

Incident ID	
District RP	IRP-732
Facility ID	
Application ID	

## Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

**Closure Report Attachment Checklist:** *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection).
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Amy Barnhill

Title: Waste and Water Specialist

Signature: 

Date: 3-27-2020

email: [ABarnhill@chevron.com](mailto:ABarnhill@chevron.com)

Telephone: 432-687-7108

### OCD Only

Received by: \_\_\_\_\_

Date: \_\_\_\_\_

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Bradford Billings Date: 3/22/2022

Printed Name: Bradford Billings

Title: Envi.Spec.A

# CLOSURE REPORT

## Former McKinley Lease

NMOCD RP Number: 1RP-732

Soil Remediation at a former Oilfield Production Facility

Lea County, New Mexico

Site Location: UL-A, Sec-30, T-18S, R-38E

Prepared for:

Chevron USA Inc

6301 Deauville Blvd

Midland, Texas 79706

Prepared By:

Amy Barnhill



27 March, 2020

New Mexico Oil Conservation Division

1625 North French Drive

Hobbs, New Mexico 88240

RE: Closure Report

Chevron USA – Former McKinley Lease

UL-A, Sec-30, T-18S, R-38E

NMOCD 1RP-732

To Whom it May Concern:

On behalf of Chevron USA (Chevron), this *Closure Report* for the above referenced Site is submitted.

Activities were initiated to bring the impacted area into conformance with NMOCD requirements. For clarity and cross reference purposes, the following Letter Closure Report offers Background History as to:

A Denial by NMOCD dated 4-22-2003 with attached Soil Sampling Results and Remediation Activities including Tables, Maps and Analytical Results

Soil and Groundwater Sample Results dated 5-14-2003

Excavation Backfill Results dated 8-9-2004

A Closure Approval dated 8-16-2005 by the NMOCD.

Please accept these documents as proof of Delineation and Remediation and grant closure based on the Closure Approval Attached hear in.

April 22, 2003

Mark Larson  
Larson & Associates, Inc.  
507 North Marienfeld, Suite 202  
Midland, TX 79701

Re: Texaco McKinley Lease  
Site Location: UL-A, Sec 30-T18S-R38E  
Dated: April 7, 2003

Dear Mr. Larson,

New Mexico Oil Conservation Division (OCD) received the closure proposal and request to backfill. The proposal is denied.

There is insufficient data presented as follows:

The borehole investigation data between 31 ft and 50 ft. are required and the drilling log between 31 and 50 ft. is incomplete.

Sincerely,



Paul Sheeley-Environmental Engineer

Cc: Roger Anderson - Environmental Bureau Chief  
Chris Williams - District I Supervisor  
William Olson - OCD Hydrologist  
Larry Johnson - Environmental Engineer





#732

April 7, 2003

VIA FACSIMILE: (505) 393-0720

Mr. Paul R. Sheeley  
New Mexico Oil Conservation Division  
1625 N. French Drive  
Hobbs, New Mexico 88240

**Re: Soil Sample Results, Former M<sup>c</sup>Kinley Lease Production Facility, UL A,  
Section 30, Township 18 South, Range 38 East, Lea County, New Mexico**

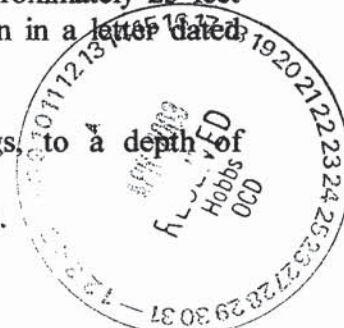
Dear Mr. Sheeley:

ChevronTexaco Exploration and Production Company (ChevronTexaco), as successor to Texaco Exploration and Production Inc. (Texaco), has retained Larson and Associates, Inc. (LA) to supervise remediation of soil at a former oilfield production facility (Site) once operated by Texaco on the McKinley Lease in Unit Letter A (NE/4 NE/4), Section 30, Township 18 South, Range 38 East, Lea County, New Mexico. Figure 1 presents a location and topographic map.

A remediation work plan was submitted to the New Mexico Oil Conservation Division (NMOCD) on January 28, 2002, and proposed to excavate soil at three locations to achieve the NMOCD Recommended Remediation Action Level (RRAL) of 100 milligrams per kilogram (mg/kg) total petroleum hydrocarbon (TPH). Following excavation of approximately 7,288 cubic yards of soil from the three locations (Hole #1, Hole #2 and Hole #3), a Final Remediation Report was submitted to the NMOCD on June 11, 2002. The NMOCD denied closure since a soil sample from the bottom of Hole #3 was above the NMOCD recommended remediation action level (RRAL) of 100 mg/kg. The NMOCD also requested that Texaco investigate an area between the excavations (Hole #2 and Hole #3) since a sample from BH-3 from 20 to 21 feet below ground surface (BGS) reported TPH at 82 mg/kg (below the RRAL).

Results of additional sampling of Hole #3, which showed that TPH was below the RRAL of 100 mg/kg, were presented to the NMOCD in a letter dated September 20, 2002. The letter also stated that Holes #1, #2 and #3 would be filled with clean soil, and a soil boring would be drilled between BH-3 and BH-4, to a depth of approximately 25 feet below ground surface (bgs). The NMOCD approved the work plan in a letter dated October 9, 2002, with two requests as follows:

- The proposed boring depth be extended from 25 feet bgs, to a depth of approximately 40 – 45 feet bgs,
- The OCD be notified 48 hours in advance of any sampling event.





Mr. Paul R. Sheeley  
 April 7, 2003  
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Appendix A provides copies of NMOCD correspondence.

Environmental Plus, Inc. (EPI) was retained to fill the excavations with clean soil, and began backfilling Hole #1 and Hole #2 on October 14, 2002. Backfilling was also stopped on that date, when NMOCD personnel visited the Site and observed additional soil staining at the north end of Hole #2. ChevronTexaco was required to investigate and remediate as necessary the soil staining north of Hole #2.

The NMOCD has established remediation action levels (RRAL) for benzene, total BTEX and TPH in soil ("Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993"). Remediation levels for benzene, total BTEX and TPH were calculated for the Site using the following NMOCD criteria:

Criteria	Result	Ranking Score
Depth-to-Groundwater	<50 feet	20
Wellhead Protection Area	No	0
Distance to Surface Water Body	>1000 Feet	0
		<b>Total: 20</b>

Based on the total ranking score above, the following RRALs were assigned to the Site based on NMOCD criteria:

<b>Benzene</b>	<b>10 mg/kg</b>
<b>Total BTEX</b>	<b>50 mg/kg</b>
<b>TPH</b>	<b>100 mg/kg</b>

#### Remediation Activities

On December 5, 2003, soil boring BH-13 was drilled between the two excavations (Hole #2 and Hole #3) and south of BH-3 and BH-4. The boring was drilled by Scarborough Drilling, Inc. of Lamesa, Texas, utilizing an air rotary drilling rig. Figure 2 shows the location of excavations (Holes #1, 2 and 3) and soil borings BH-1 through BH-13. BH-12 is located north of the Site and is not shown on Figure 2.

Soil samples were collected at ground surface, and approximately every five (5) feet bgs, thereafter, using a split-spoon sampler. The split-spoon sampler was thoroughly washed between sample events. Drill cuttings were placed on the ground adjacent to the boring. The soil samples were placed in clean glass sample jars, labeled, chilled in an ice chest, and delivered under chain-of-custody control to Environmental Lab of Texas I, Ltd., located in Odessa, Texas. A portion of each sample was also placed in a clean glass sample jar for headspace analysis. The headspace jars were filled approximately  $\frac{3}{4}$  full,



Mr. Paul R. Sheeley  
April 7, 2003  
Page 3

and a layer of aluminum foil was placed over the opening of the jar before replacing the cap. The headspace samples were allowed to reach ambient temperature before a RAE Instruments, Model 2000 photoionization detector (PID) was used to measure the concentration of organic vapors in the headspace of the sample jars. The PID probe was inserted into the headspace of the sample jars (through the aluminum foil), and the concentration of organic vapors was displayed by the instrument in parts per million (ppm). The NMOCD allows a PID measurement of less than 100 ppm to be used as a substitute for laboratory analysis of benzene and total benzene, toluene, ethylbenzene and xylenes (collectively referred to as BTEX). However, the PID measurement cannot be used as a substitute for total petroleum hydrocarbon (TPH) analysis by a laboratory. Samples from the surface and approximately every ten (10) feet bgs were analyzed for TPH by EPA method SW-846-8015 for gasoline range organics (GRO) and diesel range organics (DRO).

On October 15, 2002, EPI began to excavate soil from the north end of Hole #2. As remediation activities progressed to the north, soil samples were taken from the bottom and sides of the excavation. Soil samples were collected on December 30, 2002, January 2, 2003, February 7, 2003, February 13, 2003 and March 31, 2003, until laboratory analyses of soil samples from the sides and bottom of the excavation reported TPH values below 100 mg/kg. The final excavation, extending from the north boundary of Hole #2, measured approximately 130 x 70 feet, and was excavated to a maximum depth of 29 feet bgs. The impacted soil was transported to ChevronTexaco's centralized waste management facility (landfarm) located northwest of Jal, New Mexico. The final soil samples from the bottom and sides of the excavation reported TPH (DRO and GRO) levels below 100 mg/kg. The sample results are presented on Table 2. Figures 3, 4 and 5 present Site drawings showing the excavation boundary, sample locations and TPH concentrations from each sampling event.

#### **Soil Boring Results**

All samples collected from BH-13 exhibited a total TPH of less than ten (<10.0) mg/kg except the sample from approximately 20-21 feet bgs, which resulted in a DRO concentration of 190 mg/kg. Table 1 presents a summary of headspace and TPH analyses of soil samples from BH-13. Figure 2 shows the location of BH-13. Appendix B provides the boring log. Appendix C provides laboratory and chain-of-custody documentation. Appendix D presents photographs of the soil boring installation. The boring was filled with bentonite chips and hydrated with potable water upon completion of drilling.

#### **Remediation Results**


Only one sample (SS-9, North Bottom, 9') exhibited PID readings above 100 ppm (381.0 ppm) and was analyzed for BTEX using EPA method SW-846-8021B. Referring to Table 2, benzene was reported below the detection limit of 0.025 mg/kg and total BTEX was reported at 8.864 mg/kg. The results were below the RRAL for benzene (10 mg/kg)

Mr. Paul R. Sheeley  
April 7, 2003  
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and total BTEX (50 mg/kg). All samples were analyzed for TPH by EPA method SW-846-8015 for gasoline range organics (GRO) and diesel range organics (DRO). The concentrations of TPH in the final samples from the bottom and sides of the excavation were below the RRAL for TPH of 100 mg/kg. Table 2 provides a summary of headspace and laboratory results following excavation. Figures 3, 4 and 5 present Site drawings showing the excavation boundary, sample locations and TPH concentrations from each sampling event. Appendix C provides laboratory and chain-of-custody documentation. Appendix D presents photographs of the excavation.

Approximately 8,156 cubic yards (yd<sup>3</sup>) of impacted soil was transferred to ChevronTexaco's landfarm since October 31, 2002. Approximately 9,892 yd<sup>3</sup> of clean soil was transported to the Site, and has been stockpiled. ChevronTexaco requests the NMOCD allow it to fill the excavations. The excavations will be filled with clean soil, and a final letter will be submitted to the NMOCD upon completion. Please call Mr. Scott Toner with ChevronTexaco at (915) 687-7318 or myself at (915) 687-0901 if you have questions.

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



Cindy K Crain  
Geologist

Encl.

cc: Scott Toner, ChevronTexaco  
William Olson, OCD Hydrologist

## TABLES



**Table 1: Summary of Headspace and Laboratory Analysis of Soil Samples**  
**Texaco Exploration and Production Inc., McKinley Lease**  
**NE/4, NE/4, Section 30, Township 18 South, Range 38 East**  
**Lea County, New Mexico**

Borehole Number	Sample Date	Sample Depth (feet BGS)	PID (ppm)	GRO C6-C12 mg/kg	DRO >C12-C35 mg/kg	TPH (C6-C35) mg/kg
<b>RRAL</b>						<b>100</b>
<b>BH-13</b>	<b>12/5/2002</b>	0-1	1	<10.0	<10.0	<10.0
		10-11	1	<10.0	<10.0	<10.0
		20-21	6.1	<10.0	190.0	190.0
		30-31	5.5	<10.0	<10.0	<10.0
		50-51	3.1	<10.0	<10.0	<10.0

Notes: All analyses performed by Environmental Lab of Texas, Inc., Midland, Texas

1. BGS: Depth in feet below ground surface
2. PID: Photoionization detector
3. ppm: Parts per million
4. GRO: Gasoline-range organics
5. DRO: Diesel-range organics
6. TPH: Total petroleum hydrocarbons (Sum of GRO + DRO)
7. mg/kg: Milligrams per kilogram
8. ---: No data available
9. <: Below method detection limit
10. RRAL: NMOCD Recommended Remediation

Table 2: Summary of Headspace and Laboratory Analysis of Soil Samples Following Excavation  
 Texaco Exploration and Production Inc., McKinley Lease  
 NE/4, NE/4, Section 30, Township 18 South, Range 38 East  
 Lea County, New Mexico

Page 1 of 2

Sample Number	Location of Sample	Sample Date	Sample Depth (feet BGS)	PID (ppm)	Benzene mg/kg	Total BTEX mg/kg	GRO C6-C12 mg/kg	DRO >C12-C35 mg/kg	TPH (C6-C35) mg/kg	Chloride (mg/kg)
RRAL										
SS-1	Bottom Center	12/30/02	29	---	---	---	<10.0	<10.0	<10.0	---
SS-2	East Wall	01/02/03	8	0.1	---	---	<10.0	146.0	146.0	---
SS-3	East Wall	01/02/03	9	0.1	---	---	<10.0	<10.0	<10.0	---
SS-4	East Wall	01/02/03	8	0.1	---	---	<10.0	<10.0	<10.0	---
SS-5	North Wall	01/02/03	8	0.1	---	---	18.6	216.0	234.6	---
SS-6	West Wall	01/02/03	7	0.0	---	---	<10.0	199.0	199.0	---
SS-7	West Wall	01/02/03	7	0.0	---	---	<10.0	113.0	113.0	---
SS-8	North Bottom	01/02/03	9	17.4	---	---	128.0	4,050.0	4,178.0	---
SS-9	North Bottom	01/02/03	9	381.0	<0.025	8.864	1,530.0	12,800.0	14,330.0	---
SS-10	North Bottom	01/02/03	9	6.6	---	---	<100	1,740.0	1,740.0	---
SS-11	West Wall	01/02/03	16	0.9	---	---	<10.0	<10.0	<10.0	---
SS-12	Bottom	01/02/03	17	0.4	---	---	<100	900.0	900.0	---
SS-13	East Wall	01/02/03	16	0.0	---	---	<10.0	<10.0	<10.0	---
SS-14	West Wall	01/02/03	10	0.0	---	---	<10.0	176.0	176.0	---
SS-15	West Wall	01/02/03	19	22.1	---	---	52.3	264.0	316.3	---
SS-16	West Wall	01/02/03	27	3.8	---	---	<10.0	<10.0	<10.0	---
SS-17	Bottom	01/02/03	29	12.2	---	---	<10.0	<10.0	<10.0	---
SS-18	Bottom	01/02/03	29	1.1	---	---	<10.0	<10.0	<10.0	---
SS-19	South Wall	01/02/03	20	1.5	---	---	<10.0	<10.0	<10.0	---
SS-20	South Wall	01/02/03	26	6.9	---	---	<10.0	<10.0	<10.0	---
SS-21	East Wall	01/02/03	15	0.1	---	---	<10.0	<10.0	<10.0	---
SS-22	East Wall	01/02/03	27	2.1	---	---	<10.0	49.3	49.3	---
SS-23	North Bottom	01/02/03	10	15.4	---	---	<100	3,970.0	3,970.0	---

