# NPRS0431031135

1RP-1043

XTO Energy, Inc.

Closure

EUNICE MONUMENT SOUTH UNIT WELL #187

12/2/2019

Larson & Associates, Inc.
Environmental Consultants

October 5, 2006

Mr. Larry Johnson
Environmental Engineer
New Mexico Oil Conservation Division – District 1
1625 North French Drive
Hobbs, New Mexico 88240

**Re: RP1-1043 Investigation Report, XTO Energy, Inc., Eunice Monument South Unit Well #187, Unit Letter D (NW/4. NW/4), Section 5, Township 21 South, Range 36 East, Lea County, New Mexico**

Dear Mr. Johnson:

Please find enclosed the above-referenced report, which is submitted to the State of New Mexico Oil Conservation Division ("OCD") on behalf of XTO Energy, Inc ("XTO") by Larson and Associates, Inc. ("LA"), its consultant, for a produced water spill that occurred at the Eunice Monument South Unit Well #187. Please contact Mr. Dudley McMinn with XTO at (432) 682-8873 or email Dudley_Mcminn@xtoenergy.com if you have questions. I may be reached with questions at (432) 687-0901 or email mark@laenvironmental.com.

Sincerely,

***Larson and Associates, Inc.***

Mark J. Larson, P.G., C.P.G., C. G. W. P.
Sr. Project Manager/President

Encl.

cc: Dudley McMinn

Larson & Associates, Inc.
Environmental Consultants

October 4, 2006

**VIA CERTIFIED MAIL**

Mr. Larry Johnson
Environmental Engineer
State of New Mexico
Oil Conservation Division
1625 North French Drive
Hobbs, New Mexico 88240

**Re: 1RP-1043, XTO Energy, Inc., EMSU Well #187 Produced Water Spill Investigation Report, Unit Letter D (NW/4, NW/4), Section 5, Township 21 South, Range 36 East, Lea County, New Mexico**

Dear Mr. Johnson:

This letter is submitted to the State of New Mexico Oil Conservation Division ("OCD") on behalf of XTO Energy, Inc. ("XTO") by Larson and Associates, Inc. ("LA"), its agent, to present the results of an investigation of a produced water spill at the Eunice Monument South Unit ("EMSU") injection well #187 ("Site"). The latitude and longitude for the Site is North 32° 31' 14.1" and West 103° 17' 37.8", respectively. Figure 1 presents a topographic and depth-to-groundwater map. Contact information for XTO is as follows:

Mr. Dudley M$^{c}$Minn
Environmental, Health & Safety Representative
XTO Energy, Inc.
200 North Loraine Street, Suite 800
Midland, Texas 79701
Office: (432) 682-8873
Fax: (432) 687-0862
Cell: (432) 557-7976
Email: Dudley_McMinn@xtoenergy.com

**Chronology**

The spill occurred on August 2, 2004, while ChevronTexaco North America Exploration and Production Company ("ChevronTexaco") operated the property. ChevronTexaco reported the spill to the OCD on August 3, 2004, and submitted form C-141. Form C-141 reported the release involved approximately 180 barrels ("bbl") of produced water and 160 bbl was recovered. ChevronTexaco personnel scrapped an unknown volume of soil from the spill, which was disposed at Sundance, Inc., located east of Eunice, New Mexico. XTO assumed operations of the Site on August 16, 2004.

On November 9, 2004, December 22, 2004, April 3, 2006 and July 6, 2006, LA personnel collected soil samples from borings and notification was provided to the OCD prior to each event. The samples were collected using hand auger, direct push and air rotary methods, placed in 4-ounce glass jars, labeled, chilled in an ice chest and delivered to Environmental Lab of Texas, Inc., located in Odessa, Texas. Duplicate sample were collected for headspace analysis and recorded on boring logs. All headspace readings were below 100 parts per million ("ppm"), therefore, the laboratory analyzed select samples for total petroleum hydrocarbons ("TPH") and all samples were analyzed for chloride using methods SW-846-8015 and 300, respectively. Figure 2 presents the boring locations. Table 1 presents a summary of the laboratory analysis. Appendix A presents the boring logs. Appendix B presents the laboratory reports. Appendix C presents photographs.

**Conclusions**

Ground water occurs at approximately 105 feet below ground surface ("bgs") and no wells or surface water is present within 1,000 horizontal feet of the Site. Figure 1 presents contours for depth-to-groundwater. Recommended remediation action levels ("RRAL") were calculated for the Site using the following OCD criteria:

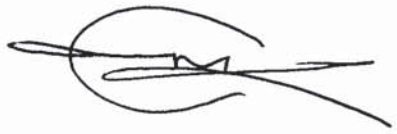
| Ranking Criteria | Result | Ranking Score |
|---|---|---|
| Depth-to-Groundwater | >100 feet | 0 |
| Wellhead Protection Area | No | 0 |
| Distance to Surface Water Body | >1000 Horizontal Feet | 0 |
| | **Total Score:** | **0** |

The following RRAL are assigned to the leak based on the total ranking score (0):

- **Benzene** **10 mg/kg**
- **BTEX** **50 mg/kg**
- **TPH** **5,000 mg/kg**

TPH was below 5,000 mg/Kg in all samples. The maximum vertical concentration of chloride decreased below 1000 milligrams per kilogram ("mg/Kg") at all locations, except from location HB-12. The deepest sample from boring HB-12 (40 to 41 feet), reported chloride at 1,110 mg/Kg. The highest chloride was reported in sample HB-12, 20 to 22 feet bgs (3,110 mg/Kg). This sample was analyzed using the synthetic precipitation leaching procedure ("SPLP") by EPA method SW-846-1312 to determine if the chloride would leach above the New Mexico Water Quality Control Commission ("WQCC") domestic water quality threshold of 250 milligrams per liter ("mg/L"). The chloride concentration from the SPLP method was 177 mg/L. XTO respectfully requests a closure letter from the OCD for this spill. Please contact Mr. Dudley McMinn with XTO at (432) 682-8873 or email Dudley_McMinn@xtoenergy.com if you have questions. I may be reached with questions at (432) 687-0901 or email mark@laenvironmental.com.

Sincerely,
***Larson and Associates, Inc.***



Mark J. Larson, P.G., C.P.G., C.G.W.P.
Senior Project Manager/President

Encl

cc: Dudley McMinn/XTO

**Tables**

**Table 1**
**Summary of Laboratory Analyses of Soil Samples**
**XTO Energy, Inc., Eunice Monument South Uunit (EMSU) Well #187**
**Unit Letter D (NW/4, NW/4), Section 5, Township 21 South, Range 36 East**
**Lea County, New Mexico**



| Sample Location | Sample Date | Sample Depth (BGS) | GRO C6 - C12 (mg/Kg) | DRO C12 - C35 (mg/Kg) | DRO C12 - C28 (mg/Kg) | DRO C28 - C35 (mg/Kg) | TPH C6 - C35 (mg/Kg) | Chloride (mg/Kg) | SPLP Chloride (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| HB-1 | 11/09/2004 | 0 - 1 | 9.7 | 66 | -- | -- | 75.7 | 638 | -- |
| BBH-1 | 11/09/2004 | 1 - 2 | <10 | <10 | -- | -- | <20 | 808 | -- |
| HB-1A | 11/09/2004 | 2 - 3 | <10 | <10 | -- | -- | <20 | 399 | -- |
| | 12/22/2004 | 4 -6 | --- | --- | -- | --- | --- | 968 | -- |
| | 12/22/2004 | 6 - 8 | --- | --- | -- | --- | --- | 1320 | -- |
| | 04/03/2006 | 10 - 12 | --- | --- | -- | --- | --- | 936 | -- |
| | 04/03/2006 | 15 - 17 | --- | --- | -- | --- | --- | 1400 | -- |
| | 04/03/2006 | 20 - 22 | --- | --- | -- | --- | --- | 441 | -- |
| HB-2 | 11/09/2004 | 0 - 1 | <10 | 107 | -- | -- | 107 | 2800 | -- |
| HB-2A | 11/09/2004 | 1 - 2 | <10 | 68 | -- | -- | 68 | 1300 | -- |
| | 11/09/2004 | 2 - 3 | <10 | <10 | -- | -- | <20 | 1130 | -- |
| | 04/04/2006 | 5 - 7 | --- | --- | -- | --- | --- | 3470 | -- |
| | 04/04/2006 | 10 - 12 | --- | --- | -- | --- | --- | 2360 | -- |
| | 04/04/2006 | 15 - 17 | --- | --- | -- | --- | --- | 681 | -- |
| HB-3 | 11/09/2004 | 0 - 1 | <10 | <10 | -- | -- | <20 | <20 | -- |
| | 11/09/2004 | 1 - 2 | <10 | <10 | -- | -- | <20 | <20 | -- |
| | 11/09/2004 | 2 - 3 | <10 | <10 | -- | -- | <20 | <20 | -- |
| HB-4 | 11/09/2004 | 0 - 1 | <10 | <10 | -- | -- | <20 | 97.7 | -- |
| BBH-4 | 11/09/2004 | 1 - 2 | <10 | <10 | -- | -- | <20 | 638 | -- |
| HB-4A | 11/09/2004 | 2 - 3 | <10 | <10 | -- | -- | <20 | 915 | -- |
| | 12/22/2004 | 4 - 6 | --- | -- | -- | --- | --- | 1280 | -- |
| | 04/03/2006 | 10 - 12 | --- | -- | -- | --- | --- | 553 | -- |
| HB-5 | 11/09/2004 | 0 - 1 | <10 | <10 | -- | -- | <20 | <20 | -- |
| | 11/09/2004 | 1 -2 | <10 | <10 | -- | -- | <20 | 31.9 | -- |
| | 11/09/2004 | 2 - 3 | <10 | <10 | -- | -- | <20 | <20 | -- |
| HB-6 | 11/09/2004 | 0 - 1 | <10 | 286 | -- | -- | 286 | 362 | -- |
| BBH-6 | 11/09/2004 | 1 - 2 | <10 | 191 | -- | -- | 191 | 319 | -- |
| HB-6A | 11/09/2004 | 2 - 3 | <10 | <10 | -- | -- | <20 | 585 | -- |
| | 12/22/2004 | 4 - 6 | --- | -- | -- | --- | --- | 1420 | -- |
| | 12/22/2004 | 6 - 8 | --- | -- | -- | --- | --- | 893 | -- |
| | 04/03/2006 | 10 - 12 | --- | -- | -- | --- | --- | 223 | -- |
| HB-7 | 11/09/2004 | 0-1 | <10 | <10 | -- | -- | <20 | <20 | -- |
| | 11/09/2004 | 1-2 | <10 | 142 | -- | -- | 142 | <20 | -- |
| | 11/09/2004 | 2-3 | <10 | <10 | -- | -- | <20 | <20 | -- |
| HB-8 | 11/09/2004 | 0 - 1 | <10 | <10 | -- | -- | <20 | <20 | -- |
| HB-8A | 11/09/2004 | 1 - 2 | <10 | <10 | -- | -- | <20 | 42.5 | -- |
| | 11/09/2004 | 2 - 3 | <10 | <10 | -- | -- | <20 | 63.8 | -- |
| | 04/03/2006 | 5 -7 | --- | -- | -- | --- | --- | 489 | -- |
| | 07/06/2006 | 10 - 11 | --- | -- | -- | --- | --- | 31.9 | -- |
| | 07/06/2006 | 15 - 16 | --- | -- | -- | --- | --- | 21.3 | -- |
| | 07/06/2006 | 20 - 21 | --- | -- | -- | --- | --- | <20 | -- |
| | 07/06/2006 | 25 - 26 | --- | -- | -- | --- | --- | --- | -- |
| BH-9 | 12/22/2004 | 0 - 2 | --- | -- | --- | --- | --- | 63.8 | -- |
| HB-9A | 12/22/2004 | 2 -4 | --- | -- | --- | --- | --- | <20 | -- |
| | 12/22/2004 | 4 - 6 | --- | -- | --- | --- | --- | 21.3 | -- |
| | 12/22/2004 | 6 - 8 | --- | -- | --- | --- | --- | 170 | -- |
| | 04/03/2006 | 10 - 12 | --- | -- | --- | --- | --- | 872 | -- |

**Table 1**
**Summary of Laboratory Analyses of Soil Samples**
**XTO Energy, Inc., Eunice Monument South Uunit (EMSU) Well #187**
**Unit Letter D (NW/4, NW/4), Section 5, Township 21 South, Range 36 East**
**Lea County, New Mexico**



| Sample Location | Sample Date | Sample Depth (BGS) | GRO C6 - C12 (mg/Kg) | DRO C12 - C35 (mg/Kg) | DRO C12 - C28 (mg/Kg) | DRO C28 - C35 (mg/Kg) | TPH C6 - C35 (mg/Kg) | Chloride (mg/Kg) | SPLP Chloride (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| | 04/03/2006 | 15 - 16 | --- | -- | --- | --- | --- | 766 | -- |
| | 07/06/2006 | 20 - 21 | --- | -- | --- | --- | --- | 1,470 | -- |
| | 07/06/2006 | 25 - 26 | --- | -- | --- | --- | --- | 319 | -- |
| | 07/06/2006 | 30 - 31 | --- | -- | --- | --- | --- | 340 | -- |
| **BH-10** | 12/22/2004 | 0 - 2 | --- | -- | --- | --- | --- | <20 | -- |
| **HB-10A** | 12/22/2004 | 2 - 4 | --- | -- | --- | --- | --- | <20 | -- |
| | 12/22/2004 | 4 - 6 | --- | -- | --- | --- | --- | <20 | -- |
| | 12/22/2004 | 6 - 8 | --- | -- | --- | --- | --- | 31.9 | -- |
| | 04/03/2006 | 10 -12 | --- | -- | --- | --- | --- | 1070 | -- |
| | 04/03/2006 | 15 - 17 | --- | -- | --- | --- | --- | 1740 | -- |
| | 04/03/2006 | 20 - 22 | --- | -- | --- | --- | --- | 959 | -- |
| **BH-11** | 12/22/2004 | 0 - 2 | --- | -- | --- | --- | --- | <20 | -- |
| **HB-11A** | 12/22/2004 | 2 - 4 | --- | -- | --- | --- | --- | <20 | -- |
| | 12/22/2004 | 4 - 6 | --- | -- | --- | --- | --- | <20 | -- |
| | 12/22/2004 | 6 - 8 | --- | -- | --- | --- | --- | <20 | -- |
| | 04/03/2006 | 10 - 12 | --- | -- | --- | --- | --- | 117 | -- |
| **HB-12** | 04/04/2006 | 0 - 2 | <10 | -- | <10 | <10 | <30 | <20 | -- |
| | 04/04/2006 | 5 - 7 | --- | -- | --- | --- | --- | 510 | -- |
| | 04/04/2006 | 1 0 -12 | --- | -- | --- | --- | --- | 2000 | -- |
| | 04/04/2006 | 20 - 22 | --- | -- | --- | --- | --- | 3110 | 177 |
| | 07/06/2006 | 25 - 26 | <10 | -- | <10 | <10 | <30 | 2,340 | -- |
| | 07/06/2006 | 30 - 31 | --- | -- | --- | --- | --- | 510 | -- |
| | 07/06/2006 | 35 - 36 | --- | -- | --- | --- | --- | 1,020 | -- |
| | 07/06/2006 | 40 - 41 | --- | -- | --- | --- | --- | 1,110 | -- |
| **HB-13** | 04/03/2006 | 0 - 2 | --- | -- | --- | --- | --- | <20 | -- |
| | 04/03/2006 | 5 - 7 | --- | -- | --- | --- | --- | 404 | -- |
| | 04/03/2006 | 10 - 12 | --- | -- | --- | --- | --- | 170 | -- |
| **HB-14** | 07/06/2006 | 0 - 2 | --- | -- | --- | --- | --- | <20 | -- |
| | 07/06/2006 | 5 - 6 | --- | -- | --- | --- | --- | 978 | -- |
| | 07/06/2006 | 1 0 -11 | --- | -- | --- | --- | --- | 681 | -- |
| | 07/06/2006 | 15 - 16 | <10 | -- | <10 | <10 | <30 | 893 | -- |
| | 07/06/2006 | 20 - 22 | --- | -- | --- | --- | --- | 1,700 | -- |
| | 07/06/2006 | 25 - 26 | --- | -- | --- | --- | --- | 638 | -- |
| | 07/06/2006 | 30 - 31 | --- | -- | --- | --- | --- | 553 | -- |
| **BH-14** | 07/06/2006 | 35 - 36 | --- | -- | --- | --- | --- | 298 | -- |
| | 07/06/2006 | 40 - 41 | --- | -- | --- | --- | --- | -- | -- |
| **HB-15** | 07/06/2006 | 0 - 2 | --- | -- | --- | --- | --- | 31.9 | -- |
| | 07/06/2006 | 5 - 6 | <10 | -- | <10 | <10 | <30 | 74.4 | -- |
| | 07/06/2006 | 1 0 -11 | --- | -- | --- | --- | --- | <20 | -- |
| | 07/06/2006 | 15 - 16 | --- | -- | --- | --- | --- | <20 | -- |
| | 07/06/2006 | 20 - 21 | --- | -- | --- | --- | --- | <20 | -- |
| | 07/06/2006 | 25 - 26 | --- | -- | --- | --- | --- | --- | -- |
| **Background** | 11/09/2004 | 0 - 1 | <10.0 | -- | --- | <10.0 | <20.0 | <20 | -- |
| | 07/06/2006 | 0 - 2 | --- | -- | --- | --- | --- | <20 | -- |
| | 11/09/2004 | 1 -2 | <10.0 | -- | --- | <10.0 | <20.0 | <20 | -- |
| | 11/09/2004 | 2 - 3 | <10.0 | -- | --- | <10.0 | <20.0 | <20 | -- |
| | 07/06/2006 | 5 - 6 | --- | -- | --- | --- | --- | 31.9 | -- |

**Table 1**
**Summary of Laboratory Analyses of Soil Samples**
**XTO Energy, Inc., Eunice Monument South Uunit (EMSU) Well #187**
**Unit Letter D (NW/4, NW/4), Section 5, Township 21 South, Range 36 East**
**Lea County, New Mexico**

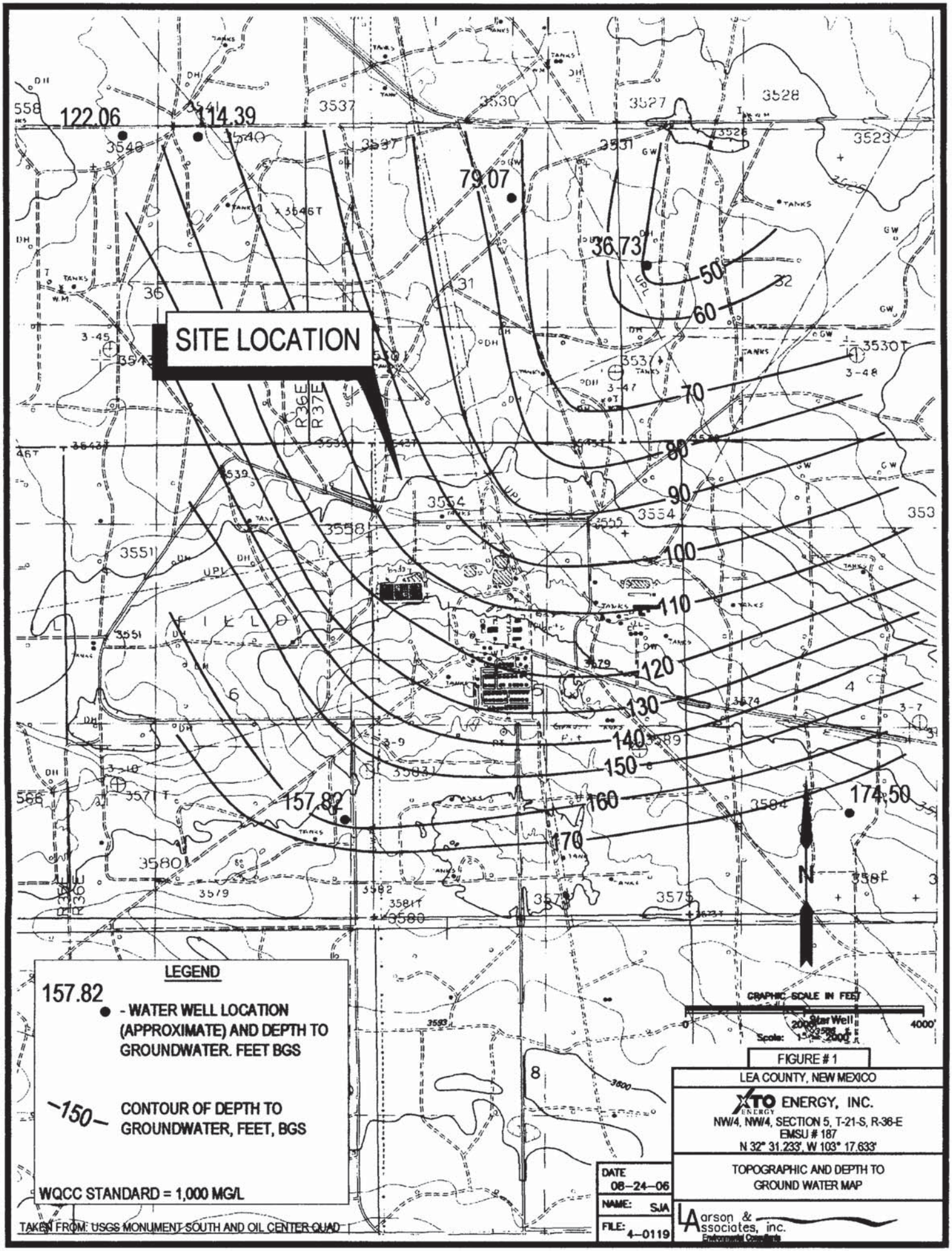


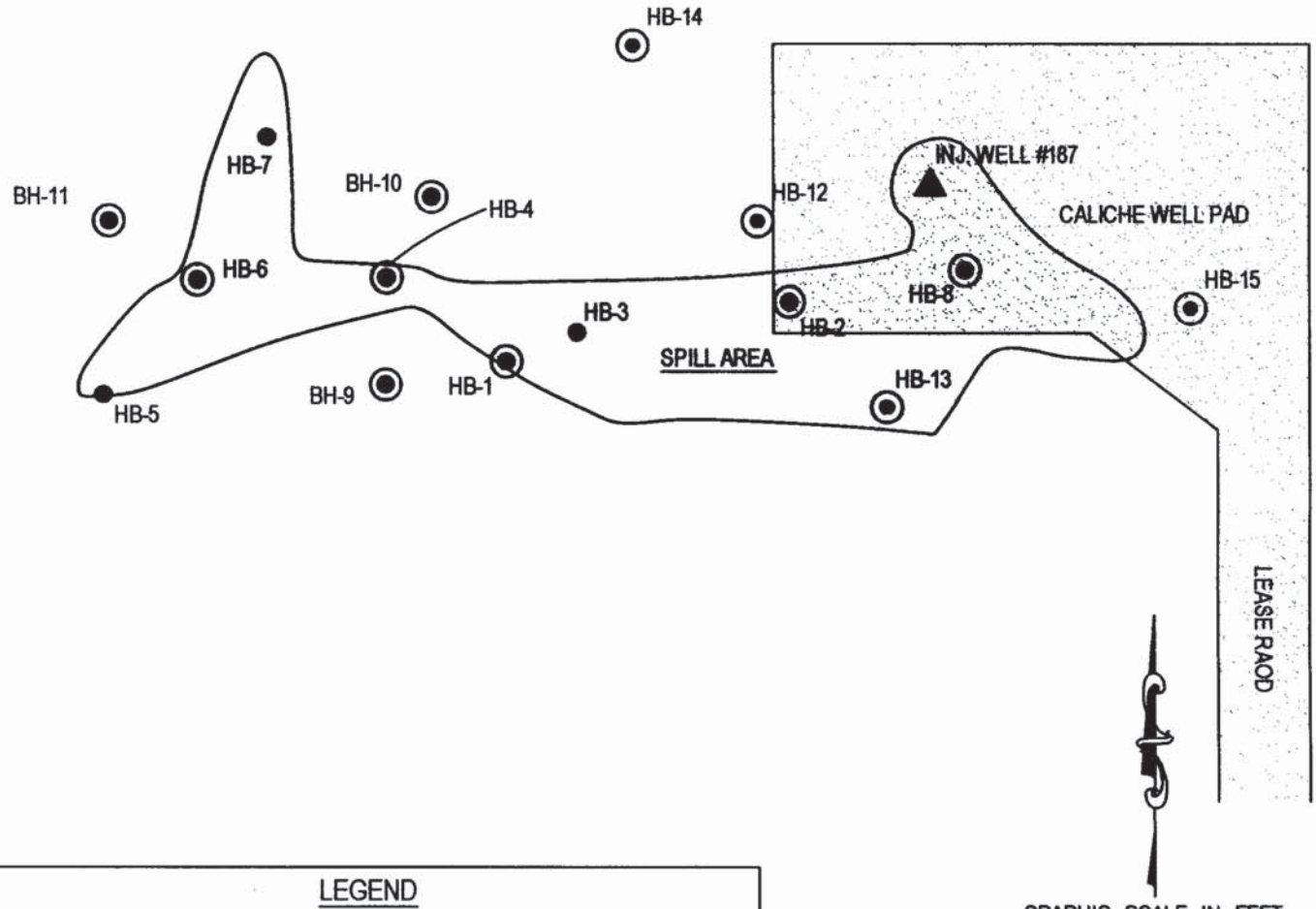
| Sample Location | Sample Date | Sample Depth (BGS) | GRO C6 - C12 (mg/Kg) | DRO C12 - C35 (mg/Kg) | DRO C12 - C28 (mg/Kg) | DRO C28 - C35 (mg/Kg) | TPH C6 - C35 (mg/Kg) | Chloride (mg/Kg) | SPLP Chloride (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| Background | 07/06/2006 | 1 0 -11 | --- | -- | --- | --- | --- | <20 | -- |
| | 07/06/2006 | 15 - 16 | --- | -- | --- | --- | --- | 85.1 | -- |
| | 07/06/2006 | 20 - 21 | --- | -- | --- | --- | --- | 42.5 | -- |
| | 07/06/2006 | 25 - 26 | --- | -- | --- | --- | --- | 21.3 | -- |
| | 07/06/2006 | 30 - 31 | --- | -- | --- | --- | --- | <20 | -- |
| | 07/06/2006 | 35 - 36 | --- | -- | --- | --- | --- | <20 | -- |
| | 07/06/2006 | 40 - 41 | --- | -- | --- | --- | --- | --- | -- |

Notes: Analysis performed by Environmental Lab of Texas I, Ltd., Odessa, Texas

1. BGS: Depth in feet below ground surface
2. TPH: Total petroleum hydrocarbons (Sum of C6 to C35)
3. mg/Kg: Milligrams per kilogram
4. mg/L: Milligrams per liter
5. <: Below method detection limit
6. --: No data available

**Figures**


122.06
114.39
79.07
36.73
157.82
174.50
SITE LOCATION
FIELD
R36E
R37E
50
60
70
80
90
100
110
120
130
140
150
160
170
LEGEND
157.82 - WATER WELL LOCATION (APPROXIMATE) AND DEPTH TO GROUNDWATER. FEET BGS
150 CONTOUR OF DEPTH TO GROUNDWATER, FEET, BGS
WQCC STANDARD = 1,000 MG/L
TAKEN FROM: USGS MONUMENT SOUTH AND OIL CENTER QUAD
GRAPHIC SCALE IN FEET
Scale: 1" = 2000'
FIGURE # 1
LEA COUNTY, NEW MEXICO
XTO ENERGY, INC.
NW/4, NW/4, SECTION 5, T-21-S, R-36-E
EMSU # 187
N 32° 31.233', W 103° 17.633'
TOPOGRAPHIC AND DEPTH TO GROUND WATER MAP
DATE 08-24-06
NAME: SJA
FILE: 4-0119
Larson & Associates, inc.




