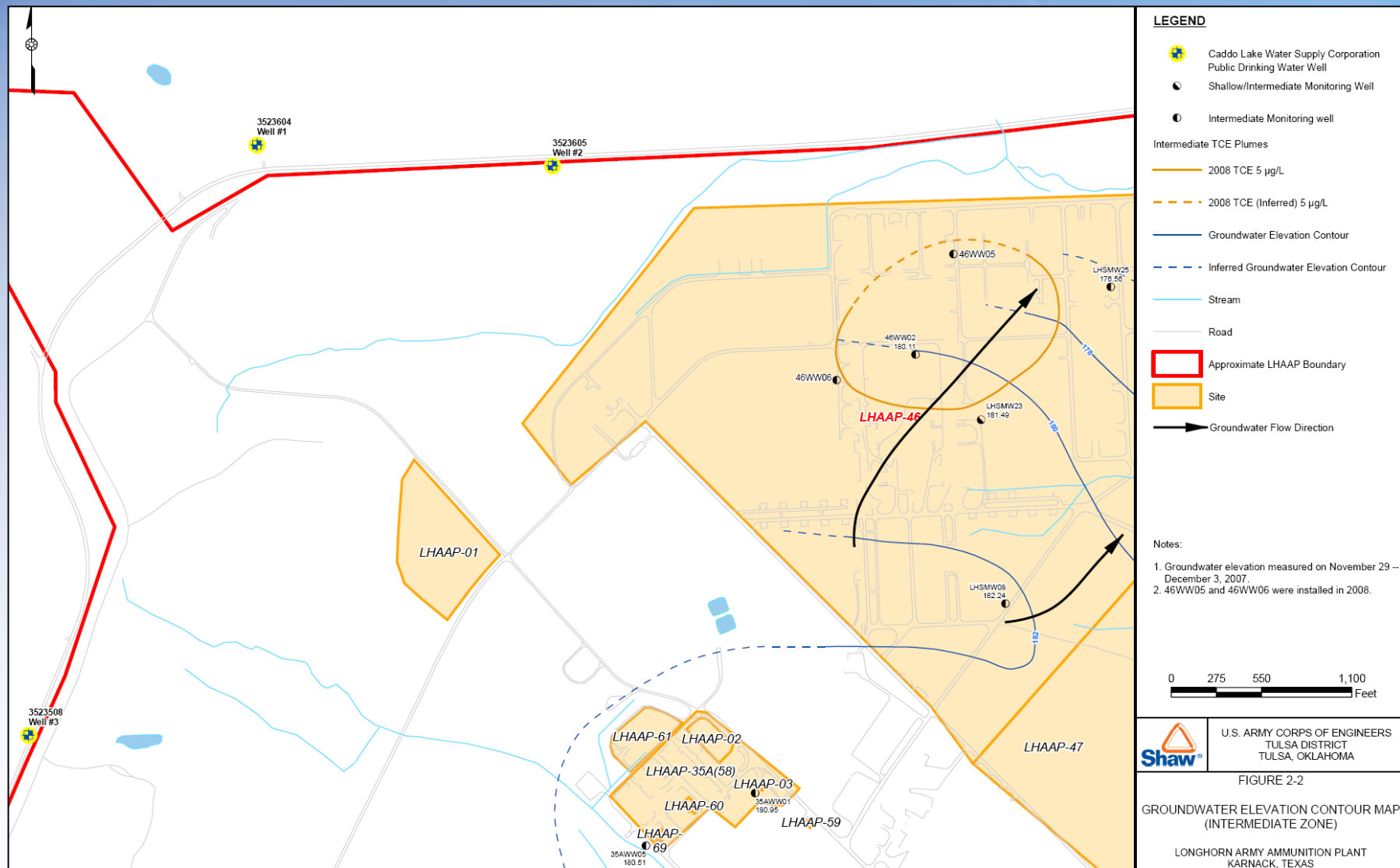
- Groundwater contamination is approximately 30 feet below ground surface
- Drinking water wells are in the Wilcox Group (approximately 200 feet below ground surface)
- Drinking water wells are upgradient of the contamination (Remedial Investigation)

Location of plumes in relation to the off-site wells used for drinking water



Public Drinking Water Wells in relation to Intermediate Zone

00088973



U.S. ARMY CORPS OF ENGINEERS
TULSA DISTRICT
TULSA, OKLAHOMA

FIGURE 2-2

GROUNDWATER ELEVATION CONTOUR MAP
(INTERMEDIATE ZONE)

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

LHAAP-46 Alternatives Evaluated

- Alternative 1 – No action (CERCLA requirement for comparability) \$0
- Alternative 2 – Monitored Natural Attenuation (MNA) with Land Use Controls (LUCs), Present Worth \$521,200
- Alternative 3 – In situ bioremediation, short-term LUCs and long-term monitoring Present Worth \$744,000

Alternative 2 is the proposed remedy

LHAAP-46 Plant 2 Area

Why Alternative 2 is Recommended

- Implementable
- Expected to attain remedial action objectives
- Will have long-term effectiveness and permanence with minimal short-term impacts
- Cost

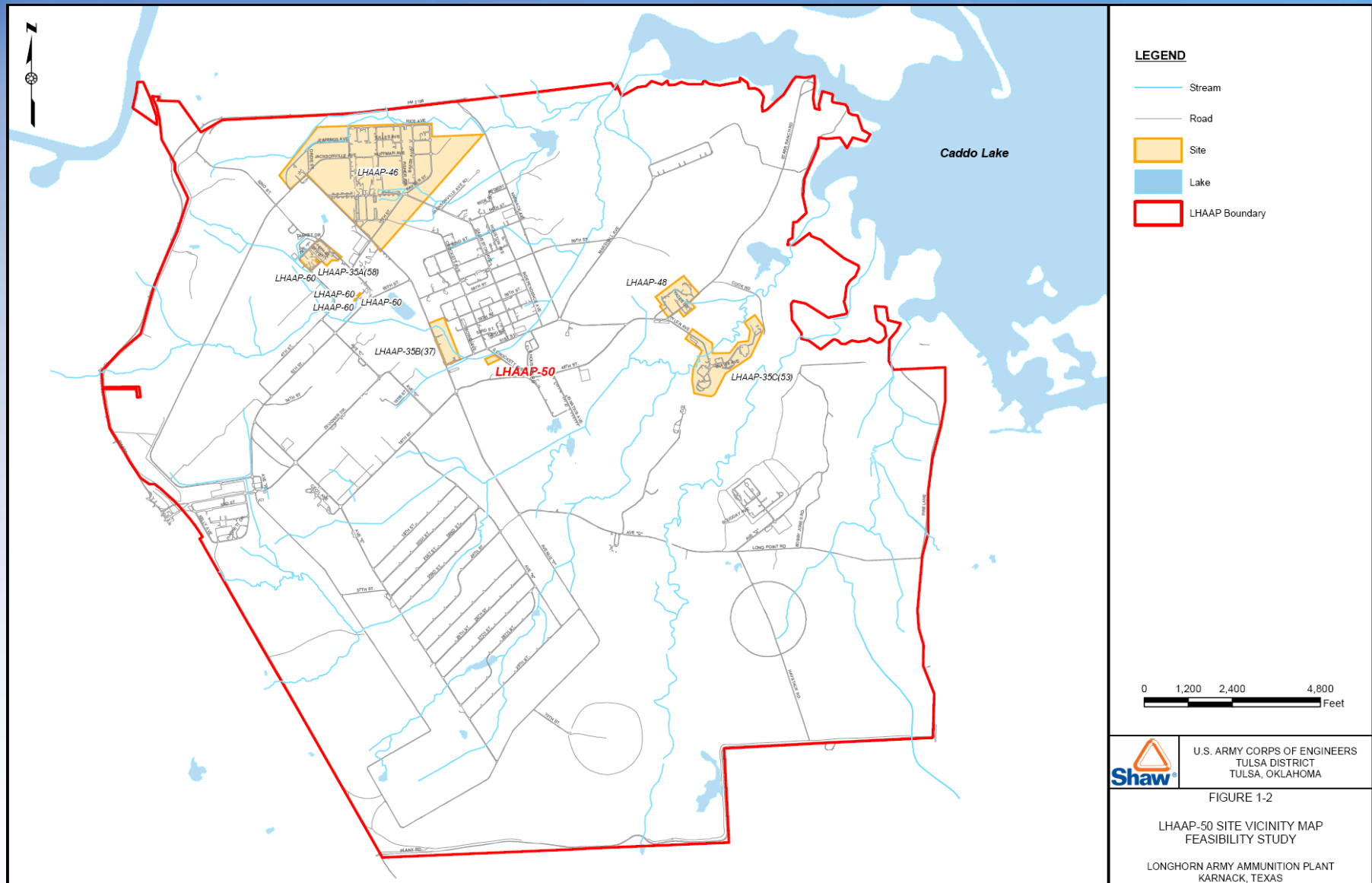
LHAAP-46 Proposed Remedy ⁰⁰⁰⁸⁸⁹⁷⁶

Alternative 2

Monitored Natural Attenuation

- MNA performance will be evaluated for 2 years (8 quarters)
 - If not effective after the 2 years, contingency remedy (e.g. in situ bioremediation) will be implemented
 - If effective, monitoring frequency will be changed to semiannual for 3 years, then annual until the next 5-year review
- Long term monitoring every 5 years until MCLs are met
- LUCs will restrict groundwater use until cleanup levels are achieved
- Estimated time to achieve cleanup levels: ~30 years

LHAAP-50 Former Sump Water Tank



LHAAP-50 Former Sump Water Tank Site Background

- Site of a 47,000-gallon capacity aboveground storage tank (AST) which received industrial wastewater transported from various industrial waste production sumps throughout LHAAP from 1955 to 1988
- After the solids were filtered, discharges from the storage tank were made upstream of the bridge on Crockett Avenue, south of 51st Street into Goose Prairie Creek. The flow in the creek was sufficient to dilute the water to safe levels.
- The AST has been removed
- Approximately 1 acre

LHAAP-50 Former Sump Water Tank

Site Characteristics

- Surface features
 - Some areas of grass and brush, some areas of heavy timber
- Topography
 - Northeastern half of the site: runoff generally flows toward the northeast; collected by a drainage ditch that eventually joins Goose Prairie Creek
 - Southwestern portion of the site: runoff flows to the west; collected by a drainage ditch that carries the runoff north into Goose Prairie Creek
 - Goose Prairie Creek eventually empties into Caddo Lake
- Shallow zone groundwater is approximately 20 feet below ground surface and flows to the east-northeast
- Shallow zone groundwater is below Goose Prairie Creek

LHAAP-50 Former Sump Water Tank

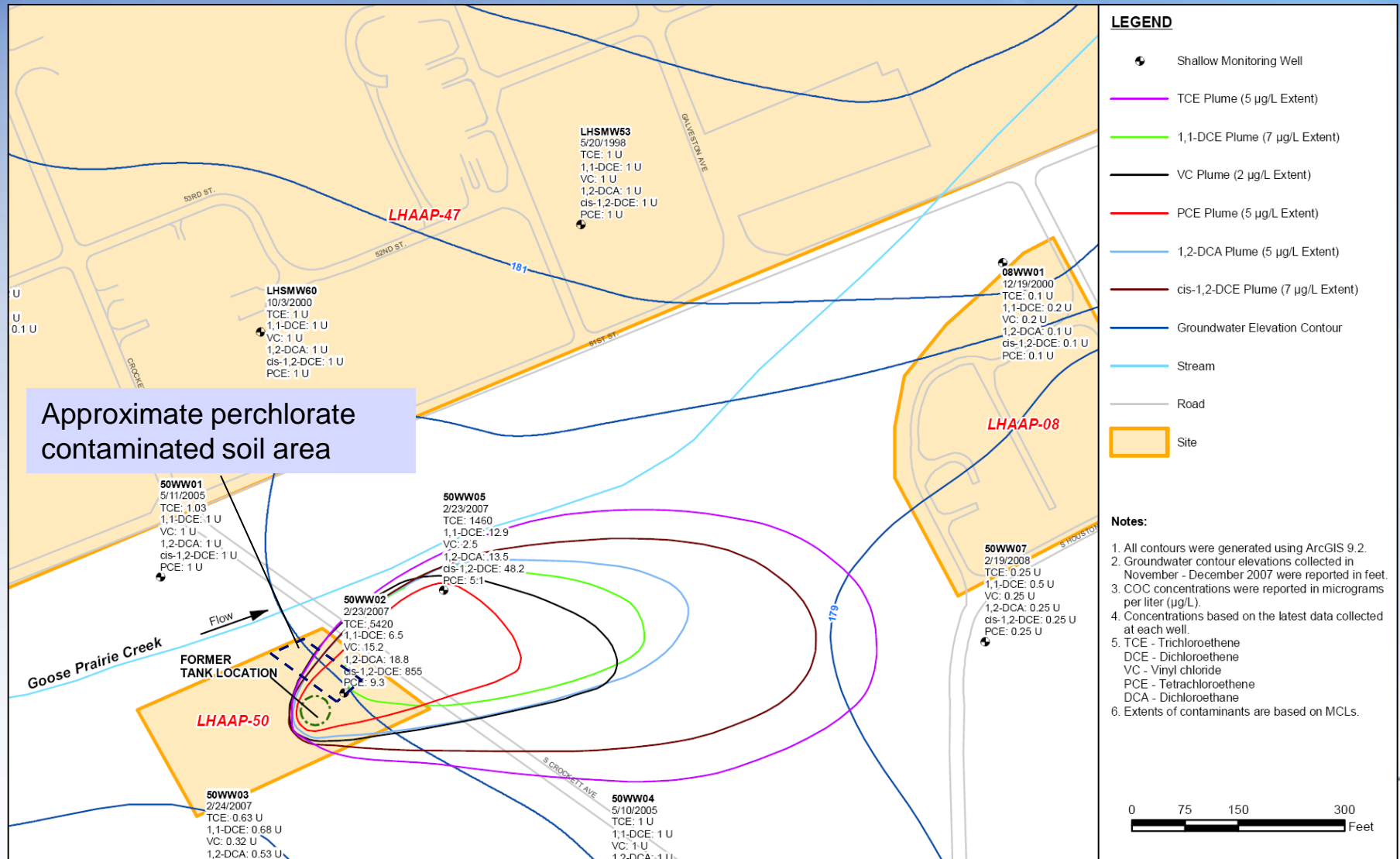
Risk Assessment and COCs

00088980

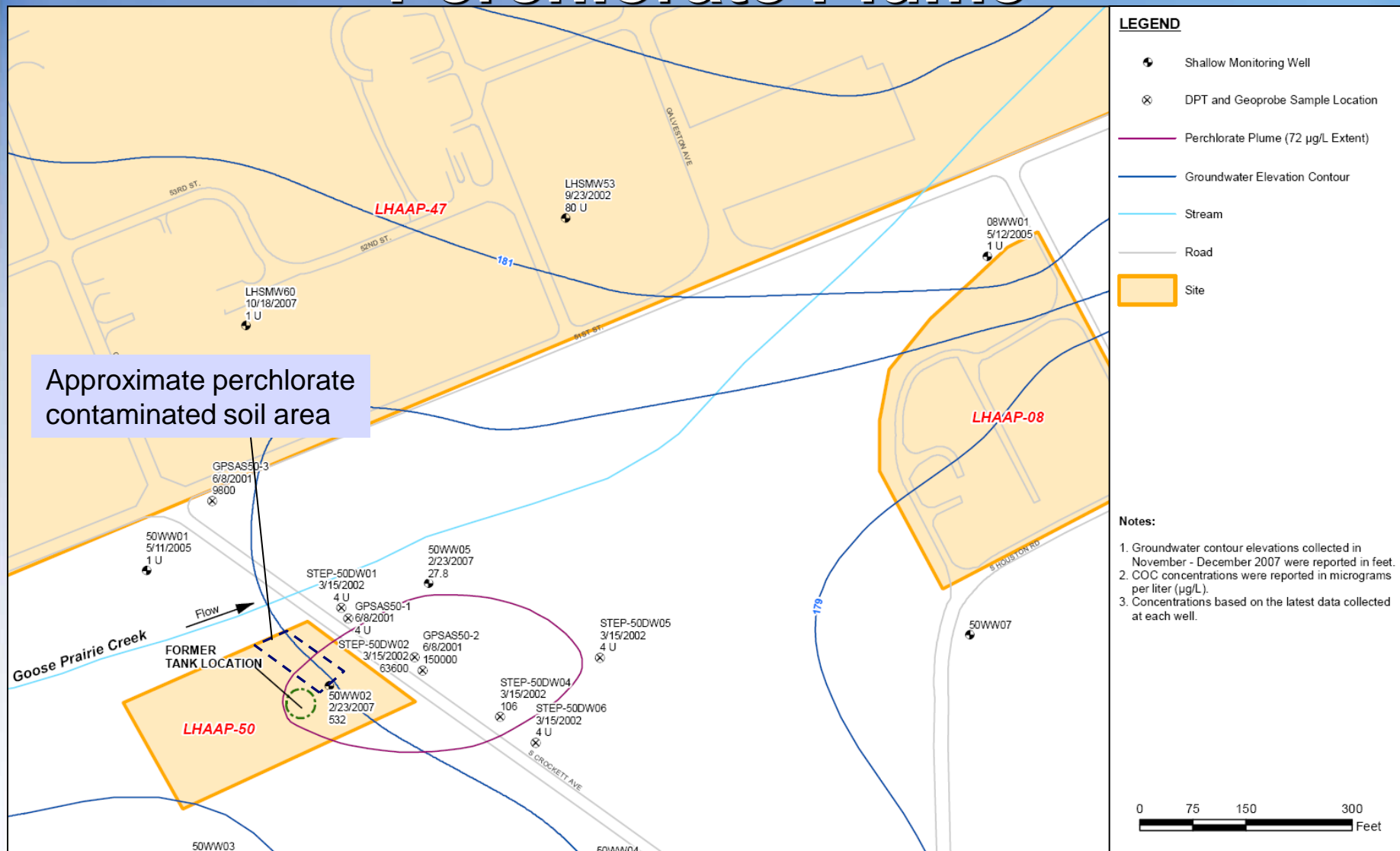
- Baseline human health risk assessment (BHHRA)
 - **Soil:** cancer risk and non-cancer hazard index (HI) are acceptable
 - **Groundwater:** cancer risk (5.5×10^{-3}) and HI (300) are unacceptable
- Soil-to-groundwater pathway: perchlorate above the industrial-use groundwater protection medium-specific concentration
- Chemicals of concern in soil
 - Perchlorate
- Chemicals of concern in shallow zone groundwater
 - Perchlorate
 - PCE
 - TCE
 - 1,1-DCE
 - Cis-1,2-DCE
 - 1,2-Dichloroethane (DCA)
 - Vinyl chloride (VC)

LHAAP-50 Former Sump Water Tank VOC Plumes

00088981



LHAAP-50 Former Sump Water Tank Perchlorate Plume



LHAAP-50 Former Sump Water Tank RAOs and Remedial Alternatives

- Remedial Action Objectives (RAOs)
 - Prevent exposure to VOC and perchlorate contaminated groundwater
 - Protect human health by preventing further degradation of groundwater and surface water from soil contaminated with perchlorate
 - Return groundwater to its potential beneficial use as a drinking water, wherever practicable

	Remedial Alternative Description	Estimated Present Worth
Alternative 1	No action (used as a comparative baseline)	\$0
Alternative 2	Excavation, Monitored Natural Attenuation (MNA) and Land Use Controls (LUCs)	\$639,000
Alternative 3	Excavation, In Situ Bioremediation, MNA, and LUCs	\$914,000

Alternative 2 is the Proposed Remedy

LHAAP-46 Plant 2 Area

Why Alternative 2 is Recommended

- Implementable
- Expected to attain remedial action objectives
- Will have long-term effectiveness and permanence with minimal short-term impacts
- Cost

LHAAP-50 Former Sump Water Tank

Proposed Remedy: Alternative 2

- Remove perchlorate-contaminated soil that is above the groundwater protection level
- MNA performance will be evaluated for 2 years (8 quarters)
 - If not effective after the 2 years, contingency remedy (e.g. in situ bioremediation) will be implemented
 - If effective, monitoring frequency will be changed to semiannual for 3 years, then annual until the next 5-year review
- Subsequent monitoring every 5 years until MCLs are met
- LUCs will restrict groundwater use until cleanup levels are achieved
- Estimated time to achieve cleanup: ~ 50 years

Questions?

DO NOT REMOVE THIS PAGE - IT IS A PART OF THIS INSTRUMENT

MISCELLANEOUS

7 Pages

FILED AND RECORDED - OPR	CLERKS NOTES
On: <u>04/27/2010 04:08 PM</u>	
Document Number: <u>2010-000005555</u>	
Receipt No: <u>1006195</u>	
Amount: \$ <u>36.00</u>	
By: <u>Ann Turner</u> , Deputy	
 Patsy Cox, County Clerk Harrison County, Texas	

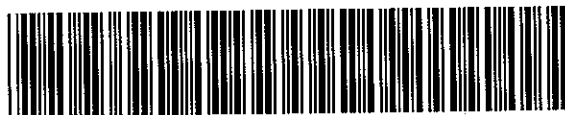


STATE OF TEXAS
COUNTY OF HARRISON

I hereby certify that this instrument was filed on the date and time stamped hereon by me
and was duly recorded in the Official Public Records of Harrison County, Texas.

Patsy Cox, Harrison County Clerk

Record and Return To:



SHAW E & I
1401 ENCLAVE PARKWAY, SUITE 250

HOUSTON, TX 77077

STATE OF TEXAS

HARRISON COUNTY

INDUSTRIAL SOLID WASTE
NOTICE OF NONRESIDENTIAL LAND USE

KNOW ALL MEN BY THESE PRESENTS THAT:

Pursuant to the Rules of the Texas Commission on Environmental Quality (TCEQ) pertaining to Industrial Solid Waste Management, this document is hereby filed in the Public Records of Harrison County, Texas in compliance with the recordation requirements of said rules:

I

The U.S. Army, Department of Defense, has performed a remediation of the land described herein. The site, LHAAP-06, is the area of a demolished building location known as Building 51-F located within the Plant 3 production area of the former Longhorn Army Ammunition Plant (LHAAP). LHAAP was placed on the National Priorities List (NPL) during August 1990. After its listing on the NPL, the U.S. Army, United States Environmental Protection Agency (USEPA), and TCEQ (formerly known as Texas Water Commission) entered into an agreement under the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA) Section 120 for remedial activities. The CERCLA Section 120 Agreement, referred to as the Federal Facility Agreement (FFA), became effective on December 30, 1991. Although there are many sites at LHAAP that are specifically NPL listed, LHAAP-06 is not itself considered an NPL site. Environmental activities at LHAAP-06 progressed through the site investigation, at which point it was agreed by the Army and the TCEQ, the lead regulatory agency, that no significant releases had occurred and the site could be closed under Texas Administrative Code (TAC) Risk Reduction Rule Standard 2.

LHAAP-06 (Building 51-F) was a collection point for waste acids and solvents. Its three-sided shed contained a rack that held a single 55-gallon drum set on a 50-square foot pie-shaped concrete pad. Beginning in 1985, the drum was used to collect waste acids and solvents from bench-scale manufacture of the explosive cyclotetramethylenetetranitramine. Further information may be found by examination of the Notice of Registration No. 30990 files, which are available for inspection upon request at TCEQ, Central File Room Customer Service Center, Building E, 12100 Park 35 Circle, Austin, Texas, 78753, (512) 239-2900, Monday through Friday 8:00 a.m. to

5:00 p.m. or the Administrative Record available at the Marshall Public Library, 300 S. Alamo Blvd, Marshall, Texas 75670, (903) 935-4465, Monday through Thursday 10:00 a.m. to 8 p.m., Friday and Saturday 10:00 a.m. to 5:30 p.m.

The TCEQ requires certain persons to provide recordation in the real property records to notify the public of the conditions of the land and/or the occurrence of remediation. This notification is not a representation or warranty by the TCEQ of the suitability of this land for any purpose.

II

The LHAAP-06 parcel is 119 square foot, more or less, or 0.00273 acre tract located in Harrison County, Texas, near the town of Karnack, being more particularly described with survey plat and metes and bounds established in Exhibit A.

The United States Department of the Army has undertaken careful environmental study of the LHAAP-06 site and USEPA and TCEQ concluded that no further investigation or action is required for LHAAP-06. Contaminants in soil samples from LHAAP-06 meet non-residential soil criteria in accordance with 30TAC§335.560(b).

Limited monitoring of LHAAP-06 will take place in the form of Letters of Certification from the Army or the Transferee to TCEQ every five years to document that the use of LHAAP-06 is consistent with the non-residential use scenarios evaluated in the risk assessment. Future use of the parcel is intended as a national wildlife refuge consistent with industrial or recreational activities and not for residential purposes. For purposes of this certification, residential use includes, but is not limited to, single family or multi-family residences; child care facilities; nursing home or assisted living facilities; and any type of educational purpose for children/young adults in grades kindergarten through 12.

III

The owner of the site is the Department of the Army, and its address where more specific information may be obtained is as follows:

ATTN: DAIM-ODB-LO (R. Zeiler)

Post Office Box 220

Ratcliff, AR 72951

Or

Assistant Chief of Staff for Installation Management

ATTN: DAIM-BDO (T. Lederle)

600 Army Pentagon

Washington D.C. 20310-0600

Rose M. Zeiler

Rose M. Zeiler
Longhorn AAP Site Manager

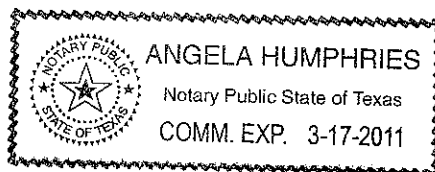
EXECUTED this the 10th day of March, 2010.

BEFORE ME, on this the 10th day of March, personally appeared Rose M. Zeiler, of the United States Army, United States Department of Defense, known to me to be the person and agent of said agency whose name is subscribed to the foregoing instrument, and she acknowledged to me that she executed the same for the purposes and in the capacity therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 10 day of March, 2010.

Angela Humphries

Notary Public in and for the State of Texas,
County of Harrison



FIELD NOTES DESCRIPTION OF
"LHAAP-06" TRACT
(REMAINS OF DEMOLISHED BUILDING 51-F)
CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, tract "LHAAP-06" being defined by the four external corners of the three concrete walls remaining at demolished Building 51-F (wall defining the West edge of said building is either gone or never existed) in the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract "LHAAP-06" being more particularly described as follows :

Surveyor's Note: All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.999861727, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "X-11" (N=6960733.698 feet E=3304750.367 feet) and "HORSE" (N=6960008.269 feet E=3309591.340 feet). Said traverse indicates a surface distance of 4895.70 feet between said monuments. The computed land area is based on surface distances. As used herein, the abbreviation E.C.C.W. indicates External Corner of Concrete Wall,

Commencing at monument "HORSE" referenced above,

THENCE N 59deg52'55"W 597.03' to an E.C.C.W. found for the S.E.C. of this tract and this POINT OF BEGINNING,

THENCE S 67deg37'19"W 10.93' along the S.B.L. of this tract to an E.C.C.W. found for this tract's S.W.C. ,

THENCE N 22deg14'24"W 10.92' along the W.B.L. of this tract to an E.C.C.W. found for this tract's N.W.C. ,

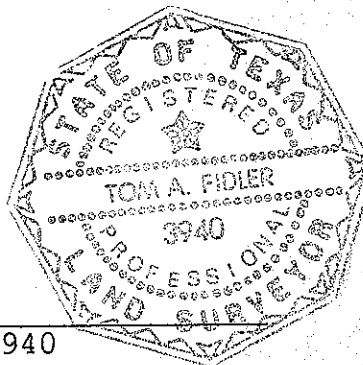
THENCE N 67deg37'19"E 10.93' along the N.B.L. of this tract to an E.C.C.W. found for this tract's N.E.C. ,

THENCE S 22deg14'24"E 10.92' along the E.B.L. of this tract to this POINT OF BEGINNING. This tract contains 119 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.