**Table 2: Summary of Headspace and Laboratory Analysis of Soil Samples Following Excavation**  
**Texaco Exploration and Production Inc., McKinley Lease**  
**NE/4, NE/4, Section 30, Township 18 South, Range 38 East**  
**Lea County, New Mexico**

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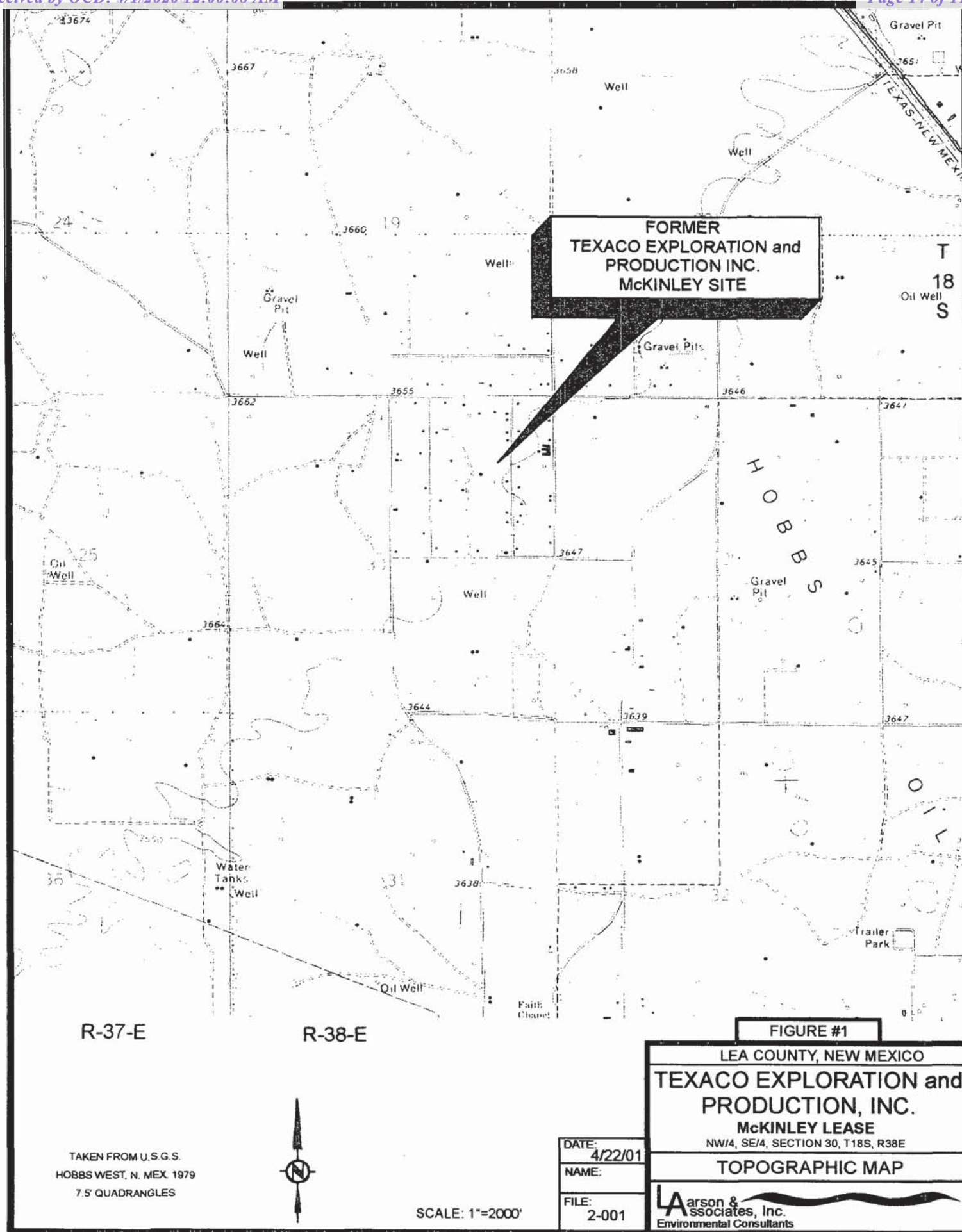
Sample Number	Location of Sample	Sample Date	Sample Depth (feet BGS)	PID (ppm)	Benzene mg/kg	Total BTEX mg/kg	GRO C8-C12 mg/kg	DRO >C12-C35 mg/kg	TPH (C8-C35) mg/kg	Chloride (mg/kg)
<b>RRAL</b>										
					10	50			100	250
SS-24	West Wall	02/07/03	10	1.2	---	---	<10.0	<10.0	<10.0	44.3
SS-25	West Wall	02/07/03	19	0.3	---	---	<10.0	<10.0	<10.0	324
SS-26	West Wall	02/07/03	7	1.7	---	---	<10.0	<10.0	<10.0	<20.0
SS-27	West Wall	02/07/03	7	1.5	---	---	<10.0	<10.0	<10.0	<20.0
SS-28	Bottom	02/07/03	20	1.3	---	---	<10.0	<10.0	<10.0	177
SS-29	Bottom	02/07/03	18	1.4	---	---	<10.0	<10.0	<10.0	<20.0
SS-30	Bottom	02/07/03	18	5.7	---	---	<10.0	85.1	85.1	88.6
SS-31	Bottom	02/07/03	15	3.8	---	---	<10.0	<10.0	<10.0	59.1
SS-32	North Wall	02/07/03	8	2.0	---	---	<10.0	430.0	430.0	103
SS-33	Bottom	02/07/03	11	16.3	---	---	<10.0	<10.0	<10.0	295
SS-34	East Wall	02/07/03	8	1.4	---	---	<10.0	159.0	159.0	59.1
SS-35	North Bottom	02/13/03	9.5	1.1	---	---	<10.0	<10.0	<10.0	73.8
SS-36	North Side	02/13/03	9	0.1	---	---	<10.0	<10.0	<10.0	88.6
SS-37	Northeast Side	02/13/03	9	0.1	---	---	<10.0	<10.0	<10.0	118
SS-38	East Wall	03/31/03	8	0.1	---	---	<10.0	<10.0	<10.0	---

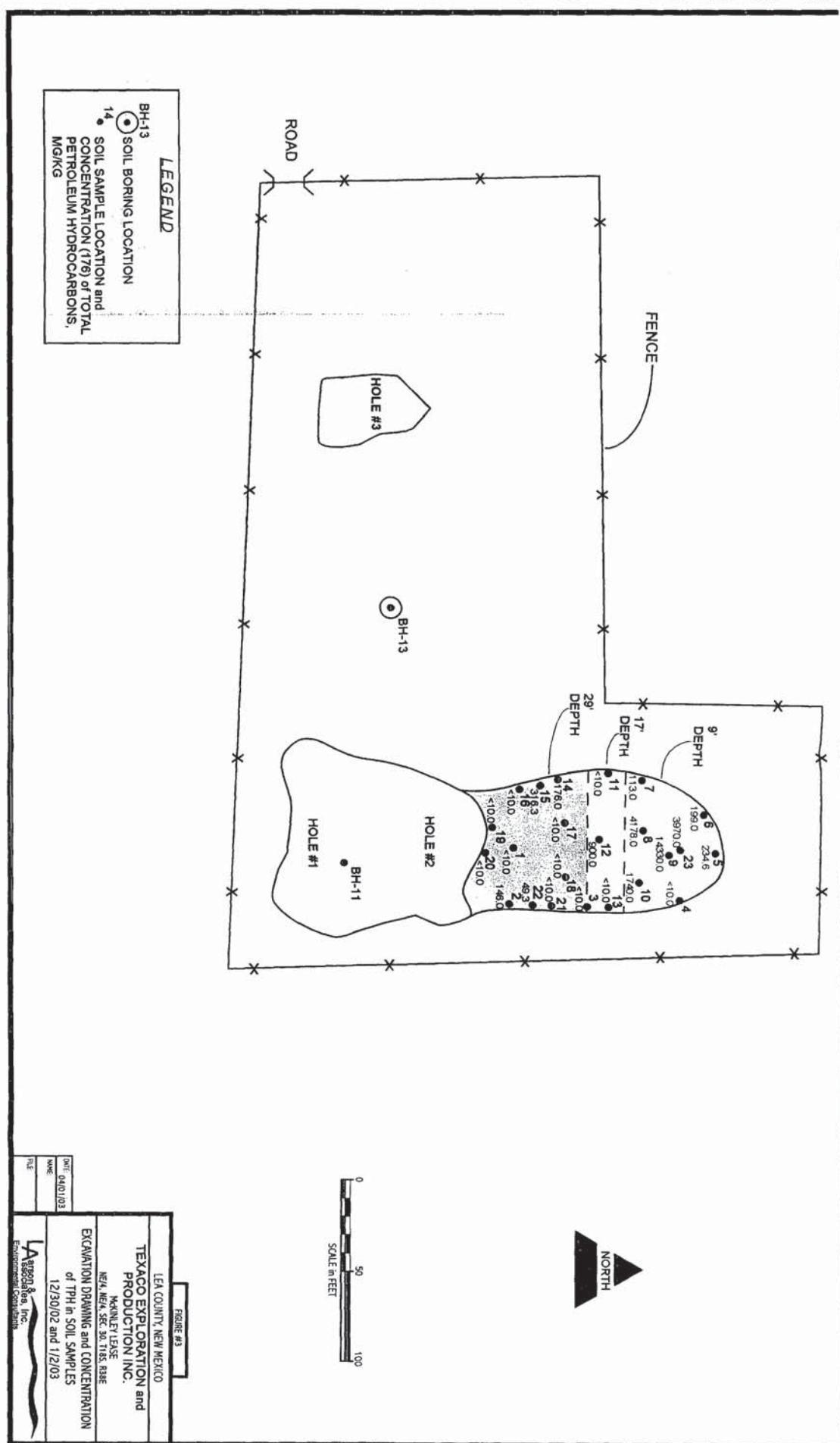
**Notes:** All analyses performed by Environmental Lab of Texas, Inc., Midland, Texas

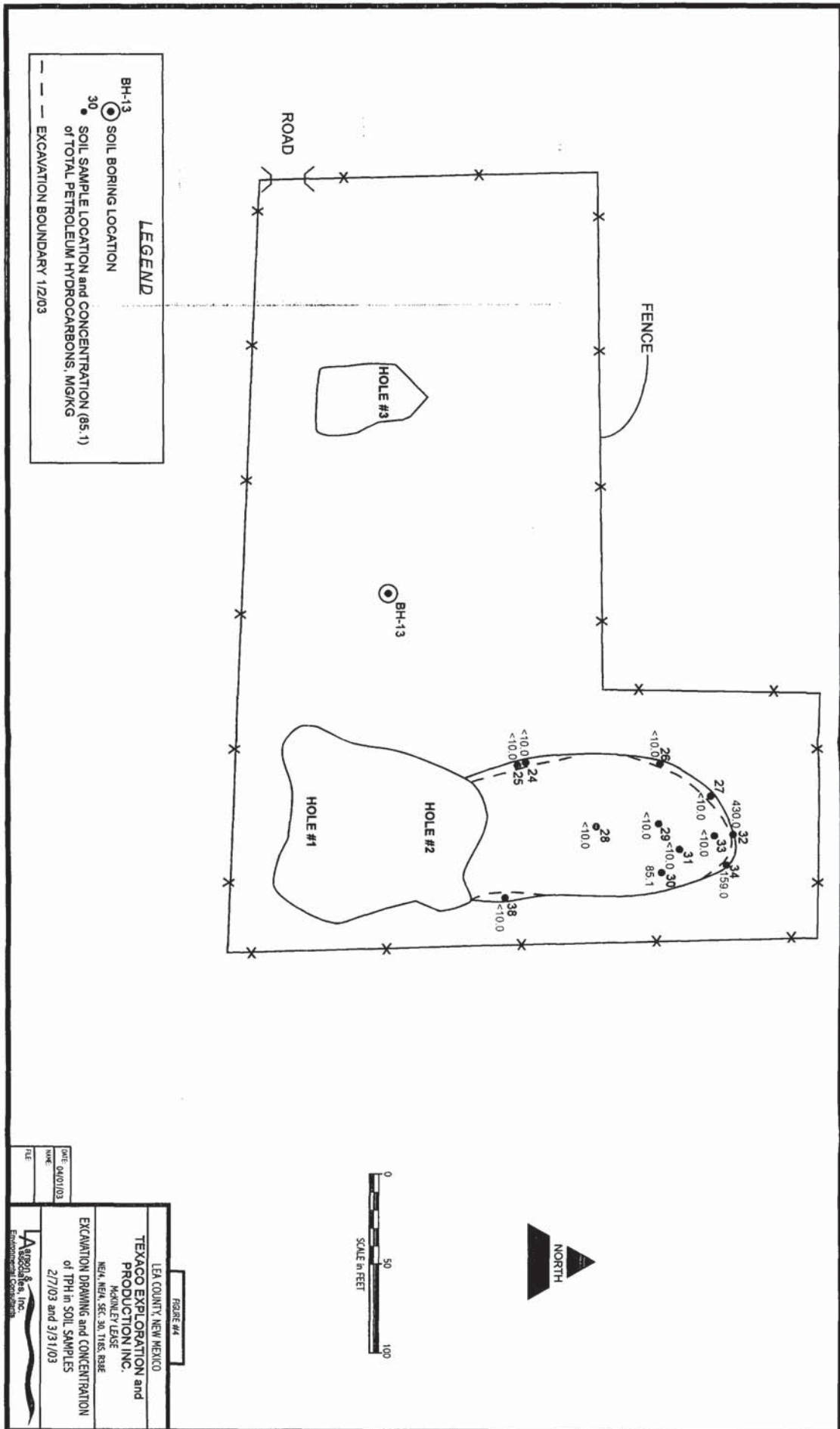
1. BGS: Depth in feet below ground surface
2. PID: Photoionization detector
3. ppm: Parts per million
4. GRO: Gasoline-range organics
5. DRO: Diesel-range organics
6. TPH: Total petroleum hydrocarbons (Sum of GRO + DRO)
7. mg/kg: Milligrams per kilogram
8. ---: No data available
9. <: Below method detection limit
10. RRAL: NMOCD Recommended Remediation Action Level