LEGEND

INJ. WELL #187 ▲ - INJECTION WELL

HB-3 ● - HAND AUGER BORING LOCATION (11/09/04)

BH-9 ◉ - MACHINE-DRILLED BORING LOCATION (12/22/04, 4/3-6/06 AND 7/6/06)

— — — - SPILL BOUNDARY

GRAPHIC SCALE IN FEET

0 40' 80'

Scale: 1" = 40'

FIGURE # 2

LEA COUNTY, NEW MEXICO

XTO ENERGY, INC.

NW/4, NW/4, SECTION 5, T-21-S, R-36-E
EMSU # 187
N 32° 31.233', W 103° 17.633'

SITE DRAWING

DATE 08-23-06

NAME: SJA

FILE: 4-0119

Larson & Associates, inc.
Environmental Consultants

**Appendix A**

**Boring Logs**

507 North Marienfeld, Suite 202 ◆ Midland, Texas 79701 ◆ Ph. (432) 687-0901 ◆ Fax (432) 687-0456

**Client:** XTO

**Project:** EMSU # 187

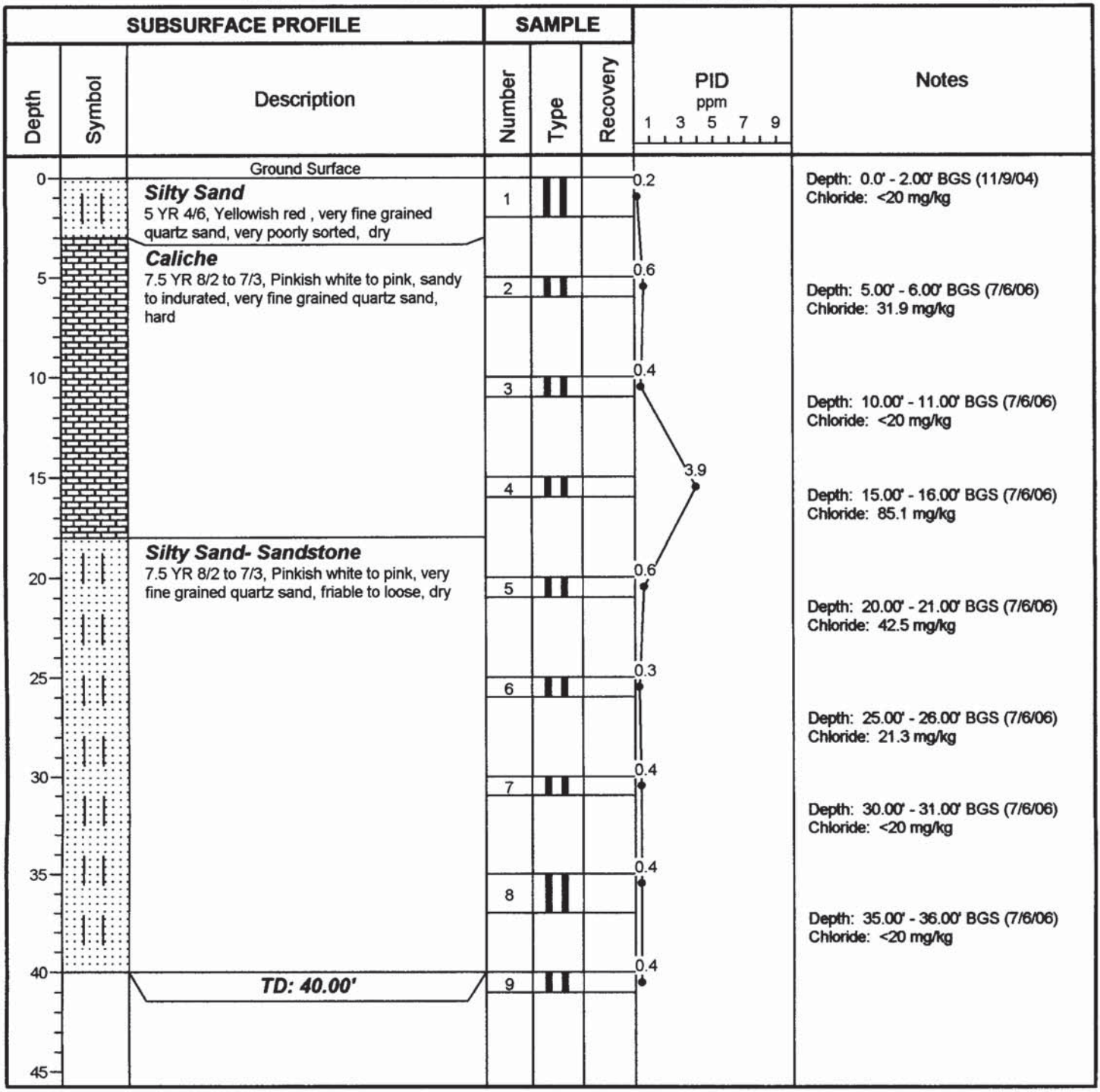
**Project No:** 4-0119

**Location:** Lea County, New Mexico

# Log: Background

**Page:** 1 of 1

**Geologist:** C. Crain/M. Larson




Drill Method: Air Rotary

Drill Date: 7/6/06

Hole Size: 2"


Larson and Associates, Inc
507 N. Marienfeld, Suite 202
Midland, Texas 79701
(432) 687-0901


Elevation: N/A

Checked by: MJL

Drilled by: Scarborough

**Client:** XTO

**Project:** EMSU # 187

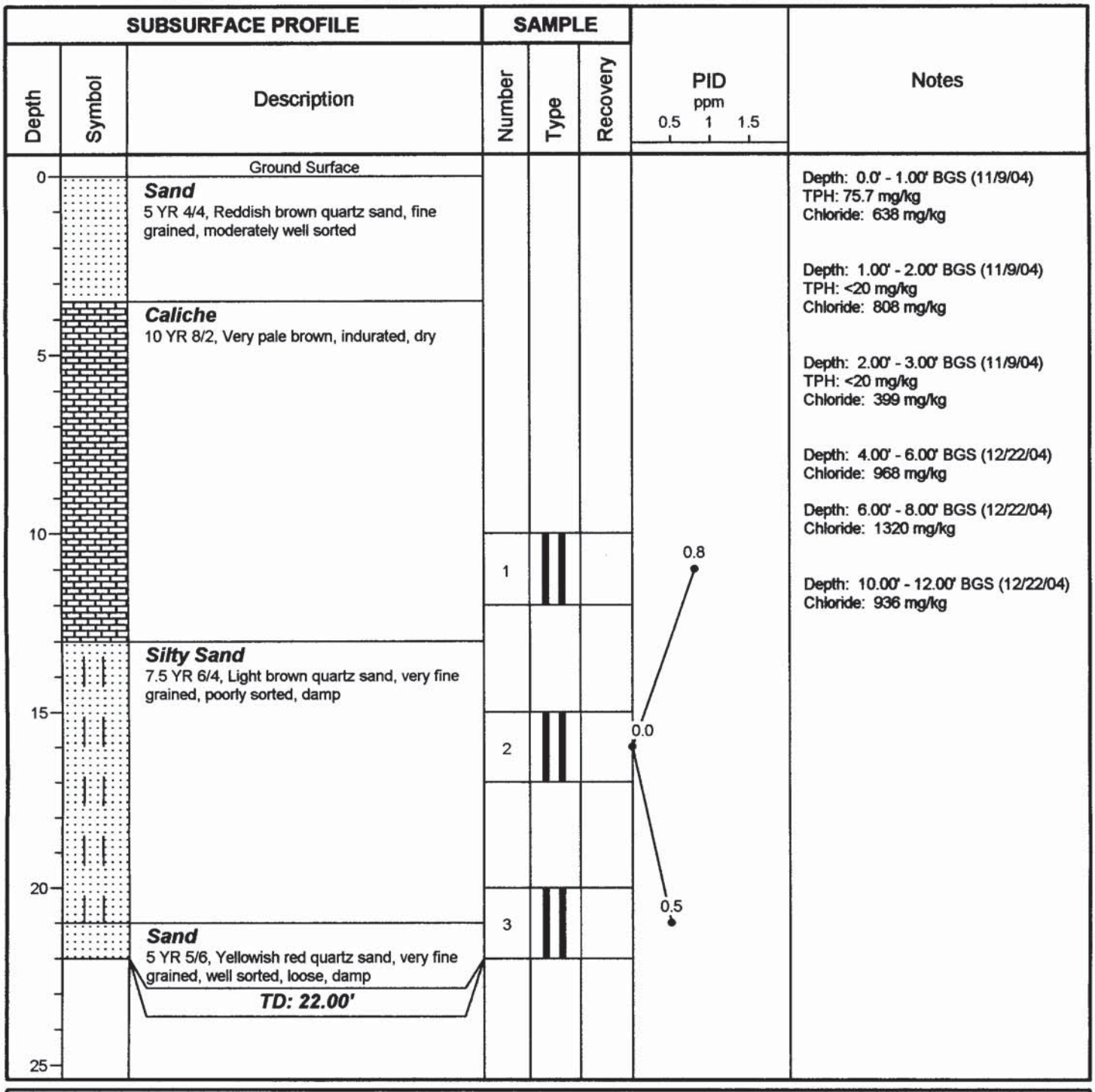
**Project No:** 4-0119

**Location:** Lea County, New Mexico

# Log: HB-1A

**Page:** 1 of 1

**Geologist:** C. Crain




Drill Method: Air Rotary

Drill Date: 4/3/06

Hole Size: 2"


Larson and Associates, Inc
507 N. Marienfeld, Suite 202
Midland, Texas 79701
(432) 687-0901


Elevation: N/A

Checked by: ML

Drilled by: Scarborough

**Client:** XTO

**Project:** EMSU # 187

**Project No:** 4-0119

**Location:** Lea County, New Mexico

# Log: HB-2A

**Page:** 1 of 1

**Geologist:** C. Crain

| Depth | Description | Number | Type | Recovery | PID (ppm) | Notes |
|---|---|---|---|---|---|---|
| 0 | Ground Surface | | | | | |
| | ***Sand*** 5 YR 4/4, Reddish brown quartz sand, fine grained, moderately well sorted | | | | | Depth: 0.0' - 1.00' BGS (11/9/04)<br>TPH: 107 mg/kg<br>Chloride: 2800 mg/kg |
| | ***Caliche*** 10 YR 8/2, Very pale brown, indurated, dry | | | | | Depth: 1.00' - 2.00' BGS (11/9/04)<br>TPH: 68 mg/kg<br>Chloride: 1300 mg/kg |
| 5 | | 1 | | | | Depth: 2.00' - 3.00' BGS (11/9/04)<br>TPH: <20 mg/kg<br>Chloride: 1130 mg/kg |
| | | | | | | Depth: 5.00' - 7.00' BGS (4/4/04)<br>Chloride: 3470 mg/kg |
| 10 | ***Silty Sand*** 7.5 YR 6/4, Light brown quartz sand, very fine grained, poorly sorted, damp | 2 | | | 0.3 | |
| | ***Sand*** 5 YR 6/6, Yellowish red quartz sand, very fine grained, well sorted, loose, damp | | | | | |
| 15 | | 3 | | | 0.3 | |
| 20 | | 4 | | | 0.3 | |
| | ***TD: 22.00'*** | | | | | |
| 25 | | | | | | |

Drill Method: Air Rotary

Drill Date: 4/4/06

Hole Size: 2"

Larson and Associates, Inc
507 N. Marienfeld, Suite 202
Midland, Texas 79701
(432) 687-0901

Elevation: N/A

Checked by: ML

Drilled by: Scarborough

**Client:** XTO

**Project:** EMSU # 187

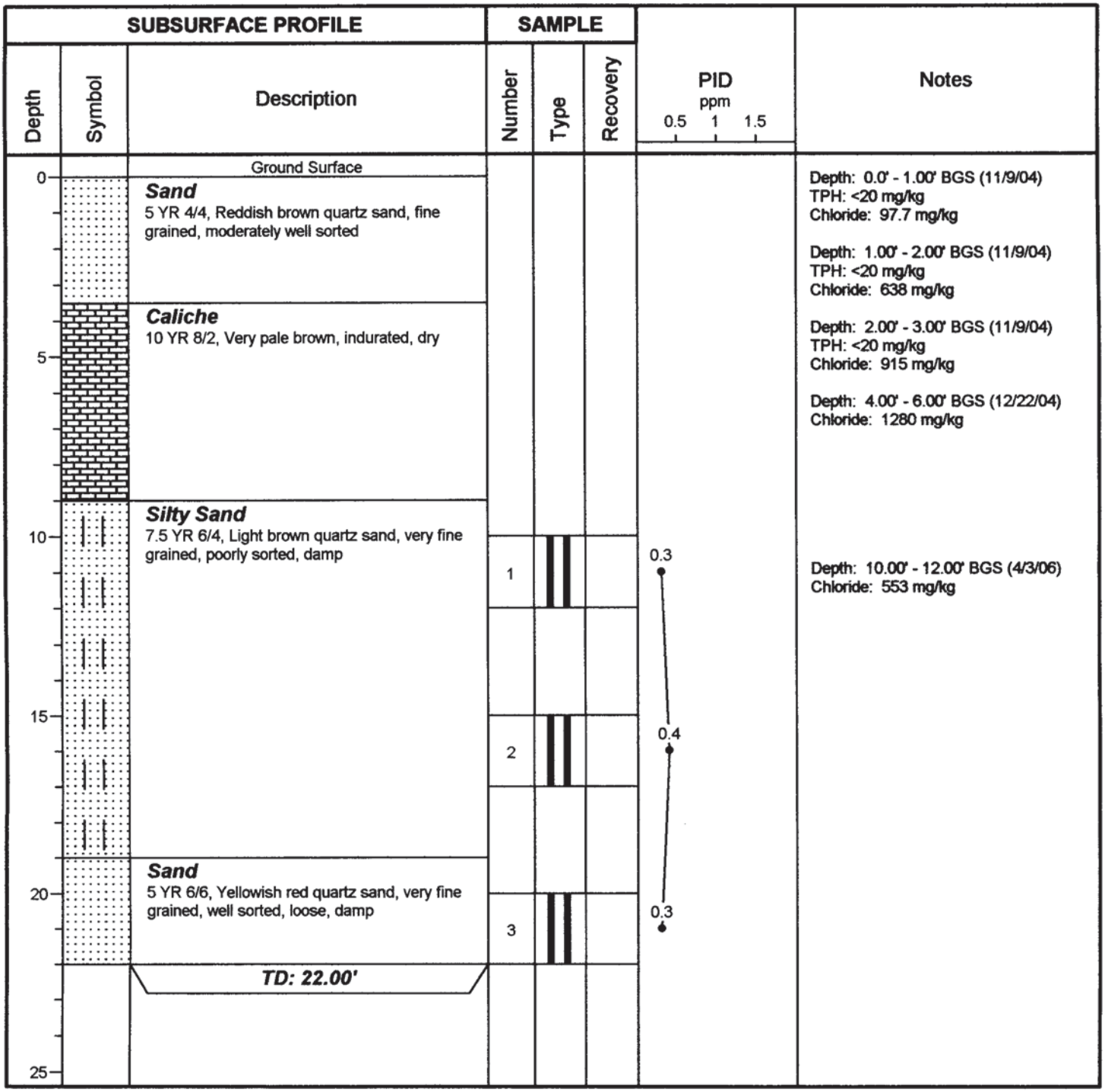
**Project No:** 4-0119

**Location:** Lea County, New Mexico

# Log: HB-4A

**Page:** 1 of 1

**Geologist:** C. Crain




Drill Method: Air Rotary

Drill Date: 4/3/06

Hole Size: 2"


Larson and Associates, Inc
507 N. Marienfeld, Suite 202
Midland, Texas 79701
(432) 687-0901


Elevation: N/A

Checked by: ML

Drilled by: Scarborough

**Client:** XTO

**Project:** EMSU # 187

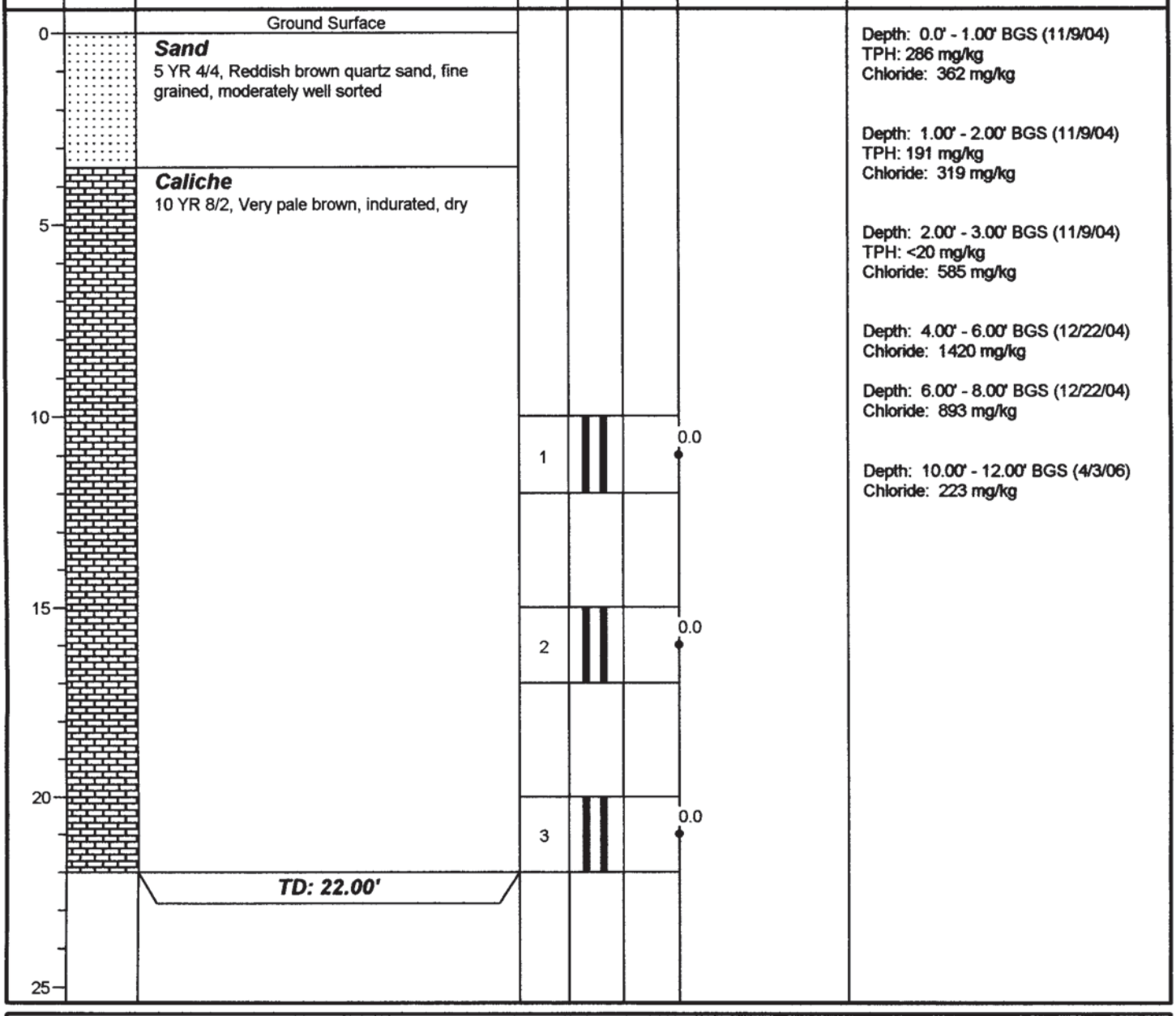
**Project No:** 4-0119

**Location:** Lea County, New Mexico

# Log: HB-6A

**Page:** 1 of 1

**Geologist:** C. Crain




Drill Method: Air Rotary

Drill Date: 4/3/06

Hole Size: 2"


Larson and Associates, Inc
507 N. Marienfeld, Suite 202
Midland, Texas 79701
(432) 687-0901


Elevation: N/A

Checked by: ML

Drilled by: Scarborough

**Client:** XTO

**Project:** EMSU # 187

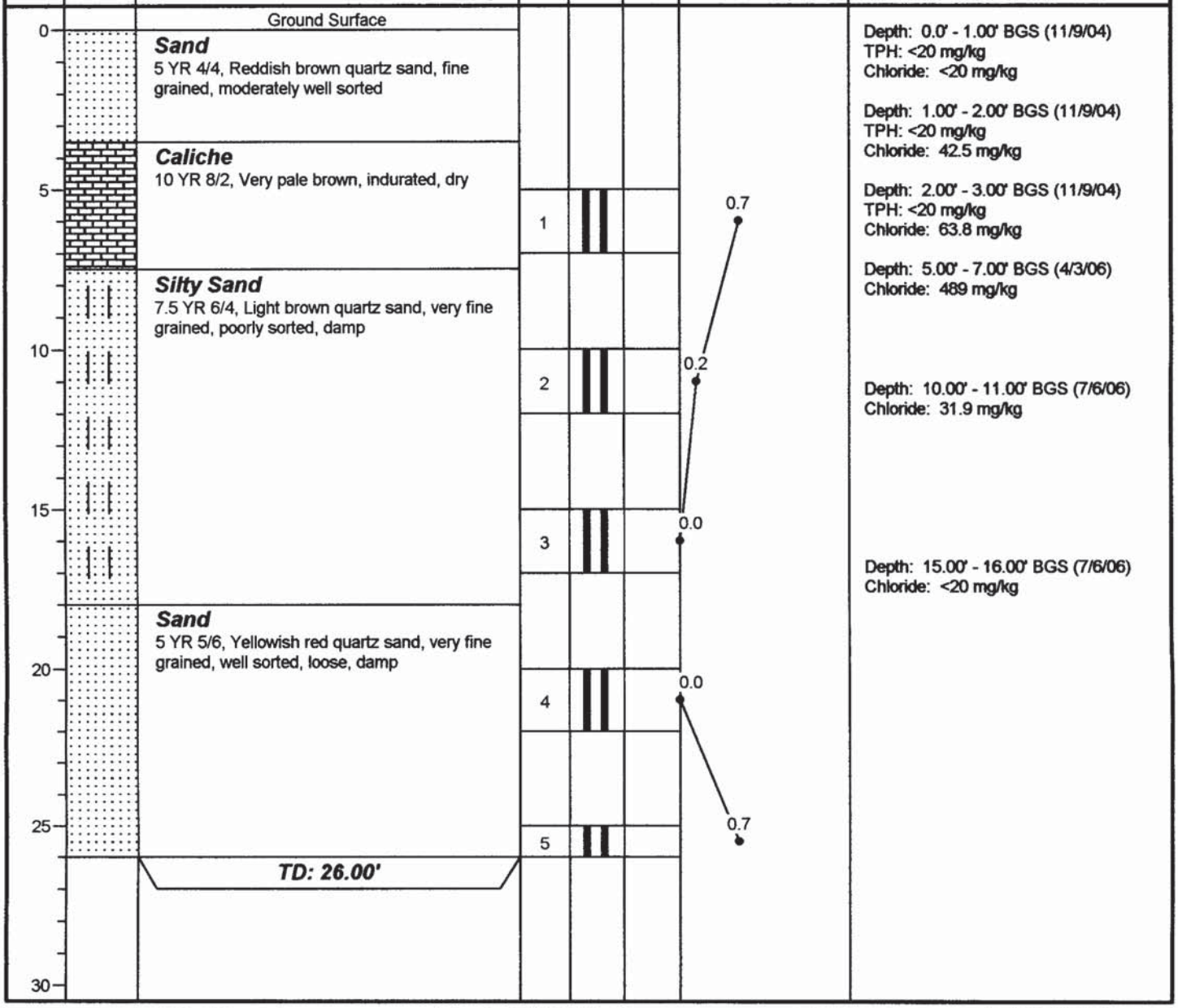
**Project No:** 4-0119

**Location:** Lea County, New Mexico

# Log: HB-8A

**Page:** 1 of 1

**Geologist:** C. Crain/M. Larson




Drill Method: Air Rotary

Drill Date: 4/3/06

Hole Size: 2"

Larson and Associates, Inc
507 N. Marienfeld, Suite 202
Midland, Texas 79701
(432) 687-0901