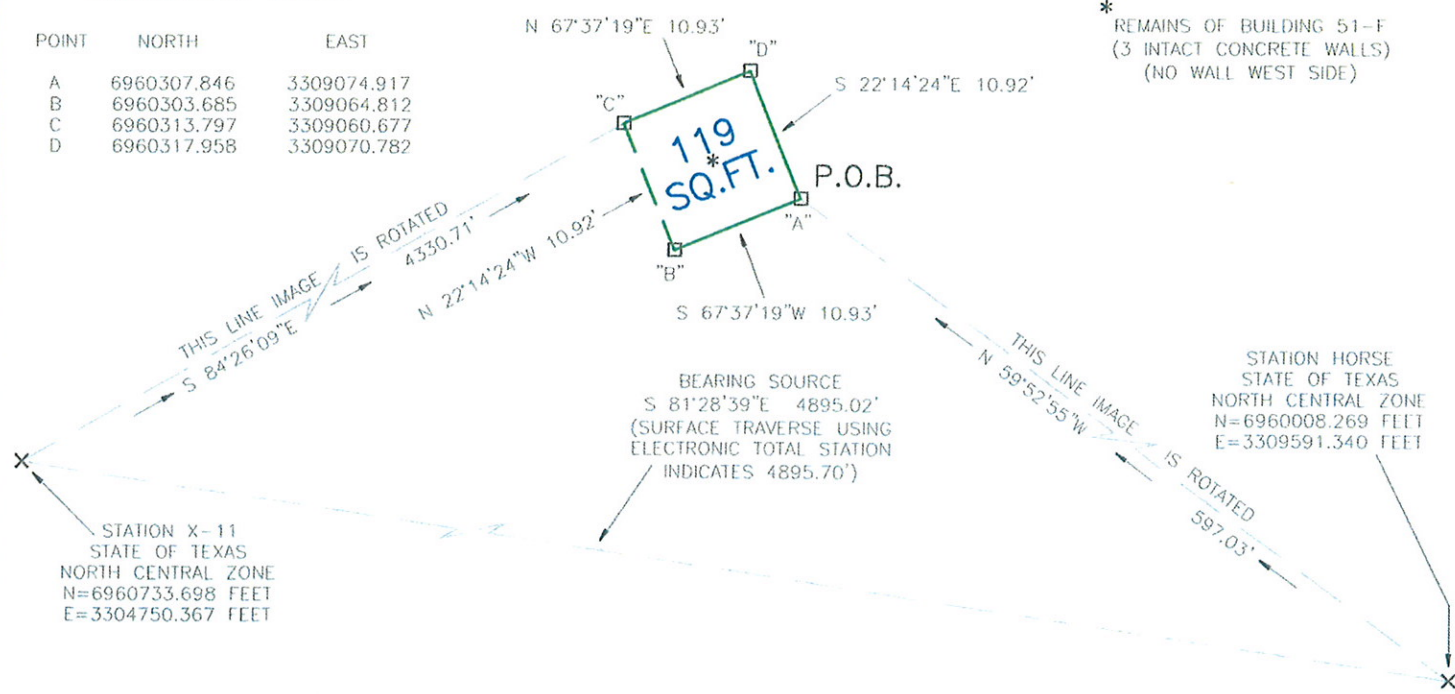


Tom A. Fidler, R.P.L.S. Number 3940



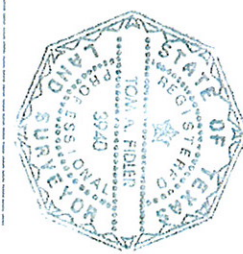
COORDINATE TABLE

POINT	NORTH	EAST
A	6960307.846	3309074.917
B	6960303.685	3309064.812
C	6960313.797	3309060.677
D	6960317.958	3309070.782



* REMAINS OF BUILDING 51-F
(3 INTACT CONCRETE WALLS)
(NO WALL WEST SIDE)

Tom A. Fidler, Registered Professional Land Surveyor, No. 3940



I, Tom A. Fidler, registered professional land surveyor, No. 3940, do hereby certify that this plat reflects the location of the corners on the tract herein described, as surveyed on the ground and under my supervision in August 2009.

Witness my hand and seal this 13th day of August, 2009.

NOTE

ALL BEARINGS, DISTANCES (UNLESS LABELED OTHERWISE), & COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, CODE 4202, NAD 1983 (92). THE SCALE FACTOR APPLIED EQUALS 0.999861727 & IS BASED ON SURFACE TRAVERSE BETWEEN STATIONS X-11 & HORSE. THE COMPUTED LAND AREA IS BASED ON SURFACE DISTANCES.

NOTES:

- X INDICATES TYPE "G" CORPS OF ENGINEERS MONUMENT (FOUND)
- INDICATES EXTERNAL CORNER OF CONCRETE BUILDING WALL

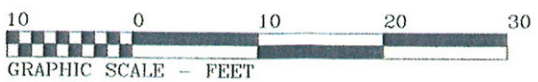
FIELD NOTES DESCRIPTION
IS ON SEPARATE SHEETS

LANDMARK CONSULTANTS, INC.

PROFESSIONAL LAND SURVEYORS

P.O. BOX 606 LONGVIEW, TEXAS 75606
PHONE (903) 236-3377 FAX (903) 236-3530
E-MAIL landmark@cablenet.com

SCALE 1"=10'



LHAAP-06
(119 SQUARE FEET)
(REMAINS OF BUILDING 51-F)
LONGHORN ARMY AMMUNITION PLANT
HARRISON COUNTY, TEXA

JOB #0407088	0407088.CRD	C.PTS	C.LEG
AUG. 13, 2009	0908074C.DWG	DRAWN BY	JTJ

2010-000005556

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Receipt No: <u>1006195</u>	
Amount: \$ <u>36.00</u>	
By: <u>Ann Turner</u> , Deputy	
 Patsy Cox, County Clerk Harrison County, Texas	

STATE OF TEXAS
COUNTY OF HARRISONI hereby certify that this instrument was filed on the date and time stamped hereon by me
and was duly recorded in the Official Public Records of Harrison County, Texas.

Patsy Cox, Harrison County Clerk

Record and Return To:

SHAW E & I
1401 ENCLAVE PARKWAY, SUITE 250
HOUSTON, TX 77077

STATE OF TEXAS

HARRISON COUNTY

INDUSTRIAL SOLID WASTE
NOTICE OF NONRESIDENTIAL LAND USE

KNOW ALL MEN BY THESE PRESENTS THAT:

Pursuant to the Rules of the Texas Commission on Environmental Quality (TCEQ) pertaining to Industrial Solid Waste Management, this document is hereby filed in the Public Records of Harrison County, Texas in compliance with the recordation requirements of said rules:

I

The U.S. Army, Department of Defense, has performed a remediation of the land described herein. The site, LHAAP-07, is the area of a demolished building location known as Building 50-G located within the Plant 3 production area of the former Longhorn Army Ammunition Plant (LHAAP). LHAAP was placed on the National Priorities List (NPL) during August 1990. After its listing on the NPL, the U.S. Army, United States Environmental Protection Agency (USEPA), and TCEQ (formerly known as the Texas Water Commission) entered into an agreement under the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA) Section 120 for remedial activities. The CERCLA Section 120 Agreement, referred to as the Federal Facility Agreement (FFA), became effective on December 30, 1991. Although there are many sites at LHAAP that are specifically NPL listed, LHAAP-07 is not itself considered an NPL site. Environmental activities at LHAAP-07 progressed through the site investigation, at which point it was agreed by the Army and the TCEQ as the lead regulatory agency that no significant releases had occurred and the site could be closed under Texas Administrative Code (TAC) Risk Reduction Rule Standard 2.

LHAAP-07 (Building 50-G) was the former drum processing building which consisted of a wooden frame building 30 feet by 100 feet in size set on a concrete pad located within the boundary of LHAAP-47. Beginning in 1985, Building 50-G had a separate bay (20 by 30 feet in size) used as a washdown area for empty drums and casting equipment used in ammunition production. The washdown area was an above-grade concrete vault where empty drums were rinsed with hot water and spent sulfuric acid neutralized with limestone. The wastes handled included solvents, oils, and organic liquids. The site ceased operation in 1995. Further information may be found by examination of the Notice of Registration No. 30990 files, which are available for inspection upon request at TCEQ, Central File Room Customer Service Center, Building E, 12100 Park 35 Circle, Austin, Texas, 78753, (512) 239-2900, Monday through Friday 8:00 a.m. to 5:00 p.m. or the Administrative Record available at the Marshall Public Library, 300 S. Alamo Blvd,

Marshall, Texas 75670, (903) 935-4465, Monday through Thursday 10:00 a.m. to 8 p.m., Friday and Saturday 10:00 a.m. to 5:30 p.m.

The TCEQ requires certain persons to provide recordation in the real property records to notify the public of the conditions of the land and/or the occurrence of remediation. This notification is not a representation or warranty by the TCEQ of the suitability of this land for any purpose.

II

The LHAAP-07 parcel is 3,078 square foot, more or less, or 0.07066 acre tract located in Harrison County, Texas, near the town of Karnack, being more particularly described with survey plat and metes and bounds established in Exhibit A.

The United States Department of the Army has undertaken careful environmental study of the LHAAP-07 site and USEPA and TCEQ concluded that no further investigation or action is required for LHAAP-07. Contaminants in soil samples from LHAAP-07 meet non-residential soil criteria in accordance with 30TAC§335.560(b).

Limited monitoring of LHAAP-07 will take place in the form of Letters of Certification from the Army or the Transferee to TCEQ every five years to document that the use of LHAAP-07 is consistent with the non-residential use scenarios evaluated in the risk assessment. Future use of the parcel is intended as a national wildlife refuge consistent with industrial or recreational activities and not for residential purposes. For purposes of this certification, residential use includes, but is not limited to, single family or multi-family residences; child care facilities; and nursing home or assisted living facilities; and any type of educational purpose for children/young adults in grades kindergarten through 12.

III

The owner of the site is the Department of the Army, and its address where more specific information may be obtained is as follows:

ATTN: DAIM-ODB-LO (R. Zeiler)

Post Office Box 220

Ratcliff, AR 72951


or

Assistant Chief of Staff for Installation Management

ATTN: DAIM-BDO (T. Lederle)

600 Army Pentagon

Washington D.C. 20310-0600

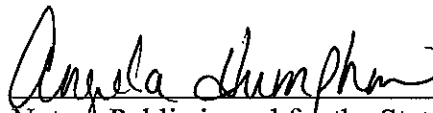


Rose M. Zeiler
Longhorn AAP Site Manager

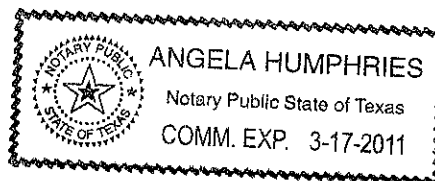
EXECUTED this the 10th day of March, 2010.

BEFORE ME, on this the 10th day of March, personally appeared Rose M. Zeiler, of United States Army, United States Department of Defense, known to me to be the person and agent of said agency whose name is subscribed to the foregoing instrument, and she acknowledged to me that she executed the same for the purposes and in the capacity therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 10 day of March, 2010.



Notary Public in and for the State of Texas,
County of Harrison



FIELD NOTES DESCRIPTION OF
"LHAAP-07" TRACT
(REMAINS OF DEMOLISHED BUILDING 50-G)
CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, tract "LHAAP-07" being defined by the four external corners of the concrete foundation stem wall of demolished Building 50-G in the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract "LHAAP-07" being more particularly described as follows:

Surveyor's Note: All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.999861727, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "X-11" (N=6960733.698 feet E=3304750.367 feet) and "HORSE" (N=6960008.269 feet E=3309591.340 feet). Said traverse indicates a surface distance of 4895.70 feet between said monuments. The computed land area is based on surface distances. As used herein, the abbreviation E.C.C.F.S.W. indicates External Corner of Concrete Foundation Stem Wall,

Commencing at monument "HORSE" referenced above,

THENCE N 87deg11'48"W 103.14' to an E.C.C.F.S.W. found for the S.E.C. of this tract and this POINT OF BEGINNING,

THENCE S 69deg02'55"W 30.36' along the S.B.L. of this tract to an E.C.C.F.S.W. found for this tract's S.W.C. ,

THENCE N 21deg59'26"W 101.90' along the W.B.L. of this tract to an E.C.C.F.S.W. found for this tract's N.W.C. , and being S 82deg14'17"E 4714.65' from monument "X-11" referenced above,

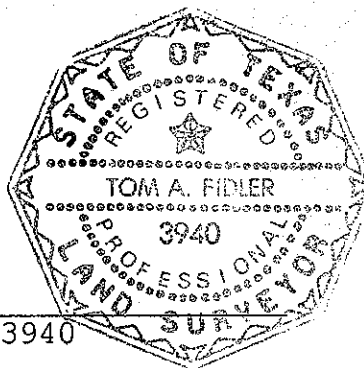
THENCE N 71deg43'04"E 30.53' along the N.B.L. of this tract to an E.C.C.F.S.W. found for this tract's N.E.C. ,

THENCE S 21deg55'35"E 100.48' along the E.B.L. of this tract to this POINT OF BEGINNING. This tract contains 3,078 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.



Tom A. Fidler, R.P.L.S. Number 3940

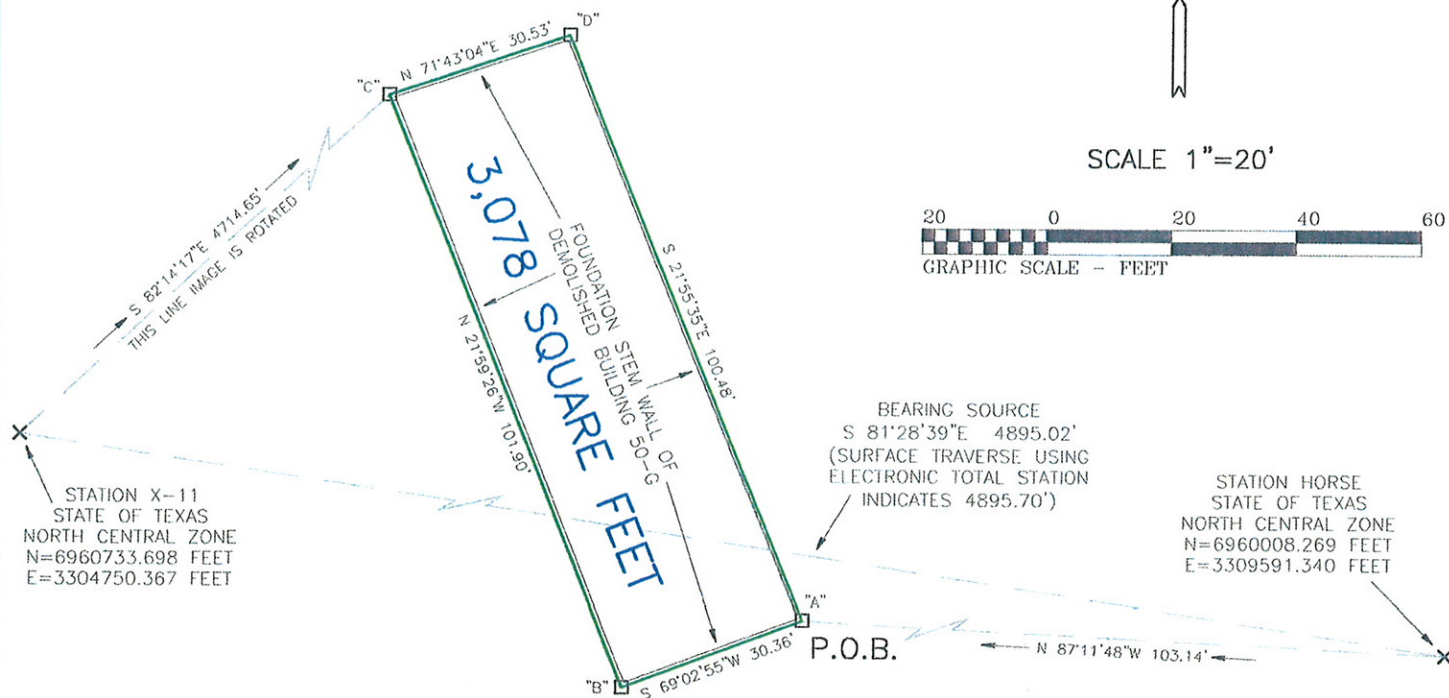


NOTES:

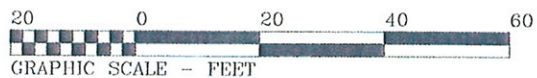
- X INDICATES TYPE "G" CORPS OF ENGINEERS MONUMENT (FOUND)
 □ INDICATES EXTERNAL CORNER OF FOUNDATION STEM WALL

COORDINATE TABLE

POINT	NORTH	EAST
A	6960013.313	3309488.323
B	6960002.458	3309459.972
C	6960096.944	3309421.815
D	6960106.521	3309450.803



SCALE 1"=20'



Tom A. Fidler, Registered Professional Land Surveyor, No. 3940

I, Tom A. Tidler, registered professional land surveyor, No. 3940, do hereby certify that this plat reflects the location of the corners on the tract herein described, as surveyed on the ground and under my supervision in August 2009.

FIELD NOTES DESCRIPTION
IS ON SEPARATE SHEET

NOTE

ALL BEARINGS, DISTANCES (UNLESS LABELED OTHERWISE), & COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, CODE 4202, NAD 1983 (92). THE SCALE FACTOR APPLIED EQUALS 0.999861727 & IS BASED ON SURFACE TRAVERSE BETWEEN STATIONS X-11 & HORSE. THE COMPUTED LAND AREA IS BASED ON SURFACE DISTANCES.

LANDMARK CONSULTANTS, INC.
PROFESSIONAL LAND SURVEYORS

P.O. BOX 606 LONGVIEW, TEXAS 75606
PHONE (903) 236-3377 FAX (903) 236-3530
E-MAIL landmark@cablelynx.com

LHAAP-07
(3,078 SQUARE FEET)
(REMAINS OF BUILDING 50-G)
LONGHORN ARMY AMMUNITION PLANT
HARRISON COUNTY, TEXAS

JOB #0407088	0407088.CRD	B.PTS	B.LEG
AUG. 13, 2009	0908074B.DWG	DRAWN BY JTG	

DO NOT REMOVE THIS PAGE – IT IS A PART OF THIS INSTRUMENT

MISCELLANEOUS

7 Pages

FILED AND RECORDED – OPR	CLERKS NOTES
On: <u>04/27/2010 04:08 PM</u>	
Document Number: <u>2010-000005557</u>	
Receipt No: <u>1006195</u>	
Amount: \$ <u>36.00</u>	
By: <u>Ann Turner</u> , Deputy	
 Patsy Cox, County Clerk Harrison County, Texas	



STATE OF TEXAS
COUNTY OF HARRISON

I hereby certify that this instrument was filed on the date and time stamped hereon by me
and was duly recorded in the Official Public Records of Harrison County, Texas.

Patsy Cox, Harrison County Clerk

Record and Return To:



SHAW E & I
1401 ENCLAVE PARKWAY, SUITE 250

HOUSTON, TX 77077

STATE OF TEXAS

HARRISON COUNTY

INDUSTRIAL SOLID WASTE
NOTICE OF NONRESIDENTIAL LAND USE

KNOW ALL MEN BY THESE PRESENTS THAT:

Pursuant to the Rules of the Texas Commission on Environmental Quality (TCEQ) pertaining to Industrial Solid Waste Management, this document is hereby filed in the Public Records of Harrison County, Texas in compliance with the recordation requirements of said rules:

I

The U.S. Army, Department of Defense, has performed a remediation of the land described herein. The site, LHAAP-51, is the area of a demolished building location known as Building 60-B, former photographic lab, located within the Plant 3 production area of the former Longhorn Army Ammunition Plant (LHAAP). LHAAP was placed on the National Priorities List (NPL) during August 1990. After its listing on the NPL, the U.S. Army, United States Environmental Protection Agency (USEPA), and TCEQ (formerly known as the Texas Water Commission) entered into an agreement under the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA) Section 120 for remedial activities. The CERCLA Section 120 Agreement, referred to as the Federal Facility Agreement (FFA), became effective on December 30, 1991. Although there are many sites at LHAAP that are specifically NPL listed, LHAAP-51 is not itself considered an NPL site. Environmental activities at LHAAP-51 progressed through the site investigation, at which point it was agreed by the Army and the TCEQ as the lead regulatory agency that no significant releases had occurred and the site could be closed under Texas Administrative Code (TAC) Risk Reduction Rule Standard 2.

LHAAP-51 (Building 60-B) was constructed in 1945 for the processing of X-ray film. The building had a concrete floor without a floor drain. Spent developing waste was drummed and transferred to another building for disposal. Small quantities of black and white developer and fixer solutions were generated by the X-ray lab. Activities ceased in the late 1970s or early 1980s. Further information may be found by examination of the Notice of Registration No. 30990 files, which are available for inspection upon request at TCEQ, Central File Room Customer Service Center, Building E, 12100 Park 35 Circle, Austin, Texas, 78753, (512) 239-2900, Monday through Friday 8:00 a.m. to 5:00 p.m. or the Administrative Record available at the Marshall Public Library, 300 S. Alamo Blvd, Marshall, Texas 75670, (903) 935-4465, Monday through Thursday 10:00 a.m. to 8 p.m., Friday and Saturday 10:00 a.m. to 5:30 p.m.

The TCEQ requires certain persons to provide recordation in the real property records to notify the public of the conditions of the land and/or the occurrence of remediation. This notification is not a representation or warranty by the TCEQ of the suitability of this land for any purpose.

II

The LHAAP-51 parcel is 5,754 square foot, more or less, or 0.13209 acre tract located in Harrison County, Texas, near the town of Karnack, being more particularly described with survey plat and metes and bounds established in Exhibit A.

The United States Department of the Army has undertaken careful environmental study of the LHAAP-51 site and USEPA and TCEQ concluded that no further investigation or action is required for LHAAP-51. Contaminants in soil samples from LHAAP-51 meet non-residential soil criteria in accordance with 30TAC§335.560(b).

Limited monitoring of LHAAP-51 will take place in the form of Letters of Certification from the Army or the Transferee to TCEQ every five years to document that the use of LHAAP-51 is consistent with the non-residential use scenarios evaluated in the risk assessment. Future use of the parcel is intended as a national wildlife refuge consistent with industrial or recreational activities and not for residential purposes. For purposes of this certification, residential use includes, but is not limited to, single family or multi-family residences; child care facilities; and nursing home or assisted living facilities; and any type of educational purpose for children/young adults in grades kindergarten through 12.

III

The owner of the site is the Department of the Army, and its address where more specific information may be obtained is as follows:

ATTN: DAIM-ODB-LO (R. Zeiler)

Post Office Box 220

Ratcliff, AR 72951


or

Assistant Chief of Staff for Installation Management

ATTN: DAIM-BDO (T. Lederle)

600 Army Pentagon

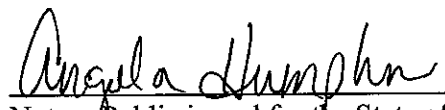
Washington D.C. 20310-0600

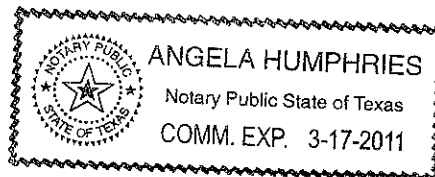

Rose M. Zeiler
Longhorn AAP Site Manager

EXECUTED this the 10th day of March, 2010.

BEFORE ME, on this the 10th day of March, personally appeared Rose M. Zeiler, of United States Army, United States Department of Defense, known to me to be the person and agent of said agency whose name is subscribed to the foregoing instrument, and she acknowledged to me that she executed the same for the purposes and in the capacity therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 10 day of March, 2010.


Notary Public in and for the State of Texas,
County of Harrison



FIELD NOTES DESCRIPTION OF
"LHAAP-51" TRACT
(INCLUDES THE REMAINS OF A DEMOLISHED BUILDING)
CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, tract "LHAAP-51" including, but not being limited to, the concrete slab of a demolished building in the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract "LHAAP-51" being more particularly described as follows :

Surveyor's Note #1: All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.999861727, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "X-11" (N=6960733.698 feet E=3304750.367 feet) and "HORSE" (N=6960008.269 feet E=3309591.340 feet). Said traverse indicates a surface distance of 4895.70 feet between said monuments. The computed land area is based on surface distances.

Surveyor's Note #2: This field notes description is based on State Plane coordinates supplied (in the form of an Autocad DXF file) by Shaw Environmental & Infrastructure Group.

Commencing at monument "HORSE" referenced above,

THENCE N 86deg33'08"W 1716.42' to a concrete nail with head dimple set for the S.E.C. of this tract and this POINT OF BEGINNING,

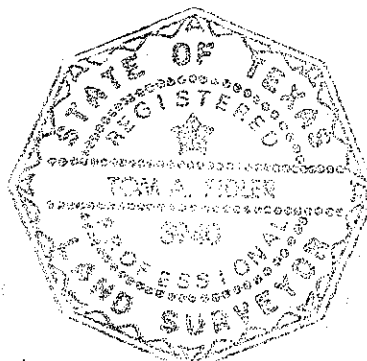
THENCE S 68deg51'01"W 68.17' along the S.B.L. of this tract to a 60d nail set for this tract's S.W.C. ,

THENCE N 21deg08'59"W 84.39' along the W.B.L. of this tract to a 60d nail set for this tract's N.W.C. , said nail being S 79deg23'36"E 3086.37' from said monument "X-11" ,

THENCE N 68deg51'01"E 68.17' along the N.B.L. of this tract to a 60d nail set for this tract's N.E.C. ,

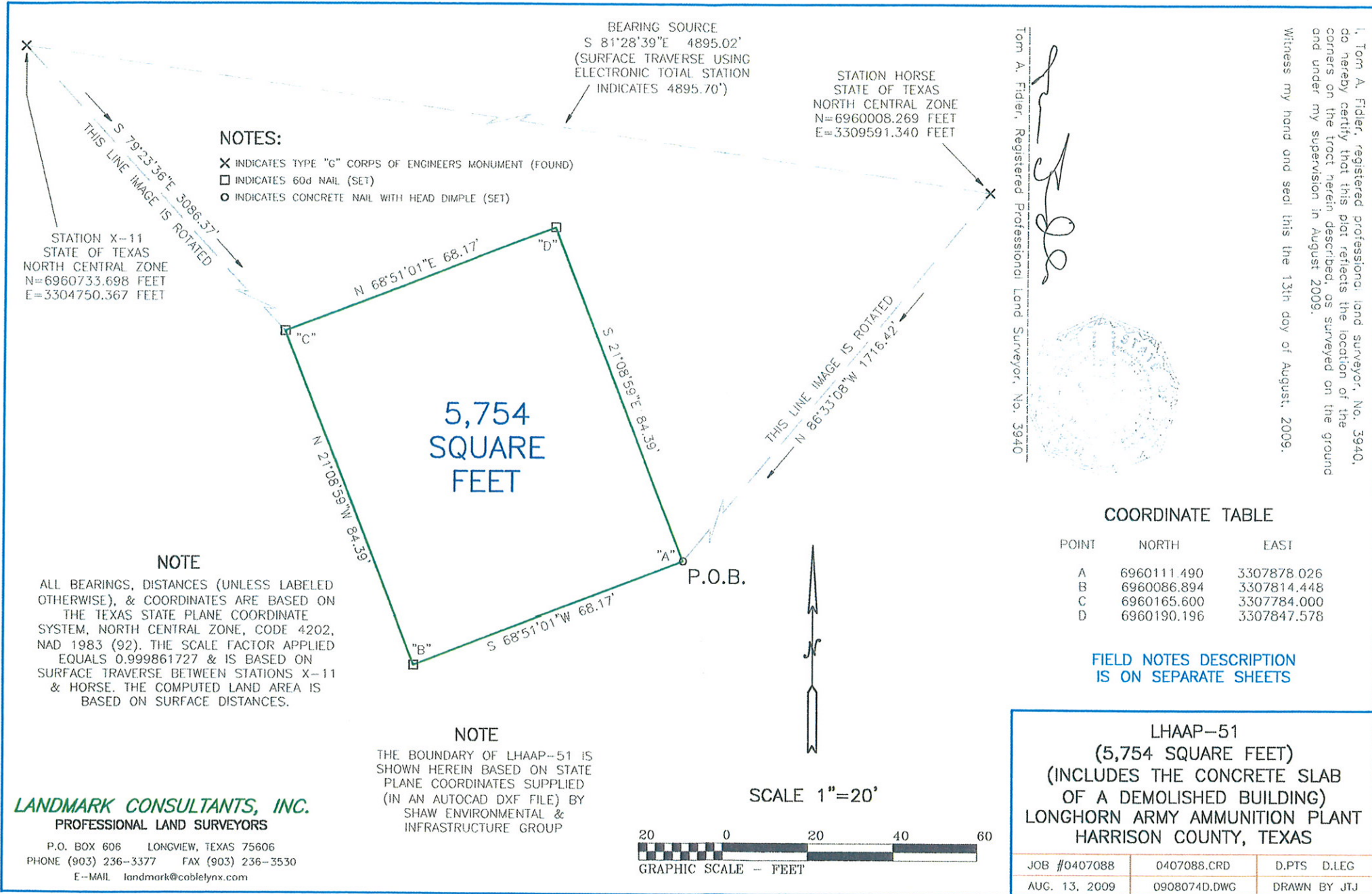
THENCE S 21deg08'59"E 84.39' along the E.B.L. of this tract to this POINT OF BEGINNING. This tract contains 5,754 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.