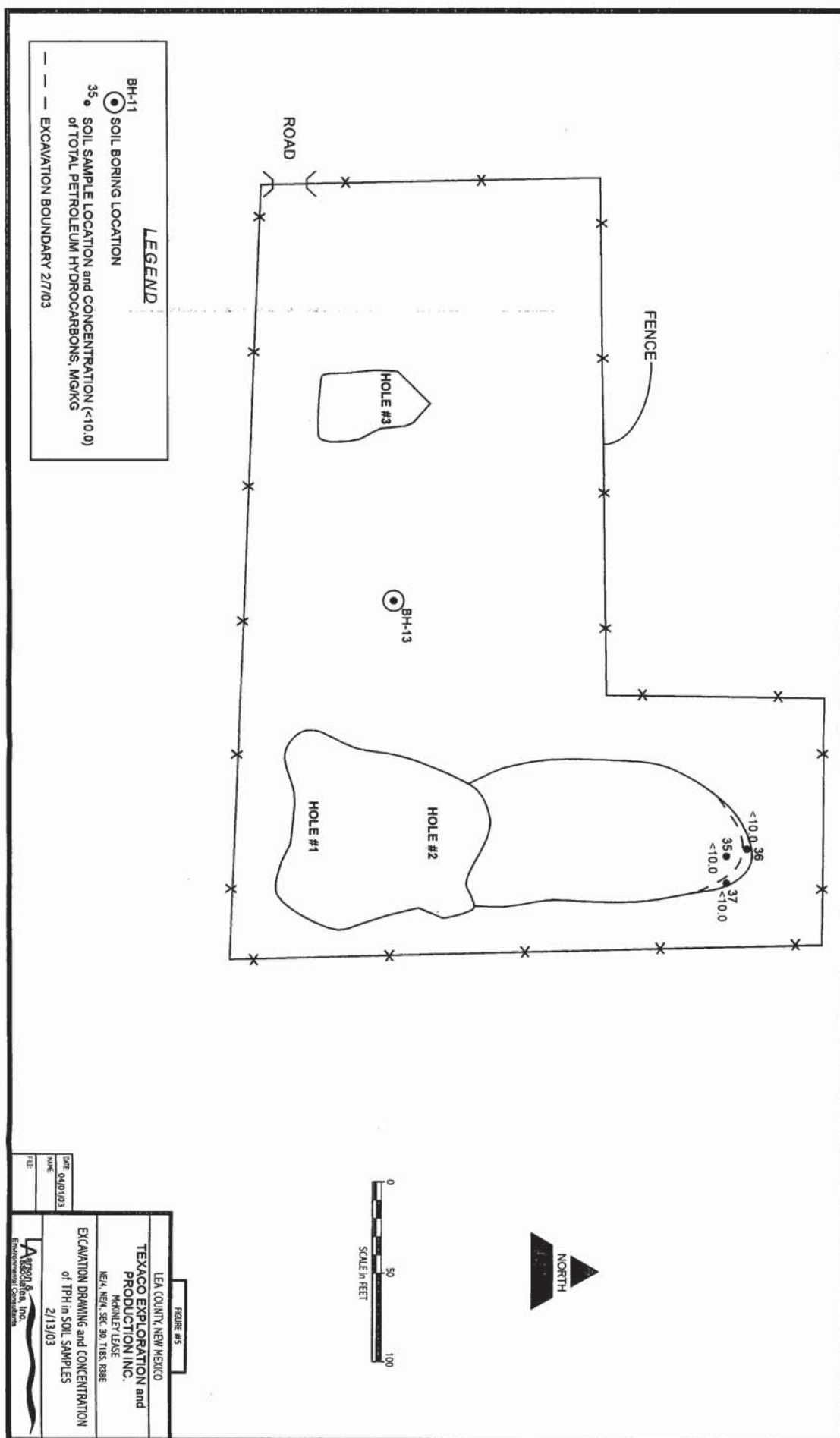


## FIGURES









**APPENDIX A**  
**NMOCD CORRESPONDENCE**





# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**GARY E. JOHNSON**

Governor  
**Betty Rivera**  
Cabinet Secretary

**Lori Wrotenbery**

Director  
Oil Conservation Division

September 6, 2002

Mark Larson  
Larson & Associates, Inc.  
507 North Marienfeld, Suite 202  
Midland, TX 79701

Re: Closure Proposal  
Texaco McKinley Lease-(Jim Davis)  
Site Location: UL-A, Sec 30-T18S-R38E  
Dated: June 11, 2002, Supplement July 19, 2002

Dear Mr. Larson,

The New Mexico Oil Conservation Division (OCD) hereby denies your closure plan proposal referenced above. Samples from excavation hole #3 exceed OCD criteria of 100 ppm TPH.

Borehole #3 and #4 are located alone between excavations. #3 indicates TPH contamination, (Work Plan dated January 28, 2002). The lab sample for borehole #3 at 21 feet shows contamination. OCD requires Texaco to investigate in between excavation holes.

If you have any questions or need any assistance please feel free to contact me at (505) 393-6161 x113 or email: [psheeley@state.nm.us](mailto:psheeley@state.nm.us)

Sincerely,

A handwritten signature in black ink, appearing to read "Paul Sheeley".

Paul Sheeley-Environmental Engineer

Cc: Roger Anderson - Environmental Bureau Chief  
Chris Williams - District I Supervisor  
William Olson - OCD Hydrologist  
Larry Johnson - Environmental Engineer



## NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**GARY E. JOHNSON**

Governor  
**Betty Rivera**  
Cabinet Secretary

**Lori Wrotenbery**  
Director  
Oil Conservation Division

October 9, 2002

Mark Larson  
Larson & Associates, Inc.  
507 North Marienfeld, Suite 202  
Midland, TX 79701

Re: Texaco McKinley Lease-(Jim Davis)  
Site Location: UL-A, Sec 30-T18S-R38E  
Dated: September 20, 2002

Dear Mr. Larson,

New Mexico Oil Conservation Division (OCD) received your modified work plan letter including the August 27, 2002 bottom hole sample analysis data for the site referenced above. The OCD hereby approves the plan and includes the following:

1. ChevronTexaco shall extend the proposed 25 foot boring to approximately 40-45 feet below ground surface, to investigate the vadose zone between the existing excavations at the site and demonstrate that contaminants have not reached the groundwater.
2. ChevronTexaco shall notify the OCD 48 hours in advance of any sampling event to allow OCD the option to split samples and witness activities.

Please be advised that OCD approval of this plan does not relieve ChevronTexaco of liability should their operations fail to adequately investigate and remediate contaminants that threaten ground water, surface water, human health or the environment. In addition, OCD approval does not relieve ChevronTexaco of responsibility for compliance with any other federal, state, or local laws and/or regulations.

If you have any questions or need assistance please write or call: (505) 393-6161, ext. 113, or e-mail: [psheeley@state.nm.us](mailto:psheeley@state.nm.us)

Sincerely,

A handwritten signature in dark ink, appearing to read "Paul Sheeley".

Paul Sheeley-Environmental Engineer

Cc: Roger Anderson - Environmental Bureau Chief  
Chris Williams - District I Supervisor  
William Olson - OCD Hydrologist  
Larry Johnson - Environmental Engineer



**APPENDIX B**  
**BORING LOG**

**Client:** Texaco E&P**Project:** Davis Property (McKinley Lease)**Project No:** 2-0100**Location:** SW/4, NE/4, Section 30, T18S, R38E, Lea Co., NM**Log of Borehole: BH-13****Geologist:** Cindy K. Crain**Page:** 1 of 1

SUBSURFACE PROFILE			SAMPLE			PID Measurement (PPM)	Lab Analysis
Depth	Symbol	Description	Number	Type	Recovery		
0		Ground Surface				1.0	0 - 1' bgs
5		<b>Sandy, Clayey Silt</b> 7.5 YR 7/4, pink quartz sand, very fine grained, very poorly sorted, medium density.	1	II		1.3	GRO: <10.0 mg/kg DRO: <10.0 mg/kg Total TPH: <10.0 mg/kg
10		<b>Silty Sand</b> 5 YR 7/4 to 7/6, pink to reddish yellow quartz sand, very fine grained, poorly sorted, loose.	2	II		1.0	10 - 11' bgs
15		<b>Caliche</b> 10 YR 8/2, very pale brown quartz sand, very fine grained, very poorly sorted, indurated. Contains some quartzite.	3	II		0.8	GRO: <10.0 mg/kg DRO: <10.0 mg/kg Total TPH: <10.0 mg/kg
20			4	II		6.1	20 - 21' bgs
25			5	II			GRO: <10.0 mg/kg DRO: 190 mg/kg Total TPH: 190 mg/kg
30		<b>Silty Sand</b> 7.5 YR 6/3, light brown quartz sand, very fine grained, poorly sorted, moderately loose.	6	II		5.5	30 - 31' bgs
35							GRO: <10.0 mg/kg DRO: <10.0 mg/kg Total TPH: <10.0 mg/kg
40			7	II		5.1	
45							
50			8	II		3.1	50 - 51' bgs
55		End of Borehole at 51 ft					GRO: <10.0 mg/kg DRO: <10.0 mg/kg Total TPH: <10.0 mg/kg
60							

**Drilling Method:** Air Rotary**Date Drilled:** 12/5/02**Hole Size:** 5 5/8"

**Larson and Associates, Inc.**  
 507 North Marienfeld St., Ste. 202  
 Midland, Texas 79701  
 (915) 687-0901

**Checked by:** CKC**Drilled by:** Scarborough Drilling, Inc.

**APPENDIX C**  
**LABORATORY REPORT**

# ANALYTICAL REPORT

## Prepared for:

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

**Project:** Texaco/ McKinley Lease

**PO#:**

**Order#:** G0205195

**Report Date:** 12/10/2002

## Certificates

US EPA Laboratory Code TX00158

# ENVIRONMENTAL LAB OF TEXAS

## SAMPLE WORK LIST

LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710  
915-687-0456

Order#: G0205195  
Project: 2-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u> <u>Collected</u>	<u>Date / Time</u> <u>Received</u>	<u>Container</u>	<u>Preservative</u>
0205195-01	BH-13 (0-1')	SOIL	12/5/02 10:25	12/6/02 16:50	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: 4.0 C		
0205195-03	BH-13 (10-11')	SOIL	12/5/02 10:35	12/6/02 16:50	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: 4.0 C		
0205195-05	BH-13 (20-21')	SOIL	12/5/02 10:51	12/6/02 16:50	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: 4.0 C		
0205195-06	BH-13 (30-31')	SOIL	12/5/02 11:00	12/6/02 16:50	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: 4.0 C		
0205195-08	BH-13 (50-51')	SOIL	12/5/02 11:36	12/6/02 16:50	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: 4.0 C		

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0205195  
Project: 2-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

Lab ID: 0205195-01  
Sample ID: BH-13 (0-1')

**8015M**

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		12/9/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	86%	70	130
1-Chlorooctadecane	92%	70	130

Lab ID: 0205195-03  
Sample ID: BH-13 (10-11')

**8015M**

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		12/9/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	79%	70	130
1-Chlorooctadecane	81%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0205195  
Project: 2-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

Lab ID: 0205195-05  
Sample ID: BH-13 (20-21')

**8015M**

<u>Method</u> <u>Blank</u>	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	<u>Sample</u> <u>Amount</u>	<u>Dilution</u> <u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		12/9/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	190	10.0
TOTAL, C6-C35	190	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	89%	70	130
1-Chlorooctadecane	101%	70	130

Lab ID: 0205195-06  
Sample ID: BH-13 (30-31')

**8015M**

<u>Method</u> <u>Blank</u>	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	<u>Sample</u> <u>Amount</u>	<u>Dilution</u> <u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		12/9/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	87%	70	130
1-Chlorooctadecane	93%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0205195  
Project: 2-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

Lab ID: 0205195-08  
Sample ID: BH-13 (50-51')

**8015M**

<u>Method</u> <u>Blank</u>	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	<u>Sample</u> <u>Amount</u>	<u>Dilution</u> <u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		12/9/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	84%	70	130
1-Chlorooctadecane	90%	70	130

Approval: Jeanne McMurrey 12-10-02  
 Raland K. Tuttle, Lab Director, QA Officer      Date  
 Celey D. Keene, Org. Tech. Director  
 Jeanne McMurrey, Inorg. Tech. Director  
 Sandra Biezugbe, Lab Tech.  
 Sara Molina, Lab Tech.

DL = Diluted out    N/A = Not Applicable    RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

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**ENVIRONMENTAL LAB OF TEXAS****QUALITY CONTROL REPORT****8015M****Order#: G0205195**

<b>BLANK</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0004010-02			<10.0		
<b>MS</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0205195-01	0	952	956	100.4%	
<b>MSD</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0205195-01	0	952	1005	105.6%	5.0%
<b>SRM</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0004010-05		1000	900	90.0%	

[illegible]

# ANALYTICAL REPORT

## Prepared for:

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

**Project:** Texaco / McKinley Lease

**PO#:**

**Order#:** G0205350

**Report Date:** 12/31/2002

## Certificates

US EPA Laboratory Code TX00158

**ENVIRONMENTAL LAB OF TEXAS****SAMPLE WORK LIST**

LARSON AND ASSOCIATES, INC.

P.O. BOX 50685

MIDLAND, TX 79710

915-687-0456

Order#: G0205350

Project: 0-0100

Project Name: Texaco / McKinley Lease

Location: None Given

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u> <u>Collected</u>	<u>Date / Time</u> <u>Received</u>	<u>Container</u>	<u>Preservative</u>
0205350-01	SS-1 (Hole D) 29'	SOIL	12/30/02 10:50	12/30/02 15:15	4 oz Glass	Ice
<u>Lab Testing:</u>		Rejected: No	Temp: 5 C			
8015M						



# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0205350  
Project: 0-0100  
Project Name: Texaco / McKinley Lease  
Location: None Given

Lab ID: 0205350-01  
Sample ID: SS-1 (Hole D) 29'

**8015M**

<u>Method</u> <u>Blank</u>	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	<u>Sample</u> <u>Amount</u>	<u>Dilution</u> <u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		12/30/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	70%	70	130
1-Chlorooctadecane	73%	70	130

Approval:

*Raland K. Tuttle* 12-31-02  
Raland K. Tuttle, Lab Director, QA Officer  
Celey D. Keene, Org. Tech. Director  
Jeanne McMurrey, Inorg. Tech. Director  
Sandra Biezugbe, Lab Tech.  
Sara Molina, Lab Tech.

Date

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

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**ENVIRONMENTAL LAB OF TEXAS****QUALITY CONTROL REPORT****8015M****Order#: G0205350**

<b>BLANK</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0004217-02			<10.0		
<b>CONTROL</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0004217-03		952	909	95.5%	
<b>CONTROL DUP</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0004217-04		952	823	86.4%	9.9%
<b>SRM</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0004217-05		1000	809	80.9%	

called w/ verbals 12/30/02 5:00. cph

# ANALYTICAL REPORT

## Prepared for:

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

**Project:** Texaco/ McKinley Lease

**PO#:**

**Order#:** G0305383

**Report Date:** 01/07/2003

## Certificates

US EPA Laboratory Code TX00158



## ENVIRONMENTAL LAB OF TEXAS

## SAMPLE WORK LIST

LARSON AND ASSOCIATES, INC.

P.O. BOX 50685

MIDLAND, TX 79710

915-687-0456

Order#: G0305383

Project: 0-0100

Project Name: Texaco/ McKinley Lease

Location: None Given

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u> <u>Collected</u>	<u>Date / Time</u> <u>Received</u>	<u>Container</u>	<u>Preservative</u>
0305383-01	SS-2 (8')	SOIL	1/2/03 10:40	1/3/03 8:25	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: -1.5 C		
0305383-02	SS-3 (9')	SOIL	1/2/03 10:42	1/3/03 8:25	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: -1.5 C		
0305383-03	SS-4 (8')	SOIL	1/2/03 10:44	1/3/03 8:25	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: -1.5 C		
0305383-04	SS-5 (8')	SOIL	1/2/03 10:57	1/3/03 8:25	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: -1.5 C		
0305383-05	SS-6 (7')	SOIL	1/2/03 10:59	1/3/03 8:25	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: -1.5 C		
0305383-06	SS-7 (7')	SOIL	1/2/03 11:02	1/3/03 8:25	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: -1.5 C		
0305383-07	SS-8 (9')	SOIL	1/2/03 11:05	1/3/03 8:25	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: -1.5 C		
0305383-08	SS-9 (9')	SOIL	1/2/03 11:07	1/3/03 8:25	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M 8021B/5030 BTEX	Rejected: No		Temp: -1.5 C		

**ENVIRONMENTAL LAB OF TEXAS****SAMPLE WORK LIST**

LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710  
915-687-0456

Order#: G0305383  
Project: 0-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

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<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u> <u>Collected</u>	<u>Date / Time</u> <u>Received</u>	<u>Container</u>	<u>Preservative</u>
0305383-09	SS-10 (9')	SOIL	1/2/03 11:10	1/3/03 8:25	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: -1.5 C		
0305383-10	SS-11 (16')	SOIL	1/2/03 11:30	1/3/03 8:25	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: -1.5 C		
0305383-11	SS-12 (17')	SOIL	1/2/03 11:35	1/3/03 8:25	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: -1.5 C		
0305383-12	SS-13 (16')	SOIL	1/2/03 11:38	1/3/03 8:25	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: -1.5 C		
0305383-13	SS-14 (10')	SOIL	1/2/03 11:40	1/3/03 8:25	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: -1.5 C		
0305383-14	SS-15 (19')	SOIL	1/2/03 11:42	1/3/03 8:25	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: -1.5 C		
0305383-15	SS-16 (27')	SOIL	1/2/03 11:45	1/3/03 8:25	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: -1.5 C		
0305383-16	SS-17 (29')	SOIL	1/2/03 12:40	1/3/03 8:25	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M	Rejected: No		Temp: -1.5 C		