Elevation: N/A

Checked by: ML

Drilled by: Scarborough

**Client:** XTO

**Project:** EMSU # 187

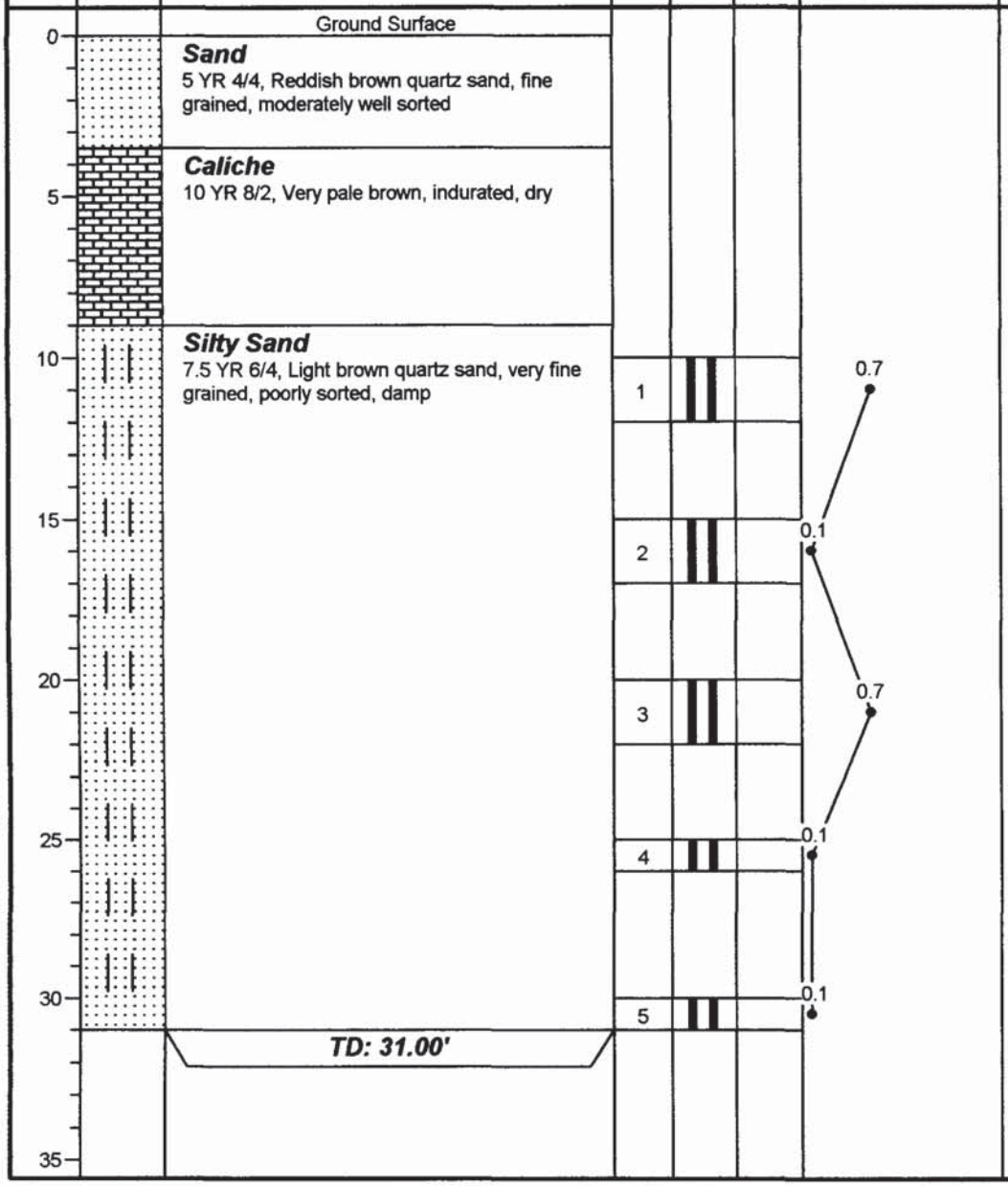
**Project No:** 4-0119

**Location:** Lea County, New Mexico

# Log: HB-9A

**Page:** 1 of 1

**Geologist:** C. Crain/M. Larson




Drill Method: Air Rotary

Drill Date: 4/3/06

Hole Size: 2"


Larson and Associates, Inc
507 N. Marienfeld, Suite 202
Midland, Texas 79701
(432) 687-0901


Elevation: N/A

Checked by: ML

Drilled by: Scarborough

**Client:** XTO

**Project:** EMSU # 187

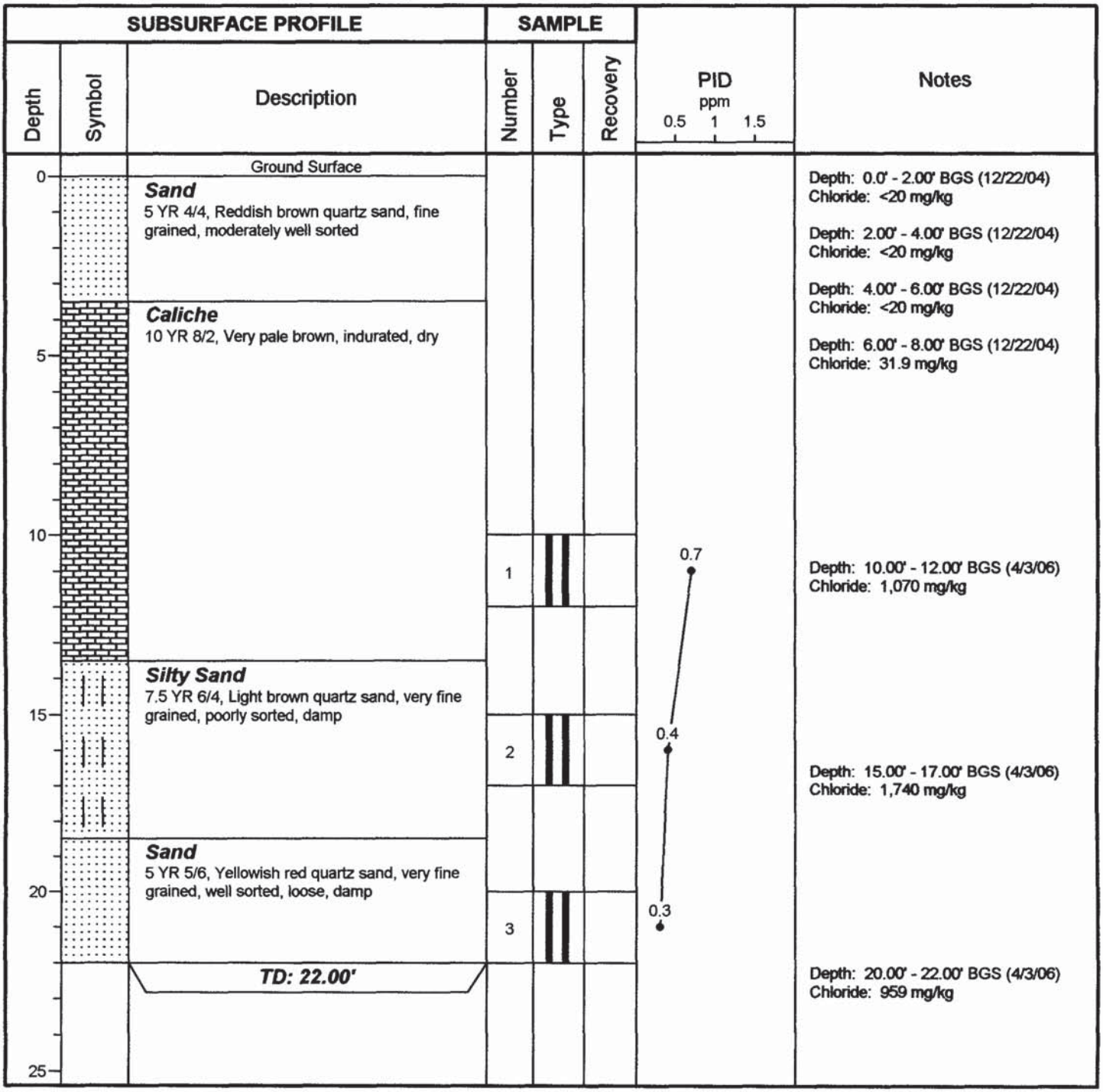
**Project No:** 4-0119

**Location:** Lea County, New Mexico

# Log: HB-10A

**Page:** 1 of 1

**Geologist:** C. Crain




Drill Method: Air Rotary

Drill Date: 4/4/06

Hole Size: 2"


Larson and Associates, Inc
507 N. Marienfeld, Suite 202
Midland, Texas 79701
(432) 687-0901


Elevation: N/A

Checked by: ML

Drilled by: Scarborough

**Client:** XTO

**Project:** EMSU # 187

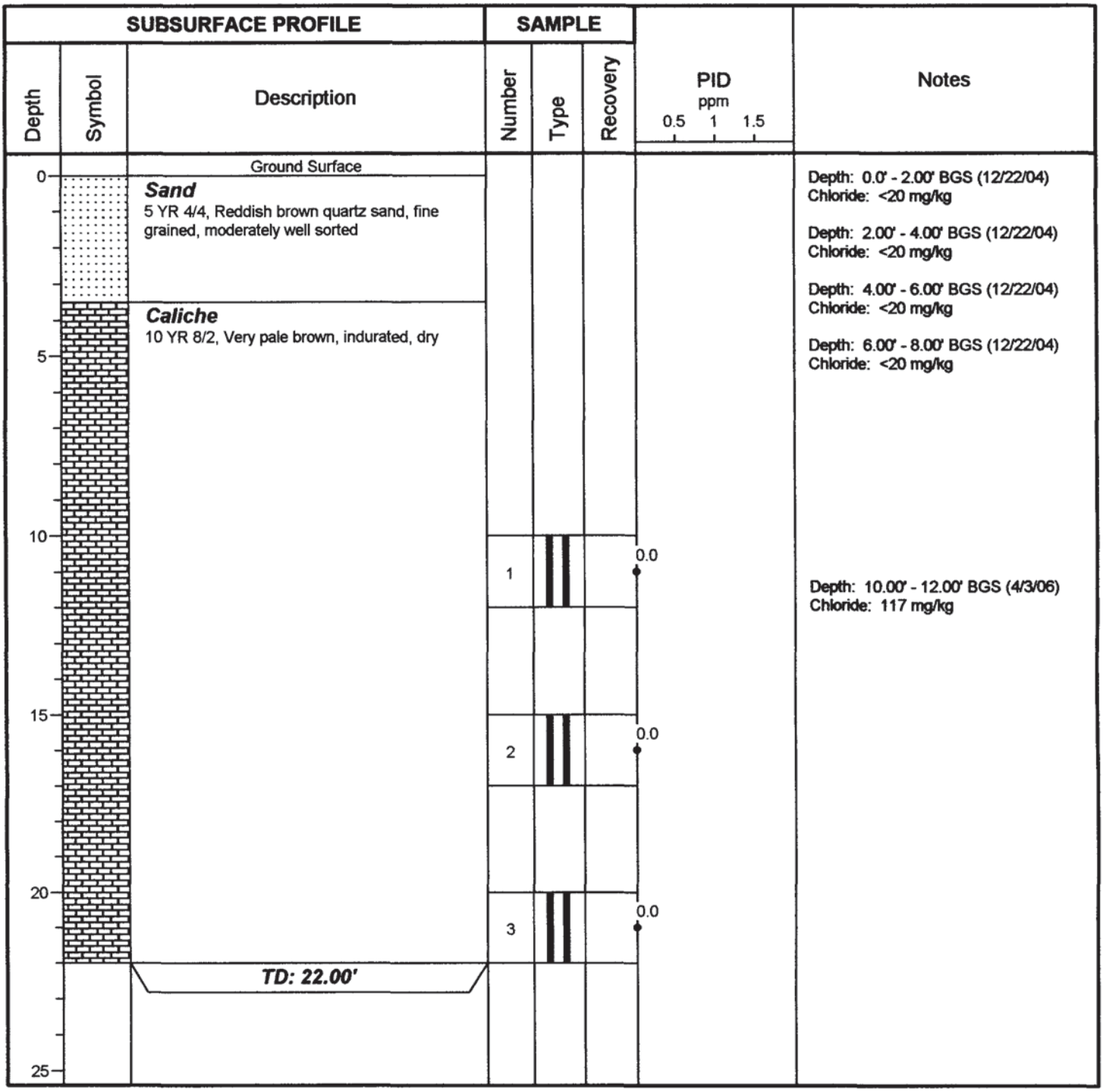
**Project No:** 4-0119

**Location:** Lea County, New Mexico

# Log: HB-11A

**Page:** 1 of 1

**Geologist:** C. Crain




Drill Method: Air Rotary

Drill Date: 4/3/06

Hole Size: 2"


Larson and Associates, Inc
507 N. Marienfeld, Suite 202
Midland, Texas 79701
(432) 687-0901


Elevation: N/A

Checked by: ML

Drilled by: Scarborough

**Client:** XTO

**Project:** EMSU # 187

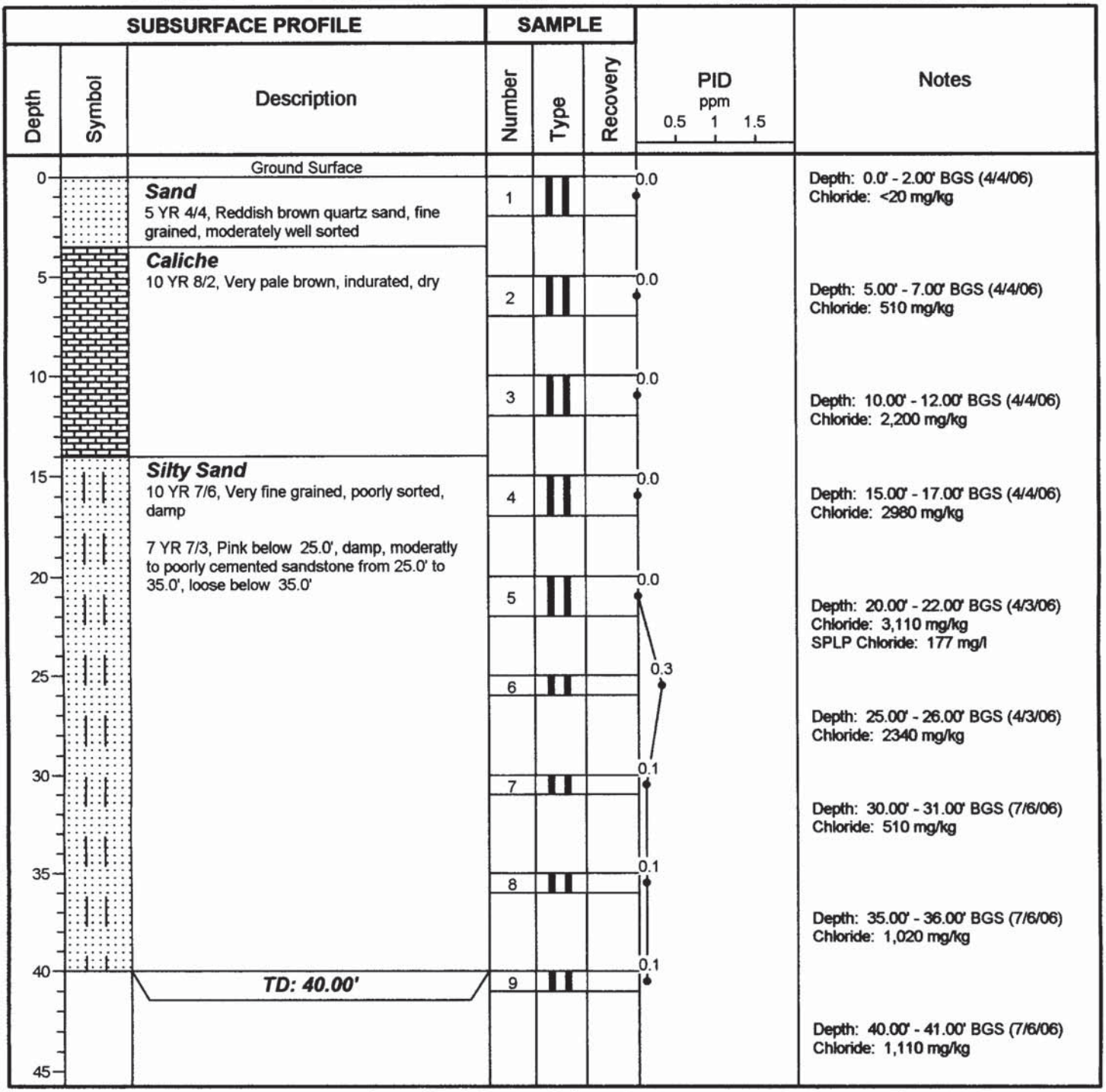
**Project No:** 4-0119

**Location:** Lea County, New Mexico

# Log: HB-12

**Page:** 1 of 1

**Geologist:** C. Crain/M. Larson




Drill Method: Air Rotary

Drill Date: 4/4/06

Hole Size: 2"


Larson and Associates, Inc
507 N. Marienfeld, Suite 202
Midland, Texas 79701
(432) 687-0901


Elevation: N/A

Checked by: ML

Drilled by: Scarborough

**Client:** XTO

**Project:** EMSU # 187

**Project No:** 4-0119

**Location:** Lea County, New Mexico

# Log: HB-13

**Page:** 1 of 1

**Geologist:** C. Crain

| Depth | Description | Sample Number | Sample Type | Recovery | PID (ppm) | Notes |
|---|---|---|---|---|---|---|
| 0 | Ground Surface | | | | | |
| | ***Sand*** 5 YR 4/4, Reddish brown quartz sand, fine grained, moderately well sorted | 1 | | | 0.6 | Depth: 0.0' - 2.00' BGS (4/3/06) Chloride: <20 mg/kg |
| 5 | ***Caliche*** 10 YR 8/2, Very pale brown, indurated, dry | 2 | | | 1.0 | Depth: 5.00' - 7.00' BGS (4/3/06) Chloride: 404 mg/kg |
| 10 | ***Silty Sand*** 7.5 YR 6/4, Light brown quartz sand, very fine grained, poorly sorted, damp | 3 | | | 0.0 | Depth: 10.00' - 12.00' BGS (4/3/06) Chloride: 170 mg/kg |
| 15 | | 4 | | | 0.0 | |
| 20 | ***Sand*** 5 YR 5/6, Yellowish red quartz sand, very fine grained, well sorted, loose, damp | 5 | | | 0.0 | |
| 25 | ***TD: 22.00'*** | | | | | |

PID ppm scale: 0.5, 1, 1.5

Drill Method: Air Rotary

Drill Date: 4/3/06

Hole Size: 2"

Larson and Associates, Inc
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Midland, Texas 79701
(432) 687-0901

Elevation: N/A

Checked by: CC

Drilled by: Scarborough

**Client:** XTO

**Project:** EMSU # 187

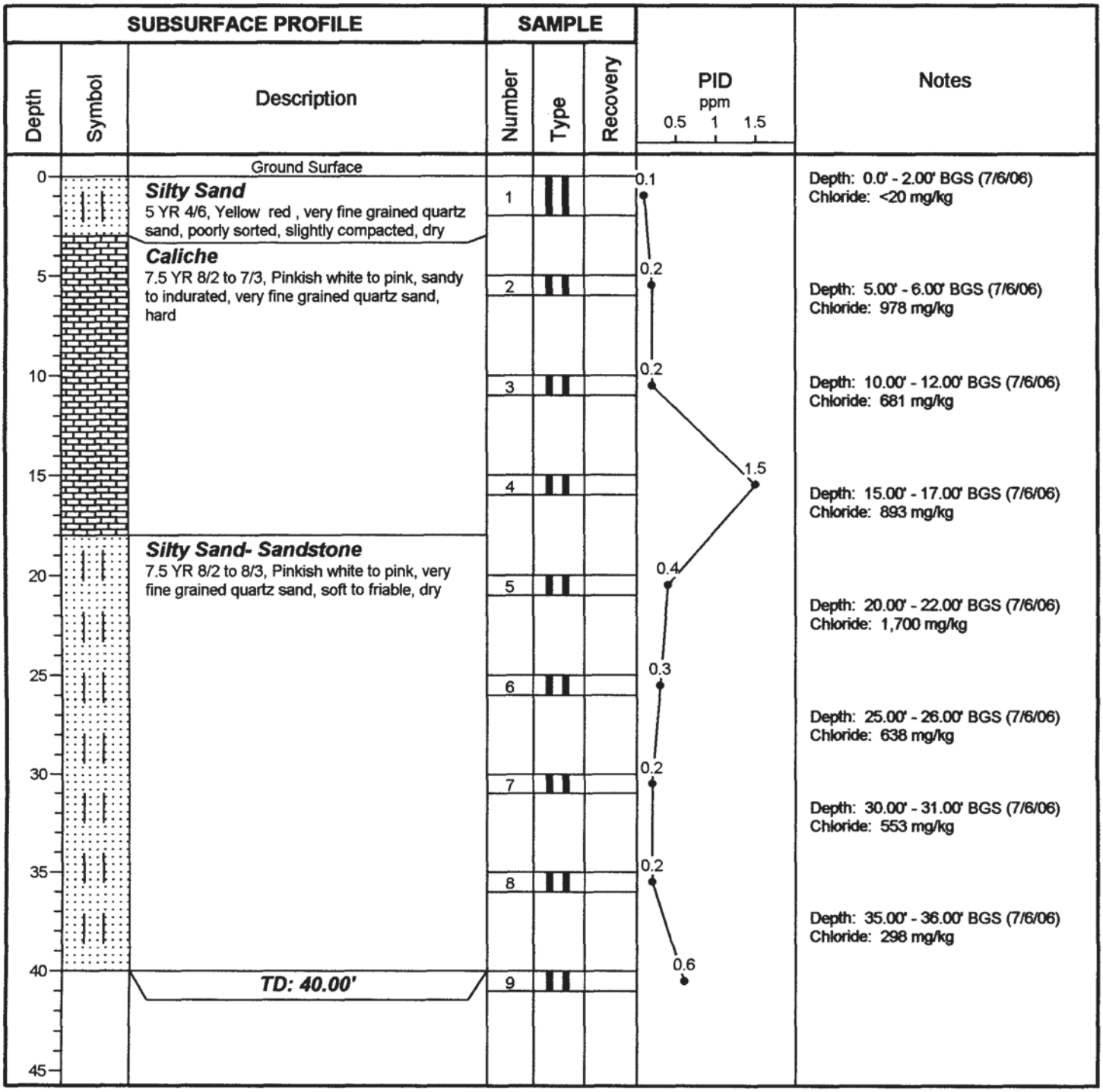
**Project No:** 4-0119

**Location:** Lea County, New Mexico

# Log: HB-14

**Page:** 1 of 1

**Geologist:** M. Larson




Drill Method: Air Rotary

Drill Date: 7/6/06

Hole Size: 2"


Larson and Associates, Inc
507 N. Marienfeld, Suite 202
Midland, Texas 79701
(432) 687-0901


Elevation: N/A

Checked by: MJL

Drilled by: Scarborough

**Client:** XTO

**Project:** EMSU # 187

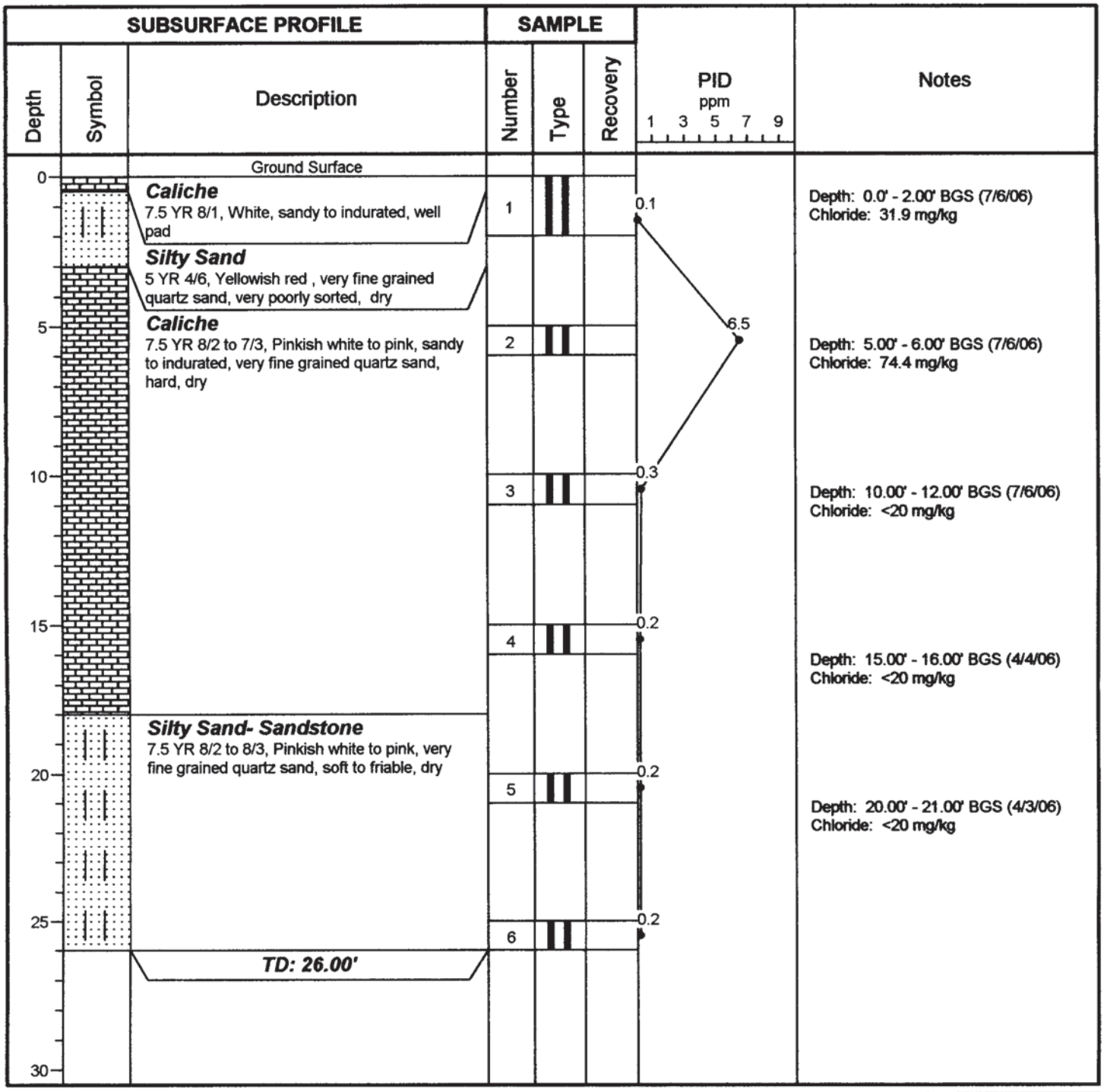
**Project No:** 4-0119

**Location:** Lea County, New Mexico

# Log: HB-15

**Page:** 1 of 1

**Geologist:** M. Larson




Drill Method: Air Rotary

Drill Date: 7/6/06

Hole Size: 2"

Larson and Associates, Inc
507 N. Marienfeld, Suite 202
Midland, Texas 79701
(432) 687-0901

Elevation: N/A

Checked by: MJL

Drilled by: Scarborough

## Appendix B

## Laboratory Reports

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

# Analytical Report

**Prepared for:**

Cindy Crain

Larson & Associates, Inc.