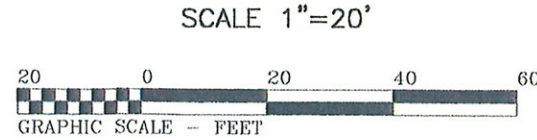
A handwritten signature in black ink, appearing to read "Tom A. Fidler", written over a horizontal line.

Tom A. Fidler, R.P.L.S. Number 3940

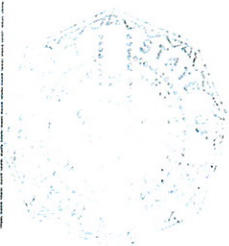


LANDMARK CONSULTANTS, INC.
PROFESSIONAL LAND SURVEYORS
P.O. BOX 606 LONGVIEW, TEXAS 75606
PHONE (903) 236-3377 FAX (903) 236-3530
E-MAIL: landmark@coblelynx.com

NOTE
THE BOUNDARY OF LHAAP-51 IS SHOWN HEREIN BASED ON STATE PLANE COORDINATES SUPPLIED (IN AN AUTOCAD DXF FILE) BY SHAW ENVIRONMENTAL & INFRASTRUCTURE GROUP



Tom A. Fidler, Registered Professional Land Surveyor, No. 3940



I, Tom A. Fidler, registered professional land surveyor, No. 3940, do hereby certify that this plat reflects the location of the corners on the tract herein described, as surveyed on the ground and under my supervision in August 2009.
Witness my hand and seal this 13th day of August, 2009.

COORDINATE TABLE			
POINT	NORTH	EAST	
A	6960111.490	3307878.026	
B	6960086.894	3307814.448	
C	6960165.600	3307784.000	
D	6960190.196	3307847.578	

FIELD NOTES DESCRIPTION IS ON SEPARATE SHEETS

LHAAP-51 (5,754 SQUARE FEET) (INCLUDES THE CONCRETE SLAB OF A DEMOLISHED BUILDING) LONGHORN ARMY AMMUNITION PLANT HARRISON COUNTY, TEXAS		
JOB #0407088	0407088.CRD	D.PTS D.LEG
AUG. 13, 2009	0908074D.DWG	DRAWN BY JTJ

DO NOT REMOVE THIS PAGE - IT IS A PART OF THIS INSTRUMENT

MISCELLANEOUS

34 Pages

FILED AND RECORDED - OPR	CLERKS NOTES
On: <u>04/27/2010 04:08 PM</u>	
Document Number: <u>2010-000005562</u>	
Receipt No: <u>1006195</u>	
Amount: \$ <u>144.00</u>	
By: <u>Ann Turner</u> , Deputy	
Patsy Cox, County Clerk Harrison County, Texas	



STATE OF TEXAS
COUNTY OF HARRISON

I hereby certify that this instrument was filed on the date and time stamped hereon by me
and was duly recorded in the Official Public Records of Harrison County, Texas.

Patsy Cox, Harrison County Clerk

Record and Return To:



SHAW E & I
1401 ENCLAVE PARKWAY, SUITE 250

HOUSTON, TX 77077

STATE OF TEXAS

HARRISON COUNTY

INDUSTRIAL SOLID WASTE
NOTICE OF NONRESIDENTIAL LAND USE

KNOW ALL MEN BY THESE PRESENTS THAT:

Pursuant to the Rules of the Texas Commission on Environmental Quality (TCEQ) pertaining to Industrial Solid Waste Management, this document is hereby filed in the Public Records of Harrison County, Texas in compliance with the recordation requirements of said rules:

I

The U.S. Army, Department of Defense, has performed a remediation of the land described herein. The site, LHAAP-55, consisted of 10 septic tank and leachate field systems that served outlying areas of the former Longhorn Army Ammunition Plant (LHAAP) within or near LHAAP-48 and LHAAP-35C(53). LHAAP was placed on the National Priorities List (NPL) during August 1990. After its listing on the NPL, the U.S. Army, United States Environmental Protection Agency (USEPA), and TCEQ (formerly known as the Texas Water Commission) entered into an agreement under the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA) Section 120 for remedial activities. The CERCLA Section 120 Agreement, referred to as the Federal Facility Agreement (FFA), became effective on December 30, 1991. Although there are many sites at LHAAP that are specifically NPL listed, LHAAP-55 is not itself considered an NPL site. Environmental activities at LHAAP-55 progressed through the site investigation, at which point it was agreed by the Army and the TCEQ as the lead regulatory agency that no significant releases had occurred and the site could be closed under Texas Administrative Code (TAC) Risk Reduction Rule Standard 2.

LHAAP-55 consisted of 10 septic tank and leachate field systems that served outlying areas of LHAAP that could not be connected to the plant sanitary sewer system. Although there was no history of industrial waste being placed into these septic tanks, soil samples were collected from borings installed at septic systems that were associated with industrial processes and analyzed for metals, explosives, semi volatile organic compounds, and volatile organic compounds where appropriate. Further information

may be found by examination of the Notice of Registration No. 30990 files, which are available for inspection upon request at TCEQ, Central File Room Customer Service Center, Building E, 12100 Park 35 Circle, Austin, Texas, 78753, (512) 239-2900, Monday through Friday 8:00 a.m. to 5:00 p.m. or the Administrative Record available at the Marshall Public Library, 300 S. Alamo Blvd, Marshall, Texas 75670, (903) 935-4465, Monday through Thursday 10:00 a.m. to 8 p.m., Friday and Saturday 10:00 a.m. to 5:30 p.m.

The TCEQ requires certain persons to provide recordation in the real property records to notify the public of the conditions of the land and/or the occurrence of remediation. This notification is not a representation or warranty by the TCEQ of the suitability of this land for any purpose.

II

The LHAAP-55 parcel include: ST-01 with 1,807 square feet, more or less, or 0.04148 acre tract; ST-02 with 1,791 square feet, more or less, or 0.04111 acre tract; ST-03 with 1,784 square feet, more or less, or 0.04095 acre tract; ST-04 with 1,789 square feet, more or less, or 0.04106 acre tract; ST-05 with 1,825 square feet more or less, or 0.04189 acre tract; ST-06 with 1,800 square feet, more or less, or 0.04132 acre tract; ST-07 with 1,865 square feet, more or less, or 0.04281 acre tract; ST-08 with 1,785 square feet, more or less, or 0.04097 acre tract; ST-09 with 2,004 square feet, more or less, or 0.04600 acre tract; and ST-10 with 1,804 square feet, more or less, or 0.04141 acre tract located in Harrison County, Texas, near the town of Karnack, being more particularly described with survey plat and metes and bounds established in Exhibit A.

The United States Department of the Army has undertaken careful environmental study of the LHAAP-55 site and USEPA and TCEQ concluded that no further investigation or action is required for LHAAP-55. Contaminants in soil samples from LHAAP-55 meet non-residential soil criteria in accordance with 30TAC§335.560(b).

Limited monitoring of LHAAP-55 will take place in the form of Letters of Certification from the Army or the Transferee to TCEQ every five years to document that the use of LHAAP-55 is consistent with the non-residential use scenarios evaluated in the risk assessment. Future use of the parcel is intended as a national wildlife refuge consistent with industrial or recreational activities and not for residential purposes. For purposes of this certification, residential use includes, but is not limited to, single family or multi-family residences; child care facilities; and nursing home or assisted living facilities; and any type of educational purpose for children/young adults in grades kindergarten through 12.

III

The owner of the site is the Department of the Army, and its address where more specific information may be obtained is as follows:

ATTN: DAIM-ODB-LO (R. Zeiler)

Post Office Box 220

Ratcliff, AR 72951

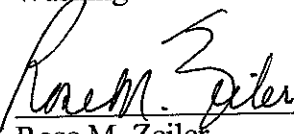
or

Assistant Chief of Staff for Installation Management

ATTN: DAIM-BDO (T. Lederle)

600 Army Pentagon

Washington D.C. 20310-0600



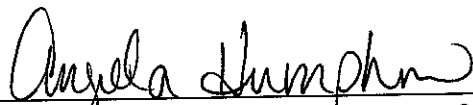
Rose M. Zeiler

Longhorn AAP Site Manager

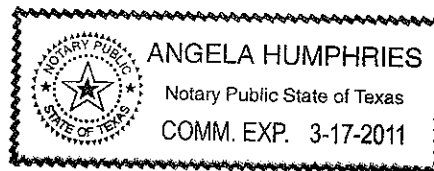
EXECUTED this the 10 th day of March, 2010.

BEFORE ME, on this the 10 th day of March, personally appeared Rose M. Zeiler, of United States Army, United States Department of Defense, known to me to be the person and agent of said agency whose name is subscribed to the foregoing instrument, and she acknowledged to me that she executed the same for the purposes and in the capacity therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 10 day of March, 2010.



Notary Public in and for the State of Texas,
County of Harrison



FIELD NOTES DESCRIPTION OF
SEPTIC TANK ST-01, ITS LEACHATE FIELD, AND A 2' WIDE
CORRIDOR CENTERED ON THE SEWER PIPE CONNECTING THE TWO

CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, being 1,807 square feet of land out of the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract being more particularly described as follows :

Surveyor's Note #1: All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.9998636625, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "IGNATIUS-1" (N=6957090.304 feet E=3311081.788 feet) and "IGNATIUS-2" (N=6955582.752 feet E=3311851.704 feet). Said traverse indicates a surface distance of 1693.005 feet between said monuments. The computed land area is based on surface distances.

Surveyor's Note #2: This field notes description is based on State Plane coordinates supplied by Shaw Environmental & Infrastructure Group. Landmark Consultants, Inc. has not probed the ground surface in this area in an attempt to determine the location of Septic Tank ST-01, its leachate field, or the sewer pipe connecting the two.

Commencing at monument "IGNATIUS-1" referenced above,

THENCE S 37deg17'23"E 1017.21' to a 60d nail set for the Westmost N.W.C. of this tract and this POINT OF BEGINNING,

THENCE N 63deg19'52"E 19.74' along a N.B.L. of this tract to a 60d nail set for this tract's Westmost N.E.C. ,

THENCE S 26deg40'08"E 4.90' along an E.B.L. of this tract to a 60d nail set for this tract's Northeast reentrant corner ,

THENCE N 89deg25'37"E 24.40' along a N.B.L. of this tract to a 60d nail set for this tract's Northwest reentrant corner ,

THENCE N 00deg00'00"E 18.03' along a W.B.L. of this tract to a 60d nail set for this tract's Eastmost N.W.C. ,

THENCE N 90deg00'00"E 46.53' along a N.B.L. of this tract to a 60d nail set for this tract's Eastmost N.E.C. ,

THENCE S 00deg00'00"E 32.43' along an E.B.L. of this tract to a 60d nail set for this tract's Eastmost S.E.C. ,

THENCE N 90deg00'00"W 46.53' along a S.B.L. of this tract to a 60d nail set for this tract's Eastmost S.W.C. ,

THENCE N 00deg00'00"E 12.40' along a W.B.L. of this tract to a 60d nail set for this tract's Southwest reentrant corner,

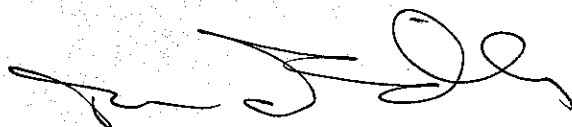
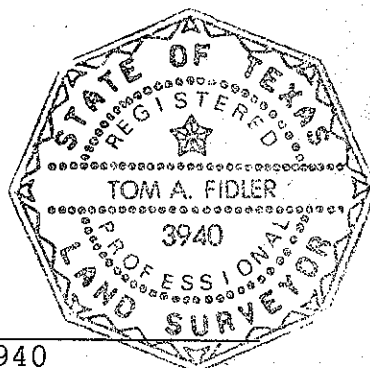
THENCE S 89deg25'37"W 23.40' along a S.B.L. of this tract to a 60d nail set for this tract's Southeast reentrant corner,

THENCE S 26deg40'08"E 5.57' along an E.B.L. of this tract to a 60d nail set for this tract's Westmost S.E.C. ,

THENCE S 63deg19'52"W 19.74' along a S.B.L. of this tract to a 60d nail set for this tract's Westmost S.W.C., from which station "IGNATIUS-2" referenced above bears S 12deg09'16"E 702.69' ,

THENCE N 26deg40'08"W 12.69' along a W.B.L. of this tract to this POINT OF BEGINNING. This tract contains 1,807 square feet, more or less.

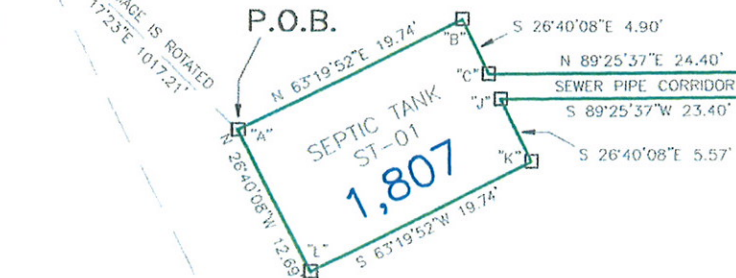
I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.

Tom A. Fidler, R.P.L.S. Number 3940

STATION IGNATIUS-1
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6957090.304 FEET
E=3311081.788 FEET

THIS LINE IMAGE IS ROTATED
S 37°17'23"E 1017.21'



BEARING SOURCE
S 27°03'13.2"E 1692.774'
(SURFACE TRAVERSE USING
ELECTRONIC TOTAL STATION
INDICATES 1693.005')

THIS LINE IMAGE
S 12°09'16"E
IS ROTATED
102.69'

SCALE 1"=10'

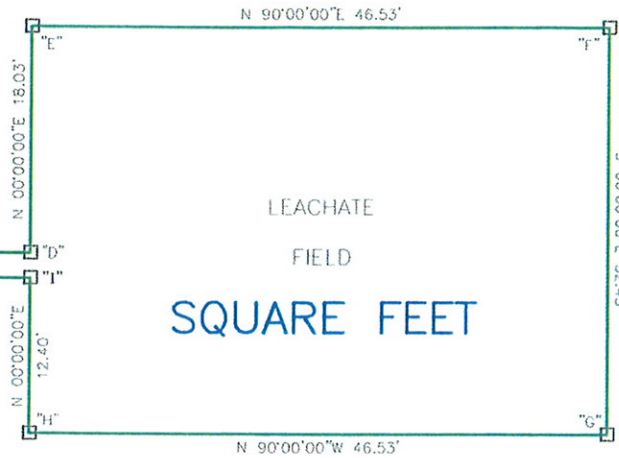


LANDMARK CONSULTANTS, INC.

PROFESSIONAL LAND SURVEYORS

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E-MAIL landmark@cablelynx.com

STATION IGNATIUS-2
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6955582.752 FEET
E=3311851.704 FEET



COORDINATE TABLE

Point	North	East
A	6956281.030	3311698.060
B	6956289.890	3311715.700
C	6956285.515	3311717.897
D	6956285.759	3311742.293
E	6956303.788	3311742.293
F	6956303.788	3311788.823
G	6956271.358	3311788.823
H	6956271.358	3311742.293
I	6956283.759	3311742.293
J	6956283.525	3311718.897
K	6956278.550	3311721.396
L	6956269.690	3311703.756

NOTE

ALL BEARINGS, DISTANCES (UNLESS LABELED OTHERWISE), & COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, CODE 4202, NAD 1983 (92). THE SCALE FACTOR APPLIED EQUALS 0.9998636625 & IS BASED ON SURFACE TRAVERSE BETWEEN STATIONS IGNATIUS-1 & IGNATIUS-2. THE COMPUTED LAND AREA IS BASED ON SURFACE DISTANCES.

Tom A. Fidler, Registered Professional Land Surveyor, No. 3940



I, Tom A. Fidler, registered professional land surveyor, No. 3940, do hereby certify that this plat reflects the location of the corners on the tract herein described, as surveyed on the ground and under my supervision in August 2009.

Witness my hand and seal this 13th day of August, 2009.

NOTES:

- X INDICATES TYPE "G" CORPS OF ENGINEERS MONUMENT (FOUND)
- INDICATES 60d NAIL (SET)

NOTE

THE BOUNDARY OF ST-01, ITS LEACHATE FIELD, AND THE SEWER PIPE CONNECTING BOTH, IS SHOWN HEREIN BASED ON STATE PLANE COORDINATES SUPPLIED BY SHAW ENVIRONMENTAL & INFRASTRUCTURE GROUP.

FIELD NOTES DESCRIPTION IS ON SEPARATE SHEETS

SEPTIC TANK ST-01
WITH LEACHATE FIELD
(1,807 SQUARE FEET)
(PART OF LHAAP-55)
LONGHORN ARMY AMMUNITION PLANT
HARRISON COUNTY, TEXAS

JOB #0407088	0407088.CRD	A.PTS	A.LEG
AUG. 13, 2009	0908074A.DWG	DRAWN BY	J.TJ

FIELD NOTES DESCRIPTION OF
SEPTIC TANK ST-02, ITS LEACHATE FIELD, AND A 2' WIDE
CORRIDOR CENTERED ON THE SEWER PIPE CONNECTING THE TWO

CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, being 1,791 square feet of land out of the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract being more particularly described as follows :

Surveyor's Note #1: All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.9998954238, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "TYLER-1" (N=6958507.460 feet E=3314279.499 feet) and "TYLER-2" (N=6957832.181 feet E=3315168.140 feet). Said traverse indicates a surface distance of 1116.219 feet between said monuments. The computed land area is based on surface distances.

Surveyor's Note #2: This field notes description is based on State Plane coordinates supplied by Shaw Environmental & Infrastructure Group. Landmark Consultants, Inc. has not probed the ground surface in this area in an attempt to determine the location of Septic Tank ST-02, its leachate field, or the sewer pipe connecting the two.

Commencing at monument "TYLER-1" referenced above,

THENCE N 05deg57'31"W 746.36' to a 60d nail set for the Eastmost S.E.C. of this tract and this POINT OF BEGINNING,

THENCE N 90deg00'00"W 19.74' along a S.B.L. of this tract to a 60d nail set (in an abandoned utility pole lying on the ground) for this tract's Eastmost S.W.C. ,

THENCE N 00deg00'00"E 5.36' along a W.B.L. of this tract to a 60d nail set for this tract's Southwest reentrant corner,

THENCE N 90deg00'00"W 15.73' along a S.B.L. of this tract to a 60d nail set for this tract's Southeast reentrant corner,

THENCE S 00deg00'00"W 15.91' along an E.B.L. of this tract to a 60d nail set for this tract's Westmost S.E.C. ,

THENCE N 90deg00'00"W 46.53' along a S.B.L. of this tract to a 60d nail set for this tract's Westmost S.W.C. ,

THENCE N 00deg00'00"E 32.43' along a W.B.L. of this tract to a 60d nail set for this tract's Westmost N.W.C. ,

THENCE N 90deg00'00"E 46.53' along a N.B.L. of this tract to a 60d nail set for this tract's Westmost N.E.C. ,

THENCE S 00deg00'00"E 14.52' along an E.B.L. of this tract to a 60d nail set for this tract's Northeast reentrant corner,

THENCE S 90deg00'00"E 15.73' along a N.B.L. of this tract to a 60d nail set for this tract's Northwest reentrant corner,

THENCE N 00deg00'00"W 5.33' along a W.B.L. of this tract to a 60d nail set for this tract's Eastmost N.W.C. ,

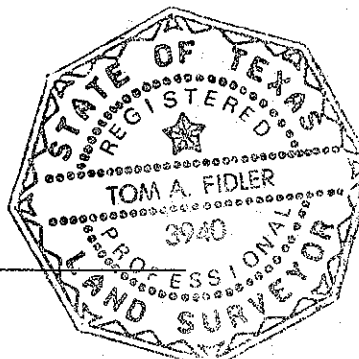
THENCE N 90deg00'00"E 19.74' along a N.B.L. of this tract to a 60d nail set for this tract's Eastmost N.E.C. ,

THENCE S 00deg00'00"E 12.69' along an E.B.L. of this tract to this POINT OF BEGINNING. This tract contains 1,791 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.

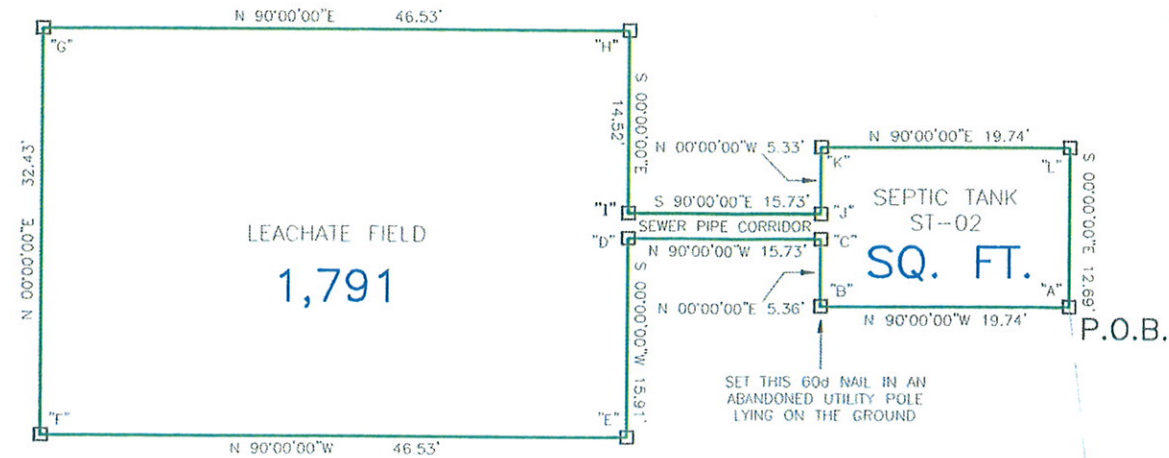


Tom A. Fidler, R.P.L.S. Number 3940



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NOTE
 ALL BEARINGS, DISTANCES (UNLESS LABELED OTHERWISE), & COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, CODE 4202, NAD 1983 (92). THE SCALE FACTOR APPLIED EQUALS 0.9998954238 & IS BASED ON SURFACE TRAVERSE BETWEEN STATIONS TYLER-1 & TYLER-2. THE COMPUTED LAND AREA IS BASED ON SURFACE DISTANCES.



COORDINATE TABLE

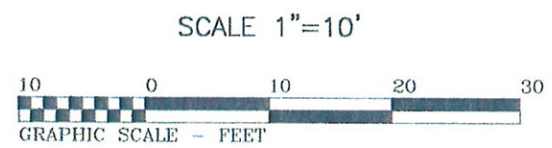
Point	North	East
A	6959249.790	3314202.020
B	6959249.790	3314182.280
C	6959255.150	3314182.280
D	6959255.150	3314166.552
E	6959239.240	3314166.552
F	6959239.240	3314120.022
G	6959271.670	3314120.022
H	6959271.670	3314166.552
I	6959257.150	3314166.552
J	6959257.150	3314182.280
K	6959262.480	3314182.280
L	6959262.480	3314202.020

NOTES:

- X INDICATES TYPE "G" CORPS OF ENGINEERS MONUMENT (FOUND)
- INDICATES 60d NAIL (SET)
- INDICATES UNMARKED POINT

NOTE

THE BOUNDARY OF ST-02, ITS LEACHATE FIELD, AND THE SEWER PIPE CORRIDOR CONNECTING BOTH, IS SHOWN HEREIN BASED ON STATE PLANE COORDINATES SUPPLIED (IN AN AUTOCAD DXF FILE) BY SHAW ENVIRONMENTAL & INFRASTRUCTURE GROUP.



I, Tom A. Fidler, registered professional land surveyor, No. 3940, do hereby certify that this plat reflects the location of the corners on the tract herein described, as surveyed on the ground and under my supervision in August through October 2009.

Witness my hand and seal October 26, 2009.

FIELD NOTES DESCRIPTION IS ON SEPARATE SHEETS

**SEPTIC TANK ST-02
 WITH LEACHATE FIELD
 (1,791 SQUARE FEET)
 (PART OF LHAAP-55)
 LONGHORN ARMY AMMUNITION PLANT
 HARRISON COUNTY, TEXAS**

JOB #0407088	0407088.CRD	J.PTS J.LEG
10/26/2009	0908074J.DWG	DRAWN BY JTJ

Tom A. Fidler, Registered Professional Land Surveyor, No. 3940

STATION TYLER-1
 STATE OF TEXAS
 NORTH CENTRAL ZONE
 N=6958507.460 FEET
 E=3314279.499 FEET

STATION TYLER-2
 STATE OF TEXAS
 NORTH CENTRAL ZONE
 N=6957832.181 FEET
 E=3315168.140 FEET

BEARING SOURCE
 S 52°46'07.6"E 1116.102'
 (SURFACE TRAVERSE USING
 ELECTRONIC TOTAL STATION
 INDICATES 1116.219')

FIELD NOTES DESCRIPTION OF
SEPTIC TANK ST-03, ITS LEACHATE FIELD, AND A 2' WIDE
CORRIDOR CENTERED ON THE SEWER PIPE CONNECTING THE TWO

CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, being 1,784 square feet of land out of the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract being more particularly described as follows :

Surveyor's Note #1: All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.9998954238, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "TYLER-1" (N=6958507.460 feet E=3314279.499 feet) and "TYLER-2" (N=6957832.181 feet E=3315168.140 feet). Said traverse indicates a surface distance of 1116.219 feet between said monuments. The computed land area is based on surface distances.

Surveyor's Note #2: This field notes description is based on State Plane coordinates supplied by Shaw Environmental & Infrastructure Group. Landmark Consultants, Inc. has not probed the ground surface in this area in an attempt to determine the location of Septic Tank ST-03, its leachate field, or the sewer pipe connecting the two.