## ENVIRONMENTAL LAB OF TEXAS

## SAMPLE WORK LIST

LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710  
915-687-0456

Order#: G0305383  
Project: 0-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u>	<u>Date / Time</u>	<u>Container</u>	<u>Preservative</u>
0305383-17	SS-18 (29')	SOIL	1/2/03 12:45	1/3/03 8:25	4 oz glass	Ice
<u>Lab Testing:</u>		Rejected: No	Temp: -1.5 C			
8015M						
0305383-18	SS-19 (20')	SOIL	1/2/03 12:15	1/3/03 8:25	4 oz glass	Ice
<u>Lab Testing:</u>		Rejected: No	Temp: -1.5 C			
8015M						
0305383-19	SS-20 (26')	SOIL	1/2/03 12:20	1/3/03 8:25	4 oz glass	Ice
<u>Lab Testing:</u>		Rejected: No	Temp: -1.5 C			
8015M						
0305383-20	SS-21 (15')	SOIL	1/2/03 12:00	1/3/03 8:25	4 oz glass	Ice
<u>Lab Testing:</u>		Rejected: No	Temp: -1.5 C			
8015M						
0305383-21	SS-22 (27')	SOIL	1/2/03 12:10	1/3/03 8:25	4 oz glass	Ice
<u>Lab Testing:</u>		Rejected: No	Temp: -1.5 C			
8015M						
0305383-22	SS-23 (10')	SOIL	1/2/03 13:15	1/3/03 8:25	4 oz glass	Ice
<u>Lab Testing:</u>		Rejected: No	Temp: -1.5 C			
8015M						

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305383  
Project: 0-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

Lab ID: 0305383-01  
Sample ID: SS-2 (8')

**8015M**

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		1/4/03	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	146	10.0
TOTAL, C6-C35	146	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	98%	70	130
1-Chlorooctadecane	98%	70	130

Lab ID: 0305383-02  
Sample ID: SS-3 (9')

**8015M**

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		1/4/03	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	92%	70	130
1-Chlorooctadecane	91%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305383  
Project: 0-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

Lab ID: 0305383-03  
Sample ID: SS-4 (8')

**8015M**

<u>Method</u> <u>Blank</u>	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	<u>Sample</u> <u>Amount</u>	<u>Dilution</u> <u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		1/4/03	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	87%	70	130
1-Chlorooctadecane	85%	70	130

Lab ID: 0305383-04  
Sample ID: SS-5 (8')

**8015M**

<u>Method</u> <u>Blank</u>	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	<u>Sample</u> <u>Amount</u>	<u>Dilution</u> <u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		1/4/03	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	18.6	10.0
DRO, >C12-C35	216	10.0
TOTAL, C6-C35	235	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	96%	70	130
1-Chlorooctadecane	95%	70	130

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800



# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305383  
Project: 0-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

Lab ID: 0305383-05  
Sample ID: SS-6 (7')

**8015M**

<u>Method</u> <u>Blank</u>	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	<u>Sample</u> <u>Amount</u>	<u>Dilution</u> <u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		1/4/03	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	199	10.0
TOTAL, C6-C35	199	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	75%	70	130
1-Chlorooctadecane	75%	70	130

Lab ID: 0305383-06  
Sample ID: SS-7 (7')

**8015M**

<u>Method</u> <u>Blank</u>	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	<u>Sample</u> <u>Amount</u>	<u>Dilution</u> <u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		1/4/03	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	113	10.0
TOTAL, C6-C35	113	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	97%	70	130
1-Chlorooctadecane	97%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305383  
Project: 0-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

Lab ID: 0305383-07  
Sample ID: SS-8 (9')

**8015M**

<u>Method</u> <u>Blank</u>	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	<u>Sample</u> <u>Amount</u>	<u>Dilution</u> <u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		1/4/03	1	5	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	128	50.0
DRO, >C12-C35	4050	50.0
TOTAL, C6-C35	4178	50.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	20%	70	130
1-Chlorooctadecane	21%	70	130

Lab ID: 0305383-08  
Sample ID: SS-9 (9')

**8015M**

<u>Method</u> <u>Blank</u>	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	<u>Sample</u> <u>Amount</u>	<u>Dilution</u> <u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		1/4/03	1	10	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	1530	100
DRO, >C12-C35	12800	100
TOTAL, C6-C35	14330	100

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	20%	70	130
1-Chlorooctadecane	12%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305383  
Project: 0-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

Lab ID: 0305383-08  
Sample ID: SS-9 (9')

### 8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004249-02		1/3/02	1	100	RKT	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.100
Toluene	0.195	0.100
Ethylbenzene	1.24	0.100
p/m-Xylene	6.50	0.100
o-Xylene	0.929	0.100

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	101%	80	120
Bromofluorobenzene	105%	80	120

Lab ID: 0305383-09  
Sample ID: SS-10 (9')

### 8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		1/4/03	1	10	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	< 100	100
DRO, >C12-C35	1740	100
TOTAL, C6-C35	1740	100

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	11%	70	130
1-Chlorooctadecane	12%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800



# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305383  
Project: 0-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

Lab ID: 0305383-10  
Sample ID: SS-11 (16')

**8015M**

<u>Method</u> <u>Blank</u>	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	<u>Sample</u> <u>Amount</u>	<u>Dilution</u> <u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		1/4/03	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	100%	70	130
1-Chlorooctadecane	101%	70	130

Lab ID: 0305383-11  
Sample ID: SS-12 (17')

**8015M**

<u>Method</u> <u>Blank</u>	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	<u>Sample</u> <u>Amount</u>	<u>Dilution</u> <u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		1/4/03	1	10	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	< 100	100
DRO, >C12-C35	900	100
TOTAL, C6-C35	900	100

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	9%	70	130
1-Chlorooctadecane	9%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

## ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
 LARSON AND ASSOCIATES, INC.  
 P.O. BOX 50685  
 MIDLAND, TX 79710

Order#: G0305383  
 Project: 0-0100  
 Project Name: Texaco/ McKinley Lease  
 Location: None Given

Lab ID: 0305383-12  
 Sample ID: SS-13 (16')

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		1/6/03 18:04	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	108%	70	130
1-Chlorooctadecane	117%	70	130

Lab ID: 0305383-13  
 Sample ID: SS-14 (10')

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		1/6/03 18:04	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	176	10.0
TOTAL, C6-C35	176	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	112%	70	130
1-Chlorooctadecane	114%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305383  
Project: 0-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

Lab ID: 0305383-14  
Sample ID: SS-15 (19')

**8015M**

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		1/6/03 18:04	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	52.3	10.0
DRO, >C12-C35	264	10.0
TOTAL, C6-C35	316	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	119%	70	130
1-Chlorooctadecane	126%	70	130

Lab ID: 0305383-15  
Sample ID: SS-16 (27')

**8015M**

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		1/6/03 18:04	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	121%	70	130
1-Chlorooctadecane	125%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305383  
Project: 0-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

Lab ID: 0305383-16  
Sample ID: SS-17 (29')

**8015M**

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		1/6/03 18:04	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	126%	70	130
1-Chlorooctadecane	127%	70	130

Lab ID: 0305383-17  
Sample ID: SS-18 (29')

**8015M**

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		1/6/03 18:04	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	119%	70	130
1-Chlorooctadecane	120%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800



# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305383  
Project: 0-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

Lab ID: 0305383-18  
Sample ID: SS-19 (20')

### 8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		1/6/03 18:04	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	130%	70	130
1-Chlorooctadecane	120%	70	130

Lab ID: 0305383-19  
Sample ID: SS-20 (26')

### 8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		1/6/03 18:04	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	122%	70	130
1-Chlorooctadecane	121%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305383  
Project: 0-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

Lab ID: 0305383-20  
Sample ID: SS-21 (15')

**8015M**

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		1/6/03 18:04	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	122%	70	130
1-Chlorooctadecane	117%	70	130

Lab ID: 0305383-21  
Sample ID: SS-22 (27')

**8015M**

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		1/6/03 18:04	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	49.3	10.0
TOTAL, C6-C35	49.3	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	84%	70	130
1-Chlorooctadecane	85%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305383  
Project: 0-0100  
Project Name: Texaco/ McKinley Lease  
Location: None Given

Lab ID: 0305383-22  
Sample ID: SS-23 (10')

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		1/6/03 18:04	1	10	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	< 100	100
DRO, >C12-C35	3970	100
TOTAL, C6-C35	3970	100

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	11%	70	130
1-Chlorooctadecane	13%	70	130

Approval: Jeanne McMurrey 01-07-03  
Raland K. Tuttle, Lab Director, QA Officer      Date  
Celey D. Keene, Org. Tech. Director  
Jeanne McMurrey, Inorg. Tech. Director  
Sandra Biezugbe, Lab Tech.  
Sara Molina, Lab Tech.

DL = Diluted out    N/A = Not Applicable    RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765    Ph: 915-563-1800

**ENVIRONMENTAL LAB OF TEXAS****QUALITY CONTROL REPORT****8015M****Order#: G0305383**

<b>BLANK</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0004256-02			<10.0		
TOTAL, C6-C35-mg/kg		0004257-02			<10.0		
<b>CONTROL</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0004256-03		952	850	89.3%	
<b>CONTROL DUP</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0004256-04		952	860	90.3%	1.2%
<b>MS</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0305383-15	0	952	790	83.3%	
<b>MSD</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0305383-15	0	952	810	85.1%	2.5%
<b>SRM</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0004256-05		1000	840	84.4%	
TOTAL, C6-C35-mg/kg		0004257-05		1000	814	81.4%	



## ENVIRONMENTAL LAB OF TEXAS

## QUALITY CONTROL REPORT

8021B/5030 BTEX

Order#: G0305383

<b>BLANK</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0004249-02			<0.025		
Toluene-mg/kg		0004249-02			<0.025		
Ethylbenzene-mg/kg		0004249-02			<0.025		
p/m-Xylene-mg/kg		0004249-02			<0.025		
o-Xylene-mg/kg		0004249-02			<0.025		
<b>MS</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0305380-06	0	0.1	0.105	105.0%	
Toluene-mg/kg		0305380-06	0	0.1	0.112	112.0%	
Ethylbenzene-mg/kg		0305380-06	0	0.1	0.113	113.0%	
p/m-Xylene-mg/kg		0305380-06	0	0.2	0.225	112.5%	
o-Xylene-mg/kg		0305380-06	0	0.1	0.108	108.0%	
<b>MSD</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0305380-06	0.105	0.1	0.102	102.0%	2.9%
Toluene-mg/kg		0305380-06	0.112	0.1	0.105	105.0%	6.5%
Ethylbenzene-mg/kg		0305380-06	0.113	0.1	0.104	104.0%	8.3%
p/m-Xylene-mg/kg		0305380-06	0.225	0.2	0.210	105.0%	6.9%
o-Xylene-mg/kg		0305380-06	0.108	0.1	0.102	102.0%	5.7%
<b>SRM</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0004249-05		0.1	0.118	118.0%	
Toluene-mg/kg		0004249-05		0.1	0.113	113.0%	
Ethylbenzene-mg/kg		0004249-05		0.1	0.111	111.0%	
p/m-Xylene-mg/kg		0004249-05		0.2	0.232	116.0%	
o-Xylene-mg/kg		0004249-05		0.1	0.111	111.0%	

# CASE NARRATIVE

## ENVIRONMENTAL LAB OF TEXAS

**Prepared for:**

LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

**Order#:** G0305383**Project:** Texaco/ McKinley Lease

The following samples were received as indicated below and on the attached Chain of Custody record. All analyses were performed within the holding time and with acceptable quality control results unless otherwise noted.

SAMPLE ID	LAB ID	MATRIX	Date Collected	Date Received
SS-2 (8')	0305383-01	SOIL	01/02/2003	01/03/2003
SS-3 (9')	0305383-02	SOIL	01/02/2003	01/03/2003
SS-4 (8')	0305383-03	SOIL	01/02/2003	01/03/2003
SS-5 (8')	0305383-04	SOIL	01/02/2003	01/03/2003
SS-6 (7')	0305383-05	SOIL	01/02/2003	01/03/2003
SS-7 (7')	0305383-06	SOIL	01/02/2003	01/03/2003
SS-8 (9')	0305383-07	SOIL	01/02/2003	01/03/2003
SS-9 (9')	0305383-08	SOIL	01/02/2003	01/03/2003
SS-10 (9')	0305383-09	SOIL	01/02/2003	01/03/2003
SS-11 (16')	0305383-10	SOIL	01/02/2003	01/03/2003
SS-12 (17')	0305383-11	SOIL	01/02/2003	01/03/2003
SS-13 (16')	0305383-12	SOIL	01/02/2003	01/03/2003
SS-14 (10')	0305383-13	SOIL	01/02/2003	01/03/2003
SS-15 (19')	0305383-14	SOIL	01/02/2003	01/03/2003
SS-16 (27')	0305383-15	SOIL	01/02/2003	01/03/2003
SS-17 (29')	0305383-16	SOIL	01/02/2003	01/03/2003
SS-18 (29')	0305383-17	SOIL	01/02/2003	01/03/2003
SS-19 (20')	0305383-18	SOIL	01/02/2003	01/03/2003
SS-20 (26')	0305383-19	SOIL	01/02/2003	01/03/2003
SS-21 (15')	0305383-20	SOIL	01/02/2003	01/03/2003
SS-22 (27')	0305383-21	SOIL	01/02/2003	01/03/2003
SS-23 (10')	0305383-22	SOIL	01/02/2003	01/03/2003

Surrogate recoveries are outside the control limits because they were diluted out. (TPH)  
(0205383-07, 08, 09, 22)

# CASE NARRATIVE

## ENVIRONMENTAL LAB OF TEXAS

**Prepared for:**

LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

**Order#:** G0305383**Project:** Texaco/ McKinley Lease


The following samples were received as indicated below and on the attached Chain of Custody record. All analyses were performed within the holding time and with acceptable quality control results unless otherwise noted.

The enclosed results of analyses are representative of the samples as received by the laboratory. Environmental Lab of Texas makes no representations or certifications as to the methods of sample collection, sample identification, or transportation handling procedures used prior to our receipt of samples. To the best of my knowledge, the information contained in this report is accurate and complete.

Approved By: Jane McMurry  
Environmental Lab of Texas I, Etd.