P.O. Box 50685

Midland, TX 79710

Project: XTO/ Well #187

Project Number: 4-0119

Location: None Given

Lab Order Number: 4K10004

Report Date: 11/12/04

# Environmental Lab of Texas
## Variance / Corrective Action Report – Sample Log-In

Client: Larson + Associates

Date/Time: 11-10-04 @ 0945

Order #: 4K 10004

Initials: JMM

### Sample Receipt Checklist

| | | | |
|---|---|---|---|
| Temperature of container/cooler? | (Yes) | No | 1.5 C |
| Shipping container/cooler in good condition? | (Yes) | No | |
| Custody Seals intact on shipping container/cooler? | Yes | No | (Not present) |
| Custody Seals intact on sample bottles? | Yes | No | (Not present) |
| Chain of custody present? | (Yes) | No | |
| Sample Instructions complete on Chain of Custody? | (Yes) | No | |
| Chain of Custody signed when relinquished and received? | (Yes) | No | |
| Chain of custody agrees with sample label(s) | (Yes) | No | |
| Container labels legible and intact? | (Yes) | No | |
| Sample Matrix and properties same as on chain of custody? | (Yes) | No | |
| Samples in proper container/bottle? | (Yes) | No | |
| Samples properly preserved? | (Yes) | No | |
| Sample bottles intact? | (Yes) | No | |
| Preservations documented on Chain of Custody? | (Yes) | No | |
| Containers documented on Chain of Custody? | (Yes) | No | |
| Sufficient sample amount for indicated test? | (Yes) | No | |
| All samples received within sufficient hold time? | (Yes) | No | |
| VOC samples have zero headspace? | (Yes) | No | Not Applicable |

Other observations:

_____

_____

_____

### Variance Documentation:

Contact Person: -_____ Date/Time: _____ Contacted by: _____

Regarding:

_____

_____

_____

Corrective Action Taken:

_____

_____

_____

_____

_____

_____

_____

_____

# CHAIN—OF—CUSTODY RECORD

CLIENT NAME: XTO

SITE MANAGER: Cindy Crain

PROJECT NO.: 4-0119

PROJECT NAME: Well #187

PAGE 1 OF 2

LAB. PO #

Larson & Associates, Inc. Environmental Consultants
Fax: 432-687-0456
432-687-0901
507 N. Marienfeld, Ste. 202 • Midland, TX 79701

| DATE | TIME | WATER | SOIL | OTHER | SAMPLE IDENTIFICATION | NUMBER OF CONTAINERS | PARAMETERS/METHOD NUMBER: TPH 8015M | PARAMETERS/METHOD NUMBER: Chloride | LAB. I.D. NUMBER (LAB USE ONLY) | REMARKS (I.E., FILTERED, UNFILTERED, PRESERVED, UNPRESERVED, GRAB COMPOSITE) |
|---|---|---|---|---|---|---|---|---|---|---|
| 11/9/04 | 1010 | | ✓ | | HB-1 0-1' | 1 | ✓ | ✓ | 4K 10004-01 | |
| | 1018 | | | | 1-2' | | | | -02 | |
| | 1032 | | | | 2-3' | | | | -03 | |
| | 1049 | | | | HB-2 0-1 | | | | -04 | |
| | 1054 | | | | 1-2 | | | | -05 | |
| | 1106 | | | | 2-3 | | | | -06 | |
| | 1111 | | | | HB-3 0-1 | | | | -07 | |
| | 1117 | | | | 1-2 | | | | -08 | |
| | 1130 | | | | 2-3 | | | | -09 | |
| | 1137 | | | | HB-4 0-1 | | | | -10 | |
| | 1140 | | | | 1-2 | | | | -11 | |
| | 1248 | | | | 2-3 | | | | -12 | |
| | 1252 | | | | HB-5 0-1 | | | | -13 | |
| | 1258 | | | | 1-2 | | | | -14 | |
| | 1318 | | | | 2-3 | | | | -15 | |
| | 1321 | | | | HB-6 0-1' | | | | -16 | |
| | 1324 | | | | 1-2' | | | | -17 | |
| | 1330 | | | | 2-3' | | | | -18 | |

SAMPLED BY: (Signature) DATE: 11/9/04 TIME: 1430

RELINQUISHED BY: (Signature) DATE: 11/9/04 TIME: 1715

RECEIVED BY: (Signature) DATE: TIME:

RELINQUISHED BY: (Signature) DATE: TIME:

RECEIVED BY: (Signature) DATE: TIME:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS AIRBILL #:
HAND DELIVERED UPS OTHER:

COMMENTS:

TURNAROUND TIME NEEDED

**WHITE** – RECEIVING LAB
**YELLOW** – RECEIVING LAB (TO BE RETURNED TO LA AFTER RECEIPT)
**PINK** – PROJECT MANAGER
**GOLD** – QA/QC COORDINATOR

RECEIVING LABORATORY: Env Lab of Tx
ADDRESS: 12600 W I-20 E
CITY: Odessa STATE: Tx ZIP: 79765
CONTACT: PHONE: 563-1800

RECEIVED BY: (Signature) Jeanne McMurray
DATE: 11-09-04 TIME: 1715

SAMPLE CONDITION WHEN RECEIVED:
4oz glass on ice 1.5°C

LA CONTACT PERSON: Cindy Crain

SAMPLE TYPE:

# CHAIN—OF—CUSTODY RECORD

LA Larson & Associates, Inc.
Environmental Consultants
Fax: 432-687-0456
432-687-0901
507 N. Marienfeld, Ste. 202 • Midland, TX 79701

CLIENT NAME: XTO

SITE MANAGER: Cindy Crain

PROJECT NO.: 2-0119

PROJECT NAME: Well #187

PAGE 2 OF 2

LAB. PO #

PARAMETERS/METHOD NUMBER

| DATE | TIME | WATER | SOIL | OTHER | SAMPLE IDENTIFICATION | NUMBER OF CONTAINERS | TPH 8015M ✓ | Chloride ✓ | LAB. I.D. NUMBER (LAB USE ONLY) | REMARKS (I.E., FILTERED, UNFILTERED, PRESERVED, UNPRESERVED, GRAB COMPOSITE) |
|---|---|---|---|---|---|---|---|---|---|---|
| 11/9 | 1333 | | ✓ | | HB-7 0-1 | 1 | ✓ | ✓ | 4K10004-19 | |
| | 1338 | | | | 1-2 | | | | -20 | |
| | 1343 | | | | 2-3 | | | | -21 | |
| | 1354 | | | | HB-8 0-1 | | | | -22 | |
| | 1350 | | | | 1-2 | | | | -23 | |
| | 1401 | | | | 2-3 | | | | -24 | |
| | 1405 | | | | Background 0-1 | | | | -25 | |
| | 1410 | | | | 1-2 | | | | -26 | |
| | 1413 | | | | 2-3 | | | | -27 | |

SAMPLED BY: (Signature) [signature] DATE: 11/9/04 TIME: 1430

RELINQUISHED BY: (Signature) [signature] DATE: 11/9/04 TIME: 1715

RECEIVED BY: (Signature) DATE: TIME:

RELINQUISHED BY: (Signature) DATE: TIME:

RECEIVED BY: (Signature) [signature] DATE: TIME:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS AIRBILL #:
HAND DELIVERED UPS OTHER:

COMMENTS:

TURNAROUND TIME NEEDED

**WHITE** – RECEIVING LAB
**YELLOW** – RECEIVING LAB (TO BE RETURNED TO LA AFTER RECEIPT)
**PINK** – PROJECT MANAGER
**GOLD** – QA/QC COORDINATOR

RECEIVING LABORATORY: Env. Lab of Tx
ADDRESS: 12600 W I-20 E Ode Texas
CITY: Odessa STATE: TX ZIP: 79765
CONTACT: PHONE: 563-1800

RECEIVED BY: (Signature) [signature]
DATE: 11-09-04 TIME: 1715

SAMPLE CONDITION WHEN RECEIVED:
4oz glass on ice 1.5°C

LA CONTACT PERSON: Cindy Crain

SAMPLE TYPE:

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

# Analytical Report

**Prepared for:**

Cindy Crain

Larson & Associates, Inc.

P.O. Box 50685

Midland, TX 79710

Project: XTO/ Well #187

Project Number: 4-0119

Location: None Given

Lab Order Number: 4L23002

Report Date: 12/28/04

| | | |
|---|---|---|
| Larson & Associates, Inc. | Project: XTO/ Well #187 | Fax: (432) 687-0456 |
| P.O. Box 50685 | Project Number: 4-0119 | **Reported:** |
| Midland TX, 79710 | Project Manager: Cindy Crain | 12/28/04 12:22 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| BBH-1 4-6' | 4L23002-01 | Soil | 12/22/04 14:49 | 12/23/04 08:15 |
| BBH-1 6-8' | 4L23002-02 | Soil | 12/22/04 14:49 | 12/23/04 08:15 |
| BBH-6 4-6' | 4L23002-03 | Soil | 12/22/04 15:13 | 12/23/04 08:15 |
| BBH-6 6-8' | 4L23002-04 | Soil | 12/22/04 15:13 | 12/23/04 08:15 |
| BBH-4 4-6' | 4L23002-05 | Soil | 12/22/04 15:27 | 12/23/04 08:15 |
| BH-9 0-2' | 4L23002-06 | Soil | 12/22/04 15:40 | 12/23/04 08:15 |
| BH-9 2-4' | 4L23002-07 | Soil | 12/22/04 15:40 | 12/23/04 08:15 |
| BH-9 4-6' | 4L23002-08 | Soil | 12/22/04 15:51 | 12/23/04 08:15 |
| BH-9 6-8' | 4L23002-09 | Soil | 12/22/04 15:51 | 12/23/04 08:15 |
| BH-10 0-2' | 4L23002-10 | Soil | 12/22/04 16:07 | 12/23/04 08:15 |
| BH-10 2-4' | 4L23002-11 | Soil | 12/22/04 16:07 | 12/23/04 08:15 |
| BH-10 4-6' | 4L23002-12 | Soil | 12/22/04 16:18 | 12/23/04 08:15 |
| BH-10 6-8' | 4L23002-13 | Soil | 12/22/04 16:18 | 12/23/04 08:15 |
| BH-11 0-2' | 4L23002-14 | Soil | 12/22/04 16:30 | 12/23/04 08:15 |
| BH-11 2-4' | 4L23002-15 | Soil | 12/22/04 16:30 | 12/23/04 08:15 |
| BH-11 4-6' | 4L23002-16 | Soil | 12/22/04 16:30 | 12/23/04 08:15 |
| BH-11 6-8' | 4L23002-17 | Soil | 12/22/04 16:30 | 12/23/04 08:15 |



12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

| | | |
|---|---|---|
| Larson & Associates, Inc. | Project: XTO/ Well #187 | Fax: (432) 687-0456 |
| P.O. Box 50685 | Project Number: 4-0119 | **Reported:** |
| Midland TX, 79710 | Project Manager: Cindy Crain | 12/28/04 12:22 |

## General Chemistry Parameters by EPA / Standard Methods
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **BBH-1 4-6' (4L23002-01) Soil** | | | | | | | | | |
| **Chloride** | **968** | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |
| **BBH-1 6-8' (4L23002-02) Soil** | | | | | | | | | |
| **Chloride** | **1320** | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |
| **BBH-6 4-6' (4L23002-03) Soil** | | | | | | | | | |
| **Chloride** | **1420** | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |
| **BBH-6 6-8' (4L23002-04) Soil** | | | | | | | | | |
| **Chloride** | **893** | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |
| **BBH-4 4-6' (4L23002-05) Soil** | | | | | | | | | |
| **Chloride** | **1280** | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |
| **BH-9 0-2' (4L23002-06) Soil** | | | | | | | | | |
| **Chloride** | **63.8** | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |
| **BH-9 2-4' (4L23002-07) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |
| **BH-9 4-6' (4L23002-08) Soil** | | | | | | | | | |
| **Chloride** | **21.3** | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |
| **BH-9 6-8' (4L23002-09) Soil** | | | | | | | | | |
| **Chloride** | **170** | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |
| **BH-10 0-2' (4L23002-10) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |







12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

| | | |
|---|---|---|
| Larson & Associates, Inc. | Project: XTO/ Well #187 | Fax: (432) 687-0456 |
| P.O. Box 50685 | Project Number: 4-0119 | **Reported:** |
| Midland TX, 79710 | Project Manager: Cindy Crain | 12/28/04 12:22 |

## General Chemistry Parameters by EPA / Standard Methods
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **BH-10 2-4' (4L23002-11) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |
| **BH-10 4-6' (4L23002-12) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |
| **BH-10 6-8' (4L23002-13) Soil** | | | | | | | | | |
| **Chloride** | **31.9** | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |
| **BH-11 0-2' (4L23002-14) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |
| **BH-11 2-4' (4L23002-15) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |
| **BH-11 4-6' (4L23002-16) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |
| **BH-11 6-8' (4L23002-17) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EL42307 | 12/23/04 | 12/23/04 | SW 846 9253 | |







12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: XTO/ Well #187
Project Number: 4-0119
Project Manager: Cindy Crain

Fax: (432) 687-0456
**Reported:**
12/28/04 16:28

## General Chemistry Parameters by EPA / Standard Methods - Quality Control
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch EL42307 - Water Extraction** | | | | | | | | | | |
| **Blank (EL42307-BLK1)** | | | | Prepared & Analyzed: 12/23/04 | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | | | | | | | |
| **Blank (EL42307-BLK2)** | | | | Prepared & Analyzed: 12/23/04 | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | | | | | | | |
| **Matrix Spike (EL42307-MS1)** | | | **Source: 4L22017-02** | Prepared & Analyzed: 12/23/04 | | | | | | |
| Chloride | 500 | 20.0 | mg/kg Wet | 500 | 74.4 | 85.1 | 80-120 | | | |
| **Matrix Spike (EL42307-MS2)** | | | **Source: 4L22017-21** | Prepared & Analyzed: 12/23/04 | | | | | | |
| Chloride | 436 | 20.0 | mg/kg Wet | 500 | 0.00 | 87.2 | 80-120 | | | |
| **Matrix Spike Dup (EL42307-MSD1)** | | | **Source: 4L22017-02** | Prepared & Analyzed: 12/23/04 | | | | | | |
| Chloride | 489 | 20.0 | mg/kg Wet | 500 | 74.4 | 82.9 | 80-120 | 2.22 | 20 | |
| **Matrix Spike Dup (EL42307-MSD2)** | | | **Source: 4L22017-21** | Prepared & Analyzed: 12/23/04 | | | | | | |
| Chloride | 447 | 20.0 | mg/kg Wet | 500 | 0.00 | 89.4 | 80-120 | 2.49 | 20 | |
| **Reference (EL42307-SRM1)** | | | | Prepared & Analyzed: 12/23/04 | | | | | | |
| Chloride | 5000 | | mg/kg | 5000 | | 100 | 80-120 | | | |
| **Reference (EL42307-SRM2)** | | | | Prepared & Analyzed: 12/23/04 | | | | | | |
| Chloride | 5000 | | mg/kg | 5000 | | 100 | 80-120 | | | |

## Notes and Definitions

| | |
|---|---|
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| LCS | Laboratory Control Spike |
| MS | Matrix Spike |
| Dup | Duplicate |

Report Approved By: Celey D. Keene Date: 12/28/04

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sandra Sanchez, Lab Tech.

# CHAIN—OF—CUSTODY RECORD

Larson & Associates, Inc.
Environmental Consultants
Fax: 432-687-0456
432-687-0901
507 N. Marienfeld, Ste. 202 • Midland, TX 79701

CLIENT NAME: XTO

SITE MANAGER: Mark Larson

PROJECT NO.: 4-0119

PROJECT NAME: Well #187

PAGE 1 OF 1

LAB. PO #

PARAMETERS/METHOD NUMBER

| DATE | TIME | WATER | SOIL | OTHER | SAMPLE IDENTIFICATION | NUMBER OF CONTAINERS | Chlorides | LAB. I.D. NUMBER (LAB USE ONLY) | REMARKS (I.E., FILTERED, UNFILTERED, PRESERVED, UNPRESERVED, GRAB COMPOSITE) |
|---|---|---|---|---|---|---|---|---|---|
| 12/22 | 1449 | | ✓ | | BB H-1 4-6' | 1 | ✓ | 4L23002-01 | |
| | 1449 | | | | BBH-1 6-8' | | | -02 | |
| | 1513 | | | | BBH-2 4-6' | | | -03 | |
| | 1513 | | | | BBH-2 6-8' | | | -04 | |
| | 1527 | | | | BBH-4 4-6' | | | -05 | |
| | 1540 | | | | BH-9 0-2' | | | -06 | |
| | 1546 | | | | BH-9 2-4' | | | -07 | |
| | 1551 | | | | BH-9 4-6' | | | -08 | |
| | 1551 | | | | BH-9 6-8' | | | -09 | |
| | 1607 | | | | BH-10 0-2' | | | -10 | |
| | 1607 | | | | BH-10 2-4' | | | -11 | |
| | 1618 | | | | BH-10 4-6' | | | -12 | |
| | 1618 | | | | BH-10 6-8' | | | -13 | |
| | 1630 | | | | BH-11 0-2' | | | -14 | |
| | 1630 | | | | BH-11 2-4' | | | -15 | |
| | 1630 | | | | BH-11 4-6' | | | -16 | |
| | 1630 | | | | BH-11 6-8' | | | -17 | |

SAMPLED BY: (Signature) Tony Jones DATE: 12/22/04 TIME: 1645

RELINQUISHED BY: (Signature) Tony Jones DATE: 12/23/04 TIME: 0815

RECEIVED BY: (Signature) DATE: TIME:

RELINQUISHED BY: (Signature) DATE: TIME:

RECEIVED BY: (Signature) DATE: TIME:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS AIRBILL #:
HAND DELIVERED UPS OTHER:

COMMENTS:

TURNAROUND TIME NEEDED Standard

**WHITE** – RECEIVING LAB
**YELLOW** – RECEIVING LAB (TO BE RETURNED TO LA AFTER RECEIPT)
**PINK** – PROJECT MANAGER
**GOLD** – QA/QC COORDINATOR

RECEIVING LABORATORY: Environmental Lab of Tx
ADDRESS: 12600 W I-20E
CITY: Odessa STATE: Tx ZIP: 79765
CONTACT: PHONE: 563-1800

RECEIVED BY: (Signature) Jaime McMurry
DATE: 12-23-04 TIME: 0815

SAMPLE CONDITION WHEN RECEIVED: -0.5°C 4oz glass on ice

LA CONTACT PERSON: Mark Larson

SAMPLE TYPE:

# Environmental Lab of Texas
## Variance / Corrective Action Report – Sample Log-In

Client: Larson + Associates

Date/Time: 12-23-04 @ 0815

Order #: 4L23002

Initials: JMM

### Sample Receipt Checklist

| | | | |
|---|---|---|---|
| Temperature of container/cooler? | (Yes) | No | -0.5 C |
| Shipping container/cooler in good condition? | Yes | No | N/A |
| Custody Seals intact on shipping container/cooler? | Yes | No | Not present N/A |
| Custody Seals intact on sample bottles? | Yes | No | (Not present) |
| Chain of custody present? | (Yes) | No | |
| Sample Instructions complete on Chain of Custody? | (Yes) | No | |
| Chain of Custody signed when relinquished and received? | (Yes) | No | |
| Chain of custody agrees with sample label(s) | Yes | No | No labels - written on lid |
| Container labels legible and intact? | Yes | No | No labels - written on lid |
| Sample Matrix and properties same as on chain of custody? | (Yes) | No | |
| Samples in proper container/bottle? | (Yes) | No | |
| Samples properly preserved? | (Yes) | No | |
| Sample bottles intact? | (Yes) | No | |
| Preservations documented on Chain of Custody? | (Yes) | No | |
| Containers documented on Chain of Custody? | (Yes) | No | |
| Sufficient sample amount for indicated test? | (Yes) | No | |
| All samples received within sufficient hold time? | (Yes) | No | |
| VOC samples have zero headspace? | Yes | No | (Not Applicable) |

Other observations:

_____

_____

_____

### Variance Documentation:

Contact Person: -_____ Date/Time: _____ Contacted by: _____

Regarding:

_____

_____

_____

Corrective Action Taken:

_____

_____

_____

_____

_____

_____

_____

_____

# Environmental Lab of Texas
## Variance / Corrective Action Report – Sample Log-In

Client: Larson + Associates

Date/Time: 12-23-04 @ 0815

Order #: 4L23002

Initials: JMM

### Sample Receipt Checklist

| | | | |
|---|---|---|---|
| Temperature of container/cooler? | (Yes) | No | -0.5 C |
| Shipping container/cooler in good condition? | Yes | No | N/A |
| Custody Seals intact on shipping container/cooler? | Yes | No | Not present N/A |
| Custody Seals intact on sample bottles? | Yes | No | (Not present) |
| Chain of custody present? | (Yes) | No | |
| Sample Instructions complete on Chain of Custody? | (Yes) | No | |
| Chain of Custody signed when relinquished and received? | (Yes) | No | |
| Chain of custody agrees with sample label(s) | Yes | No | No labels - written on lid |
| Container labels legible and intact? | Yes | No | No labels - written on lid |
| Sample Matrix and properties same as on chain of custody? | (Yes) | No | |
| Samples in proper container/bottle? | (Yes) | No | |
| Samples properly preserved? | (Yes) | No | |
| Sample bottles intact? | (Yes) | No | |
| Preservations documented on Chain of Custody? | (Yes) | No | |
| Containers documented on Chain of Custody? | (Yes) | No | |
| Sufficient sample amount for indicated test? | (Yes) | No | |
| All samples received within sufficient hold time? | (Yes) | No | |
| VOC samples have zero headspace? | Yes | No | (Not Applicable) |

Other observations:

### Variance Documentation:

Contact Person: - _____ Date/Time: _____ Contacted by: _____

Regarding:

Corrective Action Taken:

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

# Analytical Report

**Prepared for:**

Cindy Crain

Larson & Associates, Inc.

P.O. Box 50685

Midland, TX 79710

Project: XTO/ EMSU #187

Project Number: 4-0119

Location: None Given

Lab Order Number: 6D19010

Report Date: 04/24/06

| | | |
|---|---|---|
| Larson & Associates, Inc. | Project: XTO/ EMSU #187 | Fax: (432) 687-0456 |
| P.O. Box 50685 | Project Number: 4-0119 | **Reported:** |
| Midland TX, 79710 | Project Manager: Cindy Crain | 04/24/06 17:04 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| HB-12 (15-17') | 6D19010-01 | Soil | 04/04/06 10:15 | 04/05/06 12:20 |
| HB-2A (10-12') | 6D19010-02 | Soil | 04/04/06 10:38 | 04/05/06 12:20 |



12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

| | | |
|---|---|---|
| Larson & Associates, Inc. | Project: XTO/ EMSU #187 | Fax: (432) 687-0456 |
| P.O. Box 50685 | Project Number: 4-0119 | **Reported:** |
| Midland TX, 79710 | Project Manager: Cindy Crain | 04/24/06 17:04 |

## General Chemistry Parameters by EPA / Standard Methods
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-12 (15-17') (6D19010-01) Soil** | | | | | | | | | |
| **Chloride** | **2980** | 50.0 | mg/kg | 100 | ED62110 | 04/21/06 | 04/21/06 | EPA 300.0 | |
| **HB-2A (10-12') (6D19010-02) Soil** | | | | | | | | | |
| **Chloride** | **2360** | 50.0 | mg/kg | 100 | ED62110 | 04/21/06 | 04/21/06 | EPA 300.0 | |







12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

## General Chemistry Parameters by EPA / Standard Methods - Quality Control
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch ED62110 - Water Extraction** | | | | | | | | | | |
| **Blank (ED62110-BLK1)** | | | | Prepared & Analyzed: 04/21/06 | | | | | | |
| Chloride | ND | 0.500 | mg/kg | | | | | | | |
| **LCS (ED62110-BS1)** | | | | Prepared & Analyzed: 04/21/06 | | | | | | |
| Chloride | 9.35 | | mg/L | 10.0 | | 93.5 | 80-120 | | | |
| **Calibration Check (ED62110-CCV1)** | | | | Prepared & Analyzed: 04/21/06 | | | | | | |
| Chloride | 8.60 | | mg/L | 10.0 | | 86.0 | 80-120 | | | |
| **Duplicate (ED62110-DUP1)** | | **Source: 6D19011-09** | | Prepared & Analyzed: 04/21/06 | | | | | | |
| Chloride | 2380 | 25.0 | mg/kg | | 2450 | | | 2.90 | 20 | |

## Notes and Definitions

| | |
|---|---|
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| LCS | Laboratory Control Spike |
| MS | Matrix Spike |
| Dup | Duplicate |

Report Approved By: Raland K Tuttle Date: 4-25-06

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
LaTasha Cornish, Chemist
Sandra Sanchez, Lab Tech.