Commencing at monument "TYLER-1" referenced above,

THENCE N 24deg50'41"E 537.01' to a 60d nail set for the Southmost South corner of this tract and this POINT OF BEGINNING,

THENCE N 35deg57'31"W 30.43' along a S.W. B.L. of this tract to a 60d nail set for a South reentrant corner of this tract,

THENCE S 54deg02'29"W 1.92' along a S.E. B.L. of this tract to a 60d nail set for a South corner of this tract,

THENCE N 38deg10'26"W 12.26' along a S.W. B.L. of this tract to a 60d nail set for a South reentrant corner of this tract,

THENCE S 50deg49'08"W 5.10' along a S.E. B.L. of this tract to a 60d nail set for this tract's Northmost South corner,

THENCE N 39deg10'52"W 19.74' along a S.W. B.L. of this tract to a 60d nail set for this tract's Westmost corner,

THENCE N 50deg49'08"E 12.69' along a N.W. B.L. of this tract to a 60d nail set for this tract's Westmost North corner,

THENCE S 39deg10'52"E 19.74' along a N.E. B.L. of this tract to a 60d nail set for this tract's Westmost East corner,

THENCE S 50deg49'08"W 5.58' along a S.E. B.L. of this tract to a 60d nail set for this tract's East reentrant corner,

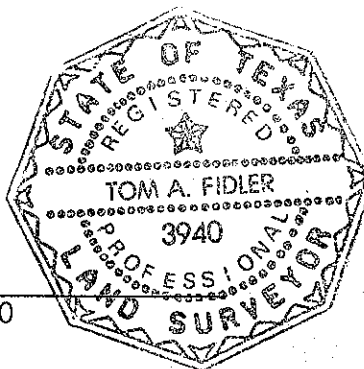
THENCE S 38deg10'26"E 10.37' along a N.E. B.L. of this tract to a 60d nail set for this tract's North reentrant corner,

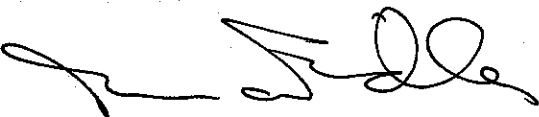
THENCE N 54deg02'29"E 46.53' along a N.W. B.L. of this tract to a 60d nail set for this tract's Eastmost North corner,

THENCE S 35deg57'31"E 32.43' along a N.E. B.L. of this tract to a 60d nail set for this tract's Eastmost East corner,

THENCE S 54deg02'29"W 46.53' along a S.E. B.L. of this tract to this POINT OF BEGINNING. This tract contains 1,784 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.




Tom A. Fidler, R.P.L.S. Number 3940

LANDMARK CONSULTANTS, INC.

PROFESSIONAL LAND SURVEYORS

P.O. BOX 606 LONGVIEW, TEXAS 75606
 PHONE (903) 236-3377 FAX (903) 236-3530
 E-MAIL landmark@coblelynx.com

NOTE

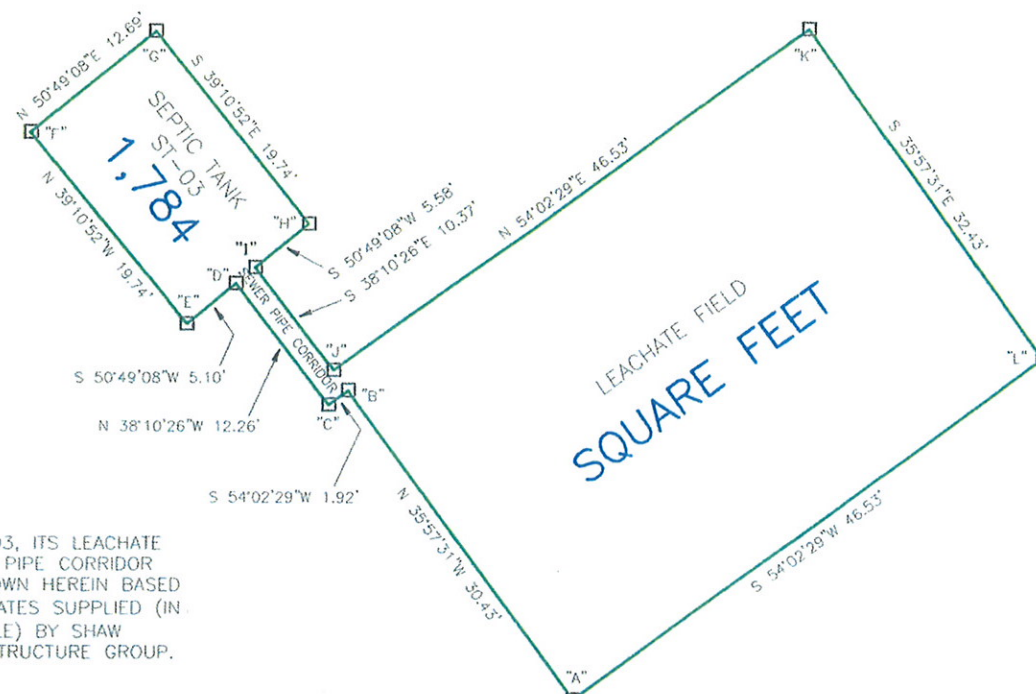
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NOTE

THE BOUNDARY OF ST-03, ITS LEACHATE FIELD, AND THE SEWER PIPE CORRIDOR CONNECTING BOTH, IS SHOWN HEREIN BASED ON STATE PLANE COORDINATES SUPPLIED (IN AN AUTOCAD DXF FILE) BY SHAW ENVIRONMENTAL & INFRASTRUCTURE GROUP.

I, Tom A. Fidler, registered professional land surveyor, No. 3940, do hereby certify that this plat reflects the location of the corners on the tract herein described, as surveyed on the ground and under my supervision in August through October 2009.

Witness my hand and seal October 26, 2009.

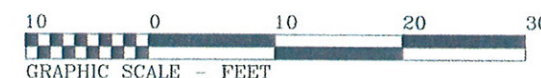
**NOTES:**

- ✕ INDICATES TYPE "G" CORPS OF ENGINEERS MONUMENT (FOUND)
- INDICATES 60d NAIL (SET)
- INDICATES UNMARKED POINT

COORDINATE TABLE

Point	North	East
A	6958994.769	3314505.128
B	6959019.400	3314487.259
C	6959018.270	3314485.702
D	6959027.905	3314478.127
E	6959024.680	3314474.170
F	6959039.982	3314461.699
G	6959047.999	3314471.535
H	6959032.697	3314484.007
I	6959029.169	3314479.678
J	6959021.019	3314486.085
K	6959048.342	3314523.748
L	6959022.091	3314542.791

SCALE 1"=10'



FIELD NOTES DESCRIPTION
IS ON SEPARATE SHEETS

SEPTIC TANK ST-03
WITH LEACHATE FIELD
(1,784 SQUARE FEET)
(PART OF LHAAP-55)
LONGHORN ARMY AMMUNITION PLANT
HARRISON COUNTY, TEXAS

JOB #0407088	0407088.CRD	K.PTS K.LEG
10/26/2009	0908074K.DWG	DRAWN BY JTJ



Tom A. Fidler

Tom A. Fidler, Registered Professional Land Surveyor, No. 3940

BEARING SOURCE
S 52°46'07.6"E 1116.102'
(SURFACE TRAVERSE USING
ELECTRONIC TOTAL STATION
INDICATES 1116.219')

STATION TYLER-2
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6957832.181 FEET
E=3315168.140 FEET

STATION TYLER-1
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6958507.460 FEET
E=3314279.499 FEET

P.O.B.

FIELD NOTES DESCRIPTION OF
SEPTIC TANK ST-04, ITS LEACHATE FIELD, AND A 2' WIDE
CORRIDOR CENTERED ON THE SEWER PIPE CONNECTING THE TWO

CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, being 1,789 square feet of land out of the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract being more particularly described as follows :

Surveyor's Note #1: All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.9998954238, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "TYLER-1" (N=6958507.460 feet E=3314279.499 feet) and "TYLER-2" (N=6957832.181 feet E=3315168.140 feet). Said traverse indicates a surface distance of 1116.219 feet between said monuments. The computed land area is based on surface distances.

Surveyor's Note #2: This field notes description is based on State Plane coordinates supplied by Shaw Environmental & Infrastructure Group. Landmark Consultants, Inc. has not probed the ground surface in this area in an attempt to determine the location of Septic Tank ST-04, its leachate field, or the sewer pipe connecting the two.

Commencing at monument "TYLER-1" referenced above,

THENCE S 64deg44'32"W 426.66' to a 60d nail set for the Southmost S.E.C. of this tract and this POINT OF BEGINNING,

THENCE N 89deg51'08"W 32.43' along a S.B.L. of this tract to a 60d nail set for this tract's Southmost S.W.C. ,

THENCE N 00deg08'52"E 46.53' along a W.B.L. of this tract to a 60d nail set for this tract's Southmost N.W.C. ,

THENCE S 89deg51'08"E 14.56' along a N.B.L. of this tract to a 60d nail set for this tract's Northwest reentrant corner,

THENCE N 00deg00'00"W 14.73' along a W.B.L. of this tract to a 60d nail set for this tract's Southwest reentrant corner,

THENCE N 89deg42'35"W 5.65' along a S.B.L. of this tract to a 60d nail set for this tract's Northmost S.W.C. ,

THENCE N 00deg17'25"E 19.74' along a W.B.L. of this tract to a concrete nail with head dimple set (in old asphalt) for this tract's Northmost N.W.C. ,

THENCE S 89deg42'35"E 12.69' along a N.B.L. of this tract to a 60d nail set for this tract's Northmost N.E.C. ,

THENCE S 00deg17'25"W 19.74' along an E.B.L. of this tract to a 60d nail set for this tract's Northmost S.E.C. ,

THENCE N 89deg42'35"W 5.04' along a S.B.L. of this tract to a 60d nail set for this tract's Southeast reentrant corner,

THENCE S 00deg00'00"E 14.73' along an E.B.L. of this tract to a 60d nail set for this tract's Northeast reentrant corner,

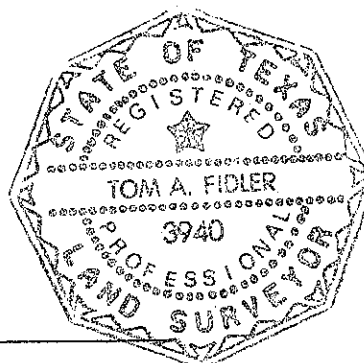
THENCE S 89deg51'08"E 15.87' along a N.B.L. of this tract to a 60d nail set for this tract's Southmost N.E.C. ,

THENCE S 00deg08'52"W 46.53' along an E.B.L. of this tract to this POINT OF BEGINNING. This tract contains 1,789 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.



Tom A. Fidler, R.P.L.S. Number 3940

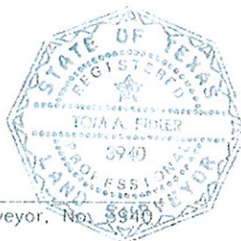


I, Tom A. Fidler, registered professional land surveyor, No. 3940, do hereby certify that this plat reflects the location of the corners on the tract herein described, as surveyed on the ground and under my supervision in August through October 2009.

Witness my hand and seal October 26, 2009.



Tom A. Fidler, Registered Professional Land Surveyor, No. 3940



NOTE

THE BOUNDARY OF ST-04, ITS LEACHATE FIELD, AND THE SEWER PIPE CORRIDOR CONNECTING BOTH, IS SHOWN HEREIN BASED ON STATE PLANE COORDINATES SUPPLIED (IN AN AUTOCAD DXF FILE) BY SHAW ENVIRONMENTAL & INFRASTRUCTURE GROUP.

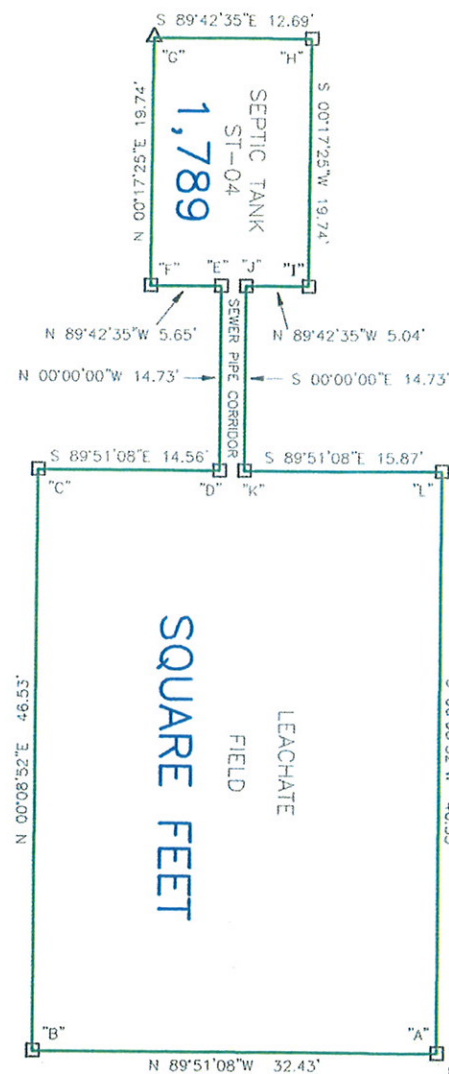
NOTES:

- X INDICATES TYPE "G" CORPS OF ENGINEERS MONUMENT (FOUND)
- INDICATES 60d NAIL (SET)
- △ INDICATES CONCRETE NAIL WITH HEAD DIMPLE (SET)

FIELD NOTES DESCRIPTION
IS ON SEPARATE SHEETS

SEPTIC TANK ST-04
WITH LEACHATE FIELD
(1,789 SQUARE FEET)
(PART OF LHAAP-55)
LONGHORN ARMY AMMUNITION PLANT
HARRISON COUNTY, TEXAS

JOB #0407088	0407088.CRD	1.PTS	1.LEG
10/26/2009	09080741.DWG	DRAWN BY JTJ	



SCALE 1"=10'



LANDMARK CONSULTANTS, INC.

PROFESSIONAL LAND SURVEYORS

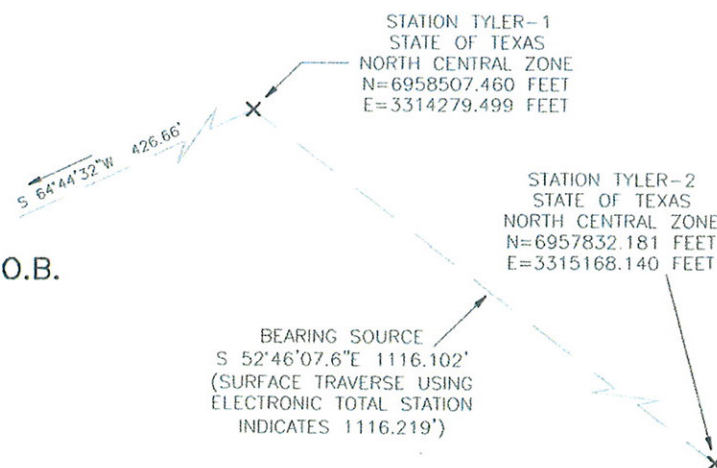
P.O. BOX 606 LONGVIEW, TEXAS 75606
PHONE (903) 236-3377 FAX (903) 236-3530
E-MAIL landmark@cablelynx.com

NOTE

ALL BEARINGS, DISTANCES (UNLESS LABELED OTHERWISE), & COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, CODE 4202, NAD 1983 (92). THE SCALE FACTOR APPLIED EQUALS 0.9998954238 & IS BASED ON SURFACE TRAVERSE BETWEEN STATIONS TYLER-1 & TYLER-2. THE COMPUTED LAND AREA IS BASED ON SURFACE DISTANCES.

COORDINATE TABLE

Point	North	East
A	6958325.408	3313893.629
B	6958325.492	3313861.199
C	6958372.022	3313861.319
D	6958371.984	3313875.880
E	6958386.716	3313875.880
F	6958386.744	3313870.230
G	6958406.484	3313870.330
H	6958406.420	3313883.020
I	6958386.680	3313882.920
J	6958386.706	3313877.880
K	6958371.979	3313877.880
L	6958371.938	3313893.749



FIELD NOTES DESCRIPTION OF
SEPTIC TANK ST-05, ITS LEACHATE FIELD, AND A 2' WIDE
CORRIDOR CENTERED ON THE SEWER PIPE CONNECTING THE TWO

CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, being 1,825 square feet of land out of the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract being more particularly described as follows :

Surveyor's Note #1: All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.9998954238, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "TYLER-1" (N=6958507.460 feet E=3314279.499 feet) and "TYLER-2" (N=6957832.181 feet E=3315168.140 feet). Said traverse indicates a surface distance of 1116.219 feet between said monuments. The computed land area is based on surface distances.

Surveyor's Note #2: This field notes description is based on State Plane coordinates supplied by Shaw Environmental & Infrastructure Group. Landmark Consultants, Inc. has not probed the ground surface in this area in an attempt to determine the location of Septic Tank ST-05, its leachate field, or the sewer pipe connecting the two.

Commencing at monument "TYLER-2" referenced above,

THENCE N 52deg46'07.6"W 36.82' to a point, said point being S 52deg46'07.6"E 1079.28' from said monument "TYLER-1" ,

THENCE S 37deg13'52"W 81.68' to a 60d nail set for the Northmost East corner of this tract and this POINT OF BEGINNING ,

THENCE S 33deg39'28"W 12.69' along a S.E. B.L. of this tract to a 60d nail set for this tract's Northmost South corner,

THENCE N 56deg20'32"W 17.74' along a S.W. B.L. of this tract to a chisled "X" set in concrete for this tract's South reentrant corner,

THENCE S 36deg51'06"W 32.79' along a S.E. B.L. of this tract to a 60d nail set for this tract's East reentrant corner,

THENCE S 57deg33'12"E 44.52' along a N.E. B.L. of this tract to a 60d nail set for this tract's Southmost East corner,

THENCE S 32deg26'48"W 32.43' along a S.E. B.L. of this tract to a 60d nail set for this tract's Southmost South corner,

THENCE N 57deg33'12"W 46.53' along a S.W. B.L. of this tract to a 60d nail set for this tract's West corner,

THENCE N 32deg26'48"E 32.43' along a N.W. B.L. of this tract to a 60d nail set for deflection corner,

THENCE N 36deg51'06"E 32.84' along a N.W. B.L. of this tract to a chisled "X" set in concrete for deflection corner,

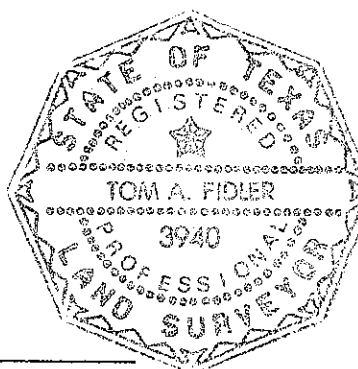
THENCE N 33deg39'28"E 12.69' along a N.W. B.L. of this tract to a 60d nail set for this tract's North corner,

THENCE S 56deg20'32"E 19.74' along a N.E. B.L. of this tract to this POINT OF BEGINNING. This tract contains 1,825 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.



Tom A. Fidler, R.P.L.S. Number 3940

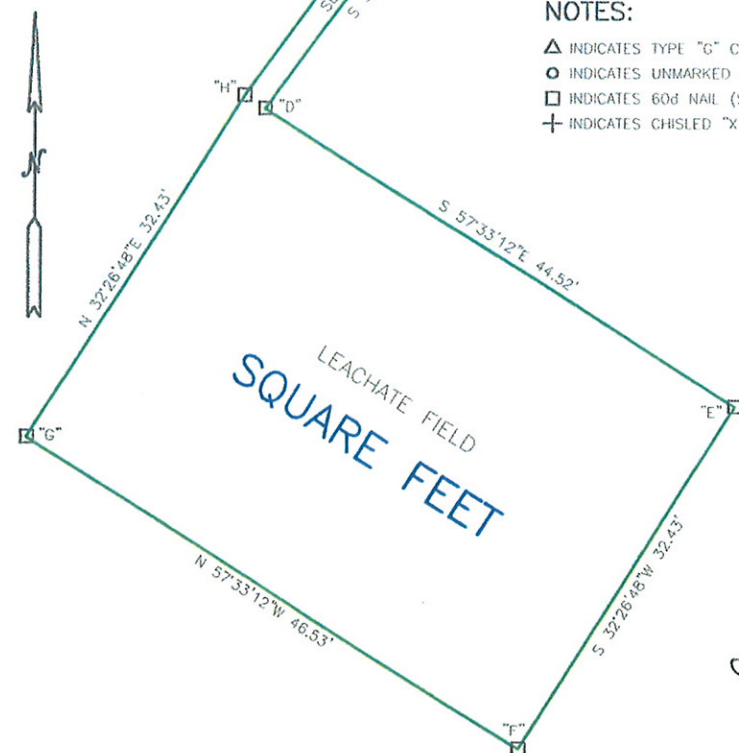


NOTE

THE BOUNDARY OF ST-05, ITS LEACHATE FIELD, AND THE SEWER PIPE CORRIDOR CONNECTING BOTH, IS SHOWN HEREIN BASED ON STATE PLANE COORDINATES SUPPLIED (IN AN AUTOCAD DXF FILE) BY SHAW ENVIRONMENTAL & INFRASTRUCTURE GROUP.

COORDINATE TABLE

Point	North	East
A	6957789.423	3315089.403
B	6957778.860	3315082.370
C	6957788.690	3315067.606
D	6957762.448	3315047.938
E	6957738.561	3315085.512
F	6957711.193	3315068.113
G	6957736.157	3315028.846
H	6957763.525	3315046.245
I	6957789.801	3315065.939
J	6957800.363	3315072.972



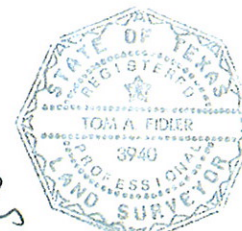
NOTES:

- △ INDICATES TYPE "G" CORPS OF ENGINEERS MONUMENT (FOUND)
- INDICATES UNMARKED POINT
- INDICATES 60d NAIL (SET)
- + INDICATES CHISELED "X" (SET) IN CONCRETE

I, Tom A. Fidler, registered professional land surveyor, No. 3940, do hereby certify that this plot reflects the location of the corners on the tract herein described, as surveyed on the ground and under my supervision in August through October, 2009.

Witness my hand and seal October 26, 2009.

Tom A. Fidler
Tom A. Fidler, Registered Professional Land Surveyor, No. 3940

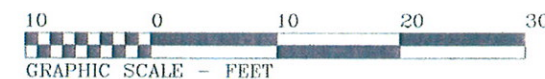
LANDMARK CONSULTANTS, INC.
PROFESSIONAL LAND SURVEYORS

P.O. BOX 606 LONGVIEW, TEXAS 75606
PHONE (903) 236-3377 FAX (903) 236-3530
E-MAIL landmark@cablelynx.com

BEARING SOURCE
S 52°46'07.6"E 1116.102'
(SURFACE TRAVERSE USING
ELECTRONIC TOTAL STATION
INDICATES 1116.219')

STATION TYLER-2
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6957832.181 FEET
E=3315168.140 FEET

SCALE 1"=10'



NOTE

ALL BEARINGS, DISTANCES (UNLESS LABELED OTHERWISE), & COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, CODE 4202, NAD 1983 (92). THE SCALE FACTOR APPLIED EQUALS 0.9998954238 & IS BASED ON SURFACE TRAVERSE BETWEEN STATIONS TYLER-1 & TYLER-2. THE COMPUTED LAND AREA IS BASED ON SURFACE DISTANCES.

FIELD NOTES DESCRIPTION
IS ON SEPARATE SHEETS

SEPTIC TANK ST-05
WITH LEACHATE FIELD
(1,825 SQUARE FEET)
(PART OF LHAAP-55)
LONGHORN ARMY AMMUNITION PLANT
HARRISON COUNTY, TEXAS

JOB #0407088	0407088.CRD	L.PTS L.LEG
10/26/2009	0908074L.DWG	DRAWN BY JTJ

FIELD NOTES DESCRIPTION OF
SEPTIC TANK ST-06, ITS LEACHATE FIELD, AND A 2' WIDE
CORRIDOR CENTERED ON THE SEWER PIPE CONNECTING THE TWO

CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, being 1,800 square feet of land out of the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract being more particularly described as follows :

Surveyor's Note #1: All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.9998954238, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "TYLER-1" (N=6958507.460 feet E=3314279.499 feet) and "TYLER-2" (N=6957832.181 feet E=3315168.140 feet). Said traverse indicates a surface distance of 1116.219 feet between said monuments. The computed land area is based on surface distances.

Surveyor's Note #2: This field notes description is based on State Plane coordinates supplied by Shaw Environmental & Infrastructure Group. Landmark Consultants, Inc. has not probed the ground surface in this area in an attempt to determine the location of Septic Tank ST-06, its leachate field, or the sewer pipe connecting the two.

Commencing at monument "TYLER-2" referenced above,

THENCE S 85deg57'52"E 1425.64' to a 60d nail set for the Northmost N.W.C. of this tract and this POINT OF BEGINNING,

THENCE N 67deg08'12"E 12.69' along a N.B.L. of this tract to a 60d nail set for this tract's Northmost N.E.C. ,

THENCE S 22deg51'48"E 19.74' along an E.B.L. of this tract to a 60d nail set for this tract's Northmost S.E.C. ,

THENCE S 67deg08'12"W 4.97' along a S.B.L. of this tract to a 60d nail set for this tract's S.E. reentrant corner,

THENCE S 22deg49'50"E 19.87' along an E.B.L. of this tract to a 60d nail set for this tract's N.E. reentrant corner,

THENCE N 64deg30'12"E 16.55' along a N.B.L. of this tract to a

60d nail set for this tract's Southmost N.E.C. ,

THENCE S 25deg29'48"E 46.53' along an E.B.L. of this tract to a 60d nail set for this tract's Southmost S.E.C. ,

THENCE S 64deg30'12"W 32.43' along a S.B.L. of this tract to a 60d nail set for this tract's Southmost S.W.C. ,

THENCE N 25deg29'48"W 46.53' along a W.B.L. of this tract to a 60d nail set for this tract's Southmost N.W.C. ,

THENCE N 64deg30'12"E 13.88' along a N.B.L. of this tract to a 60d nail set for this tract's N.W. reentrant corner,

THENCE N 22deg49'50"W 19.96' along a W.B.L. of this tract to a 60d nail set for this tract's S.W. reentrant corner,

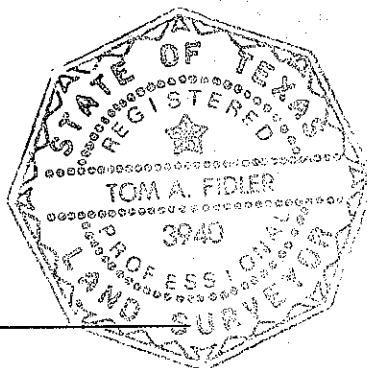
THENCE S 67deg08'12"W 5.72' along a S.B.L. of this tract to a 60d nail set for this tract's Northmost S.W.C. ,

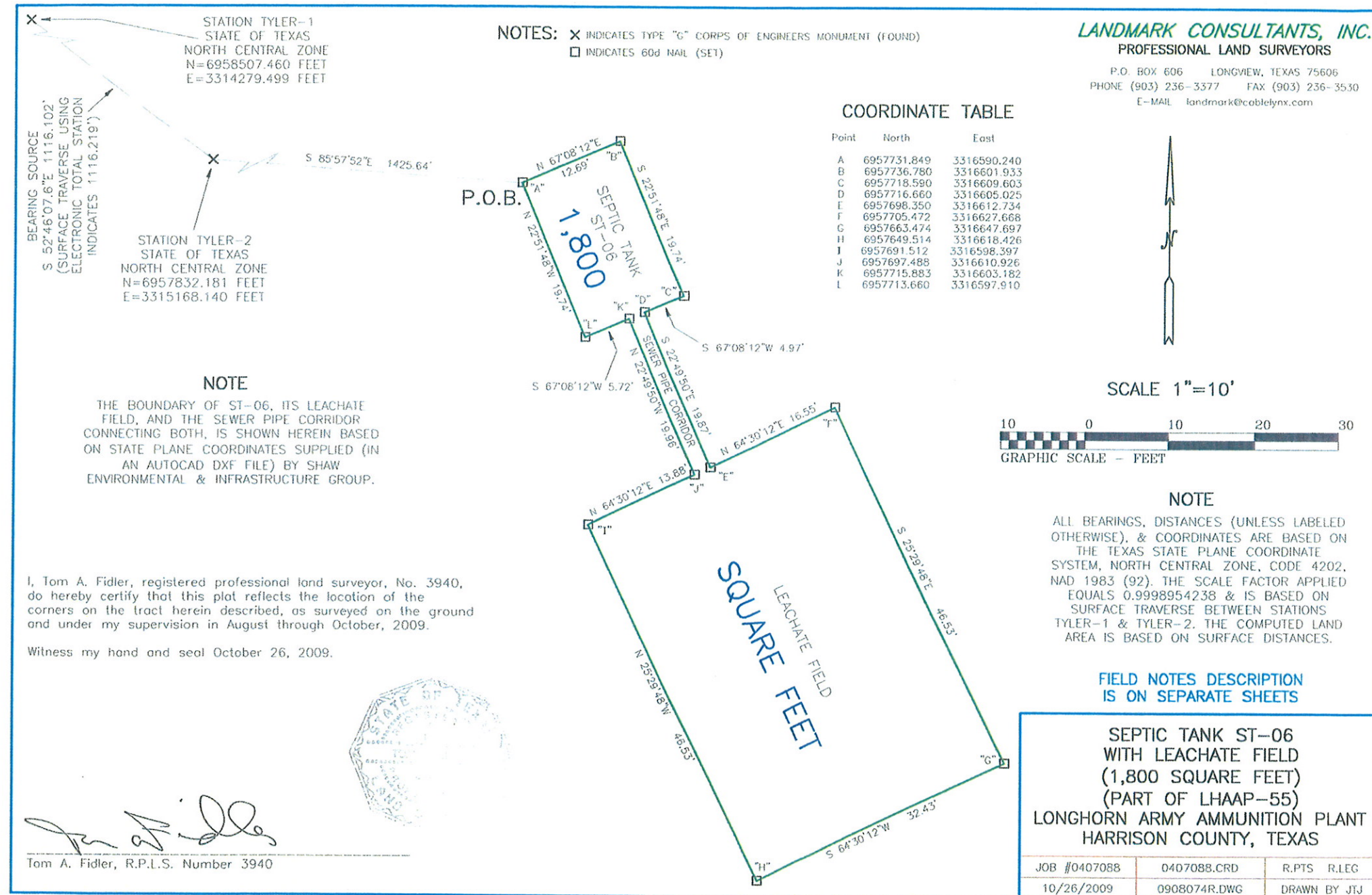
THENCE N 22deg51'48"W 19.74' along a W.B.L. of this tract to this POINT OF BEGINNING. This tract contains 1,800 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.