Date: 01-07-03



CLIENT NAME:		SITE MANAGER:		PARAMETERS/METHOD NUMBER		CHAIN—OF—CUSTODY RECORD	
Texaco		Cindy Crain		BTEX 80218		 <b>LA Associates, Inc.</b> Environmental Consultants 507 N. Marienfeld, Ste. 202 • Midland, TX 79701 Fax: 915-687-0456 915-687-0901	
PROJECT NO.: 0-0100		PROJECT NAME: McKinley Lease		7PH 8015 M			
PAGE 1 OF 2		LAB. PO #		NUMBER OF CONTAINERS 4029			
DATE	TIME	WATER	SOIL	OTHER	SAMPLE IDENTIFICATION	LAB. I.D. NUMBER (LAB USE ONLY)	REMARKS (I.E., FILTERED, UNFILTERED, PRESERVED, UNPRESERVED, GRAB COMPOSITE)
12/10/03	10:40		✓		55-2 (8')	0305383-01	
"	10:42		✓		55-3 (9')	02	
"	10:44		✓		55-4 (8')	03	
"	10:57		✓		55-5 (8')	04	
"	10:59		✓		55-6 (7')	05	
"	11:02		✓		55-7 (7')	06	
"	11:05		✓		55-8 (9')	07	
"	11:07		✓		55-9 (9')	08	
"	11:10		✓		55-10 (9')	09	
"	11:30		✓		55-11 (16')	10	
"	11:35		✓		55-12 (17')	11	
"	11:38		✓		55-13 (16')	12	
"	11:40		✓		55-14 (10')	13	
"	11:42		✓		55-15 (19')	14	
"	11:45		✓		55-16 (27')	15	
"	12:40		✓		55-17 (29')	16	
"	12:45		✓		55-18 (29')	17	
"	12:15		✓		55-19 (20')	18	

SAMPLED BY: (Signature) <i>Cindy Crain</i>	DATE: 12/10/03	TIME: 13:00	RELINQUISHED BY: (Signature)	DATE: 12/10/03	TIME: 13:00	RECEIVED BY: (Signature)	DATE: 12/10/03	TIME: 13:00
RELINQUISHED BY: (Signature) <i>Cindy Crain</i>	DATE: 12/10/03	TIME: 08:25	RECEIVED BY: (Signature)	DATE: 12/10/03	TIME: 08:25	RECEIVED BY: (Signature)	DATE: 12/10/03	TIME: 08:25
COMMENTS:			TURNAROUND TIME NEEDED			RECEIVED BY: (Signature)		
RECEIVING LABORATORY: Environmental Lab of TX			RECEIVED BY: (Signature)			RECEIVED BY: (Signature)		
ADDRESS: 12600 W I-20 E			DATE: 01-03-03			TIME: 08:25		
CITY: Odessa			STATE: TX			ZIP: 79765		
CONTACT: Odessa			PHONE:			LA CONTACT PERSON: <i>C. Crain</i>		
SAMPLE CONDITION WHEN RECEIVED:			-1.5°C			SAMPLE TYPE: <i>Soil</i>		



Released to Imaging: 3/22/2022 3:05:10 PM

# ANALYTICAL REPORT

## Prepared for:

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

**Project:** Texaco / McKinley

**PO#:**

**Order#:** G0305663

**Report Date:** 02/11/2003

## Certificates

US EPA Laboratory Code TX00158

## ENVIRONMENTAL LAB OF TEXAS

## SAMPLE WORK LIST

LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710  
915-687-0456

Order#: G0305663  
Project: 2-0100  
Project Name: Texaco / McKinley  
Location: None Given

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u> <u>Collected</u>	<u>Date / Time</u> <u>Received</u>	<u>Container</u>	<u>Preservative</u>
0305663-01	SS-24 (10')	SOIL	2/7/03 10:15	2/7/03 16:55	4 oz Glass	None
	<u>Lab Testing:</u>	Rejected: No		Temp: 1.0 C		
	8015M Chloride					
0305663-02	SS-25 (19')	SOIL	2/7/03 10:20	2/7/03 16:55	4 oz Glass	None
	<u>Lab Testing:</u>	Rejected: No		Temp: 1.0 C		
	8015M Chloride					
0305663-03	SS-26 (7')	SOIL	2/7/03 10:25	2/7/03 16:55	4 oz Glass	None
	<u>Lab Testing:</u>	Rejected: No		Temp: 1.0 C		
	8015M Chloride					
0305663-04	SS-27 (7')	SOIL	2/7/03 10:30	2/7/03 16:55	4 oz Glass	None
	<u>Lab Testing:</u>	Rejected: No		Temp: 1.0 C		
	8015M Chloride					
0305663-05	SS-28 (20')	SOIL	2/7/03 10:35	2/7/03 16:55	4 oz Glass	None
	<u>Lab Testing:</u>	Rejected: No		Temp: 1.0 C		
	8015M Chloride					
0305663-06	SS-29 (18')	SOIL	2/7/03 10:40	2/7/03 16:55	4 oz Glass	None
	<u>Lab Testing:</u>	Rejected: No		Temp: 1.0 C		
	8015M Chloride					
0305663-07	SS-30 (18')	SOIL	2/7/03 10:50	2/7/03 16:55	4 oz Glass	None
	<u>Lab Testing:</u>	Rejected: No		Temp: 1.0 C		

## ENVIRONMENTAL LAB OF TEXAS

## SAMPLE WORK LIST

LARSON AND ASSOCIATES, INC.

P.O. BOX 50685

MIDLAND, TX 79710

915-687-0456

Order#: G0305663

Project: 2-0100

Project Name: Texaco / McKinley

Location: None Given

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u> <u>Collected</u>	<u>Date / Time</u> <u>Received</u>	<u>Container</u>	<u>Preservative</u>
	8015M Chloride					
0305663-08	SS-31 (15')	SOIL	2/7/03 11:00	2/7/03 16:55	4 oz Glass	None
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 1.0 C		
0305663-09	SS-32 (8')	SOIL	2/7/03 11:05	2/7/03 16:55	4 oz Glass	None
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 1.0 C		
0305663-10	SS-33 (11')	SOIL	2/7/03 10:45	2/7/03 16:55	4 oz Glass	None
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 1.0 C		
0305663-11	SS-34 (8')	SOIL	2/7/03 11:10	2/7/03 16:55	4 oz Glass	None
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 1.0 C		



## ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305663  
Project: 2-0100  
Project Name: Texaco / McKinley  
Location: None Given

Lab ID: 0305663-01  
Sample ID: SS-24 (10')

## 8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		2/10/03	1	1	CDH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	104%	70	130
1-Chlorooctadecane	101%	70	130

Lab ID: 0305663-02  
Sample ID: SS-25 (19')

## 8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		2/10/03	1	1	CDH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	101%	70	130
1-Chlorooctadecane	98%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

Page 1 of 6

ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

## ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305663  
Project: 2-0100  
Project Name: Texaco / McKinley  
Location: None Given

Lab ID: 0305663-03  
Sample ID: SS-26 (7')

## 8015M

Method	Date	Date	Sample	Dilution	Analyst	Method
Blank	Prepared	Analyzed	Amount	Factor		
		2/10/03	1	1	CDH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	110%	70	130
1-Chlorooctadecane	107%	70	130

Lab ID: 0305663-04  
Sample ID: SS-27 (7')

## 8015M

Method	Date	Date	Sample	Dilution	Analyst	Method
Blank	Prepared	Analyzed	Amount	Factor		
		2/10/03	1	1	CDH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	103%	70	130
1-Chlorooctadecane	101%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305663  
Project: 2-0100  
Project Name: Texaco / McKinley  
Location: None Given

Lab ID: 0305663-05  
Sample ID: SS-28 (20')

**8015M**

<u>Method</u> <u>Blank</u>	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	<u>Sample</u> <u>Amount</u>	<u>Dilution</u> <u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		2/10/03	1	1	CDH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	102%	70	130
1-Chlorooctadecane	97%	70	130

Lab ID: 0305663-06  
Sample ID: SS-29 (18')

**8015M**

<u>Method</u> <u>Blank</u>	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	<u>Sample</u> <u>Amount</u>	<u>Dilution</u> <u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		2/10/03	1	1	CDH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	104%	70	130
1-Chlorooctadecane	101%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305663  
Project: 2-0100  
Project Name: Texaco / McKinley  
Location: None Given

Lab ID: 0305663-07  
Sample ID: SS-30 (18')

### 8015M

<u>Method</u> <u>Blank</u>	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	<u>Sample</u> <u>Amount</u>	<u>Dilution</u> <u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		2/10/03	1	1	CDH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	85.1	10.0
TOTAL, C6-C35	85.1	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	103%	70	130
1-Chlorooctadecane	101%	70	130

Lab ID: 0305663-08  
Sample ID: SS-31 (15')

### 8015M

<u>Method</u> <u>Blank</u>	<u>Date</u> <u>Prepared</u>	<u>Date</u> <u>Analyzed</u>	<u>Sample</u> <u>Amount</u>	<u>Dilution</u> <u>Factor</u>	<u>Analyst</u>	<u>Method</u>
		2/10/03	1	1	CDH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	112%	70	130
1-Chlorooctadecane	111%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800



# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305663  
Project: 2-0100  
Project Name: Texaco / McKinley  
Location: None Given

Lab ID: 0305663-09  
Sample ID: SS-32 (8')

### 8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		2/10/03	1	1	CDH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	430	10.0
TOTAL, C6-C35	430	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	107%	70	130
1-Chlorooctadecane	107%	70	130

Lab ID: 0305663-10  
Sample ID: SS-33 (11')

### 8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		2/10/03	1	1	CDH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	90%	70	130
1-Chlorooctadecane	90%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

## ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305663  
Project: 2-0100  
Project Name: Texaco / McKinley  
Location: None Given

Lab ID: 0305663-11  
Sample ID: SS-34 (8')

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		2/10/03	1	1	CDH	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	159	10.0
TOTAL, C6-C35	159	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	83%	70	130
1-Chlorooctadecane	84%	70	130

Approval:

Raland K. Tuttle 2-11-03  
Raland K. Tuttle, Lab Director, QA Officer  
Celey D. Keene, Org. Tech. Director  
Jeanne McMurrey, Inorg. Tech. Director  
Sandra Biezugbe, Lab Tech.  
Sara Molina, Lab Tech.

Date

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

Page 6 of 6

ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

## ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
 LARSON AND ASSOCIATES, INC.  
 P.O. BOX 50685  
 MIDLAND, TX 79710

Order#: G0305663  
 Project: 2-0100  
 Project Name: Texaco / McKinley  
 Location: None Given

Lab ID: 0305663-01  
 Sample ID: SS-24 (10')

**Test Parameters**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	44.3	mg/kg	1	20.0	9253	2/10/03	CK

Lab ID: 0305663-02  
 Sample ID: SS-25 (19')

**Test Parameters**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	324	mg/kg	1	20.0	9253	2/10/03	CK

Lab ID: 0305663-03  
 Sample ID: SS-26 (7')

**Test Parameters**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	< 20.0	mg/kg	1	20.0	9253	2/10/03	CK

Lab ID: 0305663-04  
 Sample ID: SS-27 (7')

**Test Parameters**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	< 20.0	mg/kg	1	20.0	9253	2/10/03	CK

Lab ID: 0305663-05  
 Sample ID: SS-28 (20')

**Test Parameters**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	177	mg/kg	1	20.0	9253	2/10/03	CK

Lab ID: 0305663-06  
 Sample ID: SS-29 (18')

**Test Parameters**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	< 20.0	mg/kg	1	20.0	9253	2/10/03	CK

RL = Reporting Limit    N/A = Not Applicable

Page 1 of 2

ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0305663  
Project: 2-0100  
Project Name: Texaco / McKinley  
Location: None Given

Lab ID: 0305663-07

Sample ID: SS-30 (18')

### Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	88.6	mg/kg	1	20.0	9253	2/10/03	CK

Lab ID: 0305663-08

Sample ID: SS-31 (15')

### Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	59.1	mg/kg	1	20.0	9253	2/10/03	CK

Lab ID: 0305663-09

Sample ID: SS-32 (8')

### Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	103	mg/kg	1	20.0	9253	2/10/03	CK

Lab ID: 0305663-10

Sample ID: SS-33 (11')

### Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	295	mg/kg	1	20.0	9253	2/10/03	CK

Lab ID: 0305663-11

Sample ID: SS-34 (8')

### Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	59.1	mg/kg	1	20.0	9253	2/10/03	CK

Approval:

*Raland K. Tuttle* 2/10/03  
Raland K. Tuttle, Lab Director, QA Officer  
Celey D. Keene, Org. Tech. Director  
Jeanne McMurrey, Inorg. Tech. Director  
Sandra Biezugbe, Lab Tech.  
Sara Molina, Lab Tech.

RL = Reporting Limit N/A = Not Applicable

Page 2 of 2

ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800



# ENVIRONMENTAL LAB OF TEXAS

## QUALITY CONTROL REPORT

8015M

Order#: G0305663

<b>BLANK</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0004576-02			<10.0		
<b>MS</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0305663-01	0	952	989	103.9%	
<b>MSD</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0305663-01	0	952	998	104.8%	0.9%
<b>SRM</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0004576-05		1000	1060	106.6%	

# ENVIRONMENTAL LAB OF TEXAS

## QUALITY CONTROL REPORT

### Test Parameters

Order#: G0305663

<b>BLANK</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0004580-01			< 20.0		
<b>MS</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0305665-02	2350	834	3280	111.5%	
<b>MSD</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0305665-02	2350	834	3190	100.7%	2.8%
<b>SRM</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0004580-04		5000	5140	102.8%	

*Released to Imaging: 3/22/2022 3:05:10 PM*

# ANALYTICAL REPORT

## Prepared for:

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

**Project:** Texaco/ McKinley

**PO#:**

**Order#:** G0305714

**Report Date:** 02/18/2003

## Certificates

US EPA Laboratory Code TX00158





April 7, 2003

Mr. Paul Sheeley  
New Mexico Oil Conservation Division  
1625 N. French Drive  
Hobbs, New Mexico 88240

**Re: Soil Sample Results, Former McKinley Lease Production Facility, UL A,  
Section 30, Township 18 South, Range 38 East, Lea County, New Mexico**

Dear Mr. Sheeley:

Please find enclosed a copy of the above-referenced report. The report is submitted on behalf of ChevronTexaco Exploration and Production, and presents the results of soil remediation activities conducted by Larson and Associates, Inc. Please call Scott Toner at (915) 687-7318 or myself at (915) 687-0901 if you have questions.

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

A handwritten signature in cursive script, reading 'Cindy K. Crain'.

Cindy K. Crain  
Geologist

cc: Scott Toner - ChevronTexaco  
William Olson, NMOCD





May 14, 2003

**VIA FACSIMILE: (505) 393-0720**

Mr. Paul R. Sheeley  
New Mexico Oil Conservation Division  
1625 N. French Drive  
Hobbs, New Mexico 88240

**Re: Soil and Groundwater Sample Results from Soil Boring BH-14, Former M<sup>c</sup>Kinley Lease Production Facility, UL A, Section 30, Township 18 South, Range 38 East, Lea County, New Mexico**

Dear Mr. Sheeley:

ChevronTexaco Exploration and Production Company (ChevronTexaco), as successor to Texaco Exploration and Production Inc. (Texaco), has retained Larson and Associates, Inc. (LA) to supervise remediation of soil at a former oilfield production facility (Site) once operated by Texaco on the McKinley Lease in Unit Letter A (NE/4 NE/4), Section 30, Township 18 South, Range 38 East, Lea County, New Mexico. Figure 1 presents a location and topographic map.

Soil sample results from excavated areas and from soil boring BH-13 were submitted to the New Mexico Oil Conservation Division (NMOCD) on April 7, 2003. A verbal request was made by the NMOCD on April 28, 2003, to provide additional soil samples from the soil boring, as well as a groundwater sample.

#### **Soil Boring**

On April 30, 2003, soil boring BH-14 was drilled approximately five feet west of the BH-13 location. The boring was drilled by Scarborough Drilling, Inc. of Lamesa, Texas, utilizing an air rotary drilling rig. Figure 2 shows the location of excavations (Holes #1, 2 and 3) and soil borings BH-1 through BH-14. BH-12 is located north of the Site and is not shown on Figure 2. Appendix A provides a log of borehole BH-14.

Soil samples were collected at ground surface, and approximately every five (5) feet below ground surface (bgs), thereafter, using a split-spoon sampler. The split-spoon sampler was thoroughly washed between sample events. Drill cuttings were placed on the ground adjacent to the boring. The soil samples were placed in clean glass sample jars, labeled, chilled in an ice chest, and delivered under chain-of-custody control to Environmental Lab of Texas I, Ltd., located in Odessa, Texas. A portion of each sample was also placed in a clean glass sample jar for headspace analysis. The headspace jars were filled approximately  $\frac{3}{4}$  full, and a layer of aluminum foil was placed over the

Mr. Paul Sheeley  
May 14, 2003  
Page 2

opening of the jar before replacing the cap. The headspace samples were allowed to reach ambient temperature before a RAE Instruments, Model 2000 photoionization detector (PID) was used to measure the concentration of organic vapors in the headspace of the sample jars. The PID probe was inserted into the headspace of the sample jars (through the aluminum foil), and the concentration of organic vapors was displayed by the instrument in parts per million (ppm). The PID was calibrated to 100.1 ppm isobutylene prior to obtaining headspace readings.