# CHAIN—OF—CUSTODY RECORD

Larson & Associates, Inc. Environmental Consultants
Fax: 432-687-0456
432-687-0901
507 N. Marienfeld, Ste. 202 • Midland, TX 79701

CLIENT NAME: XTO
SITE MANAGER: Cindy Crain
PROJECT NO.: 4 0119
PROJECT NAME: EMSU # 187
PAGE 2 OF 2
LAB. PO #

| DATE | TIME | WATER | SOIL | OTHER | SAMPLE IDENTIFICATION | NUMBER OF CONTAINERS | PARAMETERS/METHOD NUMBER: Chloride | LAB. I.D. NUMBER (LAB USE ONLY) | REMARKS (I.E., FILTERED, UNFILTERED, PRESERVED, UNPRESERVED, GRAB COMPOSITE) |
|---|---|---|---|---|---|---|---|---|---|
| 4/3/06 | 1420 | | ✓ | | HB-10A (10-12') | 1 | ✓ | 19059-19 | |
| " | 1426 | | ✓ | | " (15-17') | 1 | | -20 | |
| " | 1431 | | ✓ | | " (20-22') | 1 | | -21 | |
| " | 1458 | | ✓ | | HB-9A (10-12') | 1 | ✓ | -22 | |
| " | 1502 | | ✓ | | " (15-17') | 1 | | -23 | |
| " | 1506 | | ✓ | | " (20-22') | 1 | | -24 | |
| 4/4/06 | 0930 | | ✓ | | HB-10A (10-12') | 1 | ✓ | -25 | |
| " | 0942 | | ✓ | | " (15-17') | 1 | | -26 | |
| " | 0948 | | ✓ | | " (20-22') | 1 | | -27 | |
| " | 0958 | | ✓ | | HB-12 (0-2') | 1 | ✓ | -28 | |
| " | 1004 | | ✓ | | " (5-7') | 1 | ✓ | -29 | |
| " | 1009 | | ✓ | | " (10-12') | 1 | ✓ | -30 | |
| " | 1015 | | ✓ | | " (15-17') | 1 | X | 19060-31 | |
| " | 1020 | | ✓ | | " (20-22') | 1 | | -32 | |
| " | 1031 | | ✓ | | HB-2A (5-7') | 1 | ✓ | -33 | |
| " | 1038 | | ✓ | | " (10-12') | 1 | X | -02 34 | |
| " | 1041 | | ✓ | | " (15-17') | 1 | | -35 | |
| " | 1044 | | ✓ | | " (20-22') | 1 | | -36 | |

SAMPLED BY; (Signature): Cindy Crain — DATE: 4/4/06 TIME: 1051
RELINQUISHED BY: (Signature): Cindy Crain — DATE: 4/5/06 TIME: 1220
RECEIVED BY: (Signature) — DATE: TIME:
RELINQUISHED BY: (Signature) — DATE: TIME:
RECEIVED BY: (Signature) — DATE: TIME:

SAMPLE SHIPPED BY: (Circle)
FEDEX HAND DELIVERED BUS UPS AIRBILL #: OTHER:

COMMENTS: X Add Cl- 04-19-06 as per attached e-mail

COPY

TURNAROUND TIME NEEDED

WHITE – RECEIVING LAB
YELLOW – RECEIVING LAB (TO BE RETURNED TO LA AFTER RECEIPT)
PINK – PROJECT MANAGER
GOLD – QA/QC COORDINATOR

RECEIVING LABORATORY: E-T-C
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature) Carrie Kelly
DATE: 4/5/06 TIME: 12:20

SAMPLE CONDITION WHEN RECEIVED: 4.5 no label / no seal

LA CONTACT PERSON: C. Crain

SAMPLE TYPE: Soil

**Jeanne McMurrey**

**From:** "Cindy Crain" <cindy@laenvironmental.com>
**To:** "'Jeanne McMurrey'" <jeanne@elabtexas.com>
**Sent:** Wednesday, April 19, 2006 10:02 AM
**Subject:** Request for Additional Analysis

Jeanne,

Would you please run the following two (2) additional samples for Chloride analysis:

**Project:** XTO/EMSU #187
**Project Number:** 4-0119
**Lab Order Number:** 6D05019
**Report Date:** 4/13/06

- Sample HB-12 (15-17') Sampled 4/4/06 at 1015
- Sample HB-2A (10-12') Sampled 4/4/06 at 1038

Please give me a call if you have any questions or need additional information.

Thank you,

Cindy K. Crain, P.G.

*Larson and Associates, Inc.*
507 N. Marienfeld, Ste.202
Midland, TX 79701

office: (432) 687-0901
fax: (432) 687-0456
cell: (432) 556-8665

--

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

# Analytical Report

**Prepared for:**

Cindy Crain

Larson & Associates, Inc.

P.O. Box 50685

Midland, TX 79710

Project: XTO/ EMSU #187

Project Number: 4-0119

Location: None Given

Lab Order Number: 6D05019

Report Date: 04/28/06

| | | |
|---|---|---|
| Larson & Associates, Inc. | Project: XTO/ EMSU #187 | Fax: (432) 687-0456 |
| P.O. Box 50685 | Project Number: 4-0119 | **Reported:** |
| Midland TX, 79710 | Project Manager: Cindy Crain | 04/28/06 14:18 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| HB-8A (5-7') | 6D05019-01 | Soil | 04/03/06 10:40 | 04/05/06 12:20 |
| HB-13 (0-2') | 6D05019-05 | Soil | 04/03/06 12:00 | 04/05/06 12:20 |
| HB-13 (5-7') | 6D05019-06 | Soil | 04/03/06 12:05 | 04/05/06 12:20 |
| HB-13 (10-12') | 6D05019-07 | Soil | 04/03/06 12:09 | 04/05/06 12:20 |
| HB-9A (10-12') | 6D05019-10 | Soil | 04/03/06 12:34 | 04/05/06 12:20 |
| HB-9A (15-17') | 6D05019-11 | Soil | 04/03/06 12:39 | 04/05/06 12:20 |
| HB-1A (10-12') | 6D05019-13 | Soil | 04/03/06 13:00 | 04/05/06 12:20 |
| HB-1A (15-17') | 6D05019-14 | Soil | 04/03/06 13:06 | 04/05/06 12:20 |
| HB-11A (10-12') | 6D05019-16 | Soil | 04/03/06 13:41 | 04/05/06 12:20 |
| HB-6A (10-12') | 6D05019-19 | Soil | 04/03/06 14:20 | 04/05/06 12:20 |
| HB-4A (10-12') | 6D05019-22 | Soil | 04/03/06 14:58 | 04/05/06 12:20 |
| HB-10A (10-12') | 6D05019-25 | Soil | 04/04/06 09:36 | 04/05/06 12:20 |
| HB-10A (15-17') | 6D05019-26 | Soil | 04/04/06 09:42 | 04/05/06 12:20 |
| HB-12 (0-2') | 6D05019-28 | Soil | 04/04/06 09:58 | 04/05/06 12:20 |
| HB-12 (5-7') | 6D05019-29 | Soil | 04/04/06 10:04 | 04/05/06 12:20 |
| HB-12 (10-12') | 6D05019-30 | Soil | 04/04/06 10:09 | 04/05/06 12:20 |
| HB-12 (20-22') | 6D05019-32 | Soil | 04/04/06 10:20 | 04/05/06 12:20 |
| HB-2A (5-7') | 6D05019-33 | Soil | 04/04/06 10:31 | 04/05/06 12:20 |
| HB-2A (15-17') | 6D05019-35 | Soil | 04/04/06 10:47 | 04/05/06 12:20 |



12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

## General Chemistry Parameters by EPA / Standard Methods
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-8A (5-7') (6D05019-01) Soil** | | | | | | | | | |
| **Chloride** | **489** | 20.0 | mg/kg Wet | 2 | ED61207 | 04/05/06 | 04/12/06 | SW 846 9253 | |
| **HB-13 (0-2') (6D05019-05) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | ED61207 | 04/05/06 | 04/12/06 | SW 846 9253 | |
| **HB-13 (5-7') (6D05019-06) Soil** | | | | | | | | | |
| **Chloride** | **404** | 20.0 | mg/kg Wet | 2 | ED61207 | 04/05/06 | 04/12/06 | SW 846 9253 | |
| **HB-13 (10-12') (6D05019-07) Soil** | | | | | | | | | |
| **Chloride** | **170** | 20.0 | mg/kg Wet | 2 | ED61207 | 04/05/06 | 04/12/06 | SW 846 9253 | |
| **HB-9A (10-12') (6D05019-10) Soil** | | | | | | | | | |
| **Chloride** | **872** | 20.0 | mg/kg Wet | 2 | ED61207 | 04/05/06 | 04/12/06 | SW 846 9253 | |
| **HB-9A (15-17') (6D05019-11) Soil** | | | | | | | | | |
| **Chloride** | **766** | 10.0 | mg/kg Wet | 2 | ED62808 | 04/27/06 | 04/28/06 | SW 846 9253 | |
| **HB-1A (10-12') (6D05019-13) Soil** | | | | | | | | | |
| **Chloride** | **936** | 20.0 | mg/kg Wet | 2 | ED61207 | 04/05/06 | 04/12/06 | SW 846 9253 | |
| **HB-1A (15-17') (6D05019-14) Soil** | | | | | | | | | |
| **Chloride** | **1400** | 20.0 | mg/kg Wet | 2 | ED62808 | 04/27/06 | 04/28/06 | SW 846 9253 | |
| **HB-11A (10-12') (6D05019-16) Soil** | | | | | | | | | |
| **Chloride** | **117** | 20.0 | mg/kg Wet | 2 | ED61207 | 04/05/06 | 04/12/06 | SW 846 9253 | |
| **HB-6A (10-12') (6D05019-19) Soil** | | | | | | | | | |
| **Chloride** | **223** | 20.0 | mg/kg Wet | 2 | ED61207 | 04/05/06 | 04/12/06 | SW 846 9253 | |

## General Chemistry Parameters by EPA / Standard Methods
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-4A (10-12') (6D05019-22) Soil** | | | | | | | | | |
| **Chloride** | **553** | 20.0 | mg/kg Wet | 2 | ED61209 | 04/05/06 | 04/12/06 | SW 846 9253 | |
| **HB-10A (10-12') (6D05019-25) Soil** | | | | | | | | | |
| **Chloride** | **1070** | 20.0 | mg/kg Wet | 2 | ED61209 | 04/05/06 | 04/12/06 | SW 846 9253 | |
| **HB-10A (15-17') (6D05019-26) Soil** | | | | | | | | | |
| **Chloride** | **1740** | 20.0 | mg/kg Wet | 2 | ED62808 | 04/27/06 | 04/28/06 | SW 846 9253 | |
| **HB-12 (0-2') (6D05019-28) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | ED61209 | 04/05/06 | 04/12/06 | SW 846 9253 | |
| **HB-12 (5-7') (6D05019-29) Soil** | | | | | | | | | |
| **Chloride** | **510** | 20.0 | mg/kg Wet | 2 | ED61209 | 04/05/06 | 04/12/06 | SW 846 9253 | |
| **HB-12 (10-12') (6D05019-30) Soil** | | | | | | | | | |
| **Chloride** | **2000** | 20.0 | mg/kg Wet | 2 | ED61209 | 04/05/06 | 04/12/06 | SW 846 9253 | |
| **HB-12 (20-22') (6D05019-32) Soil** | | | | | | | | | |
| **Chloride** | **3110** | 20.0 | mg/kg Wet | 2 | ED62808 | 04/27/06 | 04/28/06 | SW 846 9253 | |
| **HB-2A (5-7') (6D05019-33) Soil** | | | | | | | | | |
| **Chloride** | **3470** | 20.0 | mg/kg Wet | 2 | ED61209 | 04/05/06 | 04/12/06 | SW 846 9253 | |
| **HB-2A (15-17') (6D05019-35) Soil** | | | | | | | | | |
| **Chloride** | **681** | 20.0 | mg/kg Wet | 2 | ED62808 | 04/27/06 | 04/28/06 | SW 846 9253 | |

## General Chemistry Parameters by EPA / Standard Methods - Quality Control
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch ED61207 - Water Extraction** | | | | | | | | | | |
| **Blank (ED61207-BLK1)** | | | | Prepared: 04/05/06 Analyzed: 04/12/06 | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | | | | | | | |
| **LCS (ED61207-BS1)** | | | | Prepared & Analyzed: 04/12/06 | | | | | | |
| Chloride | 96.8 | | mg/kg | 100 | | 96.8 | 80-120 | | | |
| **Matrix Spike (ED61207-MS1)** | | **Source: 6D04010-01** | | Prepared: 04/05/06 Analyzed: 04/12/06 | | | | | | |
| Chloride | 510 | 20.0 | mg/kg Wet | 500 | 0.00 | 102 | 80-120 | | | |
| **Matrix Spike Dup (ED61207-MSD1)** | | **Source: 6D04010-01** | | Prepared: 04/05/06 Analyzed: 04/12/06 | | | | | | |
| Chloride | 500 | 20.0 | mg/kg Wet | 500 | 0.00 | 100 | 80-120 | 1.98 | 20 | |
| **Reference (ED61207-SRM1)** | | | | Prepared & Analyzed: 04/12/06 | | | | | | |
| Chloride | 5050 | | mg/kg | 5000 | | 101 | 80-120 | | | |
| **Batch ED61209 - Water Extraction** | | | | | | | | | | |
| **Blank (ED61209-BLK1)** | | | | Prepared: 04/05/06 Analyzed: 04/12/06 | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | | | | | | | |
| **LCS (ED61209-BS1)** | | | | Prepared & Analyzed: 04/12/06 | | | | | | |
| Chloride | 95.7 | | mg/kg | 100 | | 95.7 | 80-120 | | | |
| **Matrix Spike (ED61209-MS1)** | | **Source: 6D05019-22** | | Prepared: 04/05/06 Analyzed: 04/12/06 | | | | | | |
| Chloride | 1060 | 20.0 | mg/kg Wet | 500 | 553 | 101 | 80-120 | | | |
| **Matrix Spike Dup (ED61209-MSD1)** | | **Source: 6D05019-22** | | Prepared: 04/05/06 Analyzed: 04/12/06 | | | | | | |
| Chloride | 1050 | 20.0 | mg/kg Wet | 500 | 553 | 99.4 | 80-120 | 0.948 | 20 | |

## General Chemistry Parameters by EPA / Standard Methods - Quality Control
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch ED61209 - Water Extraction** | | | | | | | | | | |
| **Reference (ED61209-SRM1)** | | | | Prepared & Analyzed: 04/12/06 | | | | | | |
| Chloride | 4890 | | mg/kg | 5000 | | 97.8 | 80-120 | | | |
| **Batch ED62808 - Water Extraction** | | | | | | | | | | |
| **Blank (ED62808-BLK1)** | | | | Prepared: 04/27/06 Analyzed: 04/28/06 | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | | | | | | | |
| **LCS (ED62808-BS1)** | | | | Prepared & Analyzed: 04/28/06 | | | | | | |
| Chloride | 92.5 | | mg/kg | 100 | | 92.5 | 80-120 | | | |
| **Matrix Spike (ED62808-MS1)** | | **Source: 6D05019-11** | | Prepared: 04/27/06 Analyzed: 04/28/06 | | | | | | |
| Chloride | 2960 | | mg/kg | 2000 | 766 | 110 | 80-120 | | | |
| **Matrix Spike Dup (ED62808-MSD1)** | | **Source: 6D05019-11** | | Prepared: 04/27/06 Analyzed: 04/28/06 | | | | | | |
| Chloride | 2980 | | mg/kg | 2000 | 766 | 111 | 80-120 | 0.673 | 20 | |
| **Reference (ED62808-SRM1)** | | | | Prepared & Analyzed: 04/28/06 | | | | | | |
| Chloride | 4950 | | mg/kg | 5000 | | 99.0 | 80-120 | | | |

## Notes and Definitions

| | |
|---|---|
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| LCS | Laboratory Control Spike |
| MS | Matrix Spike |
| Dup | Duplicate |

Report Approved By: Celey D. Keene Date: 04/28/06

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
LaTasha Cornish, Chemist
Sandra Sanchez, Lab Tech.

# Environmental Lab of Texas
## Variance / Corrective Action Report – Sample Log-In

ient: Larson

ate/Time: 4/5/06 12:20

rder #: 1ED050119

nitials: CK

### Sample Receipt Checklist

| | | | |
|---|---|---|---|
| emperature of container/cooler? | Yes | No | 4.5 C |
| hipping container/cooler in good condition? | Yes | No | |
| ustody Seals intact on shipping container/cooler? | Yes | No | Not present |
| ustody Seals intact on sample bottles? | Yes | No | Not present |
| hain of custody present? | Yes | No | |
| ample Instructions complete on Chain of Custody? | Yes | No | |
| hain of Custody signed when relinquished and received? | Yes | No | |
| hain of custody agrees with sample label(s) | Yes | No | ID on jar |
| ontainer labels legible and intact? | Yes | No | n/a |
| ample Matrix and properties same as on chain of custody? | Yes | No | |
| amples in proper container/bottle? | Yes | No | |
| amples properly preserved? | Yes | No | |
| ample bottles intact? | Yes | No | |
| reservations documented on Chain of Custody? | Yes | No | |
| ontainers documented on Chain of Custody? | Yes | No | |
| ufficient sample amount for indicated test? | Yes | No | |
| ll samples received within sufficient hold time? | Yes | No | |
| OC samples have zero headspace? | Yes | No | Not Applicable |

Other observations:

### Variance Documentation:

Contact Person: - Date/Time: Contacted by:

Regarding:

Corrective Action Taken:

**Jeanne McMurrey**

**From:** "Cindy Crain" <cindy@laenvironmental.com>
**To:** "'Jeanne McMurrey'" <jeanne@elabtexas.com>
**Sent:** Thursday, April 27, 2006 9:56 AM
**Subject:** Request for Additional Soil Analysis

Jeanne,

Would you please run the following five (5) additional samples for Chloride analysis:

**Project:** XTO/EMSU #187
**Project Number:** 4-0119
**Lab Order Number:** 6D05019
**Report Date:** 4/13/06

- Sample HB-9A (15-17') Sampled 4/3/06 at 1239
- Sample HB-10A (15-17') Sampled 4/4/06 at 0942
- Sample HB-12 (20-22') Sampled 4/4/06 at 1020
- Sample HB-2A (15-17') Sampled 4/4/06 at 1047
- Sample HB-1A (15-17') Sampled 4/3/06 at 1306

Please give me a call if you have any questions or need additional information.

Thank you,

Cindy K. Crain, P.G.

*Larson and Associates, Inc.*
507 N. Marienfeld, Ste.202
Midland, TX 79701

office: (432) 687-0901
fax: (432) 687-0456
cell: (432) 556-8665

| | | |
|---|---|---|
| Larson & Associates, Inc. | Project: XTO/ Well #187 | Fax: (432) 687-0456 |
| P.O. Box 50685 | Project Number: 4-0119 | **Reported:** |
| Midland TX, 79710 | Project Manager: Cindy Crain | 11/12/04 16:01 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| HB-1 0-1' | 4K10004-01 | Soil | 11/09/04 10:10 | 11/09/04 17:15 |
| HB-1 1-2' | 4K10004-02 | Soil | 11/09/04 10:18 | 11/09/04 17:15 |
| HB-1 2-3' | 4K10004-03 | Soil | 11/09/04 10:32 | 11/09/04 17:15 |
| HB-2 0-1' | 4K10004-04 | Soil | 11/09/04 10:49 | 11/09/04 17:15 |
| HB-2 1-2' | 4K10004-05 | Soil | 11/09/04 10:54 | 11/09/04 17:15 |
| HB-2 2-3' | 4K10004-06 | Soil | 11/09/04 11:06 | 11/09/04 17:15 |
| HB-3 0-1' | 4K10004-07 | Soil | 11/09/04 11:11 | 11/09/04 17:15 |
| HB-3 1-2' | 4K10004-08 | Soil | 11/09/04 11:17 | 11/09/04 17:15 |
| HB-3 2-3' | 4K10004-09 | Soil | 11/09/04 11:30 | 11/09/04 17:15 |
| HB-4 0-1' | 4K10004-10 | Soil | 11/09/04 11:37 | 11/09/04 17:15 |
| HB-4 1-2' | 4K10004-11 | Soil | 11/09/04 11:40 | 11/09/04 17:15 |
| HB-4 2-3' | 4K10004-12 | Soil | 11/09/04 12:48 | 11/09/04 17:15 |
| HB-5 0-1' | 4K10004-13 | Soil | 11/09/04 12:52 | 11/09/04 17:15 |
| HB-5 1-2' | 4K10004-14 | Soil | 11/09/04 12:58 | 11/09/04 17:15 |
| HB-5 2-3' | 4K10004-15 | Soil | 11/09/04 13:18 | 11/09/04 17:15 |
| HB-6 0-1' | 4K10004-16 | Soil | 11/09/04 13:21 | 11/09/04 17:15 |
| HB-6 1-2' | 4K10004-17 | Soil | 11/09/04 13:24 | 11/09/04 17:15 |
| HB-6 2-3' | 4K10004-18 | Soil | 11/09/04 13:38 | 11/09/04 17:15 |
| HB-7 0-1' | 4K10004-19 | Soil | 11/09/04 13:33 | 11/09/04 17:15 |
| HB-7 1-2' | 4K10004-20 | Soil | 11/09/04 13:38 | 11/09/04 17:15 |
| HB-7 2-3' | 4K10004-21 | Soil | 11/09/04 13:43 | 11/09/04 17:15 |
| HB-8 0-1' | 4K10004-22 | Soil | 11/09/04 13:54 | 11/09/04 17:15 |
| HB-8 1-2' | 4K10004-23 | Soil | 11/09/04 13:58 | 11/09/04 17:15 |
| HB-8 2-3' | 4K10004-24 | Soil | 11/09/04 14:01 | 11/09/04 17:15 |
| Background 0-1' | 4K10004-25 | Soil | 11/09/04 14:05 | 11/09/04 17:15 |
| Background 1-2' | 4K10004-26 | Soil | 11/09/04 14:10 | 11/09/04 17:15 |
| Background 2-3' | 4K10004-27 | Soil | 11/09/04 14:13 | 11/09/04 17:15 |



12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

## Organics by GC

## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-1 0-1' (4K10004-01) Soil** | | | | | | | | | |
| **Gasoline Range Organics C6-C12** | **J [9.70]** | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | J |
| **Diesel Range Organics >C12-C35** | **66.0** | 10.0 | " | " | " | " | " | " | |
| **Total Hydrocarbon C6-C35** | **66.0** | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *109 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *125 %* | *70-130* | | " | " | " | " | |
| **HB-1 1-2' (4K10004-02) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *108 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *123 %* | *70-130* | | " | " | " | " | |
| **HB-1 2-3' (4K10004-03) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *102 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *117 %* | *70-130* | | " | " | " | " | |
| **HB-2 0-1' (4K10004-04) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | |
| **Diesel Range Organics >C12-C35** | **107** | 10.0 | " | " | " | " | " | " | |
| **Total Hydrocarbon C6-C35** | **107** | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *102 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *117 %* | *70-130* | | " | " | " | " | |
| **HB-2 1-2' (4K10004-05) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | |
| **Diesel Range Organics >C12-C35** | **68.0** | 10.0 | " | " | " | " | " | " | |
| **Total Hydrocarbon C6-C35** | **68.0** | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *100 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *116 %* | *70-130* | | " | " | " | " | |

## Organics by GC
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-2 2-3' (4K10004-06) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *98.4 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *113 %* | *70-130* | | " | " | " | " | |
| **HB-3 0-1' (4K10004-07) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *92.8 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *107 %* | *70-130* | | " | " | " | " | |
| **HB-3 1-2' (4K10004-08) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *87.6 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *101 %* | *70-130* | | " | " | " | " | |
| **HB-3 2-3' (4K10004-09) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *99.2 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *113 %* | *70-130* | | " | " | " | " | |
| **HB-4 0-1' (4K10004-10) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *101 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *119 %* | *70-130* | | " | " | " | " | |

## Organics by GC
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-4 1-2' (4K10004-11) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *102 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *118 %* | *70-130* | | " | " | " | " | |
| **HB-4 2-3' (4K10004-12) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *102 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *116 %* | *70-130* | | " | " | " | " | |
| **HB-5 0-1' (4K10004-13) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *94.4 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *109 %* | *70-130* | | " | " | " | " | |
| **HB-5 1-2' (4K10004-14) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *95.6 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *109 %* | *70-130* | | " | " | " | " | |
| **HB-5 2-3' (4K10004-15) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *98.8 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *111 %* | *70-130* | | " | " | " | " | |

## Organics by GC

## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-6 0-1' (4K10004-16) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | |
| **Diesel Range Organics >C12-C35** | **286** | 10.0 | " | " | " | " | " | " | |
| **Total Hydrocarbon C6-C35** | **286** | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *87.4 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *102 %* | *70-130* | | " | " | " | " | |
| **HB-6 1-2' (4K10004-17) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/10/04 | EPA 8015M | |
| **Diesel Range Organics >C12-C35** | **191** | 10.0 | " | " | " | " | " | " | |
| **Total Hydrocarbon C6-C35** | **191** | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *89.6 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *97.8 %* | *70-130* | | " | " | " | " | |
| **HB-6 2-3' (4K10004-18) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/11/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *87.8 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *100 %* | *70-130* | | " | " | " | " | |
| **HB-7 0-1' (4K10004-19) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/11/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *95.8 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *110 %* | *70-130* | | " | " | " | " | |
| **HB-7 1-2' (4K10004-20) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/11/04 | EPA 8015M | |
| **Diesel Range Organics >C12-C35** | **142** | 10.0 | " | " | " | " | " | " | |
| **Total Hydrocarbon C6-C35** | **142** | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *90.8 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *99.4 %* | *70-130* | | " | " | " | " | |

## Organics by GC

## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-7 2-3' (4K10004-21) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/11/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *89.4 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *103 %* | *70-130* | | " | " | " | " | |
| **HB-8 0-1' (4K10004-22) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/11/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *96.2 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *107 %* | *70-130* | | " | " | " | " | |
| **HB-8 1-2' (4K10004-23) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/11/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *71.2 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *77.6 %* | *70-130* | | " | " | " | " | |
| **HB-8 2-3' (4K10004-24) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/11/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *85.4 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *97.6 %* | *70-130* | | " | " | " | " | |
| **Background 0-1' (4K10004-25) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/11/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *85.8 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *82.0 %* | *70-130* | | " | " | " | " | |

## Organics by GC
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Background 1-2' (4K10004-26) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/11/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *88.6 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *100 %* | *70-130* | | " | " | " | " | |
| **Background 2-3' (4K10004-27) Soil** | | | | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg dry | 1 | EK40906 | 11/10/04 | 11/11/04 | EPA 8015M | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *93.8 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *110 %* | *70-130* | | " | " | " | " | |

| | | |
|---|---|---|
| Larson & Associates, Inc. | Project: XTO/ Well #187 | Fax: (432) 687-0456 |
| P.O. Box 50685 | Project Number: 4-0119 | **Reported:** |
| Midland TX, 79710 | Project Manager: Cindy Crain | 11/12/04 16:01 |

## General Chemistry Parameters by EPA / Standard Methods
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-1 0-1' (4K10004-01) Soil** | | | | | | | | | |
| **Chloride** | **638** | 20.0 | mg/kg Wet | 2 | EK41208 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **7.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-1 1-2' (4K10004-02) Soil** | | | | | | | | | |
| **Chloride** | **808** | 20.0 | mg/kg Wet | 2 | EK41208 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **11.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-1 2-3' (4K10004-03) Soil** | | | | | | | | | |
| **Chloride** | **399** | 20.0 | mg/kg Wet | 2 | EK41208 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **10.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-2 0-1' (4K10004-04) Soil** | | | | | | | | | |
| **Chloride** | **2800** | 20.0 | mg/kg Wet | 2 | EK41208 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **8.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-2 1-2' (4K10004-05) Soil** | | | | | | | | | |
| **Chloride** | **1300** | 20.0 | mg/kg Wet | 2 | EK41208 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **5.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-2 2-3' (4K10004-06) Soil** | | | | | | | | | |
| **Chloride** | **1130** | 20.0 | mg/kg Wet | 2 | EK41208 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **7.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-3 0-1' (4K10004-07) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EK41208 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **3.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-3 1-2' (4K10004-08) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EK41208 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **6.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |







12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

## General Chemistry Parameters by EPA / Standard Methods
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-3 2-3' (4K10004-09) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EK41208 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **5.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-4 0-1' (4K10004-10) Soil** | | | | | | | | | |
| **Chloride** | **97.7** | 20.0 | mg/kg Wet | 2 | EK41208 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **11.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-4 1-2' (4K10004-11) Soil** | | | | | | | | | |
| **Chloride** | **638** | 20.0 | mg/kg Wet | 2 | EK41208 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **11.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-4 2-3' (4K10004-12) Soil** | | | | | | | | | |
| **Chloride** | **915** | 20.0 | mg/kg Wet | 2 | EK41208 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **12.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-5 0-1' (4K10004-13) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EK41208 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **6.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-5 1-2' (4K10004-14) Soil** | | | | | | | | | |
| **Chloride** | **31.9** | 20.0 | mg/kg Wet | 2 | EK41208 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **14.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-5 2-3' (4K10004-15) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EK41208 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **11.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-6 0-1' (4K10004-16) Soil** | | | | | | | | | |
| **Chloride** | **362** | 20.0 | mg/kg Wet | 2 | EK41208 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **2.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |

## General Chemistry Parameters by EPA / Standard Methods
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-6 1-2' (4K10004-17) Soil** | | | | | | | | | |
| **Chloride** | **319** | 20.0 | mg/kg Wet | 2 | EK41209 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **4.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-6 2-3' (4K10004-18) Soil** | | | | | | | | | |
| **Chloride** | **585** | 20.0 | mg/kg Wet | 2 | EK41209 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **6.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-7 0-1' (4K10004-19) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EK41209 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **10.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-7 1-2' (4K10004-20) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EK41209 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **12.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-7 2-3' (4K10004-21) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EK41209 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **12.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-8 0-1' (4K10004-22) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EK41209 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **4.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-8 1-2' (4K10004-23) Soil** | | | | | | | | | |
| **Chloride** | **42.5** | 20.0 | mg/kg Wet | 2 | EK41209 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **6.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **HB-8 2-3' (4K10004-24) Soil** | | | | | | | | | |
| **Chloride** | **63.8** | 20.0 | mg/kg Wet | 2 | EK41209 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **7.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |

## General Chemistry Parameters by EPA / Standard Methods
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Background 0-1' (4K10004-25) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EK41209 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **3.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **Background 1-2' (4K10004-26) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EK41209 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **8.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |
| **Background 2-3' (4K10004-27) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EK41209 | 11/10/04 | 11/11/04 | SW 846 9253 | |
| **% Moisture** | **7.0** | | % | 1 | EK41101 | 11/10/04 | 11/11/04 | % calculation | |

# Organics by GC - Quality Control
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch EK40906 - Solvent Extraction (GC)** | | | | | | | | | | |
| **Blank (EK40906-BLK1)** | | | | Prepared: 11/09/04 Analyzed: 11/10/04 | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg wet | | | | | | | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | | | | | | | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | | | | | | | |
| *Surrogate: 1-Chlorooctane* | *38.4* | | *mg/kg* | *50.0* | | *76.8* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *45.4* | | *"* | *50.0* | | *90.8* | *70-130* | | | |
| **Blank (EK40906-BLK2)** | | | | Prepared & Analyzed: 11/10/04 | | | | | | |
| Gasoline Range Organics C6-C12 | ND | 10.0 | mg/kg wet | | | | | | | |
| Diesel Range Organics >C12-C35 | ND | 10.0 | " | | | | | | | |
| Total Hydrocarbon C6-C35 | ND | 10.0 | " | | | | | | | |
| *Surrogate: 1-Chlorooctane* | *38.3* | | *mg/kg* | *50.0* | | *76.6* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *44.3* | | *"* | *50.0* | | *88.6* | *70-130* | | | |
| **LCS (EK40906-BS1)** | | | | Prepared: 11/09/04 Analyzed: 11/10/04 | | | | | | |
| Gasoline Range Organics C6-C12 | 439 | | mg/kg | 500 | | 87.8 | 75-125 | | | |
| Diesel Range Organics >C12-C35 | 523 | | " | 500 | | 105 | 75-125 | | | |
| Total Hydrocarbon C6-C35 | 962 | | " | 1000 | | 96.2 | 75-125 | | | |
| *Surrogate: 1-Chlorooctane* | *49.1* | | *"* | *50.0* | | *98.2* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *47.2* | | *"* | *50.0* | | *94.4* | *70-130* | | | |
| **LCS (EK40906-BS2)** | | | | Prepared & Analyzed: 11/10/04 | | | | | | |
| Gasoline Range Organics C6-C12 | 447 | 10.0 | mg/kg wet | 500 | | 89.4 | 75-125 | | | |
| Diesel Range Organics >C12-C35 | 530 | 10.0 | " | 500 | | 106 | 75-125 | | | |
| Total Hydrocarbon C6-C35 | 977 | 10.0 | " | 1000 | | 97.7 | 75-125 | | | |
| *Surrogate: 1-Chlorooctane* | *49.8* | | *mg/kg* | *50.0* | | *99.6* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *49.1* | | *"* | *50.0* | | *98.2* | *70-130* | | | |
| **Calibration Check (EK40906-CCV1)** | | | | Prepared: 11/09/04 Analyzed: 11/10/04 | | | | | | |
| Gasoline Range Organics C6-C12 | 527 | | mg/kg | 500 | | 105 | 80-120 | | | |
| Diesel Range Organics >C12-C35 | 561 | | " | 500 | | 112 | 80-120 | | | |
| Total Hydrocarbon C6-C35 | 1090 | | " | 1000 | | 109 | 80-120 | | | |
| *Surrogate: 1-Chlorooctane* | *57.0* | | *"* | *50.0* | | *114* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *57.7* | | *"* | *50.0* | | *115* | *70-130* | | | |

# Organics by GC - Quality Control
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch EK40906 - Solvent Extraction (GC)** | | | | | | | | | | |
| **Calibration Check (EK40906-CCV2)** | | | | Prepared & Analyzed: 11/10/04 | | | | | | |
| Gasoline Range Organics C6-C12 | 497 | | mg/kg | 500 | | 99.4 | 80-120 | | | |
| Diesel Range Organics >C12-C35 | 559 | | " | 500 | | 112 | 80-120 | | | |
| Total Hydrocarbon C6-C35 | 1060 | | " | 1000 | | 106 | 80-120 | | | |
| *Surrogate: 1-Chlorooctane* | *53.8* | | *"* | *50.0* | | *108* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *55.0* | | *"* | *50.0* | | *110* | *70-130* | | | |
| **Matrix Spike (EK40906-MS1)** | | **Source: 4K10004-05** | | Prepared & Analyzed: 11/10/04 | | | | | | |
| Gasoline Range Organics C6-C12 | 548 | 10.0 | mg/kg dry | 526 | ND | 104 | 75-125 | | | |
| Diesel Range Organics >C12-C35 | 648 | 10.0 | " | 526 | 68.0 | 110 | 75-125 | | | |
| Total Hydrocarbon C6-C35 | 1200 | 10.0 | " | 1050 | 68.0 | 108 | 75-125 | | | |
| *Surrogate: 1-Chlorooctane* | *63.6* | | *mg/kg* | *50.0* | | *127* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *62.7* | | *"* | *50.0* | | *125* | *70-130* | | | |
| **Matrix Spike (EK40906-MS2)** | | **Source: 4K10004-15** | | Prepared & Analyzed: 11/10/04 | | | | | | |
| Gasoline Range Organics C6-C12 | 572 | 10.0 | mg/kg dry | 562 | ND | 102 | 75-125 | | | |
| Diesel Range Organics >C12-C35 | 628 | 10.0 | " | 562 | ND | 112 | 75-125 | | | |
| Total Hydrocarbon C6-C35 | 1200 | 10.0 | " | 1120 | ND | 107 | 75-125 | | | |
| *Surrogate: 1-Chlorooctane* | *52.7* | | *mg/kg* | *50.0* | | *105* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *51.6* | | *"* | *50.0* | | *103* | *70-130* | | | |
| **Matrix Spike Dup (EK40906-MSD1)** | | **Source: 4K10004-05** | | Prepared & Analyzed: 11/10/04 | | | | | | |
| Gasoline Range Organics C6-C12 | 537 | 10.0 | mg/kg dry | 526 | ND | 102 | 75-125 | 2.03 | 20 | |
| Diesel Range Organics >C12-C35 | 661 | 10.0 | " | 526 | 68.0 | 113 | 75-125 | 1.99 | 20 | |
| Total Hydrocarbon C6-C35 | 1200 | 10.0 | " | 1050 | 68.0 | 108 | 75-125 | 0.00 | 20 | |
| *Surrogate: 1-Chlorooctane* | *61.2* | | *mg/kg* | *50.0* | | *122* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *57.1* | | *"* | *50.0* | | *114* | *70-130* | | | |
| **Matrix Spike Dup (EK40906-MSD2)** | | **Source: 4K10004-15** | | Prepared & Analyzed: 11/10/04 | | | | | | |
| Gasoline Range Organics C6-C12 | 569 | 10.0 | mg/kg dry | 562 | ND | 101 | 75-125 | 0.526 | 20 | |
| Diesel Range Organics >C12-C35 | 625 | 10.0 | " | 562 | ND | 111 | 75-125 | 0.479 | 20 | |
| Total Hydrocarbon C6-C35 | 1190 | 10.0 | " | 1120 | ND | 106 | 75-125 | 0.837 | 20 | |
| *Surrogate: 1-Chlorooctane* | *54.7* | | *mg/kg* | *50.0* | | *109* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *51.5* | | *"* | *50.0* | | *103* | *70-130* | | | |

## General Chemistry Parameters by EPA / Standard Methods - Quality Control
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch EK41101 - General Preparation (Prep)** | | | | | | | | | | |
| **Blank (EK41101-BLK1)** | | | | Prepared: 11/10/04 Analyzed: 11/11/04 | | | | | | |
| % Moisture | 0.0 | | % | | | | | | | |
| **Duplicate (EK41101-DUP1)** | | **Source: 4K10004-01** | | Prepared: 11/10/04 Analyzed: 11/11/04 | | | | | | |
| % Moisture | 7.0 | | % | | 7.0 | | | 0.00 | 20 | |
| **Batch EK41208 - Water Extraction** | | | | | | | | | | |
| **Blank (EK41208-BLK1)** | | | | Prepared: 11/09/04 Analyzed: 11/11/04 | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | | | | | | | |
| **Matrix Spike (EK41208-MS1)** | | **Source: 4K09008-01** | | Prepared: 11/09/04 Analyzed: 11/11/04 | | | | | | |
| Chloride | 2140 | 20.0 | mg/kg Wet | 500 | 1630 | 102 | 80-120 | | | |
| **Matrix Spike Dup (EK41208-MSD1)** | | **Source: 4K09008-01** | | Prepared: 11/09/04 Analyzed: 11/11/04 | | | | | | |
| Chloride | 2150 | 20.0 | mg/kg Wet | 500 | 1630 | 104 | 80-120 | 0.466 | 20 | |
| **Reference (EK41208-SRM1)** | | | | Prepared & Analyzed: 11/11/04 | | | | | | |
| Chloride | 5000 | | mg/kg | 5000 | | 100 | 80-120 | | | |
| **Batch EK41209 - Water Extraction** | | | | | | | | | | |
| **Blank (EK41209-BLK1)** | | | | Prepared: 11/10/04 Analyzed: 11/11/04 | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | | | | | | | |
| **Matrix Spike (EK41209-MS1)** | | **Source: 4K10004-17** | | Prepared: 11/10/04 Analyzed: 11/11/04 | | | | | | |
| Chloride | 808 | 20.0 | mg/kg Wet | 500 | 319 | 97.8 | 80-120 | | | |

## General Chemistry Parameters by EPA / Standard Methods - Quality Control
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch EK41209 - Water Extraction** | | | | | | | | | | |
| **Matrix Spike Dup (EK41209-MSD1)** | **Source: 4K10004-17** | | | Prepared: 11/10/04 | | Analyzed: 11/11/04 | | | | |
| Chloride | 819 | 20.0 | mg/kg Wet | 500 | 319 | 100 | 80-120 | 1.35 | 20 | |
| **Reference (EK41209-SRM1)** | | | | Prepared & Analyzed: 11/11/04 | | | | | | |
| Chloride | 5000 | | mg/kg | 5000 | | 100 | 80-120 | | | |

## Notes and Definitions

| | |
|---|---|
| J | Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag). |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| LCS | Laboratory Control Spike |
| MS | Matrix Spike |
| Dup | Duplicate |

Report Approved By: Raland K Tuttle Date: 11-15-04

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sandra Sanchez, Lab Tech.

# CHAIN—OF—CUSTODY RECORD

LA Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202 • Midland, TX 79701
Fax: 432-687-0456
432-687-0901

CLIENT NAME: XTO

SITE MANAGER: Cindy Crain

PROJECT NO.: 4-0119

PROJECT NAME: EMSU # 187

PAGE 1 OF 2

LAB. PO #

| DATE | TIME | WATER | SOIL | OTHER | SAMPLE IDENTIFICATION | NUMBER OF CONTAINERS | PARAMETERS/METHOD NUMBER: Chloride | LAB. I.D. NUMBER (LAB USE ONLY) | REMARKS (I.E., FILTERED, UNFILTERED, PRESERVED, UNPRESERVED, GRAB COMPOSITE) |
|---|---|---|---|---|---|---|---|---|---|
| 4/3/06 | 1040 | | ✓ | | HB-8A (5-7') | 1 | ✓ | 6D 05019-01 | |
| " | 1048 | | ✓ | | " (10-12') | 1 | cc | -02 | |
| " | 1055 | | ✓ | | " (15-17') | 1 | | -03 | |
| " | 1059 | | ✓ | | " (20-22') | 1 | | -04 | |
| " | 1200 | | ✓ | | HB-13 (0-2') | 1 | ✓ | -05 | |
| " | 1205 | | ✓ | | " (5-7') | 1 | ✓ | -06 | |
| " | 1209 | | ✓ | | " (10-12') | 1 | ✓ | -07 | |
| " | 1213 | | ✓ | | " (15-17') | 1 | | -08 | |
| " | 1216 | | ✓ | | " (20-22') | 1 | | -09 | |
| " | 1234 | | ✓ | | HB-9A (10-12') | 1 | ✓ | -10 | |
| " | 1239 | | ✓ | | " (15-17') | 1 | | -11 | |
| " | 1244 | | ✓ | | " (20-22') | 1 | | -12 | |
| " | 1300 | | ✓ | | HB-1A (10-12') | 1 | ✓ | -13 | |
| " | 1306 | | ✓ | | " (15-17') | 1 | | -14 | |
| " | 1316 | | ✓ | | " (20-22') | 1 | | -15 | |
| " | 1341 | | ✓ | | HB-11A (10-12') | 1 | ✓ | -16 | |
| " | 1354 | | ✓ | | " (15-17') | 1 | | -17 | |
| " | 1404 | | ✓ | | " (20-22') | 1 | | -18 | |

SAMPLED BY: (Signature) Cindy Crain
DATE: 4/3/06
TIME: 1404

RELINQUISHED BY: (Signature) Cindy Crain
DATE: 4/5/06
TIME: 1220

RECEIVED BY: (Signature)
DATE:
TIME:

RELINQUISHED BY: (Signature)
DATE:
TIME:

RECEIVED BY: (Signature)
DATE:
TIME:

SAMPLE SHIPPED BY: (Circle)
FEDEX HAND DELIVERED BUS UPS
AIRBILL #:
OTHER:

COMMENTS:

TURNAROUND TIME NEEDED

**WHITE** – RECEIVING LAB
**YELLOW** – RECEIVING LAB (TO BE RETURNED TO LA AFTER RECEIPT)
**PINK** – PROJECT MANAGER
**GOLD** – QA/QC COORDINATOR

RECEIVING LABORATORY: ELOT
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:

RECEIVED BY: (Signature) Carrie Keef
DATE: 4/5/06 TIME: 12:20

SAMPLE CONDITION WHEN RECEIVED:
4.5 no label/no seal

LA CONTACT PERSON: C. Crain

SAMPLE TYPE: Soil

# CHAIN—OF—CUSTODY RECORD

Larson & Associates, Inc.
Environmental Consultants
Fax: 432-687-0456
432-687-0901
507 N. Marienfeld, Ste. 202 • Midland, TX 79701

CLIENT NAME: XTO

SITE MANAGER: Cindy Crain

PROJECT NO.: 4-0119

PROJECT NAME: EMSU #187

PAGE 2 OF 2

LAB. PO #

PARAMETERS/METHOD NUMBER

| DATE | TIME | WATER | SOIL | OTHER | SAMPLE IDENTIFICATION | NUMBER OF CONTAINERS | Chloride | LAB. I.D. NUMBER (LAB USE ONLY) | REMARKS (I.E., FILTERED, UNFILTERED, PRESERVED, UNPRESERVED, GRAB COMPOSITE) |
|---|---|---|---|---|---|---|---|---|---|
| 4/3/06 | 1420 | | ✓ | | HB-6A (10-12') | 1 | ✓ | 6D05019-19 | |
| " | 1426 | | ✓ | | " (15-17') | 1 | | -20 | |
| " | 1431 | | ✓ | | " (20-22') | 1 | | -21 | |
| " | 1458 | | ✓ | | HB-4A (10-12') | 1 | ✓ | -22 | |
| " | 1502 | | ✓ | | " (15-17') | 1 | | -23 | |
| " | 1506 | | ✓ | | " (20-22') | 1 | | -24 | |
| 4/4/06 | 0936 | | ✓ | | HB-10A (10-12') | 1 | ✓ | -25 | |
| " | 0942 | | ✓ | | " (15-17') | 1 | | -26 | |
| " | 0948 | | ✓ | | " (20-22') | 1 | | -27 | |
| " | 0958 | | ✓ | | HB-12 (0-2') | 1 | ✓ | -28 | |
| " | 1004 | | ✓ | | " (5-7') | 1 | ✓ | -29 | |
| " | 1009 | | ✓ | | " (10-12') | 1 | ✓ | -30 | |
| " | 1015 | | ✓ | | " (15-17') | 1 | | -31 | |
| " | 1020 | | ✓ | | " (20-22') | 1 | | -32 | |
| " | 1031 | | ✓ | | HB-2A (5-7') | 1 | ✓ | -33 | |
| " | 1038 | | ✓ | | " (10-12') | 1 | | -34 | |
| " | 1047 | | ✓ | | " (15-17') | 1 | | -35 | |
| " | 1054 | | ✓ | | " (20-22') | 1 | | -36 | |

SAMPLED BY; (Signature) Cindy Crain — DATE: 4/4/06 TIME: 1054

RELINQUISHED BY: (Signature) Cindy Crain — DATE: 4/5/06 TIME: 1220

RECEIVED BY: (Signature) — DATE: TIME:

RELINQUISHED BY: (Signature) — DATE: TIME:

RECEIVED BY: (Signature) — DATE: TIME:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS AIRBILL #:
HAND DELIVERED UPS OTHER:

COMMENTS:

TURNAROUND TIME NEEDED

WHITE – RECEIVING LAB
YELLOW – RECEIVING LAB (TO BE RETURNED TO LA AFTER RECEIPT)
PINK – PROJECT MANAGER
GOLD – QA/QC COORDINATOR

RECEIVING LABORATORY: ELOT
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:

RECEIVED BY: (Signature) Carrie Kelly
DATE: 4/5/06 TIME: 12:20

SAMPLE CONDITION WHEN RECEIVED:
4:5 no label / no seal

LA CONTACT PERSON: C. Crain

SAMPLE TYPE: Soil

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

# Analytical Report

**Prepared for:**

Cindy Crain

Larson & Associates, Inc.

P.O. Box 50685

Midland, TX 79710

Project: XTO/ EMSU #187

Project Number: 4-0119

Location: None Given

Lab Order Number: 6E01001

Report Date: 05/04/06

| | | |
|---|---|---|
| Larson & Associates, Inc. | Project: XTO/ EMSU #187 | Fax: (432) 687-0456 |
| P.O. Box 50685 | Project Number: 4-0119 | **Reported:** |
| Midland TX, 79710 | Project Manager: Cindy Crain | 05/04/06 12:02 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| HB-1A (20-22') | 6E01001-01 | Soil | 04/03/06 13:16 | 04/05/06 12:20 |
| HB-10A (20-22') | 6E01001-02 | Soil | 04/04/06 09:48 | 04/05/06 12:20 |
| HB-12 (20-22') | 6E01001-03 | Soil | 04/04/06 10:20 | 04/05/06 12:20 |



12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

## General Chemistry Parameters by EPA / Standard Methods
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-1A (20-22') (6E01001-01) Soil** | | | | | | | | | |
| **Chloride** | **441** | 10.0 | mg/kg | 20 | EE60204 | 05/02/06 | 05/02/06 | EPA 300.0 | O-04 |
| **HB-10A (20-22') (6E01001-02) Soil** | | | | | | | | | |
| **Chloride** | **959** | 25.0 | mg/kg | 50 | EE60204 | 05/02/06 | 05/02/06 | EPA 300.0 | O-04 |
| **HB-12 (20-22') (6E01001-03) Soil** | | | | | | | | | |
| **Chloride** | **177** | 10.0 | mg/L | 2 | EE60312 | 05/04/06 | 05/04/06 | 1312/9253 | |








12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

| | | |
|---|---|---|
| Larson & Associates, Inc. | Project: XTO/ EMSU #187 | Fax: (432) 687-0456 |
| P.O. Box 50685 | Project Number: 4-0119 | **Reported:** |
| Midland TX, 79710 | Project Manager: Cindy Crain | 05/04/06 12:02 |

## General Chemistry Parameters by EPA / Standard Methods - Quality Control
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch EE60204 - Water Extraction** | | | | | | | | | | |
| **Blank (EE60204-BLK1)** | | | | Prepared & Analyzed: 05/02/06 | | | | | | |
| Chloride | ND | 0.500 | mg/kg | | | | | | | |
| **LCS (EE60204-BS1)** | | | | Prepared & Analyzed: 05/02/06 | | | | | | |
| Chloride | 10.1 | 0.500 | mg/kg | 10.0 | | 101 | 80-120 | | | |
| **Calibration Check (EE60204-CCV1)** | | | | Prepared & Analyzed: 05/02/06 | | | | | | |
| Chloride | 9.88 | | mg/L | 10.0 | | 98.8 | 80-120 | | | |
| **Duplicate (EE60204-DUP1)** | | **Source: 6D25002-21** | | Prepared & Analyzed: 05/02/06 | | | | | | |
| Chloride | 124 | 5.00 | mg/kg | | 125 | | | 0.803 | 20 | |
| **Batch EE60312 - EPA 1312/9253** | | | | | | | | | | |
| **Blank (EE60312-BLK1)** | | | | Prepared & Analyzed: 05/04/06 | | | | | | |
| Chloride | 14.2 | 10.0 | mg/L | | | | | | | B |
| **LCS (EE60312-BS1)** | | | | Prepared & Analyzed: 05/04/06 | | | | | | |
| Chloride | 97.5 | | mg/L | 100 | | 97.5 | 80-120 | | | |
| **Matrix Spike (EE60312-MS1)** | | **Source: 6E01001-03** | | Prepared & Analyzed: 05/04/06 | | | | | | |
| Chloride | 674 | 10.0 | mg/L | 500 | 177 | 99.4 | 80-120 | | | |
| **Matrix Spike Dup (EE60312-MSD1)** | | **Source: 6E01001-03** | | Prepared & Analyzed: 05/04/06 | | | | | | |
| Chloride | 665 | 10.0 | mg/L | 500 | 177 | 97.6 | 80-120 | 1.34 | 20 | |
| **Reference (EE60312-SRM1)** | | | | Prepared & Analyzed: 05/04/06 | | | | | | |
| Chloride | 4960 | | mg/L | 5000 | | 99.2 | 80-120 | | | |







12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

## Notes and Definitions

| | |
|---|---|
| O-04 | This sample was analyzed outside the EPA recommended holding time. |
| B | Analyte is found in the associated blank as well as in the sample (CLP B-flag). |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| LCS | Laboratory Control Spike |
| MS | Matrix Spike |
| Dup | Duplicate |

Report Approved By: Raland K Tuttle Date: 5-04-06

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
LaTasha Cornish, Chemist
Sandra Sanchez, Lab Tech.