Tom A. Fidler, R.P.L.S. Number 3940





FIELD NOTES DESCRIPTION OF
SEPTIC TANK ST-07, ITS LEACHATE FIELD, AND A 2' WIDE
CORRIDOR CENTERED ON THE SEWER PIPE CONNECTING THE TWO

CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, being 1,865 square feet of land out of the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract being more particularly described as follows :

Surveyor's Note #1: All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.9998954238, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "TYLER-1" (N=6958507.460 feet E=3314279.499 feet) and "TYLER-2" (N=6957832.181 feet E=3315168.140 feet). Said traverse indicates a surface distance of 1116.219 feet between said monuments. The computed land area is based on surface distances.

Surveyor's Note #2: This field notes description is based on State Plane coordinates supplied by Shaw Environmental & Infrastructure Group. Landmark Consultants, Inc. has not probed the ground surface in this area in an attempt to determine the location of Septic Tank ST-07, its leachate field, or the sewer pipe connecting the two.

Commencing at monument "TYLER-2" referenced above,

THENCE S 20deg14'47"E 467.25' to a 60d nail set for the N.E.C. corner of this tract and this POINT OF BEGINNING ,

THENCE S 13deg37'37"E 32.43' along an E.B.L. of this tract to a 60d nail set for this tract's S.E.C. ,

THENCE S 76deg22'23"W 46.53' along a S.B.L. of this tract to a 60d nail set for this tract's S.W.C. ,

THENCE N 13deg37'37"W 14.74' along a W.B.L. of this tract to a 60d nail set for this tract's Eastmost reentrant corner,

THENCE S 77deg04'57"W 23.21' along a S.B.L. of this tract to a 60d nail set for a somewhat reentrant corner of this tract,

THENCE S 29deg56'20"W 28.62' along a S.E. B.L. of this tract

to a 60d nail set for this tract's Southmost reentrant corner,

THENCE S 54deg24'06"E 5.82' along a N.E. B.L. of this tract to a 60d nail set for this tract's East corner,

THENCE S 35deg35'54"W 19.74' along a S.E. B.L. of this tract to a 60d nail set for this tract's South corner,

THENCE N 54deg24'06"W 12.69' along a S.W. B.L. of this tract to a 60d nail set for this tract's West corner,

THENCE N 35deg35'54"E 19.74' along a N.W. B.L. of this tract to a 60d nail set for this tract's North corner,

THENCE S 54deg24'06"E 4.86' along a N.E. B.L. of this tract to a 60d nail set for this tract's Westmost reentrant corner,

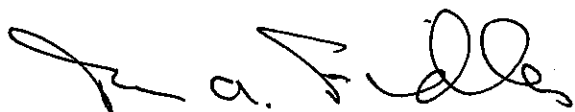
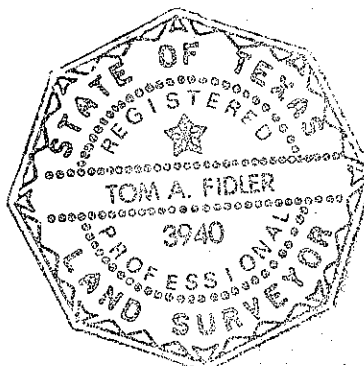
THENCE N 29deg56'20"E 29.29' along a N.W. B.L. of this tract to a 60d nail set for this tract's Southmost N.W.C. ,

THENCE N 77deg04'57"E 24.06' along a N.B.L. of this tract to a 60d nail set for this tract's Northmost reentrant corner,

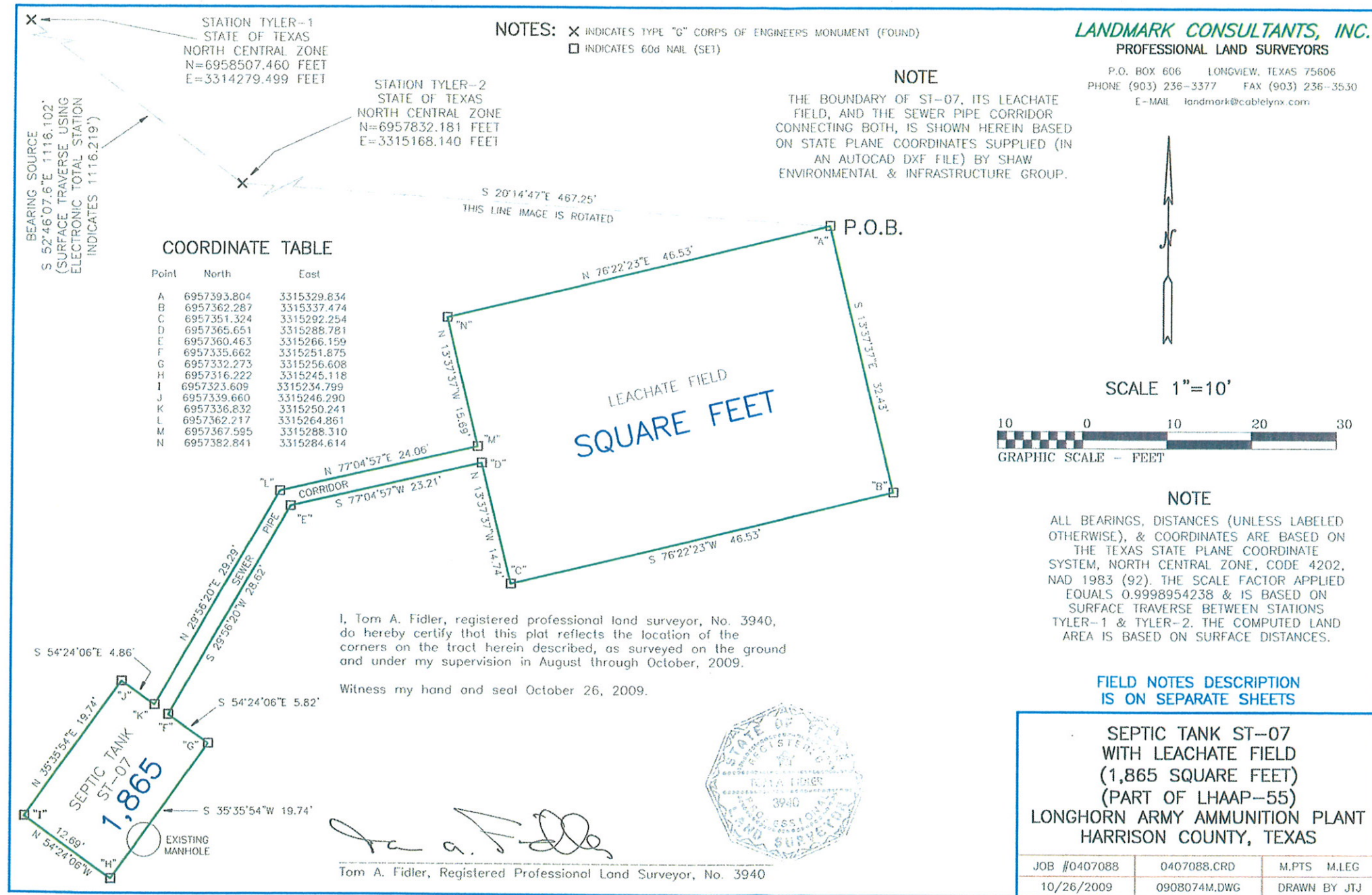
THENCE N 13deg37'37"W 15.69' along a W.B.L. of this tract to a 60d nail set for this tract's Northmost N.W.C. ,

THENCE N 76deg22'23"E 46.53' along a N.B.L. of this tract to this POINT OF BEGINNING. This tract contains 1,865 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.

Tom A. Fidler, R.P.L.S. Number 3940



FIELD NOTES DESCRIPTION OF
SEPTIC TANK ST-08, ITS LEACHATE FIELD, AND A 2' WIDE
CORRIDOR CENTERED ON THE SEWER PIPE CONNECTING THE TWO

CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, being 1,785 square feet of land out of the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract being more particularly described as follows :

Surveyor's Note #1: All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.9998954238, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "TYLER-1" (N=6958507.460 feet E=3314279.499 feet) and "TYLER-2" (N=6957832.181 feet E=3315168.140 feet). Said traverse indicates a surface distance of 1116.219 feet between said monuments. The computed land area is based on surface distances.

Surveyor's Note #2: This field notes description is based on State Plane coordinates supplied by Shaw Environmental & Infrastructure Group. Landmark Consultants, Inc. has not probed the ground surface in this area in an attempt to determine the location of Septic Tank ST-08, its leachate field, or the sewer pipe connecting the two.

Commencing at monument "TYLER-2" referenced above,

THENCE S 37deg52'57"E 620.24' to a 60d nail set for the Northmost N.E.C. corner of this tract and this POINT OF BEGINNING,

THENCE S 16deg08'12"E 46.53' along an E.B.L. of this tract to a 60d nail set for this tract's Eastmost S.E.C. ,

THENCE S 73deg51'48"W 32.43' along a S.B.L. of this tract to a 60d nail set for slight deflection corner,

THENCE S 70deg49'57"W 12.79' along a S.B.L. of this tract to a 60d nail set for this tract's Southmost reentrant corner,

THENCE S 17deg16'09"E 6.37' along an E.B.L. of this tract to a 60d nail set for this tract's Westmost S.E.C. ,

THENCE S 72deg43'51"W 19.74' along a S.B.L. of this tract to a 60d nail set for this tract's only S.W.C. ,

THENCE N 17deg16'09"W 12.69' along a W.B.L. of this tract to a chisled "X" set in concrete for this tract's Southmost N.W.C. ,

THENCE N 72deg43'51"E 19.74' along a N.B.L. of this tract to a 60d nail set for this tract's Southmost N.E.C. ,

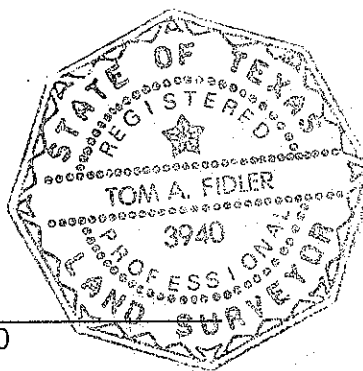
THENCE S 17deg16'09"E 4.32' along an E.B.L. of this tract to a 60d nail set for this tract's Westmost reentrant corner,

THENCE N 70deg49'57"E 12.83' along a N.B.L. of this tract to a 60d nail set for this tract's Eastmost reentrant corner,

THENCE N 16deg08'12"W 44.52' along a W.B.L. of this tract to a 60d nail set for this tract's Northmost N.W.C. ,

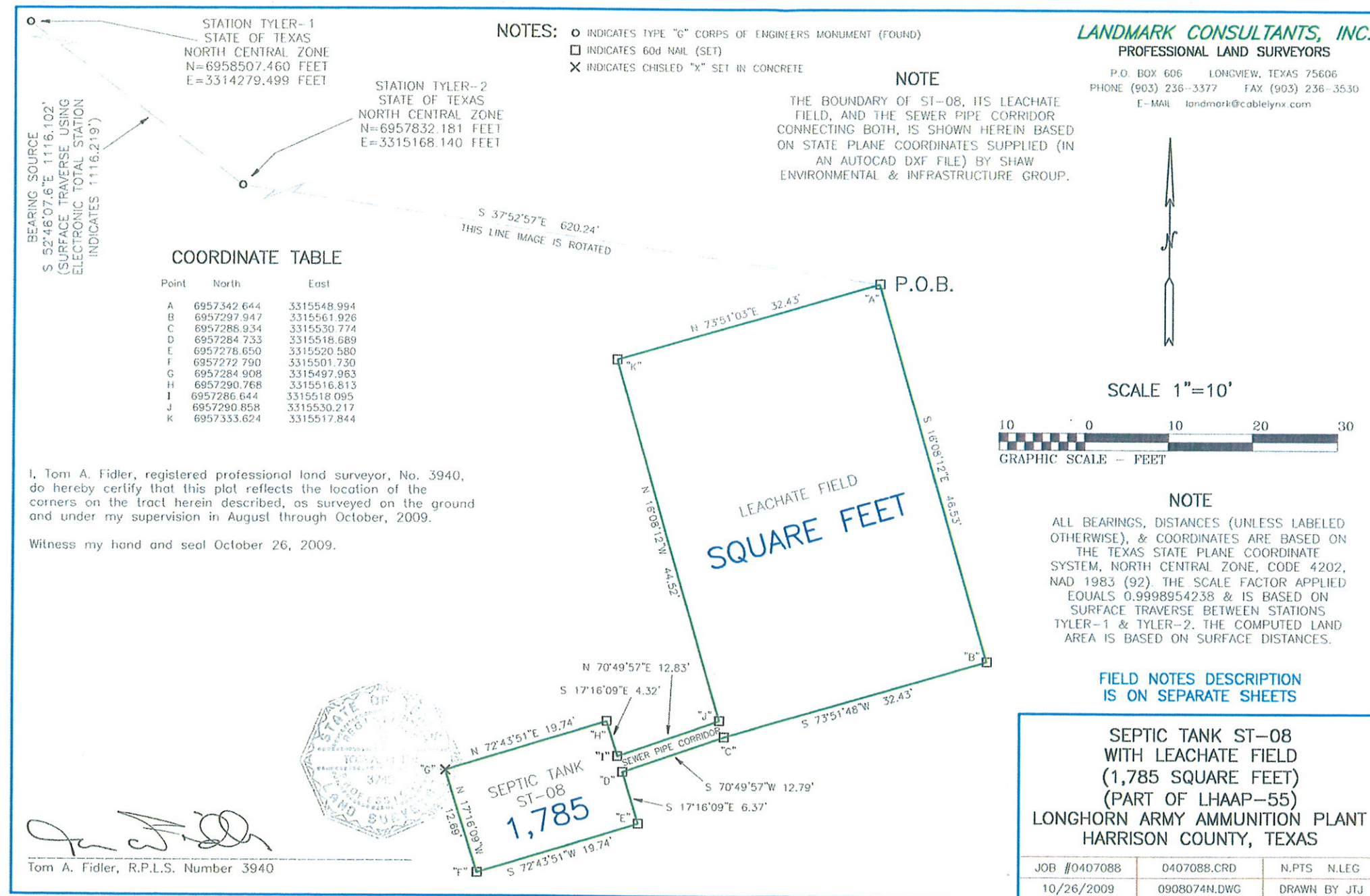
THENCE N 73deg51'03"E 32.43' along a N.B.L. of this tract to this POINT OF BEGINNING. This tract contains 1,785 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.



A handwritten signature in black ink, appearing to read "Tom A. Fidler".

Tom A. Fidler, R.P.L.S. Number 3940



FIELD NOTES DESCRIPTION OF
SEPTIC TANK ST-09, ITS LEACHATE FIELD, AND A 2' WIDE
CORRIDOR CENTERED ON THE SEWER PIPE CONNECTING THE TWO

CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, being 2,004 square feet of land out of the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract being more particularly described as follows :

Surveyor's Note #1: All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.9998954238, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "TYLER-1" (N=6958507.460 feet E=3314279.499 feet) and "TYLER-2" (N=6957832.181 feet E=3315168.140 feet). Said traverse indicates a surface distance of 1116.219 feet between said monuments. The computed land area is based on surface distances.

Surveyor's Note #2: This field notes description is based on State Plane coordinates supplied by Shaw Environmental & Infrastructure Group. Landmark Consultants, Inc. has not probed the ground surface in this area in an attempt to determine the location of Septic Tank ST-09, its leachate field, or the sewer pipe connecting the two.

Commencing at monument "TYLER-2" referenced above,

THENCE S 03deg30'04"E 1101.12' to a 60d nail set for the North corner of this tract and this POINT OF BEGINNING,

THENCE S 47deg56'14"E 12.69' along a N.E. B.L. of this tract to a 60d nail set for this tract's East corner,

THENCE S 42deg03'46"W 19.74' along a S.E. B.L. of this tract to a 60d nail set for this tract's South corner,

THENCE N 47deg56'14"W 4.08' along a S.W. B.L. of this tract to a 60d nail set for this tract's S.E. reentrant corner,

THENCE S 18deg07'53"E 120.09' along an E.B.L. of this tract to a 60d nail set for this tract's N.E. reentrant corner,

THENCE N 67deg40'46"E 15.01' along a N.B.L. of this tract to a

60d nail set for this tract's N.E.C. ,

THENCE S 22deg19'14"E 46.53' along an E.B.L. of this tract to a 60d nail set for this tract's S.E.C. ,

THENCE S 67deg40'46"W 32.43' along a S.B.L. of this tract to a 60d nail set for this tract's S.W.C. ,

THENCE N 22deg19'14"W 46.53' along a W.B.L. of this tract to a 60d nail set for this tract's N.W.C. ,

THENCE N 67deg40'46"E 15.42' along a N.B.L. of this tract to a 60d nail set for this tract's N.W. reentrant corner,

THENCE N 18deg07'53"W 123.73' along a W.B.L. of this tract to a 60d nail set for this tract's S.W. reentrant corner,

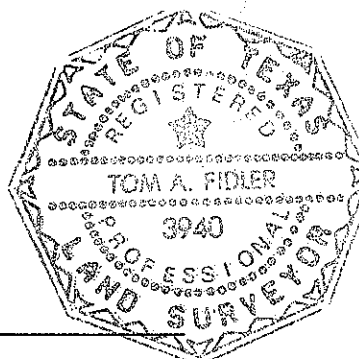
THENCE N 47deg56'14"W 4.59' along a S.W. B.L. of this tract to a 60d nail set for this tract's West corner,

THENCE N 42deg03'46"E 19.74' along a N.W. B.L. of this tract to this POINT OF BEGINNING. This tract contains 2,004 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.



Tom A. Fidler, R.P.L.S. Number 3940



STATION TYLER-1
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6958507.460 FEET
E=5314279.499 FEET

STATION TYLER-2
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6957832.181 FEET
E=3315168.140 FEET

BEARING SOURCE
(SURFACE TRAVERSE USING
ELECTRONIC TOTAL STATION
INDICATES 1116.219°)

S 52°46'07.6"E 1116.102'

S 03°30'04"E 1101.12'

SEPTIC TANK ST-09
WITH LEACHATE FIELD
(2,004 SQUARE FEET)
(PART OF LHAAP-55)
LONGHORN ARMY AMMUNITION PLANT
HARRISON COUNTY, TEXAS

JOB #0407088	0407088.CRD	P.PTS	P.LEG
10/26/2009	0908074P.DWG		DRAWN BY JTJ

FIELD NOTES DESCRIPTION IS ON SEPARATE SHEETS

I, Tom A. Fidler, registered professional land surveyor, No. 3940,
do hereby certify that this plat reflects the location of the
corners on the tract herein described, as surveyed on the ground
and under my supervision in August through October, 2009.

Witness my hand and seal October 26, 2009.



Tom A. Fidler
Tom A. Fidler, R.P.L.S. Number 3940

P.O.B.

N 42°03'46"E 19.74'
S 47°56'14"E 12.69'
S 42°03'46"W 19.74'
N 47°56'14"W 4.59'
N 47°56'14"W 4.08'

NOTE
ALL BEARINGS, DISTANCES (UNLESS LABELED
OTHERWISE), & COORDINATES ARE BASED ON
THE TEXAS STATE PLANE COORDINATE
SYSTEM, NORTH CENTRAL ZONE, CODE 4202.
NAD 1983 (92). THE SCALE FACTOR APPLIED
EQUALS 0.9998954238 & IS BASED ON
SURFACE TRAVERSE BETWEEN STATIONS
TYLER-1 & TYLER-2. THE COMPUTED LAND
AREA IS BASED ON SURFACE DISTANCES.

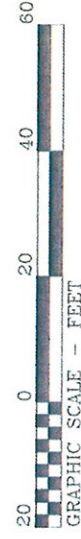
TOTAL AREA
2,004 SQ.FT.

NOTE
THE BOUNDARY OF ST-09, ITS LEACHATE
FIELD, AND THE SEWER PIPE CORRIDOR
CONNECTING BOTH, IS SHOWN HEREIN BASED
ON STATE PLANE COORDINATES SUPPLIED (IN
AN AUTOCAD DXF FILE) BY SHAW
ENVIRONMENTAL & INFRASTRUCTURE GROUP.

COORDINATE TABLE

Point	North	East
A	6956733.117	3315235.383
B	6956724.615	3315244.805
C	6956709.960	3315231.580
D	6956712.860	3315228.354
E	6956598.566	3315255.825
F	6956604.269	3315279.907
G	6956861.221	3315297.479
H	6956548.905	3315267.479
I	6956591.949	3315249.807
J	6956597.804	3315264.070
K	6956715.366	3315225.567
L	6956718.462	3315222.159

SCALE 1"=20'



LEACHATE FIELD

LANDMARK CONSULTANTS, INC.
PROFESSIONAL LAND SURVEYORS

P.O. BOX 606 LONGVIEW, TEXAS 75606
PHONE (903) 236-3377 FAX (903) 236-3530
E-MAIL landmark@cablenet.com

NOTES: X INDICATES TYPE "G" CORPS OF
ENGINEERS MONUMENT (FOUND)
□ INDICATES 60d NAIL (SET)

FIELD NOTES DESCRIPTION OF
SEPTIC TANK ST-10, ITS LEACHATE FIELD, AND A 2' WIDE
CORRIDOR CENTERED ON THE SEWER PIPE CONNECTING THE TWO

CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, being 1,804 square feet of land out of the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract being more particularly described as follows :

Surveyor's Note #1: All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.9998954238, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "TYLER-1" (N=6958507.460 feet E=3314279.499 feet) and "TYLER-2" (N=6957832.181 feet E=3315168.140 feet). Said traverse indicates a surface distance of 1116.219 feet between said monuments. The computed land area is based on surface distances.

Surveyor's Note #2: This field notes description is based on State Plane coordinates supplied by Shaw Environmental & Infrastructure Group. Landmark Consultants, Inc. has not probed the ground surface in this area in an attempt to determine the location of Septic Tank ST-10, its leachate field, or the sewer pipe connecting the two.

Commencing at monument "TYLER-2" referenced above,

THENCE S 34deg34'49"E 861.93' to a 60d nail set for the Westmost N.W.C. of this tract and this POINT OF BEGINNING,

THENCE S 81deg33'36"E 46.53' along a N.B.L. of this tract to a 60d nail set for this tract's Westmost N.E.C. ,

THENCE S 08deg26'24"W 13.21' along an E.B.L. of this tract to a 60d nail set for this tract's N.E. reentrant corner,

THENCE S 82deg30'08"E 21.87' along a N.B.L. of this tract to a 60d nail set for this tract's N.W. reentrant corner,

THENCE N 08deg55'06"E 4.34' along a W.B.L. of this tract to a 60d nail set for this tract's Eastmost N.W.C. ,

THENCE S 81deg04'54"E 19.74' along a N.B.L. of this tract to a 60d nail set for this tract's Eastmost N.E.C. ,

THENCE S 08deg55'06"W 12.69' along an E.B.L. of this tract to a 60d nail set for this tract's Eastmost S.E.C. ,

THENCE N 81deg04'54"W 19.74' along a S.B.L. of this tract to a 60d nail set for this tract's Eastmost S.W.C. ,

THENCE N 08deg55'06"E 6.34' along a W.B.L. of this tract to a 60d nail set for this tract's S.W. reentrant corner,

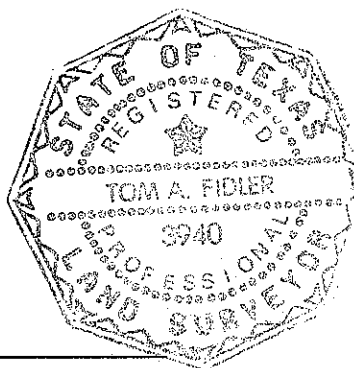
THENCE N 82deg30'08"W 21.85' along a S.B.L. of this tract to a 60d nail set for this tract's S.E. reentrant corner,

THENCE S 08deg26'24"W 17.22' along an E.B.L. of this tract to a 60d nail set for this tract's Westmost S.E.C. ,

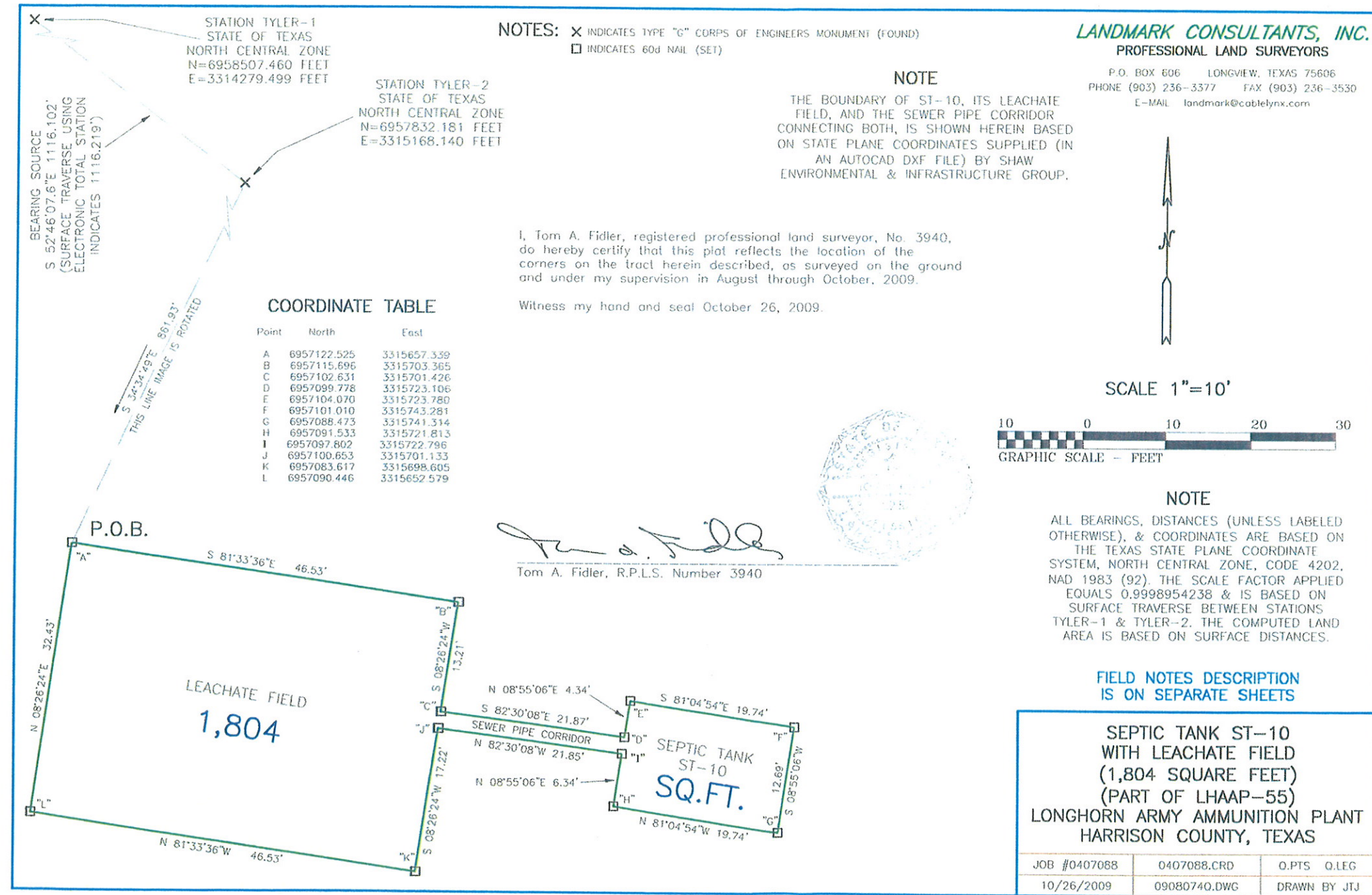
THENCE N 81deg33'36"W 46.53' along a S.B.L. of this tract to a 60d nail set for this tract's Westmost S.W.C. ,

THENCE N 08deg26'24"E 32.43' along a W.B.L. of this tract to this POINT OF BEGINNING. This tract contains 1,804 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.