The NMOCD allows a PID measurement of less than 100 ppm to be used as a substitute for laboratory analysis of benzene and total benzene, toluene, ethylbenzene and xylenes (collectively referred to as BTEX). However, the PID measurement cannot be used as a substitute for total petroleum hydrocarbon (TPH) analysis by a laboratory. Samples from the surface and approximately every five (5) feet bgs were analyzed for chloride, and for TPH by EPA method SW-846-8015 for gasoline range organics (GRO) and diesel range organics (DRO).

#### **Soil Boring Results**

All samples collected from BH-14 exhibited a total TPH of less than ten (<10.0) milligrams per kilogram (mg/kg) except the sample from approximately 25-26 feet bgs, which resulted in a total TPH concentration of 1,053 mg/kg. All samples collected from BH-14 exhibited a chloride concentration less than the New Mexico Water Quality Control Commission (NMWQCC) standard of 250 mg/kg. Table 1 presents a summary of headspace, chloride and TPH analyses of soil samples from BH-14. Figure 2 shows the location of BH-14. Appendix B provides laboratory and chain-of-custody documentation. Appendix C presents copies of the field notes.

The borehole was advanced to a total depth of 61 feet bgs (approximately 13 feet into groundwater), covered, and allowed to remain open overnight to allow the groundwater to reach a static level. On May 1, 2003, the water level was measured at 52.5 feet below ground surface, using a Heron interface probe. By lowering a dedicated disposable polyethylene bailer into the open borehole, approximately four gallons of water was purged prior to obtaining a groundwater sample. The groundwater sample was carefully poured into laboratory-prepared containers, labeled, immediately chilled in an ice chest, and transferred under chain-of-custody control to Environmental Lab of Texas I, Ltd., in Odessa, Texas. A duplicate sample was collected by the NMOCD.

The groundwater sample was analyzed for chloride, and for BTEX by EPA method SW-8021B/5030. All BTEX constituents, except p/m xylene (0.002 milligrams per liter), were reported below detection limits. The NMWQCC human health standard for xylene is 0.62 mg/L. Chloride was reported at 155 mg/L. Table 2 provides a summary of

Mr. Paul Sheeley  
May 14, 2003  
Page 3

groundwater analytical results. Appendix B provides laboratory and chain-of-custody documentation.

The boring was filled with bentonite chips and hydrated with potable water upon completion of groundwater sampling activities.

Approximately 10,000 yd<sup>3</sup> of clean soil is stockpiled at the Site, awaiting backfilling of the excavations. ChevronTexaco requests the NMOCD allow it to fill the excavations. A final letter will be submitted to the NMOCD upon completion.

Per our conversation of May 9, 2003, it is noted that a bluish-gray tinted area of siltstone was encountered in the excavated area to the north of Hole #2, at a depth of approximately 19 to 29 feet bgs. The tinted siltstone is visible in Figure 4 of the April 7, 2003 report previously submitted to the NMOCD. All areas of tinted siltstone were sampled, and results were all below the recommended remediation action level of 100 ppm for this Site. Sample locations and analytical information can be found in the April 7, 2003 report.

Please call Mr. Scott Toner with ChevronTexaco at (915) 687-7318 or myself at (915) 687-0901 if you have questions.

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



Cindy K Crain  
Geologist

Encl.

cc: Scott Toner, ChevronTexaco  
William Olson, OCD Hydrologist

## TABLES

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**Table 1: Summary of Headspace and Laboratory Analysis of Soil Samples**  
**Texaco Exploration and Production Inc., McKinley Lease**  
**NE/4, NE/4, Section 30, Township 18 South, Range 38 East**  
**Lea County, New Mexico**

Borehole Number	Sample Date	Sample Depth (feet BGS)	PID (ppm)	GRO C6-C12 mg/kg	DRO >C12-C35 mg/kg	TPH (C6-C35) mg/kg	Chloride mg/kg
<b>RRAL</b>						<b>100</b>	<b>250</b>
<b>BH-13</b>	<b>12/5/2002</b>	0-1	1	<10.0	<10.0	<10.0	---
		10-11	1	<10.0	<10.0	<10.0	---
		20-21	6.1	<10.0	<b>190.0</b>	<b>190.0</b>	---
		30-31	5.5	<10.0	<10.0	<10.0	---
		50-51	3.1	<10.0	<10.0	<10.0	---
<b>BH-14</b>	<b>4/30/2003</b>	0-1	0.1	<10.0	<10.0	<10.0	<20.0
		5-6	0.3	<10.0	<10.0	<10.0	<20.0
		10-11	0.1	<10.0	<10.0	<10.0	160.0
		15-16	0.1	<10.0	<10.0	<10.0	88.6
		20-21	0.3	<10.0	<10.0	<10.0	142.0
		25-26	58.7	<b>199.0</b>	<b>854.0</b>	<b>1053.0</b>	35.4
		30-31	7.6	<10.0	<10.0	<10.0	<20.0
		35-36	13.0	<10.0	<10.0	<10.0	<20.0
		40-41	4.8	<10.0	<10.0	<10.0	<20.0
		45-46	0.1	<10.0	<10.0	<10.0	29.5
		50-51	0.1	<10.0	<10.0	<10.0	29.5
		55-56	0.1	<10.0	<10.0	<10.0	35.4

Notes: All analyses performed by Environmental Lab of Texas, Inc., Midland, Texas

1. BGS: Depth in feet below ground surface
2. PID: Photoionization detector
3. ppm: Parts per million
4. GRO: Gasoline-range organics
5. DRO: Diesel-range organics
6. TPH: Total petroleum hydrocarbons (Sum of GRO + DRO)
7. mg/kg: Milligrams per kilogram
8. ---: No data available
9. <: Below method detection limit
10. RRAL: NMOCD Recommended Remediation

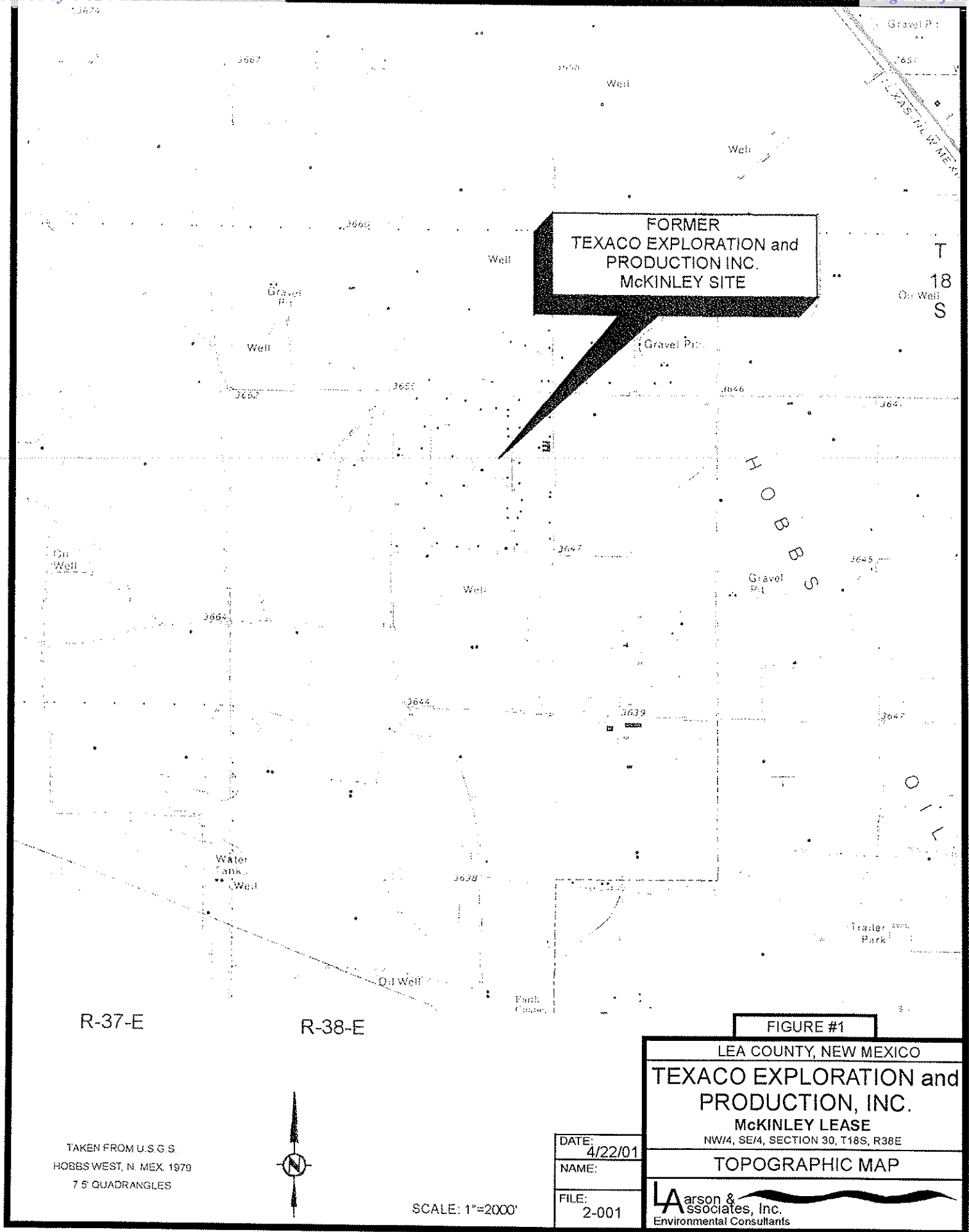
**Table 2: Summary of BTEX and Chloride Analysis of Groundwater Samples**  
**Texaco Exploration and Production Inc., McKinley Lease**  
**NE/4, NE/4, Section 30, Township 18 South, Range 38 East**  
**Lea County, New Mexico**

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethyl benzene (mg/L)	p/m Xylene (mg/L)	o- Xylene (mg/L)	Total BTEX (mg/L)	Chloride (mg/L)
BH-14	05/01/03	<0.001	<0.001	<0.001	0.002	<0.001	<0.006	155.0

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

1. mg/L: Concentration in milligrams per liter
2. <: Concentration below test method detection limit

## **FIGURES**



**APPENDIX A**  
**BORING LOG**

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**Client:** Texaco E&P**Project:** Davis Property (McKinley Lease)**Project No:** 2-0100**Location:** SW/4, NE/4, Section 30, T18S, R38E, Lea Co., NM**Log of Borehole: BH-14****Geologist:** Cindy K. Crain**Page:** 1 of 1

SUBSURFACE PROFILE			SAMPLE			PID Measurement (PPM) 20 40	Lab Analysis
Depth	Symbol	Description	Number	Type	Recovery		
0		Ground Surface					
0 - 1' bgs		<b>Silty Sand</b> 5 YR 4/3, reddish brown quartz sand, fine to very fine grained, poorly sorted, loose, dry.	1	II		0.1	Total TPH: <10.0 mg/kg
5 - 6' bgs		<b>Caliche</b> 7.5 YR 7/3 to 8/1, pink to white quartz sand, very fine grained, dry..	2	II		0.3	Total TPH: <10.0 mg/kg
10 - 11' bgs			3	II		0.1	Total TPH: <10.0 mg/kg
15 - 16' bgs			4	II		0.1	Total TPH: <10.0 mg/kg
20 - 21' bgs			5	II		0.3	Total TPH: <10.0 mg/kg
25 - 26' bgs		<b>Silty Sand</b> 5 YR 5/3, reddish brown quartz sand, fine grained, moderately well sorted, loose, dry..	6	II		58.7	Total TPH: 1,053 mg/kg
30 - 31' bgs		<b>Siltstone</b> 7.5 YR 8/1, white, inorganic silt, very fine grained, poorly sorted, dense, dry.	7	II		7.6	Total TPH: <10.0 mg/kg
35 - 36' bgs			8	II		13.0	Total TPH: <10.0 mg/kg
40 - 41' bgs		<b>Sand</b> 7.5 YR 7/3, fine grained, very poorly sorted, loose dry. Becomes moist at 48 feet below ground surface (bgs).	9	II		4.8	Total TPH: <10.0 mg/kg
45 - 46' bgs			10	II		0.1	Total TPH: <10.0 mg/kg
50 - 51' bgs			11	II		0.1	Total TPH: <10.0 mg/kg
55 - 56' bgs			12	II		0.1	Total TPH: <10.0 mg/kg
60		End of Borehole at 61 ft					Groundwater Sample: (5/1/03) Total BTEX: <0.006 mg/L Chloride: 155 mg/L
65							
70							

Drilling Method: Air Rotary

Date Drilled: 4/30/03

Hole Size: 5 5/8"

Larson and Associates, Inc.  
507 North Marienfeld St., Ste. 202  
Midland, Texas 79701  
(915) 687-0901

Checked by: CKC

Drilled by: Scarborough Drilling, Inc.

**APPENDIX B**

**LABORATORY REPORT AND  
CHAIN-OF-CUSTODY DOCUMENTATION**

---

# ANALYTICAL REPORT

## Prepared for:

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Project: Texaco McKinley  
PO#: 2-0100  
Order#: G0306388  
Report Date: 05/02/2003

### Certificates

US EPA Laboratory Code TX00158

# ENVIRONMENTAL LAB OF TEXAS

## SAMPLE WORK LIST

LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710  
915-687-0456

Order#: G0306388  
Project:  
Project Name: Texaco McKinley  
Location:

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u> <u>Collected</u>	<u>Date / Time</u> <u>Received</u>	<u>Container</u>	<u>Preservative</u>
0306388-01	BH-14 (0-1')	SOIL	4/30/03 11:15	4/30/03 16:50	4 oz Glass	Ice
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 4 C		
0306388-02	BH-14 (5-6')	SOIL	4/30/03 11:20	4/30/03 16:50	4 oz Glass	Ice
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 4 C		
0306388-03	BH-14(10-11')	SOIL	4/30/03 11:29	4/30/03 16:50	4 oz Glass	Ice
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 4 C		
0306388-04	BH-14 (15-16')	SOIL	4/30/03 11:32	4/30/03 16:50	4 oz Glass	Ice
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 4 C		
0306388-05	BH-14 (20-21')	SOIL	4/30/03 11:49	4/30/03 16:50	4 oz Glass	Ice
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 4 C		
0306388-06	BH-14 (25-26')	SOIL	4/30/03 12:05	4/30/03 16:50	4 oz Glass	Ice
	<u>Lab Testing:</u> 8015M Chloride	Rejected: No		Temp: 4 C		
0306388-07	BH-14 (30-31')	SOIL	4/30/03 12:10	4/30/03 16:50	4 oz Glass	Ice
	<u>Lab Testing:</u>	Rejected: No		Temp: 4 C		

ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## SAMPLE WORK LIST

LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710  
915-687-0456

Order#: G0306388  
Project:  
Project Name: Texaco McKinley  
Location:

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u> <u>Collected</u>	<u>Date / Time</u> <u>Received</u>	<u>Container</u>	<u>Preservative</u>
	8015M Chloride					
<b>0306388-08</b>	BH-14 (35-36')	SOIL	4/30/03 12:18	4/30/03 16:50	4 oz Glass	Ice
	<u>Lab Testing:</u>	Rejected: No		Temp: 4 C		
	8015M Chloride					
<b>0306388-09</b>	BH-14 (40-41')	SOIL	4/30/03 12:28	4/30/03 16:50	4 oz Glass	Ice
	<u>Lab Testing:</u>	Rejected: No		Temp: 4 C		
	8015M Chloride					
<b>0306388-10</b>	BH-14 (45-46')	SOIL	4/30/03 12:41	4/30/03 16:50	4 oz Glass	Ice
	<u>Lab Testing:</u>	Rejected: No		Temp: 4 C		
	8015M Chloride					
<b>0306388-11</b>	BH-14 (50-51')	SOIL	4/30/03 12:54	4/30/03 16:50	4 oz Glass	Ice
	<u>Lab Testing:</u>	Rejected: No		Temp: 4 C		
	8015M Chloride					
<b>0306388-12</b>	BH-14 (55-56')	SOIL	4/30/03 13:08	4/30/03 16:50	4 oz Glass	Ice
	<u>Lab Testing:</u>	Rejected: No		Temp: 4 C		
	8015M Chloride					



# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0306388  
Project:  
Project Name: Texaco McKinley  
Location:

Lab ID: 0306388-01  
Sample ID: BH-14 (0-1')

**8015M**

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
Blank	Prepared	Analyzed	Amount	Factor		
		5/1/03	1	1	WL	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	99%	70	130
1-Chlorooctadecane	96%	70	130

Lab ID: 0306388-02  
Sample ID: BH-14 (5-6')

**8015M**

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
Blank	Prepared	Analyzed	Amount	Factor		
		5/1/03	1	1	WL	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	104%	70	130
1-Chlorooctadecane	102%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0306388  
Project:  
Project Name: Texaco McKinley  
Location:

Lab ID: 0306388-03  
Sample ID: BH-14(10-11')

**8015M**

Method	Date	Date	Sample	Dilution	Analyst	Method
Blank	Prepared	Analyzed	Amount	Factor		
		5/1/03	1	1	WL	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	83%	70	130
1-Chlorooctadecane	75%	70	130

Lab ID: 0306388-04  
Sample ID: BH-14 (15-16')

**8015M**

Method	Date	Date	Sample	Dilution	Analyst	Method
Blank	Prepared	Analyzed	Amount	Factor		
		5/1/03	1	1	WL	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	85%	70	130
1-Chlorooctadecane	79%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0306388  
Project:  
Project Name: Texaco McKinley  
Location:

Lab ID: 0306388-05  
Sample ID: BH-14 (20-21')

**8015M**

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
Blank	Prepared	Analyzed	Amount	Factor		
		5/1/03	1	1	WL	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	89%	70	130
1-Chlorooctadecane	81%	70	130

Lab ID: 0306388-06  
Sample ID: BH-14 (25-26')

**8015M**

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
Blank	Prepared	Analyzed	Amount	Factor		
		5/1/03	1	1	WL	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	199	10.0
DRO, >C12-C35	854	10.0
TOTAL, C6-C35	1,053	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	98%	70	130
1-Chlorooctadecane	85%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD. 12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0306388  
Project:  
Project Name: Texaco McKinley  
Location:

Lab ID: 0306388-07  
Sample ID: BH-14 (30-31')

**8015M**

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>	<u>WL</u>	<u>8015M</u>
		5/1/03	1	1	WL	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	76%	70	130
1-Chlorooctadecane	71%	70	130

Lab ID: 0306388-08  
Sample ID: BH-14 (35-36')

**8015M**

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>	<u>WL</u>	<u>8015M</u>
		5/1/03	1	1	WL	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	86%	70	130
1-Chlorooctadecane	81%	70	130

DL = Diluted out    N/A = Not Applicable    RL = Reporting Limit

Page 4 of 6

ENVIRONMENTAL LAB OF TEXAS I, LTD.    12600 West I-20 East, Odessa, TX 79765    Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0306388  
Project:  
Project Name: Texaco McKinley  
Location:

Lab ID: 0306388-09  
Sample ID: BH-14 (40-41')

**8015M**

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
Blank	Prepared	Analyzed	Amount	Factor		
		5/1/03	1	1	WL	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	88%	70	130
1-Chlorooctadecane	82%	70	130

Lab ID: 0306388-10  
Sample ID: BH-14 (45-46')

**8015M**

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
Blank	Prepared	Analyzed	Amount	Factor		
		5/1/03	1	1	WL	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	83%	70	130
1-Chlorooctadecane	77%	70	130

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD. 12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800



# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0306388  
Project:  
Project Name: Texaco McKinley  
Location:

Lab ID: 0306388-11  
Sample ID: BH-14 (50-51')

**8015M**

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		5/1/03	1	1	WL	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	81%	70	130
1-Chlorooctadecane	74%	70	130


Lab ID: 0306388-12  
Sample ID: BH-14 (55-56')

**8015M**

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		5/1/03	1	1	WL	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	81%	70	130
1-Chlorooctadecane	72%	70	130

Approval:  5-02-03  
 Raland K. Tuttle, Lab Director, QA Officer  
 Celey D. Keene, Org. Tech. Director  
 Jeanne McMurrey, Inorg. Tech. Director  
 Sandra Biezugbe, Lab Tech.  
 Sara Molina, Lab Tech.

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD. 12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0306388  
Project:  
Project Name: Texaco McKinley  
Location:

Lab ID: 0306388-01  
Sample ID: BH-14 (0-1')

### Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	<20.0	mg/kg	1	20	9253	5/1/03	CK

Lab ID: 0306388-02  
Sample ID: BH-14 (5-6')

### Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	<20.0	mg/kg	1	20	9253	5/1/03	CK

Lab ID: 0306388-03  
Sample ID: BH-14(10-11')

### Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	160	mg/kg	1	20	9253	5/1/03	CK

Lab ID: 0306388-04  
Sample ID: BH-14 (15-16')

### Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	88.6	mg/kg	1	20	9253	5/1/03	CK

Lab ID: 0306388-05  
Sample ID: BH-14 (20-21')

### Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	142	mg/kg	1	20	9253	5/1/03	CK

Lab ID: 0306388-06  
Sample ID: BH-14 (25-26')

### Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	35.4	mg/kg	1	20	9253	5/1/03	CK

RL = Reporting Limit    N/A = Not Applicable

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# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0306388  
Project:  
Project Name: Texaco McKinley  
Location:

Lab ID: 0306388-07  
Sample ID: BH-14 (30-31')

### Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	<20.0	mg/kg	1	20	9253	5/1/03	CK

Lab ID: 0306388-08  
Sample ID: BH-14 (35-36')

### Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	<20.0	mg/kg	1	20	9253	5/1/03	CK

Lab ID: 0306388-09  
Sample ID: BH-14 (40-41')

### Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	<20.0	mg/kg	1	20	9253	5/1/03	CK

Lab ID: 0306388-10  
Sample ID: BH-14 (45-46')

### Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	29.5	mg/kg	1	20	9253	5/1/03	CK

Lab ID: 0306388-11  
Sample ID: BH-14 (50-51')

### Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	29.5	mg/kg	1	20	9253	5/1/03	CK

Lab ID: 0306388-12  
Sample ID: BH-14 (55-56')

### Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	35.4	mg/kg	1	20	9253	5/1/03	CK

RL = Reporting Limit    N/A = Not Applicable

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765    Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0306388  
Project:  
Project Name: Texaco McKinley  
Location:

Approval:

Raland K. Tuttle, Lab Director, QA Officer  
Celey D. Keene, Org. Tech. Director  
Jeanne McMurrey, Inorg. Tech. Director  
Sandra Biezugbe, Lab Tech.  
Sara Molina, Lab Tech.

Date

RL = Reporting Limit N/A = Not Applicable

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12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

**ENVIRONMENTAL LAB OF TEXAS****QUALITY CONTROL REPORT****8015M****Order#: G0306388**

<b>BLANK</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0005404-02			<10.0		
<b>MS</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0306388-04	0	952	775	81.4%	
<b>MSD</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0306388-04	0	952	768	80.7%	0.9%
<b>SRM</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0005404-05		1,000	858	85.8%	



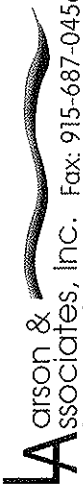
# ENVIRONMENTAL LAB OF TEXAS

## QUALITY CONTROL REPORT

### Test Parameters

Order#: G0306388

<b>BLANK</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0005391-01			<20.0		
<b>MS</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0306371-01	88.6	500	638	109.9%	
<b>MSD</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0306371-01	88.6	500	603	102.9%	5.6%
<b>SRM</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0005391-04		5000	5050	101.1%	

CLIENT NAME:		SITE MANAGER:		PARAMETERS/METHOD NUMBER		CHAIN—OF—CUSTODY RECORD	
Texaco		Lindy Crain				 <b>LA Associates, Inc.</b> Environmental Consultants 507 N. Marientfeld, Ste. 202 • Midland, TX 79701 Fax: 915-687-0456 915-687-0901	
PROJECT NO.:		PROJECT NAME:		NUMBER OF CONTAINERS		LAB. I.D. NUMBER (LAB USE ONLY)	
2-0100		McKinley				0306388-01	
PAGE 1 OF 1		LAB. PO #				REMARKS (I.E., FILTERED, UNFILTERED, PRESERVED, UNPRESERVED, GRAB COMPOSITE)	
DATE	TIME	WATER	SOIL	OTHER	SAMPLE IDENTIFICATION		
4/30/03	1115		✓		BH-14 (0-1')	✓	
"	1120		✓		" (5-6')	✓	
"	1129		✓		" (10-11')	✓	
"	1132		✓		" (15-16')	✓	
"	1149		✓		" (20-21')	✓	
"	1205		✓		" (25-26')	✓	
"	1210		✓		" (30-31')	✓	
"	1218		✓		" (35-36')	✓	
"	1228		✓		" (40-41')	✓	
"	1241		✓		" (45-46')	✓	
"	1254		✓		" (50-51')	✓	
"	1308		✓		" (55-56')	✓	
4/30/03						✓	
SAMPLED BY: (Signature)		DATE: 4/30/03		RELINQUISHED BY: (Signature)		DATE: _____	
Lindy Crain		TIME: 1330				TIME: _____	
RELINQUISHED BY: (Signature)		DATE: 4/30/03		RECEIVED BY: (Signature)		DATE: _____	
Lindy Crain		TIME: 1450				TIME: _____	
COMMENTS:		TURNAROUND TIME NEEDED				SAMPLE SHIPPED BY: (Circle) FEDEX <input type="checkbox"/> BUS <input type="checkbox"/> UPS <input type="checkbox"/> OTHER: <input type="checkbox"/>	
RECEIVING LABORATORY: Env. Lab of Texas		RECEIVED BY: (Signature)				WHITE <input type="checkbox"/> - RECEIVING LAB	
ADDRESS: _____		DATE: 4/30/03				YELLOW <input type="checkbox"/> - RECEIVING LAB (TO BE RETURNED TO LA AFTER RECEIPT)	
CITY: _____		STATE: _____				PINK <input type="checkbox"/> - PROJECT MANAGER	
CONTACT: _____		ZIP: _____				GOLD <input type="checkbox"/> - QA/QC COORDINATOR	
SAMPLE CONDITION WHEN RECEIVED:		LA CONTACT PERSON:				SAMPLE TYPE: Soil	
4.0 °C							

# ANALYTICAL REPORT

## Prepared for:

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

**Project:** Texaco/ Mckinley

**PO#:**

**Order#:** G0306397

**Report Date:** 05/07/2003

### Certificates

US EPA Laboratory Code TX00158

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# ENVIRONMENTAL LAB OF TEXAS

## SAMPLE WORK LIST

LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710  
915-687-0456

Order#: G0306397  
Project: 2-0100  
Project Name: Texaco/ Mckinley  
Location: None Given

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u> <u>Collected</u>	<u>Date / Time</u> <u>Received</u>	<u>Container</u>	<u>Preservative</u>
0306397-01	BH-14	WATER	5/1/03 13:05	5/1/03 17:05	See COC	See COC
<u>Lab Testing:</u>		Rejected: No	Temp: 4 C			
8021B/5030 BTEX						
Chloride						

---

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0306397  
Project: 2-0100  
Project Name: Texaco/ Mckinley  
Location: None Given

Lab ID: 0306397-01  
Sample ID: BH-14

### 8021B/5030 BTEX

Method	Date	Date	Sample	Dilution	Analyst	Method
Blank	Prepared	Analyzed	Amount	Factor		
0005454-02		5/6/03 12:30	1	1	CK	8021B

Parameter	Result mg/L	RL
Benzene	<0.001	0.001
Toluene	<0.001	0.001
Ethylbenzene	<0.001	0.001
p/m-Xylene	0.002	0.001
o-Xylene	<0.001	0.001

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	98%	80	120
Bromofluorobenzene	90%	80	120

Approval: Raland K. Tuttle 5-08-03  
Raland K. Tuttle, Lab Director, QA Officer Date  
Celey D. Keene, Org. Tech. Director  
Jeanne McMurrey, Inorg. Tech. Director  
Sandra Biezugbe, Lab Tech.  
Sara Molina, Lab Tech.

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

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ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800



# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

CINDY CRAIN  
LARSON AND ASSOCIATES, INC.  
P.O. BOX 50685  
MIDLAND, TX 79710

Order#: G0306397  
Project: 2-0100  
Project Name: Texaco/ Mckinley  
Location: None Given

Lab ID: 0306397-01

Sample ID: BH-14

### Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	155	mg/L	1	5.00	9253	5/2/03	SB

Approval:

*Raland K. Tuttle* 5-08-03  
Raland K. Tuttle, Lab Director, QA Officer Date  
Celey D. Keene, Org. Tech. Director  
Jeanne McMurrey, Inorg. Tech. Director  
Sandra Biezugbe, Lab Tech.  
Sara Molina, Lab Tech.

RL = Reporting Limit N/A = Not Applicable

Page 1 of 1

ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

# ENVIRONMENTAL LAB OF TEXAS

## QUALITY CONTROL REPORT

8021B/5030 BTEX

Order#: G0306397

<b>BLANK</b>		LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
	WATER						
Benzene-mg/L		0005454-02			<0.001		
Toluene-mg/L		0005454-02			<0.001		
Ethylbenzene-mg/L		0005454-02			<0.001		
p/m-Xylene-mg/L		0005454-02			<0.001		
o-Xylene-mg/L		0005454-02			<0.001		
<b>CONTROL</b>		LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
	WATER						
Benzene-mg/L		0005454-03		0.1	0.105	105.0%	
Toluene-mg/L		0005454-03		0.1	0.098	98.0%	
Ethylbenzene-mg/L		0005454-03		0.1	0.097	97.0%	
p/m-Xylene-mg/L		0005454-03		0.2	0.192	96.0%	
o-Xylene-mg/L		0005454-03		0.1	0.093	93.0%	
<b>CONTROL DUP</b>		LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
	WATER						
Benzene-mg/L		0005454-04		0.1	0.100	100.0%	4.9%
Toluene-mg/L		0005454-04		0.1	0.098	98.0%	0.0%
Ethylbenzene-mg/L		0005454-04		0.1	0.096	96.0%	1.0%
p/m-Xylene-mg/L		0005454-04		0.2	0.199	99.5%	3.6%
o-Xylene-mg/L		0005454-04		0.1	0.096	96.0%	3.2%
<b>SRM</b>		LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
	WATER						
Benzene-mg/L		0005454-05		0.1	0.103	103.0%	
Toluene-mg/L		0005454-05		0.1	0.100	100.0%	
Ethylbenzene-mg/L		0005454-05		0.1	0.095	95.0%	
p/m-Xylene-mg/L		0005454-05		0.2	0.195	97.5%	
o-Xylene-mg/L		0005454-05		0.1	0.092	92.0%	

# ENVIRONMENTAL LAB OF TEXAS

## QUALITY CONTROL REPORT

### Test Parameters

Order#: G0306397

<b>BLANK</b>		LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
	WATER						
Chloride-mg/L		0005407-01			<5.00		
<b>MS</b>		LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
	WATER						
Chloride-mg/L		0306381-01	301	500	798	99.4%	
<b>MSD</b>		LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
	WATER						
Chloride-mg/L		0306381-01	301	500	789	97.6%	1.1%
<b>SRM</b>		LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
	WATER						
Chloride-mg/L		0005407-04		5000	4960	99.2%	

20-04-  
(1) 55  
(2) 17/11

**APPENDIX C**  
**FIELD NOTES**

---



21

Tuesday, April 30, 2003

0930 On site to drill BH-14  
 Scarborough Dig. arrived on site  
 0940- Jim Davis by site 1000 Paul Sheeley & Larry  
 1110 - Began drilling ~~Johnson by site~~  
 till 11:25

0940- Calibrated PID to 100.1 ppm  
 Check Cal Gas - 100.0 ppm

1210 Paul Sheeley & Jim Davis  
 on site

1300 Hugh Davis on site

Drilled BH 14 to 60' bgs  
 Collected samples @ surface  
 and every 5' to 55'.