# CHAIN—OF—CUSTODY RECORD

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202 • Midland, TX 79701
Fax: 432-687-0456
432-687-0901

CLIENT NAME: XTO

SITE MANAGER: Cindy Crain

PROJECT NO.: 4 0114

PROJECT NAME: EMSU # 187

PAGE 1 OF 2

LAB. PO #

| DATE | TIME | WATER | SOIL | OTHER | SAMPLE IDENTIFICATION | NUMBER OF CONTAINERS | PARAMETERS/METHOD NUMBER: Chlorides | Added 4 analytes per Cindy Crain attached e-mail | LAB. I.D. NUMBER (LAB USE ONLY) | REMARKS (I.E., FILTERED, UNFILTERED, PRESERVED, UNPRESERVED, GRAB COMPOSITE) |
|---|---|---|---|---|---|---|---|---|---|---|
| 4/3/06 | 1040 | | ✓ | | HB 8A (5-7') | 1 | ✓ | | 6D 05019-01 | |
| " | 1048 | | ✓ | | " (10-12') | 1 | ✓ | cc | -02 | |
| " | 1055 | | ✓ | | " (15-17') | 1 | | | -03 | |
| " | 1059 | | ✓ | | " (20-22') | 1 | | | -04 | |
| " | 1200 | | ✓ | | HB 13 (0-2') | 1 | ✓ | | -05 | |
| " | 1205 | | ✓ | | " (5-7') | 1 | ✓ | | -06 | |
| " | 1209 | | ✓ | | " (10-12') | 1 | ✓ | | -07 | |
| " | 1213 | | ✓ | | " (15-17') | 1 | | | -08 | |
| " | 1216 | | ✓ | | " (20-22') | 1 | | | -09 | |
| " | 1234 | | ✓ | | HB 9A (10-12') | 1 | ✓ | | -10 | |
| " | 1239 | | ✓ | | " (15-17') | 1 | (X) | | -11 | |
| " | 1241 | | ✓ | | " (20-22') | 1 | | | -12 | |
| " | 1300 | | ✓ | | HB 1A (10-12') | 1 | ✓ | | -13 | |
| " | 1306 | | ✓ | | " (15-17') | 1 | (X) | | -14 | |
| " | 1311 | | ✓ | | " (20-22') | 1 | (X) | | -15 | 6E01001-01 |
| " | 1341 | | ✓ | | HB 11A (10-12') | 1 | ✓ | | -16 | |
| " | 1354 | | ✓ | | " (15-17') | 1 | | | -17 | |
| " | 1404 | | ✓ | | " (20-22') | 1 | | | -18 | |

SAMPLED BY: (Signature) Cindy Crain
DATE: 4/3/06
TIME: 1404

RELINQUISHED BY: (Signature) Cindy Crain
DATE: 4/5/06
TIME: 1220

RECEIVED BY: (Signature)
DATE:
TIME:

RELINQUISHED BY: (Signature)
DATE:
TIME:

RECEIVED BY: (Signature)
DATE:
TIME:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS AIRBILL #:
HAND DELIVERED UPS OTHER:

COMMENTS: (X) Add 5-1-5 as per attached e-mail

TURNAROUND TIME NEEDED

WHITE – RECEIVING LAB
YELLOW – RECEIVING LAB (TO BE RETURNED TO LA AFTER RECEIPT)
PINK – PROJECT MANAGER
GOLD – QA/QC COORDINATOR

RECEIVING LABORATORY: TEL-01
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:

RECEIVED BY: (Signature) Karen Kelly
DATE: 4/5/06 TIME: 12:20

SAMPLE CONDITION WHEN RECEIVED: 4.5 no label / no seal

LA CONTACT PERSON: C. Crain

SAMPLE TYPE: Soil

**Jeanne McMurrey**

**From:** "Cindy Crain" <cindy@laenvironmental.com>
**To:** "Jeanne McMurrey" <jeanne@elabtexas.com>
**Sent:** Monday, May 01, 2006 9:21 AM
**Subject:** FW: Request for Additional Soil Analysis

Jeanne,

Would you please run the following two (2) additional samples for Chloride analysis:

**Project:** XTO/EMSU #187
**Project Number:** 4-0119
**Lab Order Number:** 6D05019
**Report Date:** 4/13/06

- Sample HB-10A (20-22') Sampled 4/4/06 at 0948
- Sample HB-1A (20-22') Sampled 4/3/06 at 1316

In addition, please run the following sample for SPLP analysis for chloride:

- Sample HB-12 (20-22') Sampled 4/4/06 at 1020

Please give me a call if you have any questions or need additional information.

Thank you,

Cindy K. Crain, P.G.

*Larson and Associates, Inc.*
507 N. Marienfeld, Ste.202
Midland, TX 79701

office: (432) 687-0901
fax: (432) 687-0456
cell: (432) 556-8665

--

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

# Analytical Report

**Prepared for:**

Mark Larson

Larson & Associates, Inc.

P.O. Box 50685

Midland, TX 79710

Project: XTO/ EMSU #187

Project Number: 4-0119

Location: None Given

Lab Order Number: 6G07011

Report Date: 07/14/06

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: XTO/ EMSU #187
Project Number: 4-0119
Project Manager: Mark Larson

Fax: (432) 687-0456

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| HB-12, 25-26' | 6G07011-01 | Soil | 07/06/06 09:18 | 07/07/06 11:10 |
| HB-12, 30-31' | 6G07011-02 | Soil | 07/06/06 09:30 | 07/07/06 11:10 |
| HB-12, 35-36' | 6G07011-03 | Soil | 07/06/06 09:36 | 07/07/06 11:10 |
| HB-14, 0-2' | 6G07011-05 | Soil | 07/06/06 10:10 | 07/07/06 11:10 |
| HB-14, 5-6' | 6G07011-06 | Soil | 07/06/06 10:15 | 07/07/06 11:10 |
| HB-14, 10-11' | 6G07011-07 | Soil | 07/06/06 10:20 | 07/07/06 11:10 |
| HB-14, 15-16' | 6G07011-08 | Soil | 07/06/06 10:23 | 07/07/06 11:10 |
| HB-14, 20-21' | 6G07011-09 | Soil | 07/06/06 10:28 | 07/07/06 11:10 |
| HB-14, 25-26' | 6G07011-10 | Soil | 07/06/06 10:34 | 07/07/06 11:10 |
| HB-14, 30-31' | 6G07011-11 | Soil | 07/06/06 10:40 | 07/07/06 11:10 |
| HB-14, 35-36' | 6G07011-12 | Soil | 07/06/06 10:48 | 07/07/06 11:10 |
| Background, 0-2' | 6G07011-14 | Soil | 07/06/06 13:26 | 07/07/06 11:10 |
| Background, 5-6' | 6G07011-15 | Soil | 07/06/06 13:30 | 07/07/06 11:10 |
| Background, 10-11' | 6G07011-16 | Soil | 07/06/06 13:34 | 07/07/06 11:10 |
| Background, 15-16' | 6G07011-17 | Soil | 07/06/06 13:36 | 07/07/06 11:10 |
| Background, 20-21' | 6G07011-18 | Soil | 07/06/06 13:43 | 07/07/06 11:10 |
| Background, 25-26' | 6G07011-19 | Soil | 07/06/06 13:50 | 07/07/06 11:10 |
| Background, 30-31' | 6G07011-20 | Soil | 07/06/06 14:02 | 07/07/06 11:10 |
| Background, 35-36' | 6G07011-21 | Soil | 07/06/06 14:10 | 07/07/06 11:10 |
| HB-8A, 10-11' | 6G07011-23 | Soil | 07/06/06 14:42 | 07/07/06 11:10 |
| HB-8A, 15-16' | 6G07011-24 | Soil | 07/06/06 14:46 | 07/07/06 11:10 |
| HB-8A, 20-21' | 6G07011-25 | Soil | 07/06/06 14:53 | 07/07/06 11:10 |
| HB-15, 0-2' | 6G07011-27 | Soil | 07/06/06 15:30 | 07/07/06 11:10 |
| HB-15, 5-6' | 6G07011-28 | Soil | 07/06/06 15:35 | 07/07/06 11:10 |
| HB-15, 10-11' | 6G07011-29 | Soil | 07/06/06 15:40 | 07/07/06 11:10 |
| HB-15, 15-16' | 6G07011-30 | Soil | 07/06/06 15:45 | 07/07/06 11:10 |
| HB-15, 20-21' | 6G07011-31 | Soil | 07/06/06 15:48 | 07/07/06 11:10 |
| HB-9A, 20-21' | 6G07011-33 | Soil | 07/06/06 16:20 | 07/07/06 11:10 |
| HB-9A, 25-26' | 6G07011-34 | Soil | 07/06/06 16:27 | 07/07/06 11:10 |
| HB-9A, 30-31' | 6G07011-35 | Soil | 07/06/06 16:34 | 07/07/06 11:10 |

## Organics by GC
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-12, 25-26' (6G07011-01) Soil** | | | | | | | | | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EF62601 | 07/07/06 | 07/08/06 | EPA 8015M | |
| **Carbon Ranges C12-C28** | **ND** | 10.0 | " | " | " | " | " | " | |
| Carbon Ranges C28-C35 | ND | 10.0 | " | " | " | " | " | " | |
| **Total Hydrocarbon nC6-nC35** | **ND** | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *96.0 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *98.2 %* | *70-130* | | " | " | " | " | |
| **HB-14, 15-16' (6G07011-08) Soil** | | | | | | | | | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EF62601 | 07/07/06 | 07/08/06 | EPA 8015M | |
| Carbon Ranges C12-C28 | ND | 10.0 | " | " | " | " | " | " | |
| Carbon Ranges C28-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon nC6-nC35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *98.6 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *99.0 %* | *70-130* | | " | " | " | " | |
| **HB-15, 5-6' (6G07011-28) Soil** | | | | | | | | | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg dry | 1 | EF62601 | 07/07/06 | 07/08/06 | EPA 8015M | |
| Carbon Ranges C12-C28 | ND | 10.0 | " | " | " | " | " | " | |
| Carbon Ranges C28-C35 | ND | 10.0 | " | " | " | " | " | " | |
| Total Hydrocarbon nC6-nC35 | ND | 10.0 | " | " | " | " | " | " | |
| *Surrogate: 1-Chlorooctane* | | *94.8 %* | *70-130* | | " | " | " | " | |
| *Surrogate: 1-Chlorooctadecane* | | *96.8 %* | *70-130* | | " | " | " | " | |

| | | |
|---|---|---|
| Larson & Associates, Inc. | Project: XTO/ EMSU #187 | Fax: (432) 687-0456 |
| P.O. Box 50685 | Project Number: 4-0119 | |
| Midland TX, 79710 | Project Manager: Mark Larson | |

## General Chemistry Parameters by EPA / Standard Methods
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-12, 25-26' (6G07011-01) Soil** | | | | | | | | | |
| **Chloride** | **2340** | 20.0 | mg/kg Wet | 2 | EG61003 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **% Moisture** | **4.3** | 0.1 | % | 1 | EG61010 | 07/07/06 | 07/10/06 | % calculation | |
| **HB-12, 30-31' (6G07011-02) Soil** | | | | | | | | | |
| **Chloride** | **510** | 20.0 | mg/kg Wet | 2 | EG61003 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **HB-12, 35-36' (6G07011-03) Soil** | | | | | | | | | |
| **Chloride** | **1020** | 20.0 | mg/kg Wet | 2 | EG61003 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **HB-14, 0-2' (6G07011-05) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **HB-14, 5-6' (6G07011-06) Soil** | | | | | | | | | |
| **Chloride** | **978** | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **HB-14, 10-11' (6G07011-07) Soil** | | | | | | | | | |
| **Chloride** | **681** | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **HB-14, 15-16' (6G07011-08) Soil** | | | | | | | | | |
| **Chloride** | **893** | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **% Moisture** | **6.9** | 0.1 | % | 1 | EG61010 | 07/07/06 | 07/10/06 | % calculation | |
| **HB-14, 20-21' (6G07011-09) Soil** | | | | | | | | | |
| **Chloride** | **1700** | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **HB-14, 25-26' (6G07011-10) Soil** | | | | | | | | | |
| **Chloride** | **638** | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **HB-14, 30-31' (6G07011-11) Soil** | | | | | | | | | |
| **Chloride** | **553** | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |







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Larson & Associates, Inc.
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Project: XTO/ EMSU #187
Project Number: 4-0119
Project Manager: Mark Larson

Fax: (432) 687-0456

## General Chemistry Parameters by EPA / Standard Methods
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-14, 35-36' (6G07011-12) Soil** | | | | | | | | | |
| **Chloride** | **298** | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **Background, 0-2' (6G07011-14) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **Background, 5-6' (6G07011-15) Soil** | | | | | | | | | |
| **Chloride** | **31.9** | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **Background, 10-11' (6G07011-16) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **Background, 15-16' (6G07011-17) Soil** | | | | | | | | | |
| **Chloride** | **85.1** | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **Background, 20-21' (6G07011-18) Soil** | | | | | | | | | |
| **Chloride** | **42.5** | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **Background, 25-26' (6G07011-19) Soil** | | | | | | | | | |
| **Chloride** | **21.3** | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **Background, 30-31' (6G07011-20) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **Background, 35-36' (6G07011-21) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **HB-8A, 10-11' (6G07011-23) Soil** | | | | | | | | | |
| **Chloride** | **31.9** | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |







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| | | |
|---|---|---|
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| P.O. Box 50685 | Project Number: 4-0119 | |
| Midland TX, 79710 | Project Manager: Mark Larson | |

## General Chemistry Parameters by EPA / Standard Methods
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-8A, 15-16' (6G07011-24) Soil** | | | | | | | | | |
| **Chloride** | **21.3** | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **HB-8A, 20-21' (6G07011-25) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **HB-15, 0-2' (6G07011-27) Soil** | | | | | | | | | |
| **Chloride** | **31.9** | 20.0 | mg/kg Wet | 2 | EG61004 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **HB-15, 5-6' (6G07011-28) Soil** | | | | | | | | | |
| **Chloride** | **74.4** | 20.0 | mg/kg Wet | 2 | EG61005 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **% Moisture** | **3.0** | 0.1 | % | 1 | EG61010 | 07/07/06 | 07/10/06 | % calculation | |
| **HB-15, 10-11' (6G07011-29) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EG61005 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **HB-15, 15-16' (6G07011-30) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EG61005 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **HB-15, 20-21' (6G07011-31) Soil** | | | | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | 2 | EG61005 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **HB-9A, 20-21' (6G07011-33) Soil** | | | | | | | | | |
| **Chloride** | **1470** | 20.0 | mg/kg Wet | 2 | EG61005 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **HB-9A, 25-26' (6G07011-34) Soil** | | | | | | | | | |
| **Chloride** | **319** | 20.0 | mg/kg Wet | 2 | EG61005 | 07/10/06 | 07/11/06 | SW 846 9253 | |
| **HB-9A, 30-31' (6G07011-35) Soil** | | | | | | | | | |
| **Chloride** | **340** | 20.0 | mg/kg Wet | 2 | EG61005 | 07/10/06 | 07/11/06 | SW 846 9253 | |







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Project: XTO/ EMSU #187
Project Number: 4-0119
Project Manager: Mark Larson

Fax: (432) 687-0456

# Organics by GC - Quality Control
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch EF62601 - Solvent Extraction (GC)** | | | | | | | | | | |
| **Blank (EF62601-BLK1)** | | | | Prepared: 07/07/06 Analyzed: 07/08/06 | | | | | | |
| Carbon Ranges C6-C12 | ND | 10.0 | mg/kg wet | | | | | | | |
| Carbon Ranges C12-C28 | ND | 10.0 | " | | | | | | | |
| Carbon Ranges C28-C35 | ND | 10.0 | " | | | | | | | |
| Total Hydrocarbon nC6-nC35 | ND | 10.0 | " | | | | | | | |
| *Surrogate: 1-Chlorooctane* | *47.9* | | *mg/kg* | *50.0* | | *95.8* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *47.0* | | *"* | *50.0* | | *94.0* | *70-130* | | | |
| **LCS (EF62601-BS1)** | | | | Prepared: 07/07/06 Analyzed: 07/08/06 | | | | | | |
| Carbon Ranges C6-C12 | 511 | 10.0 | mg/kg wet | 500 | | 102 | 75-125 | | | |
| Carbon Ranges C12-C28 | 517 | 10.0 | " | 500 | | 103 | 75-125 | | | |
| Carbon Ranges C28-C35 | ND | 10.0 | " | 0.00 | | | 75-125 | | | |
| Total Hydrocarbon nC6-nC35 | 1030 | 10.0 | " | 1000 | | 103 | 75-125 | | | |
| *Surrogate: 1-Chlorooctane* | *56.8* | | *mg/kg* | *50.0* | | *114* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *48.1* | | *"* | *50.0* | | *96.2* | *70-130* | | | |
| **Calibration Check (EF62601-CCV1)** | | | | Prepared: 07/07/06 Analyzed: 07/10/06 | | | | | | |
| Carbon Ranges C6-C12 | 272 | | mg/kg | 250 | | 109 | 80-120 | | | |
| Carbon Ranges C12-C28 | 277 | | " | 250 | | 111 | 80-120 | | | |
| Total Hydrocarbon nC6-nC35 | 549 | | " | 500 | | 110 | 80-120 | | | |
| *Surrogate: 1-Chlorooctane* | *46.9* | | *"* | *50.0* | | *93.8* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *44.9* | | *"* | *50.0* | | *89.8* | *70-130* | | | |
| **Matrix Spike (EF62601-MS1)** | **Source: 6G07010-02** | | | Prepared: 07/07/06 Analyzed: 07/08/06 | | | | | | |
| Carbon Ranges C6-C12 | 509 | 10.0 | mg/kg dry | 541 | ND | 94.1 | 75-125 | | | |
| Carbon Ranges C12-C28 | 521 | 10.0 | " | 541 | ND | 96.3 | 75-125 | | | |
| Carbon Ranges C28-C35 | ND | 10.0 | " | 0.00 | ND | | 75-125 | | | |
| Total Hydrocarbon nC6-nC35 | 1030 | 10.0 | " | 1080 | ND | 95.4 | 75-125 | | | |
| *Surrogate: 1-Chlorooctane* | *55.8* | | *mg/kg* | *50.0* | | *112* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *48.6* | | *"* | *50.0* | | *97.2* | *70-130* | | | |

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## Organics by GC - Quality Control
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch EF62601 - Solvent Extraction (GC)** | | | | | | | | | | |
| **Matrix Spike Dup (EF62601-MSD1)** | **Source: 6G07010-02** | | | Prepared: 07/07/06 Analyzed: 07/08/06 | | | | | | |
| Carbon Ranges C6-C12 | 513 | 10.0 | mg/kg dry | 541 | ND | 94.8 | 75-125 | 0.783 | 20 | |
| Carbon Ranges C12-C28 | 522 | 10.0 | " | 541 | ND | 96.5 | 75-125 | 0.192 | 20 | |
| Carbon Ranges C28-C35 | ND | 10.0 | " | 0.00 | ND | | 75-125 | | 20 | |
| Total Hydrocarbon nC6-nC35 | 1040 | 10.0 | " | 1080 | ND | 96.3 | 75-125 | 0.966 | 20 | |
| *Surrogate: 1-Chlorooctane* | *58.7* | | *mg/kg* | *50.0* | | *117* | *70-130* | | | |
| *Surrogate: 1-Chlorooctadecane* | *49.6* | | *"* | *50.0* | | *99.2* | *70-130* | | | |

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## General Chemistry Parameters by EPA / Standard Methods - Quality Control
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch EG61003 - General Preparation (WetChem)** | | | | | | | | | | |
| **Blank (EG61003-BLK1)** | | | | Prepared: 07/10/06 Analyzed: 07/11/06 | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | | | | | | | |
| **LCS (EG61003-BS1)** | | | | Prepared & Analyzed: 07/11/06 | | | | | | |
| Chloride | 83.0 | | mg/kg | 100 | | 83.0 | 80-120 | | | |
| **Matrix Spike (EG61003-MS1)** | | **Source: 6G07006-01** | | Prepared: 07/10/06 Analyzed: 07/11/06 | | | | | | |
| Chloride | 17800 | 20.0 | mg/kg Wet | 500 | 17200 | 120 | 80-120 | | | |
| **Matrix Spike Dup (EG61003-MSD1)** | | **Source: 6G07006-01** | | Prepared: 07/10/06 Analyzed: 07/11/06 | | | | | | |
| Chloride | 17800 | 20.0 | mg/kg Wet | 500 | 17200 | 120 | 80-120 | 0.00 | 20 | |
| **Reference (EG61003-SRM1)** | | | | Prepared & Analyzed: 07/11/06 | | | | | | |
| Chloride | 50.0 | | mg/kg | 50.0 | | 100 | 80-120 | | | |
| **Batch EG61004 - General Preparation (WetChem)** | | | | | | | | | | |
| **Blank (EG61004-BLK1)** | | | | Prepared: 07/10/06 Analyzed: 07/11/06 | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | | | | | | | |
| **LCS (EG61004-BS1)** | | | | Prepared & Analyzed: 07/11/06 | | | | | | |
| Chloride | 80.8 | | mg/kg | 100 | | 80.8 | 80-120 | | | |
| **Matrix Spike (EG61004-MS1)** | | **Source: 6G07011-07** | | Prepared: 07/10/06 Analyzed: 07/11/06 | | | | | | |
| Chloride | 1110 | 20.0 | mg/kg Wet | 500 | 681 | 85.8 | 80-120 | | | |
| **Matrix Spike Dup (EG61004-MSD1)** | | **Source: 6G07011-07** | | Prepared: 07/10/06 Analyzed: 07/11/06 | | | | | | |
| Chloride | 1110 | 20.0 | mg/kg Wet | 500 | 681 | 85.8 | 80-120 | 0.00 | 20 | |

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## General Chemistry Parameters by EPA / Standard Methods - Quality Control
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch EG61004 - General Preparation (WetChem)** | | | | | | | | | | |
| **Reference (EG61004-SRM1)** | | | | Prepared & Analyzed: 07/11/06 | | | | | | |
| Chloride | 51.0 | | mg/kg | 50.0 | | 102 | 80-120 | | | |
| **Batch EG61005 - General Preparation (WetChem)** | | | | | | | | | | |
| **Blank (EG61005-BLK1)** | | | | Prepared: 07/10/06 Analyzed: 07/11/06 | | | | | | |
| Chloride | ND | 20.0 | mg/kg Wet | | | | | | | |
| **LCS (EG61005-BS1)** | | | | Prepared & Analyzed: 07/11/06 | | | | | | |
| Chloride | 84.0 | | mg/kg | 100 | | 84.0 | 80-120 | | | |
| **Matrix Spike (EG61005-MS1)** | | **Source: 6G07011-30** | | Prepared: 07/10/06 Analyzed: 07/11/06 | | | | | | |
| Chloride | 489 | 20.0 | mg/kg Wet | 500 | 0.00 | 97.8 | 80-120 | | | |
| **Matrix Spike Dup (EG61005-MSD1)** | | **Source: 6G07011-30** | | Prepared: 07/10/06 Analyzed: 07/11/06 | | | | | | |
| Chloride | 489 | 20.0 | mg/kg Wet | 500 | 0.00 | 97.8 | 80-120 | 0.00 | 20 | |
| **Reference (EG61005-SRM1)** | | | | Prepared & Analyzed: 07/11/06 | | | | | | |
| Chloride | 52.1 | | mg/kg | 50.0 | | 104 | 80-120 | | | |
| **Batch EG61010 - General Preparation (Prep)** | | | | | | | | | | |
| **Blank (EG61010-BLK1)** | | | | Prepared: 07/07/06 Analyzed: 07/11/06 | | | | | | |
| % Moisture | ND | 0.1 | % | | | | | | | |
| **Duplicate (EG61010-DUP1)** | | **Source: 6G07002-01** | | Prepared: 07/07/06 Analyzed: 07/10/06 | | | | | | |
| % Solids | 92.8 | | % | | 94.6 | | | 1.92 | 20 | |

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## General Chemistry Parameters by EPA / Standard Methods - Quality Control
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch EG61010 - General Preparation (Prep)** | | | | | | | | | | |
| **Duplicate (EG61010-DUP2)** | | **Source: 6G07004-12** | | Prepared: 07/07/06 Analyzed: 07/10/06 | | | | | | |
| % Solids | 86.8 | | % | | 87.8 | | | 1.15 | 20 | |
| **Duplicate (EG61010-DUP3)** | | **Source: 6G07007-03** | | Prepared: 07/07/06 Analyzed: 07/10/06 | | | | | | |
| % Solids | 90.1 | | % | | 89.0 | | | 1.23 | 20 | |
| **Duplicate (EG61010-DUP4)** | | **Source: 6G07012-03** | | Prepared: 07/07/06 Analyzed: 07/10/06 | | | | | | |
| % Solids | 95.2 | | % | | 94.0 | | | 1.27 | 20 | |

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## Notes and Definitions

| | |
|---|---|
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| LCS | Laboratory Control Spike |
| MS | Matrix Spike |
| Dup | Duplicate |

Report Approved By: Raland K Tuttle Date: 7-14-06

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
LaTasha Cornish, Chemist
Sandra Sanchez, Lab Tech.









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CLIENT NAME: XTO Energy, Inc.