Tom A. Fidler, R.P.L.S. Number 3940



DO NOT REMOVE THIS PAGE – IT IS A PART OF THIS INSTRUMENT

MISCELLANEOUS

16 Pages

FILED AND RECORDED – OPR	CLERKS NOTES
On: <u>04/27/2010 04:08 PM</u>	
Document Number: <u>2010-000005561</u>	
Receipt No: <u>1006195</u>	
Amount: \$ <u>72.00</u>	
By: <u>Ann Turner</u> , Deputy	
 Patsy Cox, County Clerk Harrison County, Texas	



STATE OF TEXAS
COUNTY OF HARRISON

I hereby certify that this instrument was filed on the date and time stamped hereon by me
and was duly recorded in the Official Public Records of Harrison County, Texas.

Patsy Cox, Harrison County Clerk

Record and Return To:



SHAW E & I
1401 ENCLAVE PARKWAY, SUITE 250

HOUSTON, TX 77077

STATE OF TEXAS

HARRISON COUNTY

INDUSTRIAL SOLID WASTE
NOTICE OF NONRESIDENTIAL LAND USE

KNOW ALL MEN BY THESE PRESENTS THAT:

Pursuant to the Rules of the Texas Commission on Environmental Quality (TCEQ) pertaining to Industrial Solid Waste Management, this document is hereby filed in the Public Records of Harrison County, Texas in compliance with the recordation requirements of said rules:

I

The U.S. Army, Department of Defense, has performed a remediation of the land described herein. The site, LHAAP-60, consisted of four pesticide storage buildings located in the steam plant and shops area of the former Longhorn Army Ammunition Plant (LHAAP). LHAAP was placed on the National Priorities List (NPL) during August 1990. After its listing on the NPL, the U.S. Army, United States Environmental Protection Agency (USEPA), and TCEQ (formerly known as the Texas Water Commission) entered into an agreement under the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA) Section 120 for remedial activities. The CERCLA Section 120 Agreement, referred to as the Federal Facility Agreement (FFA), became effective on December 30, 1991. Although there are many sites at LHAAP that are specifically NPL listed, LHAAP-60 is not itself considered an NPL site. Environmental activities at LHAAP-60 progressed through the site investigation, at which point it was agreed by the Army and the TCEQ as the lead regulatory agency that no significant releases had occurred and the site could be closed under Texas Administrative Code (TAC) Risk Reduction Rule Standard 2.

LHAAP-60 consisted of buildings 411, 411-A, 714, and shed TS-80, which were located in the northwestern portion of LHAAP near the steam plant and shops area in the general vicinity of sites LHAAP-02, LHAAP-04, LHAAP-35A(58), and LHAAP-66. Pesticides and herbicides were stored in the now demolished buildings. Further information may be found by examination of the Notice of Registration No. 30990 files, which are available for inspection upon request at TCEQ, Central File Room Customer Service Center, Building E, 12100 Park 35 Circle, Austin, Texas, 78753, (512) 239-2900, Monday through Friday 8:00 a.m. to 5:00 p.m. or the Administrative Record available at

the Marshall Public Library, 300 S. Alamo Blvd, Marshall, Texas 75670, (903) 935-4465, Monday through Thursday 10:00 a.m. to 8 p.m., Friday and Saturday 10:00 a.m. to 5:30 p.m.

The TCEQ requires certain persons to provide recordation in the real property records to notify the public of the conditions of the land and/or the occurrence of remediation. This notification is not a representation or warranty by the TCEQ of the suitability of this land for any purpose.

II

The LHAAP-60 parcels include: Building 411 with 4,242 square feet, more or less, or 0.09738 acre tract; Building TS-80 with 186 square feet, more or less, or 0.00426 acre tract; Building 411-A with 484 square feet, more or less, or 0.01111 acre tract; and Building 714 with 4,468 square feet, more or less, or 0.10463 acre tract located in Harrison County, Texas, near the town of Karnack, being more particularly described with survey plat and metes and bounds established in Exhibit A.

The United States Department of the Army has undertaken careful environmental study of the LHAAP-60 site and USEPA and TCEQ concluded that no further investigation or action is required for LHAAP-60. Contaminants in soil samples from LHAAP-60 meet non-residential soil criteria in accordance with 30TAC§335.560(b).

Limited monitoring of LHAAP-60 will take place in the form of Letters of Certification from the Army or the Transferee to TCEQ every five years to document that the use of LHAAP-60 is consistent with the non-residential use scenarios evaluated in the risk assessment. Future use of the parcel is intended as a national wildlife refuge consistent with industrial or recreational activities and not for residential purposes. For purposes of this certification, residential use includes, but is not limited to, single family or multi-family residences; child care facilities; and nursing home or assisted living facilities; and any type of educational purpose for children/young adults in grades kindergarten through 12.

III

The owner of the site is the Department of the Army, and its address where more specific information may be obtained is as follows:

ATTN: DAIM-ODB-LO (R. Zeiler)

Post Office Box 220

Ratcliff, AR 72951

or

Assistant Chief of Staff for Installation Management

ATTN: DAIM-BDO (T. Lederle)

600 Army Pentagon

Washington D.C. 20310-0600



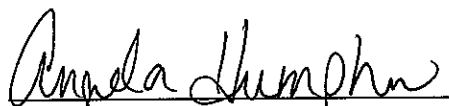
Rose M. Zeiler

Longhorn AAP Site Manager

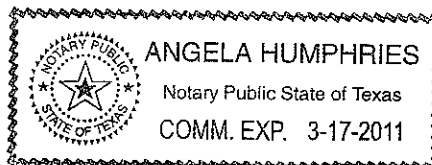
EXECUTED this the 10 th day of March, 2010.

BEFORE ME, on this the 10 th day of March, personally appeared Rose M. Zeiler, of United States Army, United States Department of Defense, known to me to be the person and agent of said agency whose name is subscribed to the foregoing instrument, and she acknowledged to me that she executed the same for the purposes and in the capacity therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 10 day of March, 2010.



Notary Public in and for the State of Texas,
County of Harrison



FIELD NOTES DESCRIPTION OF
"LHAAP-60A" TRACT
(FOUNDATION SLAB OF DEMOLISHED BUILDING 411)
CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, tract "LHAAP-60A" being the concrete foundation slab of demolished Building 411, "LHAAP-60A" being located within the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract "LHAAP-60A" being more particularly described as follows :

Surveyor's Note : All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.999861727, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "X-11" (N=6960733.698 feet E=3304750.367 feet) and "C-21" (N=6956579.781 feet E=3308499.969 feet). Said traverse indicates a surface distance of 5596.714 feet between said monuments. The computed land area is based on surface distances.

Commencing at monument "X-11" referenced above,

THENCE S 42deg04'17.4"E 1875.89' to a point, from which point monument "C-21" referenced above bears S 42deg04'17.4"E 3720.05',

(as used below, the abbreviation C.C.F.S. indicates corner of concrete foundation slab)

THENCE S 47deg55'43"W 188.47' to a C.C.F.S. found for the Northmost corner of this tract and this description's POINT OF BEGINNING,

THENCE S 45deg09'46"E 41.80' along the Northeast B.L. of this tract to a C.C.F.S. found for this tract's Eastmost corner,

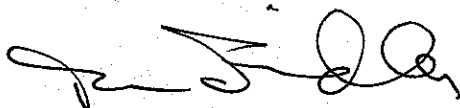
THENCE S 44deg51'53"W 101.29' along the Southeast B.L. of this

tract to a C.C.F.S. found for this tract's Southmost corner,

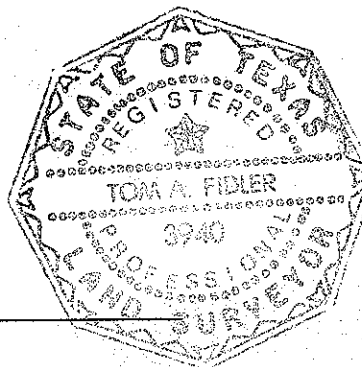
THENCE N 45deg07'02"W 41.95' along the Southwest B.L. of this tract to a C.C.F.S. found for this tract's Westmost corner,

THENCE N 44deg56'57"E 101.25' along the Northwest B.L. of this tract to this POINT OF BEGINNING. This tract contains 4,242 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.



Tom A. Fidler, R.P.L.S. Number 3940



STATION X-11
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6960733.698 FEET
E=3304750.367 FEET

COORDINATE TABLE

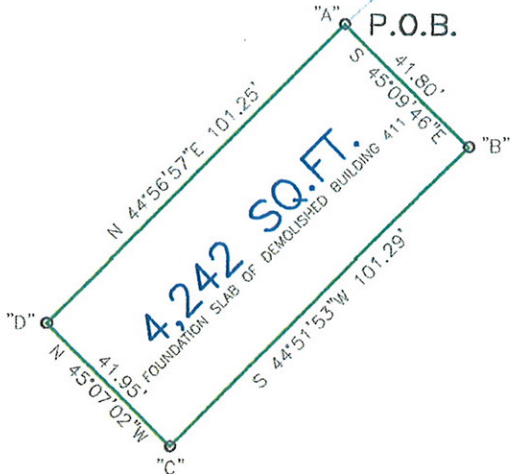
POINT	NORTH	EAST
A	6959214.922	3305867.424
B	6959185.451	3305897.062
C	6959113.662	3305825.611
D	6959143.261	3305795.890

I, Tom A. Fidler, registered professional land surveyor, No. 3940, do hereby certify that this plat reflects the location of the corners on the tract herein described, as surveyed on the ground and under my supervision in August 2009.

Witness my hand and seal September 8, 2009.

NOTES:

- INDICATES TYPE "G" CORPS OF ENGINEERS MONUMENT (FOUND)
- INDICATES CORNER OF CONCRETE FOUNDATION SLAB (FOUND)
- + INDICATES UNMARKED POINT



BEARING SOURCE BETWEEN
STATION X-11 & STATION C-21
IS S 42°04'17.4"E 5595.940'
(SURFACE TRAVERSE USING
ELECTRONIC TOTAL STATION
INDICATES 5596.714')



[Signature]

Tom A. Fidler, Registered Professional Land Surveyor, No. 3940

NOTE

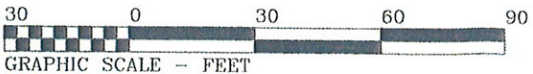
ALL BEARINGS, DISTANCES (UNLESS LABELED OTHERWISE), & COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, CODE 4202, NAD 1983 (92). THE SCALE FACTOR APPLIED EQUALS 0.999861727 & IS BASED ON SURFACE TRAVERSE BETWEEN STATIONS X-11 & C-21. THE COMPUTED LAND AREA IS BASED ON SURFACE DISTANCES.

FIELD NOTES DESCRIPTION
IS ON SEPARATE SHEETS

LANDMARK CONSULTANTS, INC.

PROFESSIONAL LAND SURVEYORS

P.O. BOX 606 LONGVIEW, TEXAS 75606
PHONE (903) 236-3377 FAX (903) 236-3530
E-MAIL landmark@cablelynx.com



SCALE 1"=30'

STATION C-21
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6956579.781 FEET
E=3308499.969 FEET

LHAAP-60A
(REMAINS OF BUILDING 411)
(4,242 SQUARE FEET)
LONGHORN ARMY AMMUNITION PLANT
HARRISON COUNTY, TEXAS

JOB #0407088	0407088.CRD	F.PTS	F.LEG
SEPT. 8, 2009	0908074F.DWG	DRAWN BY	JTJ

"LHAAP-60B" TRACT
(BUILDING TS-80)
CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, the perimeter of tract "LHAAP-60B" being defined by the four corners of the external face of the exterior walls of Building TS-80 (said Building is constructed of galvanized corrugated sheet metal), tract "LHAAP-60B" being located within the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract "LHAAP-60B" being more particularly described as follows :

Surveyor's Note : All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.999861727, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "X-11" (N=6960733.698 feet E=3304750.367 feet) and "C-21" (N=6956579.781 feet E=3308499.969 feet). Said traverse indicates a surface distance of 5596.714 feet between said monuments. The computed land area is based on surface distances.

Commencing at monument "X-11" referenced above,

THENCE S 42deg04'17.4"E 1919.72' to a point, from which point monument "C-21" referenced above bears S 42deg04'17.4"E 3676.22',

(as used below, the abbreviation C.E.F.E.W. indicates Corner of the External Face of the Exterior Walls of Building TS-80)

THENCE S 47deg55'43"W 378.14' to a C.E.F.E.W. found for the Northmost corner of this tract and this description's POINT OF BEGINNING,

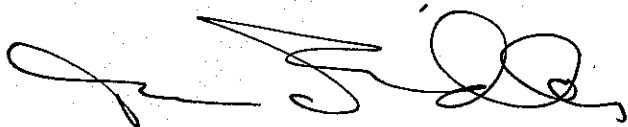
THENCE S 41deg54'33"E 8.55' along the Northeast B.L. of this tract to a C.E.F.E.W. found for this tract's Eastmost corner,

THENCE S 48deg12'22"W 22.54' along the Southeast B.L. of this tract to a C.E.F.E.W. found for this tract's Southmost corner,

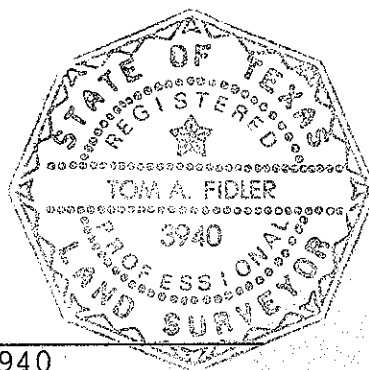
THENCE N 43deg05'46"W 7.91' along the Southwest B.L. of this tract to a C.E.F.E.W. found for this tract's Westmost corner,

THENCE N 46deg35'09"E 22.71' along the Northwest B.L. of this tract to this POINT OF BEGINNING. This tract contains 186 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.



Tom A. Fidler, R.P.L.S. Number 3940



STATION X-11
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6960733.698 FEET
E=3304750.367 FEET

COORDINATE TABLE

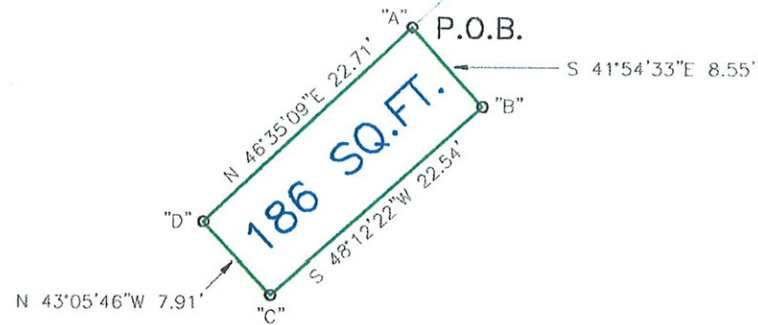
POINT	NORTH	EAST
A	6959055.296	3305755.998
B	6959048.930	3305761.712
C	6959033.908	3305744.907
D	6959039.687	3305739.499

I, Tom A. Fidler, registered professional land surveyor, No. 3940, do hereby certify that this plot reflects the location of the corners on the tract herein described, as surveyed on the ground and under my supervision in August 2009.

Witness my hand and seal September 8, 2009.

NOTES:

- INDICATES TYPE "G" CORPS OF ENGINEERS MONUMENT (FOUND)
- INDICATES CORNER OF EXTERNAL FACE OF EXTERIOR WALLS OF GALVANIZED CORRUGATED SHEET METAL BUILDING TS-80
- + INDICATES UNMARKED POINT



BEARING SOURCE BETWEEN
STATION X-11 & STATION C-21
IS S 42°04'17.4\"/>

Tom A. Fidler, Registered Professional Land Surveyor, No. 3940

NOTE

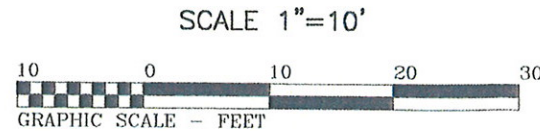
ALL BEARINGS, DISTANCES (UNLESS LABELED OTHERWISE), & COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, CODE 4202, NAD 1983 (92). THE SCALE FACTOR APPLIED EQUALS 0.999861727 & IS BASED ON SURFACE TRAVERSE BETWEEN STATIONS X-11 & C-21. THE COMPUTED LAND AREA IS BASED ON SURFACE DISTANCES.

FIELD NOTES DESCRIPTION
IS ON SEPARATE SHEETS

LANDMARK CONSULTANTS, INC.

PROFESSIONAL LAND SURVEYORS

P.O. BOX 606 LONGVIEW, TEXAS 75606
PHONE (903) 236-3377 FAX (903) 236-3530
E-MAIL landmark@cablelynx.com



SCALE 1"=10'

STATION C-21
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6956579.781 FEET
E=3308499.969 FEET

LHAAP-60B
(BUILDING TS-80)
(186 SQUARE FEET)
LONGHORN ARMY AMMUNITION PLANT
HARRISON COUNTY, TEXAS

JOB #0407088	0407088.CRD	G.PTS	G.LEG
SEPT. 8, 2009	0908074G.DWG	DRAWN BY	JTJ

FIELD NOTES DESCRIPTION OF
"LHAAP-60C" TRACT
(FOUNDATION SLAB OF DEMOLISHED BUILDING 411-A)
CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, tract "LHAAP-60C" being the concrete foundation slab of demolished Building 411-A, tract "LHAAP-60C" being located within the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract "LHAAP-60C" being more particularly described as follows :

Surveyor's Note : All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.999861727, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "X-11" (N=6960733.698 feet E=3304750.367 feet) and "C-21" (N=6956579.781 feet E=3308499.969 feet). Said traverse indicates a surface distance of 5596.714 feet between said monuments. The computed land area is based on surface distances.

Commencing at monument "X-11" referenced above,

THENCE S 42deg04'17.4"E 1924.12' to a point, from which point monument "C-21" referenced above bears S 42deg04'17.4"E 3671.82',

(as used below, the abbreviation C.C.F.S. indicates corner of concrete foundation slab)

THENCE S 47deg55'43"W 418.77' to a C.C.F.S. found for the Northmost corner of this tract and this description's POINT OF BEGINNING,

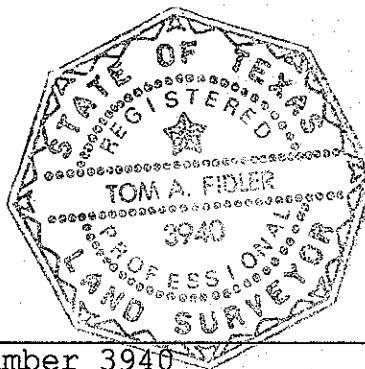
THENCE S 28deg26'16"E 24.08' along the Northeast B.L. of this tract to a C.C.F.S. found for this tract's Eastmost corner,


THENCE S 61deg38'48"W 20.15' along the Southeast B.L. of this tract to a C.C.F.S. found for this tract's Southmost corner,

THENCE N 28deg13'40"W 24.07' along the Southwest B.L. of this tract to a C.C.F.S. found for this tract's Westmost corner,

THENCE N 61deg37'50"E 20.07' along the Northwest B.L. of this tract to this POINT OF BEGINNING. This tract contains 484 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.




Tom A. Fidler, R.P.L.S. Number 3940

STATION X-11
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6960733.698 FEET
E=3304750.367 FEET

COORDINATE TABLE

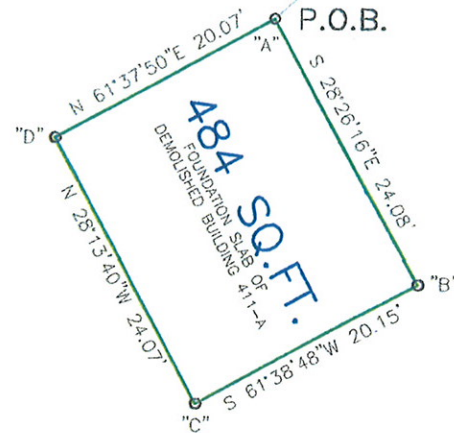
POINT	NORTH	EAST
A	6959024.810	3305728.779
B	6959003.636	3305740.245
C	6958994.065	3305722.510
D	6959015.276	3305711.123

I, Tom A. Fidler, registered professional land surveyor, No. 3940, do hereby certify that this plot reflects the location of the corners on the tract herein described, as surveyed on the ground and under my supervision in August 2009.

Witness my hand and seal September 8, 2009.

NOTES:

- INDICATES TYPE "G" CORPS OF ENGINEERS MONUMENT (FOUND)
- INDICATES CORNER OF CONCRETE FOUNDATION SLAB (FOUND)
- + INDICATES UNMARKED POINT



BEARING SOURCE BETWEEN
STATION X-11 & STATION C-21
IS S 42°04'17.4\"/>

Tom A. Fidler



Tom A. Fidler, Registered Professional Land Surveyor, No. 3940

NOTE

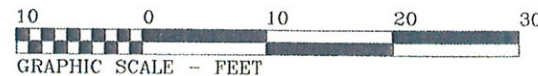
ALL BEARINGS, DISTANCES (UNLESS LABELED OTHERWISE), & COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, CODE 4202, NAD 1983 (92). THE SCALE FACTOR APPLIED EQUALS 0.999861727 & IS BASED ON SURFACE TRAVERSE BETWEEN STATIONS X-11 & C-21. THE COMPUTED LAND AREA IS BASED ON SURFACE DISTANCES.

FIELD NOTES DESCRIPTION
IS ON SEPARATE SHEETS

LANDMARK CONSULTANTS, INC.
PROFESSIONAL LAND SURVEYORS

P.O. BOX 606 LONGVIEW, TEXAS 75606
PHONE (903) 236-3377 FAX (903) 236-3530
E-MAIL: landmark@cabletynx.com

SCALE 1"=10'



STATION C-21
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6956579.781 FEET
E=3308499.969 FEET

LHAAP-60C
(REMAINS OF BUILDING 411-A)
(484 SQUARE FEET)
LONGHORN ARMY AMMUNITION PLANT
HARRISON COUNTY, TEXAS

JOB #0407088	0407088.CRD	H.PTS	H.LEG
SEPT. 8, 2009	0908074H.DWG	DRAWN BY	JTJ

FIELD NOTES DESCRIPTION OF
"LHAAP-60D" TRACT
(INCLUDES FOUNDATION SLAB OF DEMOLISHED BUILDING #714)
CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, tract "LHAAP-60D" including the concrete foundation slab of demolished Building #714 plus an area adjacent to the Southwest edge of said slab, "LHAAP-60D" being located within the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract "LHAAP-60D" being more particularly described as follows :

Surveyor's Note : All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.999861727, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "X-11" (N=6960733.698 feet E=3304750.367 feet) and "C-21" (N=6956579.781 feet E=3308499.969 feet). Said traverse indicates a surface distance of 5596.714 feet between said monuments. The computed land area is based on surface distances.

Commencing at monument "X-11" referenced above,

THENCE S 42deg04'17.4"E 395.512' to a point, from which point monument "C-21" referenced above bears S 42deg04'17.4"E 5200.428'

(as used below, the abbreviation C.C.F.S. indicates corner of concrete foundation slab)

THENCE S 47deg55'43"W 442.92' to a C.C.F.S. found for the Northmost corner of this tract and this description's POINT OF BEGINNING,

THENCE S 44deg51'26"E 91.43' along the Northeast B.L. of this tract, and generally along the Northeast edge of said concrete slab, to a C.C.F.S. found for this tract's Eastmost corner,

THENCE S 44deg50'54"W 44.35' along a Southeast B.L. of this tract, and generally along the Southeast edge of said concrete slab, to a C.C.F.S. found for this tract's Southmost corner,

THENCE N 44deg59'57"W 29.43' along a Southwest B.L. of this tract, and generally along the Southwest edge of said concrete slab, to a point for this tract's Southmost reentrant corner,

THENCE S 45deg00'03"W 14.90' along a Southeast B.L. of this tract to a 60d nail set for this tract's Westmost South corner,

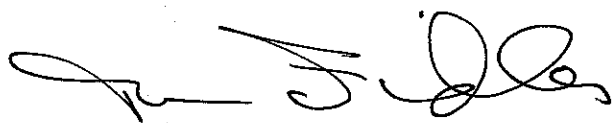
THENCE N 44deg59'57"W 32.36' along a Southwest B.L. of this tract to a 60d nail set for this tract's Southmost West corner,

THENCE N 45deg00'03"E 14.90' along a Northwest B.L. of this tract to a point for this tract's Northmost reentrant corner,

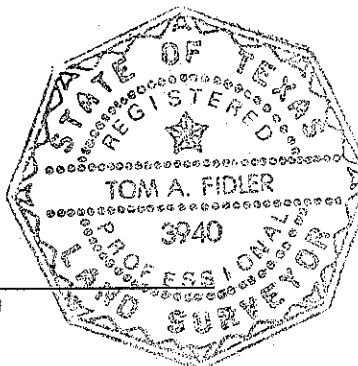
THENCE N 44deg59'57"W 30.02' along a Southwest B.L. of this tract, and generally along the Southwest edge of said concrete slab, to a C.C.F.S. found for this tract's Northmost West corner,

THENCE N 45deg20'52"E 44.58' along a Northwest B.L. of this tract, and generally along the Northwest edge of said concrete slab, to this POINT OF BEGINNING. This tract contains 4,558 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.



Tom A. Fidler, R.P.L.S. Number 3940



STATION X-11
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6960733.698 FEET
E=3304750.367 FEET

NOTES:

- INDICATES TYPE "G" CORPS OF ENGINEERS MONUMENT (FOUND)
- INDICATES CORNER OF CONCRETE FOUNDATION SLAB (FOUND)
- △ INDICATES 60d NAIL (SET)
- + INDICATES UNMARKED POINT

COORDINATE TABLE

POINT	NORTH	EAST
A	6960143.322	3304686.596
B	6960078.513	3304751.083
C	6960047.071	3304719.807
D	6960067.881	3304698.997
E	6960057.345	3304688.461
F	6960080.231	3304665.577
G	6960090.766	3304676.113
B	6960111.994	3304654.886

I, Tom A. Fidler, registered professional land surveyor, No. 3940, do hereby certify that this plot reflects the location of the corners on the tract herein described, as surveyed on the ground and under my supervision in August through October, 2009.

Witness my hand and seal October 26, 2009.



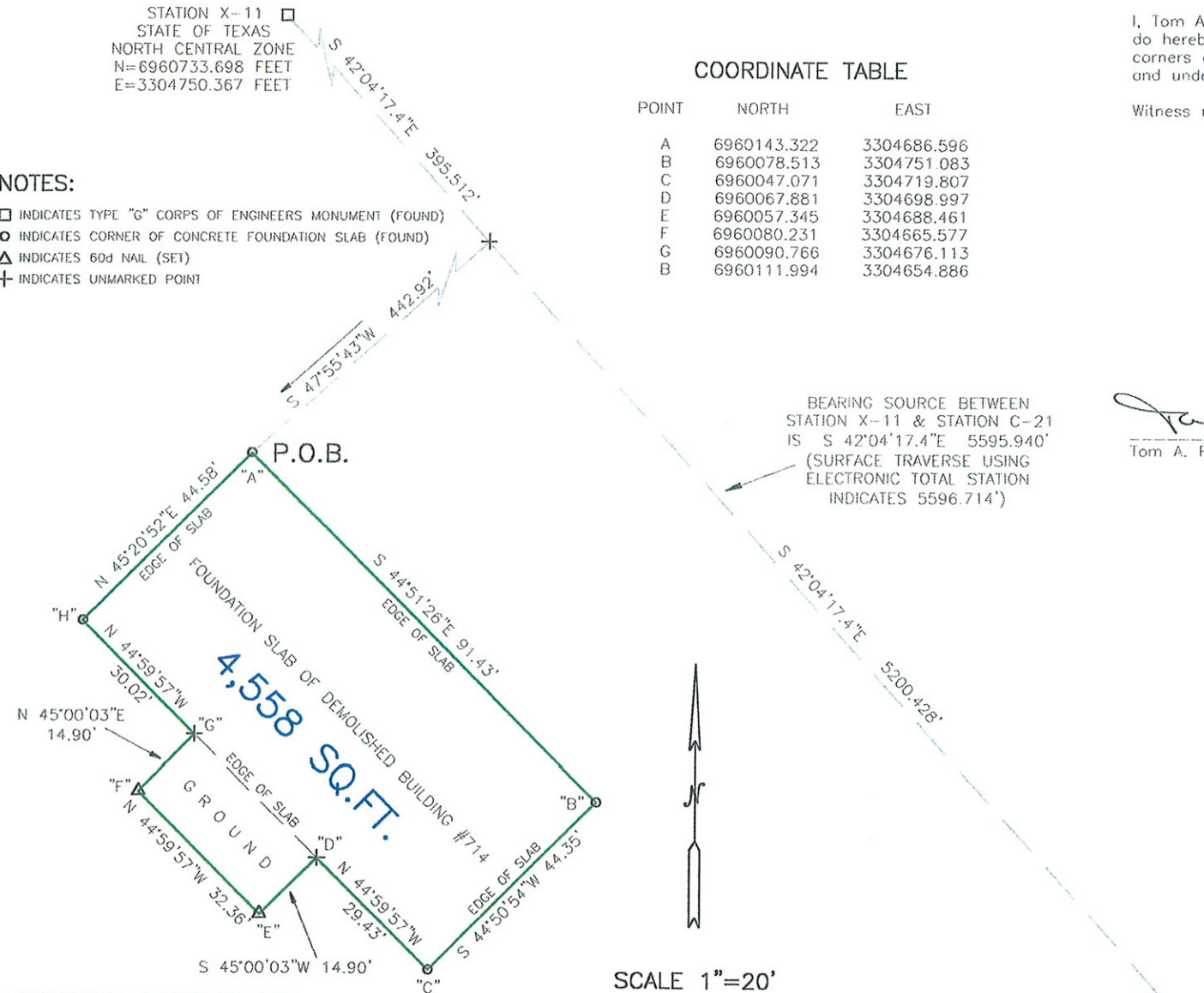
Tom A. Fidler

Tom A. Fidler, Registered Professional Land Surveyor, No. 3940

NOTE

ALL BEARINGS, DISTANCES (UNLESS LABELED OTHERWISE), & COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, CODE 4202, NAD 1983 (92). THE SCALE FACTOR APPLIED EQUALS 0.999861727 & IS BASED ON SURFACE TRAVERSE BETWEEN STATIONS X-11 & C-21. THE COMPUTED LAND AREA IS BASED ON SURFACE DISTANCES.

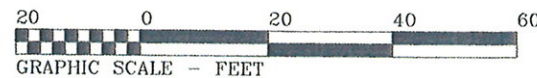
FIELD NOTES DESCRIPTION
IS ON SEPARATE SHEETS



LANDMARK CONSULTANTS, INC.

PROFESSIONAL LAND SURVEYORS

P.O. BOX 606 LONGVIEW, TEXAS 75606
PHONE (903) 236-3377 FAX (903) 236-3530
E-MAIL landmark@cabelllynx.com



STATION C-21
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6956579.781 FEET
E=3308499.969 FEET

LHAAP-60D
(4,558 SQUARE FEET)
LONGHORN ARMY AMMUNITION PLANT
HARRISON COUNTY, TEXAS

JOB #0407088	0407088.CRD	T.PTS	T.LEG
10/26/2009	0908074T.DWG	DRAWN BY	JTJ

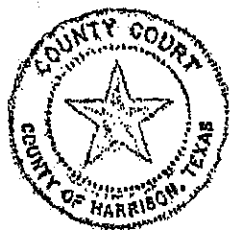
2010-000005558

DO NOT REMOVE THIS PAGE – IT IS A PART OF THIS INSTRUMENT

MISCELLANEOUS

7 Pages

FILED AND RECORDED – OPR	CLERKS NOTES
On: <u>04/27/2010 04:08 PM</u>	
Document Number: <u>2010-000005558</u>	
Receipt No: <u>1006195</u>	
Amount: \$ <u>36.00</u>	
By: <u>Ann Turner</u> , Deputy	
 Patsy Cox, County Clerk Harrison County, Texas	

STATE OF TEXAS
COUNTY OF HARRISONI hereby certify that this instrument was filed on the date and time stamped hereon by me
and was duly recorded in the Official Public Records of Harrison County, Texas.

Patsy Cox, Harrison County Clerk

Record and Return To:SHAW E & I
1401 ENCLAVE PARKWAY, SUITE 250
HOUSTON, TX 77077

STATE OF TEXAS

HARRISON COUNTY

INDUSTRIAL SOLID WASTE
NOTICE OF NONRESIDENTIAL LAND USE

KNOW ALL MEN BY THESE PRESENTS THAT:

Pursuant to the Rules of the Texas Commission on Environmental Quality (TCEQ) pertaining to Industrial Solid Waste Management, this document is hereby filed in the Public Records of Harrison County, Texas in compliance with the recordation requirements of said rules:

I

The U.S. Army, Department of Defense, has performed a remediation of the land described herein. The site, LHAAP-64, is the location of a former transformer storage area located in the western portion of the former Longhorn Army Ammunition Plant (LHAAP). LHAAP was placed on the National Priorities List (NPL) during August 1990. After its listing on the NPL, the U.S. Army, United States Environmental Protection Agency (USEPA), and TCEQ (formerly known as the Texas Water Commission) entered into an agreement under the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA) Section 120 for remedial activities. The CERCLA Section 120 Agreement, referred to as the Federal Facility Agreement (FFA), became effective on December 30, 1991. Although there are many sites at LHAAP that are specifically NPL listed, LHAAP-64 is not itself considered an NPL site. Environmental activities at LHAAP-64 progressed through the site investigation, at which point it was agreed by the Army and the TCEQ as the lead regulatory agency that no significant releases had occurred and the site could be closed under Texas Administrative Code (TAC) Risk Reduction Rule Standard 2.

LHAAP-64 is located next to site LHAAP-29. Polychlorinated biphenyl (PCB)-containing transformers were stored on a pad on Zeugner Drive immediately southwest of Building 707-B. Approximately 20 out-of-service non-PCB transformers were stored on pallets with no curbs or other containment. The site was used for the storage of transformer oil. The contaminants of concern were petroleum and oil lubricants and PCBs. Further information may be found by examination of the Notice of Registration No. 30990 files, which are available for inspection upon request at TCEQ, Central File Room Customer Service Center, Building E, 12100 Park 35 Circle, Austin, Texas, 78753, (512) 239-2900, Monday through Friday 8:00 a.m. to 5:00 p.m. or the Administrative Record available at the Marshall Public Library, 300 S. Alamo Blvd, Marshall, Texas

75670, (903) 935-4465, Monday through Thursday 10:00 a.m. to 8 p.m., Friday and Saturday 10:00 a.m. to 5:30 p.m.

The TCEQ requires certain persons to provide recordation in the real property records to notify the public of the conditions of the land and/or the occurrence of remediation. This notification is not a representation or warranty by the TCEQ of the suitability of this land for any purpose.

II

The LHAAP-64 parcel is 847 square feet, more or less, or 0.01944 acre tract located in Harrison County, Texas, near the town of Karnack, being more particularly described with survey plat and metes and bounds established in Exhibit A.

The United States Department of the Army has undertaken careful environmental study of the LHAAP-64 site and USEPA and TCEQ concluded that no further investigation or action is required for LHAAP-64. Contaminants in soil samples from LHAAP-64 meet non-residential soil criteria in accordance with 30TAC§335.560(b).

Limited monitoring of LHAAP-64 will take place in the form of Letters of Certification from the Army or the Transferee to TCEQ every five years to document that the use of LHAAP-64 is consistent with the non-residential use scenarios evaluated in the risk assessment. Future use of the parcel is intended as a national wildlife refuge consistent with industrial or recreational activities and not for residential purposes. For purposes of this certification, residential use includes, but is not limited to, single family or multi-family residences; child care facilities; and nursing home or assisted living facilities; and any type of educational purpose for children/young adults in grades kindergarten through 12.

III

The owner of the site is the Department of the Army, and its address where more specific information may be obtained is as follows:

ATTN: DAIM-ODB-LO (R. Zeiler)

Post Office Box 220

Ratcliff, AR 72951

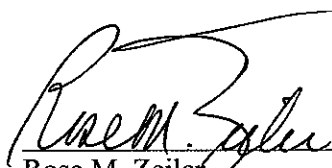
or

Assistant Chief of Staff for Installation Management

ATTN: DAIM-BDO (T. Lederle)

600 Army Pentagon

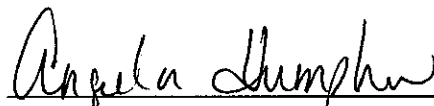
Washington D.C. 20310-0600


Rose M. Zeiler
Longhorn AAP Site Manager

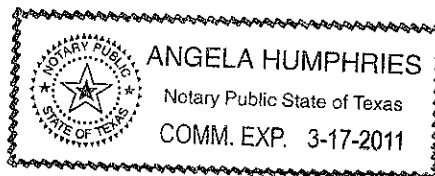
EXECUTED this the 10th day of March, 2010.

BEFORE ME, on this the 10th day of March, personally appeared Rose M. Zeiler, of United States Army, United States Department of Defense, known to me to be the person and agent of said agency whose name is subscribed to the foregoing instrument, and she acknowledged to me that she executed the same for the purposes and in the capacity therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 10 day of March, 2010.



Notary Public in and for the State of Texas,
County of Harrison



FIELD NOTES DESCRIPTION OF
"LHAAP-64" TRACT
(ADJACENT TO FOUNDATION SLAB OF DEMOLISHED BUILDING #707-B)
CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, tract "LHAAP-64" being located within the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), tract "LHAAP-64" being adjacent to the Southwest edge of the concrete foundation slab of demolished Building #707-B, tract "LHAAP-64" being more particularly described as follows :

Surveyor's Note : All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.9998463585, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "C-1" (N=6955947.067 feet E=3305400.600 feet) and "C-22" (N=6955892.461 feet E=3307823.958 feet). Said traverse indicates a surface distance of 2424.346 feet between said monuments. The computed land area is based on surface distances.

Commencing at monument "C-1" referenced above,

THENCE S 32deg52'16"W 338.58' to the West corner of the concrete slab of demolished building 707-B, said slab corner marking the North corner of this tract and this POINT OF BEGINNING,

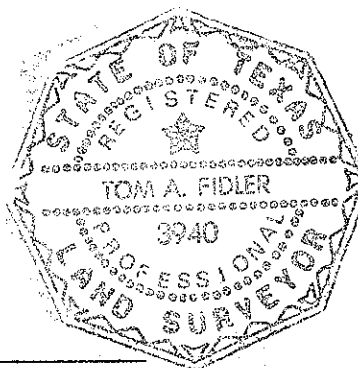
THENCE S 45deg00'47"E 29.76' along the N.E. B.L. of this tract, and generally along the Southwest edge of said concrete slab, to the South corner of said concrete slab, said slab corner marking the East corner of this tract,


THENCE S 44deg55'45"W 28.44' along the S.E. B.L. of this tract to a concrete nail with head dimple set (in asphalt) for the South corner of this tract,

THENCE N 45deg00'47"W 29.75' along the S.W. B.L. of this tract to a concrete nail with head dimple set (in asphalt) for the West corner of this tract,

THENCE N 44deg54'27"E 28.44' along the N.W. B.L. of this tract to this POINT OF BEGINNING. This tract contains 847 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.




Tom A. Fidler, R.P.L.S. Number 3940

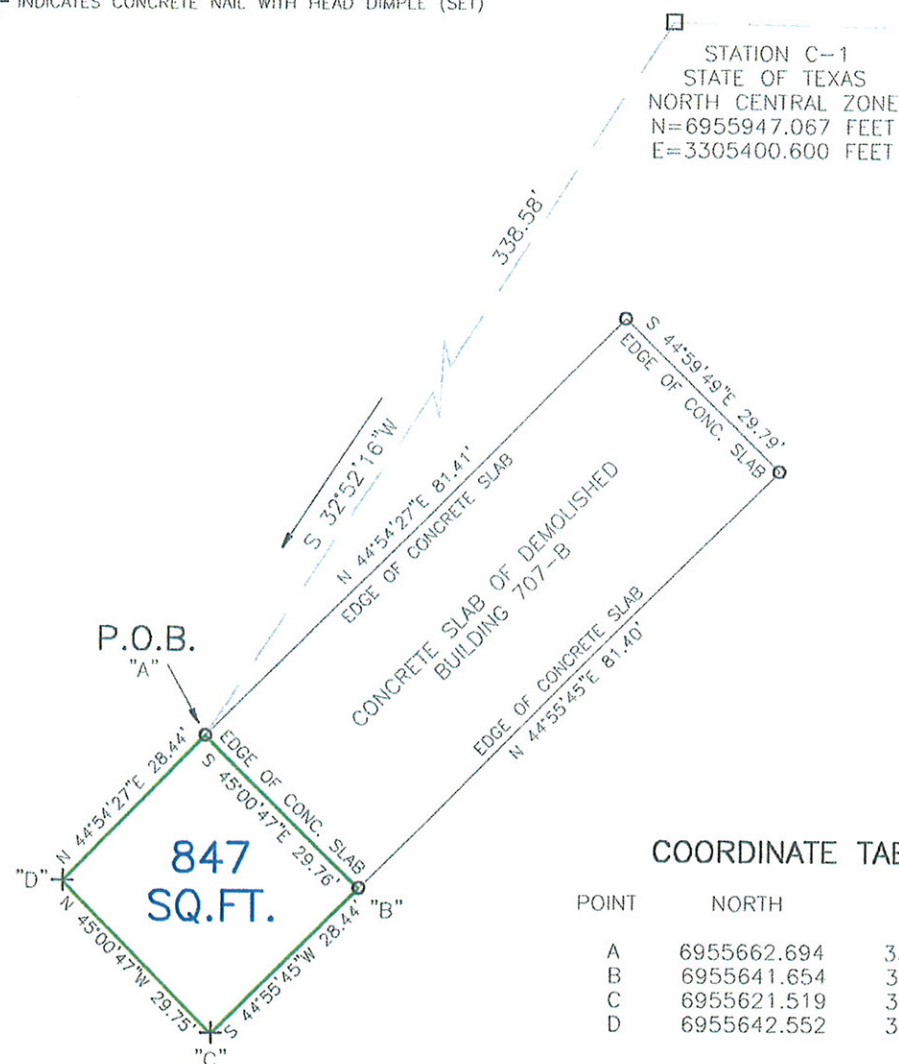
NOTES:

- INDICATES TYPE "G" CORPS OF ENGINEERS MONUMENT (FOUND)
- INDICATES CORNER OF CONCRETE FOUNDATION SLAB (FOUND)
- △ INDICATES 60d NAIL (SET)
- + INDICATES CONCRETE NAIL WITH HEAD DIMPLE (SET)

I, Tom A. Fidler, registered professional land surveyor, No. 3940, do hereby certify that this plat reflects the location of the corners on the tract herein described, as surveyed on 11/12/2009 and under my supervision in August through November, 2009.

00089064

Witness my hand and seal November 12, 2009.

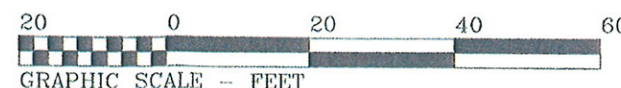


COORDINATE TABLE

POINT	NORTH	EAST
A	6955662.694	3305216.833
B	6955641.654	3305237.884
C	6955621.519	3305217.798
D	6955642.552	3305196.756



SCALE 1"=20'



LANDMARK CONSULTANTS, INC.
PROFESSIONAL LAND SURVEYORS

P.O. BOX 606 LONGVIEW, TEXAS 75606
PHONE (903) 236-3377 FAX (903) 236-3530
E-MAIL landmark@coblelynx.com

NOTE

ALL BEARINGS, DISTANCES (UNLESS LABELED OTHERWISE), & COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, CODE 4202, NAD 1983 (92). THE SCALE FACTOR APPLIED EQUALS 0.9998463585 & IS BASED ON SURFACE TRAVERSE BETWEEN STATIONS C-1 & C-22. THE COMPUTED LAND AREA IS BASED ON SURFACE DISTANCES.

FIELD NOTES DESCRIPTION
IS ON SEPARATE SHEETS

LHAAP-64
(847 SQUARE FEET)
LONGHORN ARMY AMMUNITION PLANT
HARRISON COUNTY, TEXAS

JOB #0407088	0407088.CRD	U.PTS U.LEG
NOV. 12, 2009	0908074U.DWG	DRAWN BY JTI

DO NOT REMOVE THIS PAGE – IT IS A PART OF THIS INSTRUMENT

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7 Pages

FILED AND RECORDED – OPR	CLERKS NOTES
On: <u>04/27/2010 04:08 PM</u>	
Document Number: <u>2010-000005559</u>	
Receipt No: <u>1006195</u>	
Amount: \$ <u>36.00</u>	
By: <u>Ann Turner</u> , Deputy	
 Patsy Cox, County Clerk Harrison County, Texas	



STATE OF TEXAS
COUNTY OF HARRISON

I hereby certify that this instrument was filed on the date and time stamped hereon by me
and was duly recorded in the Official Public Records of Harrison County, Texas.

Patsy Cox, Harrison County Clerk

Record and Return To:



SHAW E & I
1401 ENCLAVE PARKWAY, SUITE 250
HOUSTON, TX 77077

STATE OF TEXAS

HARRISON COUNTY

INDUSTRIAL SOLID WASTE
NOTICE OF NONRESIDENTIAL LAND USE

KNOW ALL MEN BY THESE PRESENTS THAT:

Pursuant to the Rules of the Texas Commission on Environmental Quality (TCEQ) pertaining to Industrial Solid Waste Management, this document is hereby filed in the Public Records of Harrison County, Texas in compliance with the recordation requirements of said rules:

I

The U.S. Army, Department of Defense, has performed a remediation of the land described herein. The site, LHAAP-66, is the location of a leaking transformer from the electric power substation and transformer area, near Building 401. Building 401 housed gas-fired boilers that generated steam for distribution throughout the former Longhorn Army Ammunition Plant (LHAAP). LHAAP was placed on the National Priorities List (NPL) during August 1990. After its listing on the NPL, the U.S. Army, United States Environmental Protection Agency (USEPA), and TCEQ (formerly known as the Texas Water Commission) entered into an agreement under the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA) Section 120 for remedial activities. The CERCLA Section 120 Agreement, referred to as the Federal Facility Agreement (FFA), became effective on December 30, 1991. Although there are many sites at LHAAP that are specifically NPL listed, LHAAP-66 is not itself considered an NPL site. Environmental activities at LHAAP-66 progressed through the site investigation, at which point it was agreed by the Army and the TCEQ as the lead regulatory agency that no significant releases had occurred and the site could be closed under Texas Administrative Code (TAC) Risk Reduction Rule Standard 2.

LHAAP-66 is located at the electric power substation and includes several transformers. One of these transformers was reported to be leaking, but subsequent environmental activities confirmed there was no release to the soil from polychlorinated biphenyls. The electric power substation still provides power to parts of LHAAP. Further information may be found by examination of the Notice of Registration No. 30990 files, which are available for inspection upon request at TCEQ, Central File Room Customer Service Center, Building E, 12100 Park 35 Circle, Austin, Texas, 78753, (512) 239-2900, Monday through Friday 8:00 a.m. to 5:00 p.m. or the Administrative Record available at the Marshall Public Library, 300 S. Alamo Blvd, Marshall, Texas 75670, (903) 935-4465,

Monday through Thursday 10:00 a.m. to 8 p.m., Friday and Saturday 10:00 a.m. to 5:30 p.m.

The TCEQ requires certain persons to provide recordation in the real property records to notify the public of the conditions of the land and/or the occurrence of remediation. This notification is not a representation or warranty by the TCEQ of the suitability of this land for any purpose.

II

The LHAAP-66 parcel is 8,616 square foot, more or less, or 0.19779 acre tract located in Harrison County, Texas, near the town of Karnack, being more particularly described with survey plat and metes and bounds established in Exhibit A.

The United States Department of the Army has undertaken careful environmental study of the LHAAP-66 site and USEPA and TCEQ concluded that no further investigation or action is required for LHAAP-66. Contaminants in soil samples from LHAAP-66 meet non-residential soil criteria in accordance with 30TAC§335.560(b).

Limited monitoring of LHAAP-66 will take place in the form of Letters of Certification from the Army or the Transferee to TCEQ every five years to document that the use of LHAAP-66 is consistent with the non-residential use scenarios evaluated in the risk assessment. Future use of the parcel is intended as a national wildlife refuge consistent with industrial or recreational activities and not for residential purposes. For purposes of this certification, residential use includes, but is not limited to, single family or multi-family residences; child care facilities; and nursing home or assisted living facilities; and any type of educational purpose for children/young adults in grades kindergarten through 12.

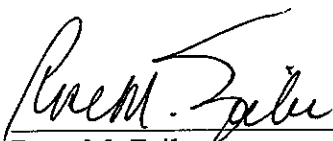
III

The owner of the site is the Department of the Army, and its address where more specific information may be obtained is as follows:

ATTN: DAIM-ODB-LO (R. Zeiler)
Post Office Box 220
Ratcliff, AR 72951

or

Assistant Chief of Staff for Installation Management
ATTN: DAIM-BDO (T. Lederle)
600 Army Pentagon
Washington D.C. 20310-0600

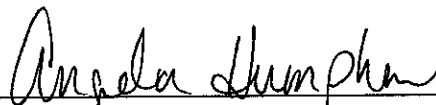


Rose M. Zeiler
Longhorn AAP Site Manager

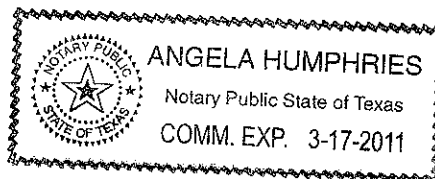
EXECUTED this the 10th day of March, 2010.

BEFORE ME, on this the 10th day of March, personally appeared Rose M. Zeiler, of United States Army, United States Department of Defense, known to me to be the person and agent of said agency whose name is subscribed to the foregoing instrument, and she acknowledged to me that she executed the same for the purposes and in the capacity therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 10 day of March, 2010.



Notary Public in and for the State of Texas,
County of Harrison



FIELD NOTES DESCRIPTION OF
"LHAAP-66" TRACT
(CONTAINS AN ELECTRIC POWER SUBSTATION)
CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, tract "LHAAP-66" containing an electric power substation, including transformers, "LHAAP-66" being located within the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract "LHAAP-66" being more particularly described as follows :

Surveyor's Note : All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.999861727, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "X-11" (N=6960733.698 feet E=3304750.367 feet) and "C-21" (N=6956579.781 feet E=3308499.969 feet). Said traverse indicates a surface distance of 5596.714 feet between said monuments. The computed land area is based on surface distances.

Commencing at monument "X-11" referenced above,

THENCE S 42deg04'17.4"E 1722.19' to a point, from which point monument "C-21" referenced above bears S 42deg04'17.4"E 3873.75',

(as used below, the abbreviation F.C.P. indicates 2-1/2" diameter chain link fence corner pipe)

THENCE S 47deg55'43"W 210.22' to an F.C.P. found (leaning approximately 15 degrees) for the Northmost corner of this tract and this description's POINT OF BEGINNING,

THENCE S 45deg10'23"E 130.14' along a chain link fence found for the Northeast B.L. of this tract to an F.C.P. found for this tract's Eastmost corner,

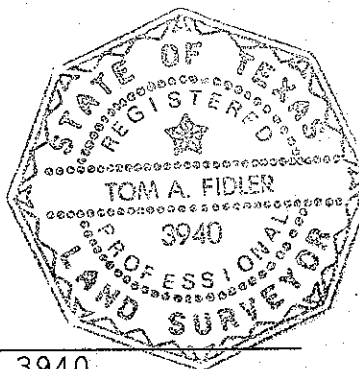
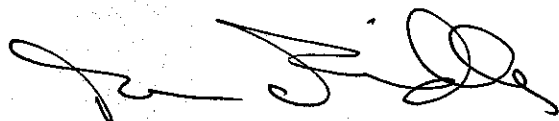
THENCE S 44deg46'19"W 65.93' along a chain link fence found for

the Southeast B.L. of this tract to an F.C.P. found for this tract's Southmost corner,

THENCE N 45deg18'44"W 130.52' along a chain link fence found for the Southwest B.L. of this tract to an F.C.P. found for this tract's Westmost corner,

THENCE N 45deg05'44"E 66.25' along a chain link fence found for the Northwest B.L. of this tract to this POINT OF BEGINNING. This tract contains 8,616 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.