SITE MANAGER: Mark Larson

PROJECT NO.: 4-0119

PROJECT NAME: EMSU Well #187

PAGE 1 OF 2

LAB. PO #

# CHAIN—OF—CUSTODY RECORD

Larson & Associates, Inc.
Environmental Consultants
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| DATE | TIME | WATER | SOIL | OTHER | SAMPLE IDENTIFICATION | NUMBER OF CONTAINERS | PARAMETERS/METHOD NUMBER: TPH (8015 GRO/DRO) | PARAMETERS/METHOD NUMBER: Chlorides | LAB. I.D. NUMBER (LAB USE ONLY) | REMARKS (I.E., FILTERED, UNFILTERED, PRESERVED, UNPRESERVED, GRAB COMPOSITE) |
|---|---|---|---|---|---|---|---|---|---|---|
| 7/6/06 | 0918 | | X | | HB-12, 25-26' | 1 | ✓ | ✓ | | 607011 -01 |
| | 0930 | | | | HB-12, 30-31' | 1 | | ✓ | | -02 |
| | 0936 | | | | HB-12, 35-36' | 1 | | ✓ | | -03 |
| | 0945 | | | | HB-12, 40-41' | 1 | | ✓ | | -04 |
| | 10:10 | | | | HB-14, 0-2' | 1 | | ✓ | | -05 |
| | 10:15 | | | | HB-14, 5-6' | 1 | | ✓ | | -06 |
| | 10:20 | | | | HB-14, 10-11' | 1 | | ✓ | | -07 |
| | 10:23 | | | | HB-14, 15-16' | 1 | ✓ | ✓ | | -08 |
| | 10:25 | | | | HB-14, 20-21' | 1 | | ✓ | | -09 |
| | 10:34 | | | | HB-14, 25-26' | 1 | | ✓ | | -10 |
| | 10:40 | | | | HB-14, 30-31' | 1 | | ✓ | | -11 |
| | 10:48 | | | | HB-14, 35-36' | 1 | | ✓ | | -12 |
| | 10:58 | | | | HB-14, 40-41' | 1 | | ✓ | | -13 |
| | 13:26 | | | | Background, 0-2 | 1 | | ✓ | | -14 |
| | 13:30 | | | | Background, 5-6' | 1 | | ✓ | | -15 |
| | 13:34 | | | | Background, 10-11' | 1 | | ✓ | | -16 |
| | 13:36 | | | | Background, 15-16' | 1 | | ✓ | | -17 |
| | 13:43 | | | | Background, 20-21' | 1 | | ✓ | | -18 |

SAMPLED BY: (Signature) DATE: 7/6/06 TIME: 1634

RELINQUISHED BY: (Signature) DATE: TIME:

RECEIVED BY: (Signature) DATE: TIME:

RELINQUISHED BY: (Signature) DATE: 7/7/06 TIME: 11:10

RECEIVED BY: (Signature) DATE: TIME:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS AIRBILL #:
HAND DELIVERED UPS OTHER:

COMMENTS:

TURNAROUND TIME NEEDED

**WHITE** – RECEIVING LAB
**YELLOW** – RECEIVING LAB (TO BE RETURNED TO LA AFTER RECEIPT)
**PINK** – PROJECT MANAGER
**GOLD** – QA/QC COORDINATOR

RECEIVING LABORATORY: ELT
ADDRESS: 12600 W I-20 E
CITY: Odessa STATE: TX ZIP: 79765
CONTACT: Roland Tuttle PHONE: (432) 563-1800

RECEIVED BY: (Signature) Cindy Kelly
DATE: 7/7/06 TIME: 11:10

SAMPLE CONDITION WHEN RECEIVED:
4oz glass 4.0 w/labels

LA CONTACT PERSON: M. Larson

SAMPLE TYPE: Soil

# CHAIN—OF—CUSTODY RECORD

CLIENT NAME: XTO Energy, Inc
SITE MANAGER: Mark Larson
PROJECT NO.: 4-0119
PROJECT NAME: EMSU Well #87
PAGE 2 OF 2
LAB. PO #


Larson & Associates, Inc.
Environmental Consultants
Fax: 432-687-0456
432-687-0901
507 N. Marienfeld, Ste. 202 • Midland, TX 79701


| DATE | TIME | WATER | SOIL | OTHER | SAMPLE IDENTIFICATION | NUMBER OF CONTAINERS | PARAMETERS/METHOD NUMBER: TPH (8015 DRO/GRO) | PARAMETERS/METHOD NUMBER: Chloride | LAB. I.D. NUMBER (LAB USE ONLY) | REMARKS (I.E., FILTERED, UNFILTERED, PRESERVED, UNPRESERVED, GRAB COMPOSITE) |
|---|---|---|---|---|---|---|---|---|---|---|
| 7/6/06 | 13:50 | | X | | Background 25-26' | 1 | | ✓ | | G07011 - 19 |
| | 14:02 | | | | Background 30-31' | 1 | | ✓ | | -20 |
| | 14:10 | | | | Background 35-36' | 1 | | ✓ | | -21 |
| | 14:15 | | | | Background 40-41' | 1 | | ✓ | | -22 |
| | 14:42 | | | | HB-8A, 10-11' | 1 | | ✓ | | -23 |
| | 14:46 | | | | HB-8A, 15-16' | 1 | | ✓ | | -24 |
| | 14:53 | | | | HB-8A, 20-21' | 1 | | ✓ | | -25 |
| | 15:00 | | | | HB-8A, 25-26' | 1 | | | | -26 |
| | 15:30 | | | | HB-15, 0-2' | 1 | | ✓ | | -27 |
| | 15:35 | | | | HB-15, 5-6' | 1 | ✓ | ✓ | | -28 |
| | 15:40 | | | | HB-15, 10-11' | 1 | | ✓ | | -29 |
| | 15:45 | | | | HB-15, 15-16' | 1 | | ✓ | | -30 |
| | 15:48 | | | | HB-15, 20-21' | 1 | | ✓ | | -31 |
| | 15:55 | | | | HB-15, 25-26' | 1 | | ✓ | | -32 |
| | 16:20 | | | | HB-9A, 20-21' | 1 | | ✓ | | -33 |
| | 16:27 | | | | HB-9A, 25-26' | 1 | | ✓ | | -34 |
| | 16:39 | | | | HB-9A, 30-31' | 1 | | ✓ | | -35 |

SAMPLED BY: (Signature) DATE: 7/6/06 TIME: 16:45
RELINQUISHED BY: (Signature) DATE: TIME:
RECEIVED BY: (Signature) DATE: TIME:

RELINQUISHED BY: (Signature) DATE: 7/7/06 TIME: 11:10
RECEIVED BY: (Signature) DATE: TIME:
SAMPLE SHIPPED BY: (Circle)
FEDEX BUS AIRBILL #:
HAND DELIVERED UPS OTHER:

COMMENTS:
TURNAROUND TIME NEEDED

WHITE – RECEIVING LAB
YELLOW – RECEIVING LAB (TO BE RETURNED TO LA AFTER RECEIPT)
PINK – PROJECT MANAGER
GOLD – QA/QC COORDINATOR

RECEIVING LABORATORY: Environmental Lab of Texas
ADDRESS: 12600 W I-20 E
CITY: Odessa STATE: TX ZIP: 79765
CONTACT: Roland Tuttle PHONE: (432) 563-1800
RECEIVED BY: (Signature)
DATE: 7/7/06 TIME: 11:10

SAMPLE CONDITION WHEN RECEIVED:
LA CONTACT PERSON: M. Larson
SAMPLE TYPE: Soil

# Environmental Lab of Texas
## Variance / Corrective Action Report – Sample Log-In

Client: Larson

Date/Time: 7/7/06 11:10

Order #: 6407011

Initials: CK

### Sample Receipt Checklist

| | | | |
|---|---|---|---|
| Temperature of container/cooler? | Yes | No | 4.0 C |
| Shipping container/cooler in good condition? | ~~Yes~~ | No | |
| Custody Seals intact on shipping container/cooler? | Yes | No | ~~Not present~~ |
| Custody Seals intact on sample bottles? | Yes | No | ~~Not present~~ |
| Chain of custody present? | ~~Yes~~ | No | |
| Sample Instructions complete on Chain of Custody? | ~~Yes~~ | No | |
| Chain of Custody signed when relinquished and received? | ~~Yes~~ | No | |
| Chain of custody agrees with sample label(s) | ~~Yes~~ | No | ID on lid |
| Container labels legible and intact? | Yes | No | |
| Sample Matrix and properties same as on chain of custody? | ~~Yes~~ | No | |
| Samples in proper container/bottle? | ~~Yes~~ | No | |
| Samples properly preserved? | ~~Yes~~ | No | |
| Sample bottles intact? | ~~Yes~~ | No | |
| Preservations documented on Chain of Custody? | ~~Yes~~ | No | |
| Containers documented on Chain of Custody? | ~~Yes~~ | No | |
| Sufficient sample amount for indicated test? | ~~Yes~~ | No | |
| All samples received within sufficient hold time? | ~~Yes~~ | No | |
| VOC samples have zero headspace? | ~~Yes~~ | No | Not Applicable |

Other observations:

### Variance Documentation:

Contact Person: - Date/Time: Contacted by:

Regarding:

Corrective Action Taken:

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

# Analytical Report

**Prepared for:**

Mark Larson

Larson & Associates, Inc.

P.O. Box 50685

Midland, TX 79710

Project: XTO/ EMSU #187

Project Number: 4-0119

Location: None Given

Lab Order Number: 6G17005

Report Date: 07/20/06

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: XTO/ EMSU #187
Project Number: 4-0119
Project Manager: Mark Larson

Fax: (432) 687-0456

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| HB-12 40-41' | 6G17005-01 | Soil | 07/06/06 09:45 | 07/07/06 11:10 |

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: XTO/ EMSU #187
Project Number: 4-0119
Project Manager: Mark Larson

Fax: (432) 687-0456

## General Chemistry Parameters by EPA / Standard Methods
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HB-12 40-41' (6G17005-01) Soil** | | | | | | | | | |
| **Chloride** | **1110** | 20.0 | mg/kg | 40 | EG61910 | 07/19/06 | 07/19/06 | EPA 300.0 | |







12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: XTO/ EMSU #187
Project Number: 4-0119
Project Manager: Mark Larson

Fax: (432) 687-0456

## General Chemistry Parameters by EPA / Standard Methods - Quality Control
## Environmental Lab of Texas

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch EG61910 - General Preparation (WetChem)** | | | | | | | | | | |
| **Blank (EG61910-BLK1)** | | | | Prepared & Analyzed: 07/19/06 | | | | | | |
| Chloride | ND | 0.500 | mg/kg | | | | | | | |
| **LCS (EG61910-BS1)** | | | | Prepared & Analyzed: 07/19/06 | | | | | | |
| Chloride | 10.2 | 0.500 | mg/kg | 10.0 | | 102 | 80-120 | | | |
| **Calibration Check (EG61910-CCV1)** | | | | Prepared & Analyzed: 07/19/06 | | | | | | |
| Chloride | 10.2 | | mg/L | 10.0 | | 102 | 80-120 | | | |
| **Duplicate (EG61910-DUP1)** | | **Source: 6G14012-02** | | Prepared & Analyzed: 07/19/06 | | | | | | |
| Chloride | 542 | 10.0 | mg/kg | | 544 | | | 0.368 | 20 | |
| **Duplicate (EG61910-DUP2)** | | **Source: 6G14008-03** | | Prepared & Analyzed: 07/19/06 | | | | | | |
| Chloride | 63.5 | 5.00 | mg/kg | | 67.2 | | | 5.66 | 20 | |
| **Matrix Spike (EG61910-MS1)** | | **Source: 6G14012-02** | | Prepared & Analyzed: 07/19/06 | | | | | | |
| Chloride | 796 | 10.0 | mg/kg | 200 | 544 | 126 | 80-120 | | | S-07 |
| **Matrix Spike (EG61910-MS2)** | | **Source: 6G14008-03** | | Prepared & Analyzed: 07/19/06 | | | | | | |
| Chloride | 168 | 5.00 | mg/kg | 100 | 67.2 | 101 | 80-120 | | | |

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: XTO/ EMSU #187
Project Number: 4-0119
Project Manager: Mark Larson

Fax: (432) 687-0456

## Notes and Definitions

| | |
|---|---|
| S-07 | Recovery outside Laboratory historical or method prescribed limits. |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| LCS | Laboratory Control Spike |
| MS | Matrix Spike |
| Dup | Duplicate |

Report Approved By: Raland K Tuttle Date: 7-20-06

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
LaTasha Cornish, Chemist
Sandra Sanchez, Lab Tech.









12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

# CHAIN—OF—CUSTODY RECORD

Larson & Associates, Inc.
Environmental Consultants
Fax: 432-687-0456
432-687-0901
507 N. Marienfeld, Ste. 202 • Midland, TX 79701

CLIENT NAME: XTO Energy, Inc.

SITE MANAGER: Mark Larson

PROJECT NO.: 4-0119

PROJECT NAME: EMSU Well #187

PAGE 1 OF 2

LAB. PO #

| DATE | TIME | WATER | SOIL | OTHER | SAMPLE IDENTIFICATION | NUMBER OF CONTAINERS | PARAMETERS/METHOD NUMBER: TPH (8015 GRO/DRO) | PARAMETERS/METHOD NUMBER: Chlorides | LAB. I.D. NUMBER (LAB USE ONLY) | REMARKS (I.E., FILTERED, UNFILTERED, PRESERVED, UNPRESERVED, GRAB COMPOSITE) |
|---|---|---|---|---|---|---|---|---|---|---|
| 7/6/06 | 09:18 | | X | | HB-12, 25-26' | 1 | ✓ | ✓ | | 660701 -01 |
| | 09:30 | | | | HB-12, 30-31' | 1 | | ✓ | | -02 |
| | 09:34 | | | | HB-12, 35-36' | 1 | | ✓ | | -03 |
| | 09:45 | | | | HB-12, 40-41' | 1 | | X | 660700501 | -04 |
| | 10:16 | | | | HB-14, 0-2' | 1 | | ✓ | | -05 |
| | 10:18 | | | | HB-14, 5-6' | 1 | | ✓ | | -06 |
| | 10:26 | | | | HB-14, 10-11' | 1 | | ✓ | | -07 |
| | 10:23 | | | | HB-14, 15-16' | 1 | ✓ | ✓ | | -08 |
| | 10:29 | | | | HB-14, 20-21' | 1 | | ✓ | | -09 |
| | 10:31 | | | | HB-14, 25-26' | 1 | | ✓ | | -10 |
| | 10:48 | | | | HB-14, 30-31' | 1 | | ✓ | | -11 |
| | 10:48 | | | | HB-14, 35-36' | 1 | | ✓ | | -12 |
| | 10:55 | | | | HB-14, 40-41' | 1 | | | | -13 |
| | 13:26 | | | | Background, 0-2' | 1 | | ✓ | | -14 |
| | 13:30 | | | | Background, 5-6' | 1 | | ✓ | | -15 |
| | 13:34 | | | | Background, 10-11' | 1 | | ✓ | | -16 |
| | 13:36 | | | | Background, 15-16' | 1 | | ✓ | | -17 |
| | 13:43 | | | | Background, 20-21' | 1 | | ✓ | | -18 |

SAMPLED BY: (Signature) DATE: 7/6/06 TIME: 16:34

RELINQUISHED BY: (Signature) DATE: TIME:

RECEIVED BY: (Signature) DATE: TIME:

RELINQUISHED BY: (Signature) DATE: 7/7/06 TIME: 11:10

RECEIVED BY: (Signature) DATE: TIME:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS AIRBILL #:
HAND DELIVERED UPS OTHER:

COMMENTS: *Add Cl- 07-17-06 @ 0800 as per attached e-mail

TURNAROUND TIME NEEDED

WHITE – RECEIVING LAB
YELLOW – RECEIVING LAB (TO BE RETURNED TO LA AFTER RECEIPT)
PINK – PROJECT MANAGER
GOLD – QA/QC COORDINATOR

COPY

RECEIVING LABORATORY: ELT
ADDRESS: 12600 W I-20 E
CITY: Odessa STATE: TX ZIP: 79765
CONTACT: Roland Tuttle PHONE: (432) 563-1800

RECEIVED BY: (Signature)
DATE: 7/7/06 TIME: 11:10

SAMPLE CONDITION WHEN RECEIVED:
4oz glass 4,0 w/labels

LA CONTACT PERSON: M. Larson

SAMPLE TYPE: Soil

# CHAIN—OF—CUSTODY RECORD

Larson & Associates, Inc.
Environmental Consultants
Fax: 432-687-0456
432-687-0901
507 N. Marienfeld, Ste. 202 • Midland, TX 79701

CLIENT NAME: XTO Energy, Inc

SITE MANAGER: Mark Larson

PROJECT NO.: 4-0119

PROJECT NAME: EMSU Well #187

PAGE 2 OF 2

LAB. PO #

PARAMETERS/METHOD NUMBER

| DATE | TIME | WATER | SOIL | OTHER | SAMPLE IDENTIFICATION | NUMBER OF CONTAINERS | TPH (8015 DRO/GRO) | Chloride | LAB. I.D. NUMBER (LAB USE ONLY) | REMARKS (I.E., FILTERED, UNFILTERED, PRESERVED, UNPRESERVED, GRAB COMPOSITE) |
|---|---|---|---|---|---|---|---|---|---|---|
| 7/6/06 | 13:50 | | X | | Background 25-26' | 1 | | ✓ | | G07011 - 19 |
| | 14:05 | | | | Background 30-31' | 1 | | ✓ | | -20 |
| | 14:10 | | | | Background 35-36' | 1 | | ✓ | | -21 |
| | 14:15 | | | | Background 40-41' | 1 | | ✓ | | -22 |
| | 14:42 | | | | HB-8A, 10-11' | 1 | | ✓ | | -23 |
| | 14:46 | | | | HB-8A, 15-16' | 1 | | ✓ | | -24 |
| | 14:53 | | | | HB-8A, 20-21' | 1 | | ✓ | | -25 |
| | 15:00 | | | | HB-8A, 25-26' | 1 | | | | -26 |
| | 15:30 | | | | HB-15, 0-2' | 1 | | ✓ | | -27 |
| | 15:35 | | | | HB-15, 5-6' | 1 | ✓ | ✓ | | -28 |
| | 15:40 | | | | HB-15, 10-11' | 1 | | ✓ | | -29 |
| | 15:45 | | | | HB-15, 15-16' | 1 | | ✓ | | -30 |
| | 15:48 | | | | HB-15, 20-21' | 1 | | ✓ | | -31 |
| | 15:55 | | | | HB-15, 25-26' | 1 | | ✓ | | -32 |
| | 16:20 | | | | HB-9A, 20-21' | 1 | | ✓ | | -33 |
| | 16:27 | | | | HB-9A, 25-26' | 1 | | ✓ | | -34 |
| | 16:34 | | | | HB-9A, 30-31' | 1 | | ✓ | | -35 |

SAMPLED BY: (Signature) DATE: 7/6/06 TIME: 16:34

RELINQUISHED BY: (Signature) DATE: 7/7/06 TIME: 11:10

RELINQUISHED BY: (Signature) DATE: TIME:

RECEIVED BY: (Signature) DATE: TIME:

RECEIVED BY: (Signature) DATE: TIME:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS AIRBILL #:
HAND DELIVERED UPS OTHER:

COMMENTS:

TURNAROUND TIME NEEDED

RECEIVING LABORATORY: Environmental Lab of Texas
ADDRESS: 12600 W I-20 E
CITY: Odessa STATE: TX ZIP: 79765
CONTACT: Holland Tuttle PHONE: (432) 563-1800

RECEIVED BY: (Signature)
DATE: 7/7/06 TIME: 11:10

**WHITE** – RECEIVING LAB
**YELLOW** – RECEIVING LAB (TO BE RETURNED TO LA AFTER RECEIPT)
**PINK** – PROJECT MANAGER
**GOLD** – QA/QC COORDINATOR

COPY

SAMPLE CONDITION WHEN RECEIVED:

LA CONTACT PERSON: M. Larson

SAMPLE TYPE: Soil

# Environmental Lab of Texas
## Variance / Corrective Action Report – Sample Log-In

Client: Larson

Date/Time: 7/7/06 11:10

Order #: ~~[illegible]~~ 6G17005

Initials: CK

COPY

### Sample Receipt Checklist

| | | | |
|---|---|---|---|
| Temperature of container/cooler? | Yes | No | 4.0 C |
| Shipping container/cooler in good condition? | ~~Yes~~ | No | |
| Custody Seals intact on shipping container/cooler? | Yes | No | ~~Not present~~ |
| Custody Seals intact on sample bottles? | Yes | No | ~~Not present~~ |
| Chain of custody present? | ~~Yes~~ | No | |
| Sample Instructions complete on Chain of Custody? | ~~Yes~~ | No | |
| Chain of Custody signed when relinquished and received? | ~~Yes~~ | No | |
| Chain of custody agrees with sample label(s) | ~~Yes~~ | No | ID on lid |
| Container labels legible and intact? | Yes | No | |
| Sample Matrix and properties same as on chain of custody? | ~~Yes~~ | No | |
| Samples in proper container/bottle? | ~~Yes~~ | No | |
| Samples properly preserved? | ~~Yes~~ | No | |
| Sample bottles intact? | ~~Yes~~ | No | |
| Preservations documented on Chain of Custody? | ~~Yes~~ | No | |
| Containers documented on Chain of Custody? | ~~Yes~~ | No | |
| Sufficient sample amount for indicated test? | ~~Yes~~ | No | |
| All samples received within sufficient hold time? | ~~Yes~~ | No | |
| VOC samples have zero headspace? | ~~Yes~~ | No | Not Applicable |

Other observations:

### Variance Documentation:

Contact Person: - _____ Date/Time: _____ Contacted by: _____

Regarding:

Corrective Action Taken:

**Jeanne McMurrey**

**From:** "Mark Larson" <mark@laenvironmental.com>
**To:** <jeanne@elabtexas.com>
**Sent:** Saturday, July 15, 2006 10:39 PM
**Subject:** Re: Additional Analysis, Report No. 6G07011

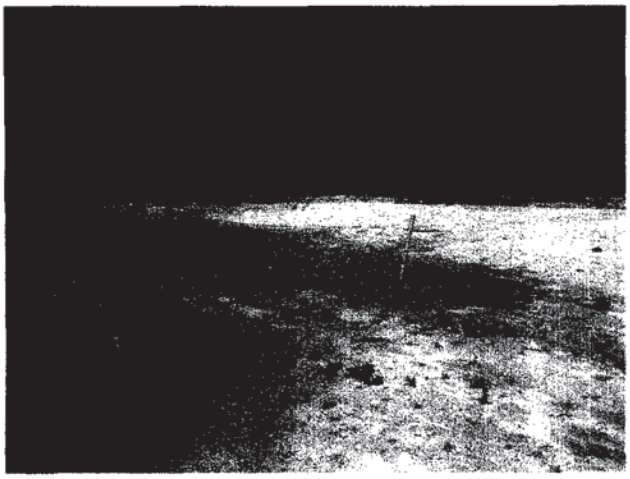
Jeanne: Please run the following sample for chloride:
HB-12, 40 to 41'
Also, I detected a typo in the report for sample 6G07011-21 (Background, 35-26'), which should be Background, 35 - 36'?
Thanks,
Mark

--

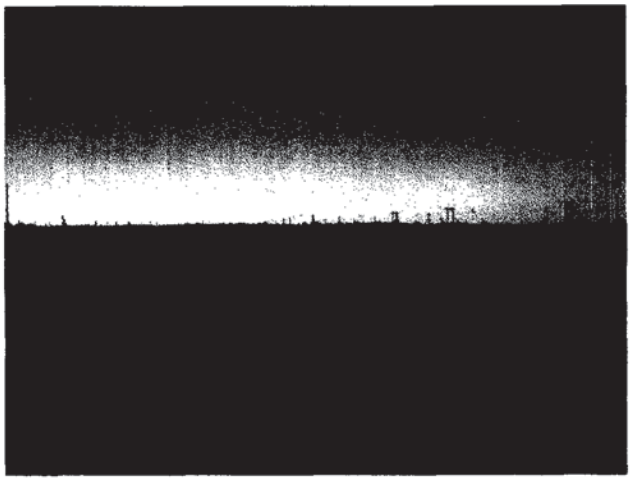
**Appendix C**

**Photographs**

EMSU # 187
NW/4, NW/4, SECTION 5, T-21-S, R-36-E
LEA COUNTY, NEW MEXICO



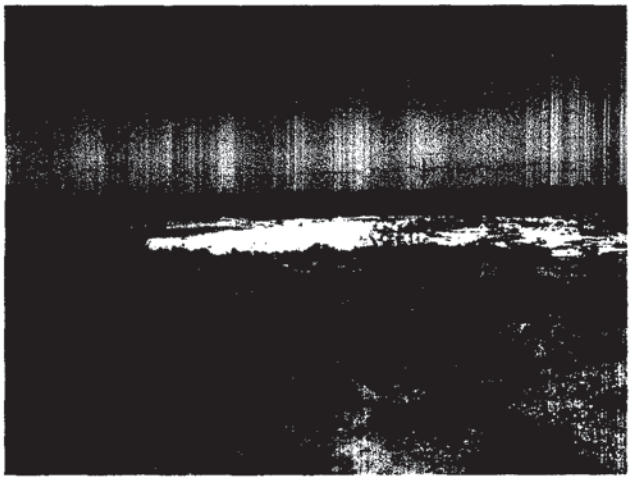
1. EMSU # 187 - looking north



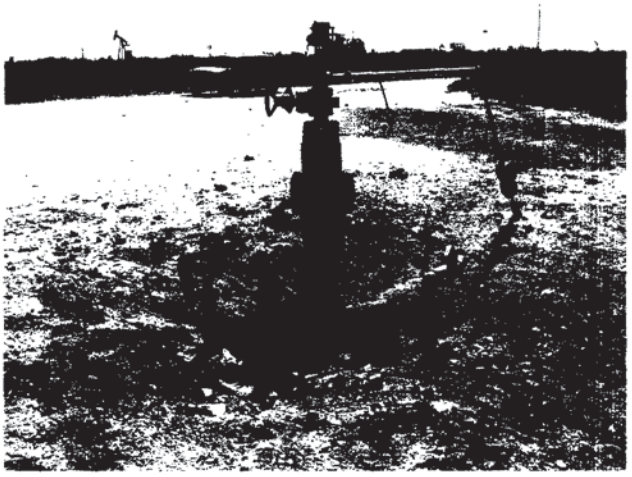
2. EMSU # 187 - looking south

3. EMSU # 187 - looking east

EMSU # 187
NW/4, NW/4, SECTION 5, T-21-S, R-36-E
LEA COUNTY, NEW MEXICO



4. EMSU # 187 - looking west



5. EMSU # 187 - wellhead

6. EMSU # 187 - looking west from BH-11

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

# Release Notification and Corrective Action

## OPERATOR

Initial Report ☒ Final Report

| | |
|---|---|
| Name of Company ChevronTexaco | Contact Danny Lovell |
| Address 2401 Ave "O" Eunice NM 88221 | Telephone No. 505-394-1242 |
| Facility Name EMSU #187 | Facility Type WIW |

| Surface Owner Berta Tibbis | Mineral Owner | Lease No. |
|---|---|---|

## LOCATION OF RELEASE API#3002504515000O

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|---|---|---|---|---|---|---|---|---|
| D | 5 | 21S | 36E | 654 | NORTH | 660 | WEST | LEA |
| | | | | | | | | |

**Latitude** N32deg-31.225__ **Longitude**_W103deg-17.621_____

## NATURE OF RELEASE

| | | |
|---|---|---|
| Type of Release PRODUCED WATER | Volume of Release 180BBLS | Volume Recovered 160BBLS |
| Source of Release WATER INJECTION LINE | Date and Hour of Occurrence 8/2/04 6:00am-5:00 pm | Date and Hour of Discovery 8/2/04-5:00 P.M. |
| Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required | If YES, To Whom? SYLVIA DICKEY | |
| By Whom? DANNY LOVELL | Date and Hour 10:00 A.M. 8/3/04 | |
| Was a Watercourse Reached? ☐ Yes ☒ No | If YES, Volume Impacting the Watercourse. | |

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
LATERAL LINE GOING TO WELL IS 2" FIBERGLASS AND IS CONNECTED TO WELLHEAD WITH 1" STAINLESS STEEL TUBING. TRACKS AROUND WELLHEAD INDICATED THAT A COW RUBBED AGAINST 1" SS CAUSING IT TO PULL OUT OF 2" FIBERGLASS COUPLING. WELL WAS SHUT-IN AND FLUID VACUUMED UP THAT EVENING.

Describe Area Affected and Cleanup Action Taken.*
MAJORITY OF FLUID WAS CONTAINED ON WELL PAD WITH A 120'X3' STRIP GOING INTO PASTURE. STAINED SOIL WAS SCRAPED UP AND HAULED TO RHINO LAND FARM. DEPTH TO GROUNDWATER 180'. PER RE-SUBMIT NOTICE CHEVRONTEXACO WILL REMOVE CONTAMINATED SOIL FROM RHINO AND HAULEDTO SUNDANCE DISPOSAL BY 10/30/04. VERTICAL EXTENT OF CONTAMINATED AREA WAS NOT REQUESTED WHEN SPILL WAS CALLED IN. XTO PURCHASED PROPERTY FROM CHEVRON TEXACO 8/16/04. A COPY OF RE-SUBMIT NOTICE WAS GIVEN TO GUY HACKUS WITH XTO 10/27/04 WHO WILL FURNISH OTHER CLEAN UP REQUIRMENTS REQUESTED.

NOTE- LATE RESPONSE WAS DUE TO NOTICE JUST BEING RECEIVED RECENTLY.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Dan Lovell

Printed Name: DANNY LOVELL

OK
11.20.06

OIL CONSERVATION DIVISION

Approved by District Supervisor:

10.31.06
XTO BEGIN CLOSURE

RP#1043

application - pPAC0627125515