Tom A. Fidler, R.P.L.S. Number 3940

STATION X-11
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6960733.698 FEET
E=3304750.367 FEET



I, Tom A. Fidler, registered professional land surveyor, No. 3940, do hereby certify that this plat reflects the location of the corners on the tract herein described, as surveyed on the ground and under my supervision in August 2009.

Witness my hand and seal November 12, 2009.

COORDINATE TABLE

POINT	NORTH	EAST
A	6959314.442	3305748.279
B	6959222.696	3305840.580
C	6959175.889	3305794.144
D	6959267.673	3305701.353

NOTES:

- INDICATES TYPE "G" CORPS OF ENGINEERS MONUMENT (FOUND)
- INDICATES 2-1/2" DIAMETER CHAIN LINK FENCE CORNER PIPE (FOUND)
- + INDICATES UNMARKED POINT
- INDICATES CHAIN LINK FENCE

THIS FENCE CORNER
PIPE IS LEANING
APPROXIMATELY 15'

P.O.B.

8,616 SQUARE FEET
THIS TRACT CONTAINS AN ELECTRIC POWER
SUBSTATION, INCLUDING TRANSFORMERS

NOTE

THE BOUNDARY OF LHAAP-66
IS DEFINED BY THE CHAIN LINK
FENCE SHOWN ON THIS PLAT.

LANDMARK CONSULTANTS, INC.
PROFESSIONAL LAND SURVEYORS

P.O. BOX 606 LONGVIEW, TEXAS 75606
PHONE (903) 236-3377 FAX (903) 236-3530
E-MAIL landmark@cablelynx.com

BEARING SOURCE BETWEEN
STATION X-11 & STATION C-21
IS S 42°04'17.4"E 5595.940'
(SURFACE TRAVERSE USING
ELECTRONIC TOTAL STATION
INDICATES 5596.714')



[Signature]

Tom A. Fidler, Registered Professional Land Surveyor, No. 3940

NOTE

ALL BEARINGS, DISTANCES (UNLESS LABELED OTHERWISE), & COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, CODE 4202, NAD 1983 (92). THE SCALE FACTOR APPLIED EQUALS 0.999861727 & IS BASED ON SURFACE TRAVERSE BETWEEN STATIONS X-11 & C-21. THE COMPUTED LAND AREA IS BASED ON SURFACE DISTANCES.



SCALE 1"=30'

FIELD NOTES DESCRIPTION
IS ON SEPARATE SHEETS

STATION C-21
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6956579.781 FEET
E=3308499.969 FEET

LHAAP-66
(8,616 SQUARE FEET)
(CONTAINS AN ELECTRIC
POWER SUBSTATION)
LONGHORN ARMY AMMUNITION PLANT
HARRISON COUNTY, TEXAS

JOB #0407088	0407088.CRD	E.PTS	E.LEG
NOV. 12, 2009	0908074E.DWG	DRAWN BY	JTJ

DO NOT REMOVE THIS PAGE – IT IS A PART OF THIS INSTRUMENT

MISCELLANEOUS

7 Pages

FILED AND RECORDED – OPR	CLERKS NOTES
On: <u>04/27/2010 04:08 PM</u>	
Document Number: <u>2010-000005560</u>	
Receipt No: <u>1006195</u>	
Amount: \$ <u>36.00</u>	
By: <u>Ann Turner</u> , Deputy	
Patsy Cox, County Clerk Harrison County, Texas	



STATE OF TEXAS
COUNTY OF HARRISON

I hereby certify that this instrument was filed on the date and time stamped hereon by me
and was duly recorded in the Official Public Records of Harrison County, Texas.

Patsy Cox, Harrison County Clerk

Record and Return To:



SHAW E & I
1401 ENCLAVE PARKWAY, SUITE 250

HOUSTON, TX 77077

STATE OF TEXAS

HARRISON COUNTY

INDUSTRIAL SOLID WASTE
NOTICE OF NONRESIDENTIAL LAND USE

KNOW ALL MEN BY THESE PRESENTS THAT:

Pursuant to the Rules of the Texas Commission on Environmental Quality (TCEQ) pertaining to Industrial Solid Waste Management, this document is hereby filed in the Public Records of Harrison County, Texas in compliance with the recordation requirements of said rules:

I

The U.S. Army, Department of Defense, has performed a remediation of the land described herein. The site, LHAAP-68, is located near the service station in the maintenance shops and power area of the former Longhorn Army Ammunition Plant (LHAAP). LHAAP-68 consisted of two mobile 600-gallon storage tanks on trucks that were parked on the asphalt surface at the service station of the maintenance complex. LHAAP was placed on the National Priorities List (NPL) during August 1990. After its listing on the NPL, the U.S. Army, United States Environmental Protection Agency (USEPA), and TCEQ (formerly known as the Texas Water Commission) entered into an agreement under the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA) Section 120 for remedial activities. The CERCLA Section 120 Agreement, referred to as the Federal Facility Agreement (FFA), became effective on December 30, 1991. Although there are many sites at LHAAP that are specifically NPL listed, LHAAP-68 is not itself considered an NPL site. Environmental activities at LHAAP-68 progressed through the site investigation, at which point it was agreed by the Army and the TCEQ as the lead regulatory agency that no significant releases had occurred and the site could be closed under Texas Administrative Code (TAC) Risk Reduction Rule Standard 2.

LHAAP-68 is located at the maintenance complex next to the service station. Two mobile 600-gallon storage tanks on trucks were parked on the asphalt surface with no curb or other containment present. The mobile storage tanks contained No. 2 diesel and gasoline fuel. In 2006, six soil samples were collected, two from each of three borings that were installed at the site, and analyzed for semi volatile organic compounds, volatile organic compounds, and total petroleum hydrocarbons. Further information may be found by examination of the Notice of Registration No. 30990 files, which are available for inspection upon request at TCEQ, Central File Room Customer Service Center, Building E, 12100 Park 35 Circle, Austin, Texas, 78753, (512) 239-2900, Monday

through Friday 8:00 a.m. to 5:00 p.m. or the Administrative Record available at the Marshall Public Library, 300 S. Alamo Blvd, Marshall, Texas 75670, (903) 935-4465, Monday through Thursday 10:00 a.m. to 8 p.m., Friday and Saturday 10:00 a.m. to 5:30 p.m.

The TCEQ requires certain persons to provide recordation in the real property records to notify the public of the conditions of the land and/or the occurrence of remediation. This notification is not a representation or warranty by the TCEQ of the suitability of this land for any purpose.

II

The LHAAP-68 parcel is 426 square foot, more or less, or 0.00977 acre tract located in Harrison County, Texas, near the town of Karnack, being more particularly described with survey plat and metes and bounds established in Exhibit A.

The United States Department of the Army has undertaken careful environmental study of the LHAAP-68 site and USEPA and TCEQ concluded that no further investigation or action is required for LHAAP-68. Contaminants in soil samples from LHAAP-68 meet non-residential soil criteria in accordance with 30TAC§335.560(b).

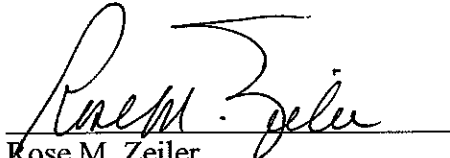
Limited monitoring of LHAAP-68 will take place in the form of Letters of Certification from the Army or the Transferee to TCEQ every five years to document that the use of LHAAP-68 is consistent with the non-residential use scenarios evaluated in the risk assessment. Future use of the parcel is intended as a national wildlife refuge consistent with industrial or recreational activities and not for residential purposes. For purposes of this certification, residential use includes, but is not limited to, single family or multi-family residences; child care facilities; and nursing home or assisted living facilities; and any type of educational purpose for children/young adults in grades kindergarten through 12.

III

The owner of the site is the Department of the Army, and its address where more specific information may be obtained is as follows:

ATTN: DAIM-ODB-LO (R. Zeiler)
Post Office Box 220
Ratcliff, AR 72951
or

Assistant Chief of Staff for Installation Management
ATTN: DAIM-BDO (T. Lederle)
600 Army Pentagon
Washington D.C. 20310-0600

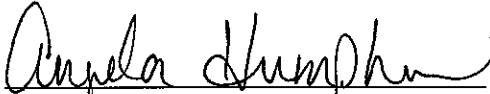

Rose M. Zeiler

Longhorn AAP Site Manager

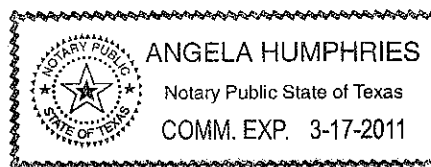
EXECUTED this the 10 th day of March, 2010.

BEFORE ME, on this the 10 th day of March, personally appeared Rose M. Zeiler, of United States Army, United States Department of Defense, known to me to be the person and agent of said agency whose name is subscribed to the foregoing instrument, and she acknowledged to me that she executed the same for the purposes and in the capacity therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 10 day of March, 2010.



Notary Public in and for the State of Texas,
County of Harrison



FIELD NOTES DESCRIPTION OF
"LHAAP-68" TRACT
CADDO LAKE NATIONAL WILDLIFE REFUGE
HARRISON COUNTY, TEXAS

The herein described tract of land is located in Harrison County, Texas, near the town of Karnack, tract "LHAAP-68" being located within the Longhorn Ordnance Works Reservation (also known as the Longhorn Army Ammunition Plant, Karnack, Texas), said tract "LHAAP-68" being more particularly described as follows :

Surveyor's Note : All bearings and distances herein (unless labeled surface distance) are based on the Texas State Plane Coordinate System, North Central Zone, Code 4202, NAD 1983 (92). The scale factor applied equals 0.999861727, and is based on surface traverse using electronic total station between type "G" Corps of Engineers monuments "X-11" (N=6960733.698 feet E=3304750.367 feet) and "C-21" (N=6956579.781 feet E=3308499.969 feet). Said traverse indicates a surface distance of 5596.714 feet between said monuments. The computed land area is based on surface distances.

Commencing at monument "X-11" referenced above,

THENCE S 42deg04'17.4"E 428.46' to a point, from which point monument "C-21" referenced above bears S 42deg04'17.4"E 5167.48',

THENCE S 47deg55'43"W 686.07' to a concrete nail (with head dimple) set in asphalt for the Northmost corner of this tract and this description's POINT OF BEGINNING,

THENCE S 44deg35'24"E 41.58' along the Northeast B.L. of this tract to an "X" set (chisled in concrete) for this tract's Eastmost corner,

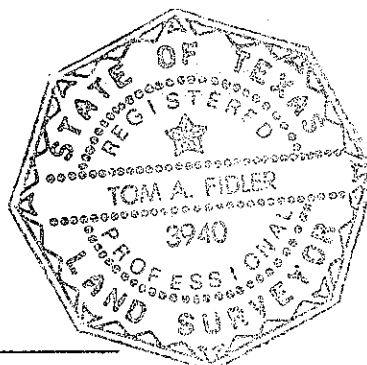
THENCE S 41deg38'18"W 9.34' along the Southeast B.L. of this tract to an "X" set (chisled in concrete) for this tract's Southmost corner,

THENCE N 46deg59'28"W 41.90' along the Southwest B.L. of this tract to a concrete nail (with head dimple) set in asphalt for this tract's Westmost corner,

THENCE N 43deg41'50"E 11.08' along the Northwest B.L. of this

tract to this POINT OF BEGINNING. This tract contains 426 square feet, more or less.

I, Tom A. Fidler, registered professional land surveyor No. 3940 in the State of Texas, do hereby certify that this field notes description is the result of a survey made on the ground and under my supervision.



A handwritten signature in black ink, appearing to read "Tom A. Fidler", written over a horizontal line.

Tom A. Fidler, R.P.L.S. Number 3940

STATION X-11
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6960733.698 FEET
E=3304750.367 FEET

COORDINATE TABLE

POINT	NORTH	EAST
A	6959955.942	3304528.186
B	6959926.330	3304557.376
C	6959919.350	3304551.170
D	6959947.931	3304520.531

NOTES:

- INDICATES TYPE "G" CORPS OF ENGINEERS MONUMENT (FOUND)
- △ INDICATES CONCRETE NAIL WITH HEAD DIMPLE (SET)
- X INDICATES X CHISELED IN CONCRETE (SET)
- INDICATES UNMARKED POINT
- INDICATES BORE HOLE AS MARKED BY SHAW ENVIRONMENTAL

I, Tom A. Fidler, registered professional land surveyor, No. 3940, do hereby certify that this plat reflects the location of the corners on the tract herein described, as surveyed on the ground and under my supervision in August through October 2009.

Witness my hand and seal October 26, 2009.



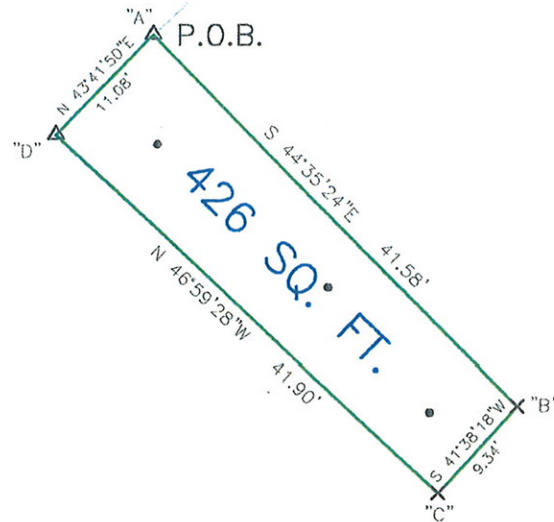
Tom A. Fidler

Tom A. Fidler, Registered Professional Land Surveyor, No. 3940

NOTE

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FIELD NOTES DESCRIPTION
IS ON SEPARATE SHEETS



SCALE 1"=10'



STATION C-21
STATE OF TEXAS
NORTH CENTRAL ZONE
N=6956579.781 FEET
E=3308499.969 FEET

LANDMARK CONSULTANTS, INC.

PROFESSIONAL LAND SURVEYORS

P.O. BOX 606 LONGVIEW, TEXAS 75606
PHONE (903) 236-3377 FAX (903) 236-3530
E-MAIL landmark@cablelynx.com

LHAAP-68
(426 SQUARE FEET)
LONGHORN ARMY AMMUNITION PLANT
HARRISON COUNTY, TEXAS

JOB #0407088	0407088.CRD	S.PTS	S.LEG
10/26/2009	0908074S.DWG	DRAWN BY	JTJ

LONGHORN ARMY AMMUNITION PLANT,**Karnack, Texas****MONTHLY MANAGERS' MEETING****AGENDA**

DATE: Tuesday, 27 April 2010
TIME: 2:00 p.m.
PLACE: Teleconference, Call-in-Number Courtesy of Shaw: 866-797-9304,
 Passcode: 4155734

Welcome**RMZ****Action Items:****Army**

- Provide regulators with draft 2010 IAP for review. *Completed.*

EPA**ST**

- LHAAP-18/24
- MMRP Sites – Perchlorate Tech Memo Response
- EPA will examine Army training materials on ARAR and provide an opinion on whether there are problems related to application to off-site responses. *Completed, but Location-Specific ARARs questions are being resolved with Army and TCEQ.*
- 18/24 ESD - Status

TCEQ**FD**

- MMRP Sites – Perchlorate Tech Memo Response

Defense Environmental Restoration Program (DERP) PBC Update**PS/GJ**

- Document Status/Environmental Sites (Table)
- Groundwater Treatment Plant

DERP Total Environmental Restoration Contract Update

- LHAAP-37/67 –Responsiveness Summary & ROD Schedule
- Remaining TERC Recordations

RMZ**BRAC-Funded Environmental Restoration**

- LHAAP-19 – Demolition Landfill Inspection and Repair

JRL/AW**MMRP****JRL/AW**

Update from EPA/TCEQ response to Perchlorate Tech Memo

Other Issues**RMZ**

- Sitewide Schedule Review - Changes
- IAP Schedule
 April 26 – Validation Call – end of IAP update

Adjourn



Subject: **Final Minutes, Monthly Managers Meeting,
Longhorn Army Ammunition Plant (LHAAP)**

Location of Meeting: **Teleconference**

Date of Meeting: **April 27, 2010; 2:00 PM – 4:15 PM**

Meeting Participants:

BRAC:	Rose M. Zeiler
USAEC:	Matthew Mechenes
USACE-Tulsa:	Aaron Williams, John Lambert
Shaw:	Praveen Srivastav, Greg Jones, Kay Everett, Susan Watson
USEPA Region 6:	Steve Tzhone
TCEQ:	Fay Duke, Dale Vodak
USFWS:	Paul Bruckwicki, Barry Forsythe

Action Items:

Army

- **IAP – Status**
Refresh and send out tomorrow the updated IAP. John Lambert noted that the database opens up on May 7 to allow any additional changes which have to come back before May 11 to meet the May 14 deadline.

EPA

- **LHAAP-18/24 – Status**
Report from USGS on the sampling effort at LHAAP-18/24 will be tabled until the next meeting.
- **MMRP Sites – Perchlorate Tech Memo Response**
The TCEQ and EPA discussed what needs to happen for these sites in an effort to move them forward. They have approached this issue on a remedy selection basis by implementing long term monitoring (LTM). LTM will address detections that have been observed in the past at various locations. But this would also give them the flexibility to

either increase the sampling frequency or consider remedy complete if no additional detections are observed at the 5-year review marker. EPA and TCEQ have prepared a memo and will be issuing it this week. Rose reminded Steve that LTM is not a remedy and noted that monitoring can be included in a NFA ROD. Steve agreed. John said that allows for a ramp down/exit strategy. Rose Zeiler indicated that when the Army receives the response to the memo from the regulators it would be sent up the chain for review.

Regarding the ARARs issue, Steve indicated that George (Malone) had responded to the issue about location specific ARARs. Rose said those comments were sent to Matt Mechenes who is handling it. Fay said that she had deferred the comment to EPA because she thought the issue was really a CERCLA one. Steve said that unless there is formal documentation in place from the relevant agency (e.g. Trustees) that states that the location-specific ARARs are not applicable, the Army will have to consider the ARARs as potential. Rose indicated that Army will review and provide concurrence or response.

- **LHAAP-18/24 ESD – Status**

Steve Tzhone noted that some minor issues on the ESD are being handled internally by EPA regarding signatures or co-signatures. A discussion followed regarding how to handle making changes to documents that have already been signed by one or all parties.

TCEQ

- **MMRP Sites – Perchlorate Tech Memo Response**

This is being written by EPA with TCEQ collaborating. The response to the memo will be submitted sometime this week.

Defense Environmental Restoration Program (DERP) PBC Update

Praveen went over the document status/environmental sites table.

- LHAAP-02: The Draft Final Decision Document for LHAAP-02 is in review with the TCEQ.
- LHAAP-03: The draft work plan for soil removal is in preparation and will be submitted soon.
- LHAAP-04: The Draft Completion Report for LHAAP-04 is in Army review.
- LHAAP-06, -07, -51, -55, -64, -66, and -68: The deed notifications will be filed this week in the Harrison County office. A discussion on the LUC Management Plan ensued and the best way to update the document. The exact copy of the notification that is returned from the county, with recordation number and notarized signature, must be placed in the LUC. This will be the first such instrument to be added to the LUC plan since LHAAP-12 and the LUC Management Plan's implementation. Five copies will be needed. Stakeholders having the document are Steve Tzhone, Paul Bruckwicki, John Lambert, Fay Duke, and Shaw. It was agreed that Army will submit an updated LUC Management Plan with the recent additions which will include a method of document control and the regulators can review and comment at that point. John stated that the Comprehensive LUC Management Plan has a Document Revision Log to capture entries into the plan.

- LHAAP-16: The Final Feasibility Study Addendum was submitted 3/31/10. The draft Proposed Plan for LHAAP-16 is in preparation.
- LHAAP-17: The Final Feasibility Study for LHAAP-17 will be submitted this week. The Proposed Plan is in Army's review.
- LHAAP-18/24: Responses on the Draft Feasibility Study are being resolved with the Army. Rose suggested an on board meeting in May with the regulators to push the Final FS out by end of May 2010. Praveen asked that Army and Shaw would talk off line regarding this issue.
- LHAAP-29: The RTCs to the Draft Final Feasibility Study are in regulatory review. If regulators expedite their review, the document could go final this week and keep the April submittal date. Discussion followed regarding the form the final could take place and to insure all comments were resolved satisfactorily.
- LHAAP-46: The Draft Record of Decision is in preparation.
- LHAAP-47: The Draft Final Feasibility Study for LHAAP-47 is in regulatory review.
- LHAAP-49: The Draft Final ROD for LHAAP-49 is in Army review.
- LHAAP-50: The Draft ROD is in preparation.
- LHAAP-58: The Draft ROD is in preparation.
- LHAAP-60: The deed notification will be filed this week.
- LHAAP-35/36: TCEQ comment has been received on the Draft final Decision Document. The erratum is in progress and will go out with the Decision Document. Army has reviewed the responses and Shaw is addressing their input.
- Pistol Range: Army is currently reviewing the Draft ROD.

Groundwater Treatment Plant

Greg Jones noted that the treatment plant operated normally since the last monthly managers meeting - 180 to 200 gallons per minute in the metals/volatiles treatment units and 15 to 20 gpm in the FBR. There was an electrical problem after the previous month's meeting reducing operation time to one day for that week.

Other Discussion

Fay asked a question about when they would see responses to the citizens' comments received during the comment period. Praveen indicated that they would be included in the RODs under their respective responsiveness summaries. Of course, the transcripts would be entered into the Administrative Record. He said that Army has the draft responses and Rose said that she was finishing her review this afternoon. The responsiveness summaries located within each ROD will reflect significant comments, but that all of the responses and comments would be a part of the Administrative Record. Fay asked if the Army planned to provide the responses to the CLI and the community directly or would the first time they see them be in the ROD and asked if they could be provided to the RAB so the community could see them before. John said that it is a requirement per the NCP that responses to written public comments be captured in responsiveness summary in order to make remedy selection, but if a copy of the written responses were made available before the ROD was issued, that it might encourage additional comments, although the official comment period is over. Praveen said that they should all decide how it would be best to provide responses to the public. If everyone agrees to the distribution of comment responses outside of the RODs,

then they could be sent out to the RAB members. Steve emphasized that although legally not required, it was good public relations. He said it would be helpful if the team took that approach by providing them responses in advance, have an open house to discuss and explain how their comments are incorporated in the decision-making process. John said that this should be conducted in an informal setting because the comment period has closed, so there should be some caution in how to execute this. There shouldn't be another chance for another round of comments since it is outside the comment period. The comment resolution process can put a halt to the ROD. It was agreed that the comment responses will be made available to the public shortly before the next RAB so that there is opportunity for review before the meeting. The responses to comments will be included in the RAB agenda.

DERP Total Environmental Restoration Contract Update

- Fay asked about the fact that there is no contingency specified in the ROD for LHAAP-37/67. If MNA doesn't work after 2 years then they will have to go back to the community. However, if the contingency is specified in the ROD, then they do not need to go to the community. A ROD amendment or ESD is the next appropriate step. A signature date for the ROD has been extended to June.
- Remaining TERC Recordations
There were no sites at this step currently but Army will try to prepare the recordations for Sites 59 and 8 for TCEQ review before the next RAB meeting.

BRAC-Funded Environmental Restoration

- LHAAP-19 – Demolition Landfill Inspection and Repair

Paul Bruckwicki asked what constituted a good fence or barrier fence for the landfill. Dale said they he would be on site tomorrow to do an inspection of the landfill, and indicated that normally a fence is considered adequate if it keeps people out. In this case, a barbed fence with a locked gate is adequate for this landfill as adequacy of fencing criteria is also dependent on the location and access to the landfill. John said that erosion has occurred before the vegetative cover was fully established. Therefore, the landfill was undergoing some additional seeding and that temporary wells have been removed.

Fay noted that Rick Lowerre has requested to attend the monthly manager's meetings like the public used to do. Paul said the onsite commander of the installation used to open up the meetings to the public. Rose stated that Paul might be thinking of the Technical Review Committee (TRC) meetings. It was noted that those were different types of meetings. The TRC meetings were held for public participation. The TRC was converted to the RAB. It was also noted that in the early RAB meetings, transfer issues were the community's main focus and interest and only recently has the public shown more interest in environmental restoration. She also mentioned that there should be diversity in the board that better represents the community surrounding Longhorn.

Rose suggested that changing the format of the RAB to a more interactive, informal structure and perhaps meeting more often might increase attendance and foster more representation from the surrounding community. Due to the heightened level of community interest recently, maybe the

community would like to increase the frequency of RAB meetings to every other month or every month. A different meeting format may also encourage more participation from the community.

MMRP

Steve indicated that TCEQ and EPA will be providing written information on this soon.

John Lambert noted that the MEC area will have institutional controls, and that the recordation was on hold until completion of the ROD.

Other Issues

- Site-wide Schedule Review - Changes
Army noted that the schedule was sent to everyone.
- IAP Schedule
April 26 – Validation Call – end of IAP update

Next monthly manager's meeting date is May 13, 2010 which will also be a conference call. A suggestion to change the next RAB meeting to a new night in order to enhance community participation was mentioned.

Meeting Adjourned



**Status of Sites and Technical Documents
Longhorn Army Ammunition Plant – PBC Contract
April 27, 2010**

No.	Document in Progress	Submittal Date	Army	Regulator	Next Submittal	Expected Date	Army	Regulator	Comment Resolution	Status	Remarks
1	Draft Final Decision Document, LHAAP-02	03/30/10	x	x	Final	05/30/10	x	x		Document in regulatory review	
2	Draft Soil Removal Work Plan, LHAAP-03	03/18/10	x		Draft	05/15/10	x			Removal action work plan in internal review	
3	Draft Completion Report, LHAAP-04	01/21/10	x							In Army review	
4	County Notification LHAAP-06, 07, 51, 55, 64, 66, 68	01/30/10	x							To be filed at County office in April 2010	
5	Final Feasibility Study Addendum, LHAAP-16	3/31/10	x	x							
6	Draft Proposed Plan, LHAAP-16	4/30/10	x							In preparation	
7	Final Feasibility Study, LHAAP-17	4/30/10	x	x						In progress	
8	Draft Proposed Plan, LHAAP-17	4/16/10	x							In Army review	



**Status of Sites and Technical Documents
Longhorn Army Ammunition Plant – PBC Contract
April 27, 2010**

No.	Document in Progress	Submittal Date	Army	Regulator	Next Submittal	Expected Date	Army	Regulator	Comment Resolution	Status	Remarks
9	Draft Feasibility Study, LHAAP-18/24	3/3/09	x		Draft Final	05/30/10	x	x	In progress	Army comments received. Resolution in progress.	
10	Draft Final Feasibility Study, LHAAP-29	03/11/09	x	x	Final	04/30/10	x	x	In progress	RTCs in regulatory review	
11	Draft Record of Decision, LHAAP-46	04/30/10	x							In preparation	
12	Draft Final Focused Feasibility Study, LHAAP-47	04/15/10	x	x	Final	05/30/10	x	x		In regulatory review	
13	Draft ROD, LHAAP-49	04/01/10	x		Draft Final	05/15/10	x	x		In Army's review	
14	Draft Record of Decision, LHAAP-50	05/4/10	x							In preparation	
15	Draft Record of Decision, LHAAP-58	05/04/10	x							In preparation	
16	County Notification, LHAAP-60	01/30/10	x							To be filed at County office in April 2010	
17	Draft Final Decision Document, LHAAP-35/36	07/15/09	x	x	Final	4/30/10	x	x	In progress	TCEQ comment received on DF DD. Army has reviewed responses; Shaw is addressing their input.	



**Status of Sites and Technical Documents
Longhorn Army Ammunition Plant – PBC Contract
April 27, 2010**

No.	Document in Progress	Submittal Date	Army	Regulator	Next Submittal	Expected Date	Army	Regulator	Comment Resolution	Status	Remarks
18	Draft Record of Decision, Pistol Range	02/08/10	x		Draft Final	05/15/10	x	x		Army is currently reviewing the draft ROD.	