1330 Covered boring to sit overnight  
 and allow groundwater to  
 accumulate in borehole

Wednesday, May 1, 2003

1200 Arrived on site to sample  
 groundwater @ BH-14

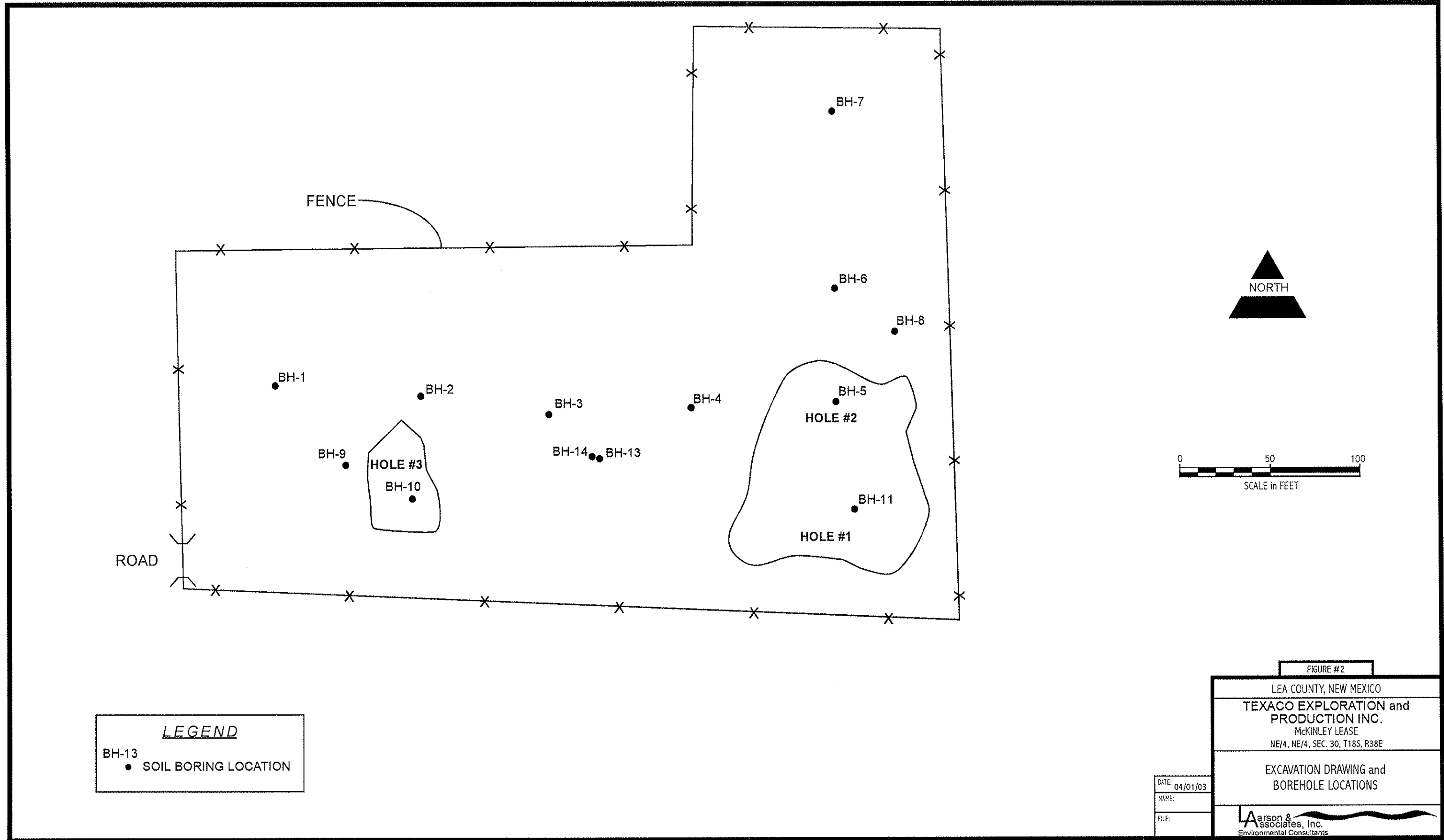
Have notified Paul Sheeley,  
 Hugh Davis and Layne Scarborough  
 to be on site @ 12:30

1230 Larry Johnson arrived on  
 site

DTW: 52.5'

Bailed 4.0 gal

1305 Sampled - BTEX, Chlorides





August 9, 2004

**VIA FACSIMILE: (505) 393-0720**

Mr. Paul R. Sheeley  
New Mexico Oil Conservation Division  
1625 N. French Drive  
Hobbs, New Mexico 88240

**Re: Excavation Backfill Results, Former M<sup>c</sup>Kinley Lease Production Facility, UL A, Section 30, Township 18 South, Range 38 East, Lea County, New Mexico**

Dear Mr. Sheeley:

ChevronTexaco Exploration and Production Company (ChevronTexaco), as successor to Texaco Exploration and Production Inc. (Texaco), has retained Larson and Associates, Inc. (LA) to supervise remediation of soil at a former oilfield production facility (Site) once operated by Texaco at the McKinley Lease, located in Unit Letter A (NE/4 NE/4), Section 30, Township 18 South, Range 38 East, Lea County, New Mexico. Figure 1 presents a location and topographic map.

A remediation work plan was submitted to the New Mexico Oil Conservation Division (NMOCD) on January 28, 2002, and approved to excavate soil at three locations where the concentrations of total petroleum hydrocarbons (TPH) exceeded the NMOCD Recommended Remediation Action Level (RRAL) of 100 milligrams per kilogram (mg/kg). Following excavation of approximately 7,288 cubic yards of soil from the three locations (Hole #1, Hole #2 and Hole #3), a Final Remediation Report was submitted to the NMOCD on June 11, 2002. The NMOCD denied closure since a soil sample from the bottom of Hole #3 was above the RRAL (100 mg/kg). The NMOCD also requested that ChevronTexaco investigate an area between the excavations (Hole #2 and Hole #3) since a sample from BH-3 from 20 to 21 feet below ground surface (bgs) reported TPH at 82 mg/kg (below the RRAL).

The results of additional sampling of Hole #3, which showed that TPH was below the RRAL of 100 mg/kg, were presented to the NMOCD in a letter dated September 20, 2002. The letter also stated that Holes #1, #2 and #3 would be filled with clean soil, and a soil boring would be drilled between BH-3 and BH-4, to a depth of approximately 25 feet bgs. The NMOCD approved the work plan in a letter dated October 9, 2002.

Environmental Plus, Inc. (EPI) was retained to fill the excavations with clean soil, and began backfilling Hole #1 and Hole #2 on October 14, 2002. Backfilling was also stopped on that date, when NMOCD personnel visited the Site and observed additional

Mr. Paul R. Sheeley  
August 9, 2004  
Page 2

soil staining at the north end of Hole #2. ChevronTexaco was required to investigate, and remediate as necessary, the soil staining north of Hole #2.

On October 15, 2002, EPI began to excavate soil from the north end of Hole #2. Remediation activities progressed to the north until the final soil samples from the bottom and sides of the excavation reported TPH (DRO and GRO) below 100 mg/kg. On December 5, 2002, soil boring BH-13 was drilled between the two excavations (Hole #2 and Hole #3) and south of BH-3 and BH-4. The soil sample results from excavated areas and from soil boring BH-13 were submitted to the NMOCD on April 7, 2003. A verbal request was made by the NMOCD on April 28, 2003, to provide additional soil samples from the soil boring, as well as a groundwater sample.

On April 30, 2003, soil boring BH-14 was drilled approximately five (5) feet west of BH-13. Soil and groundwater sample results were presented to the NMOCD on May 14, 2003, with a request that the NMOCD allow ChevronTexaco to backfill the remaining excavations. Approval to backfill the excavations was granted by the NMOCD on May 19, 2003.

From September 8, 2003 through October 7, 2003, the excavations were filled with clean soil to ground surface, and a one-foot layer of gravel was placed above the soil, covering the entire property. ChevronTexaco has since purchased the property, and requests that no further action be imposed by the NMOCD. Please call Mr. Scott Toner with ChevronTexaco at (432) 687-7318 or myself at (432) 687-0901 if you have questions.

Sincerely,  
*Larson and Associates, Inc.*

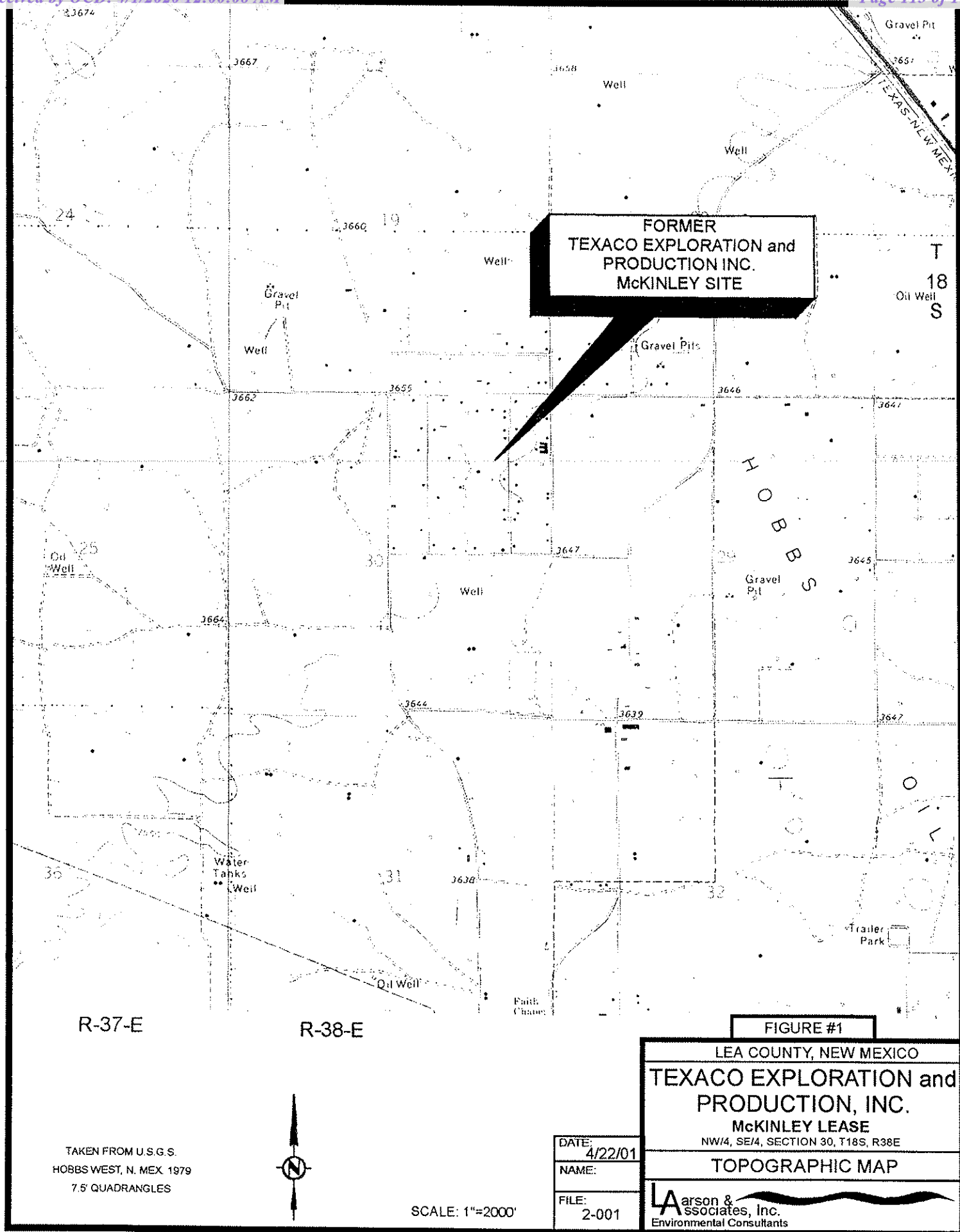


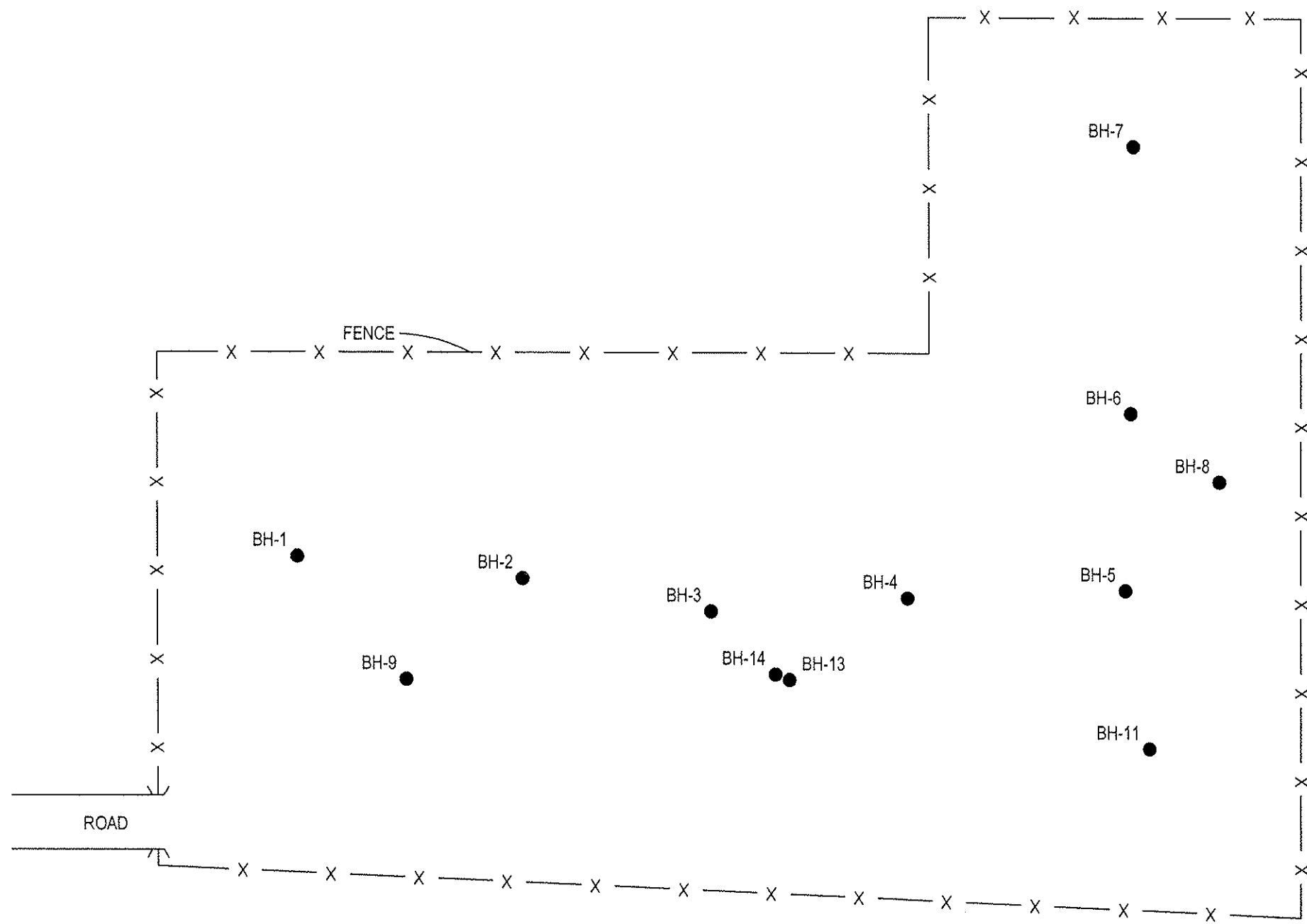
Cindy K Crain, PG  
Project Manager  
Encl.

cc: Scott Toner, ChevronTexaco  
William Olson, OCD Hydrologist

## FIGURES

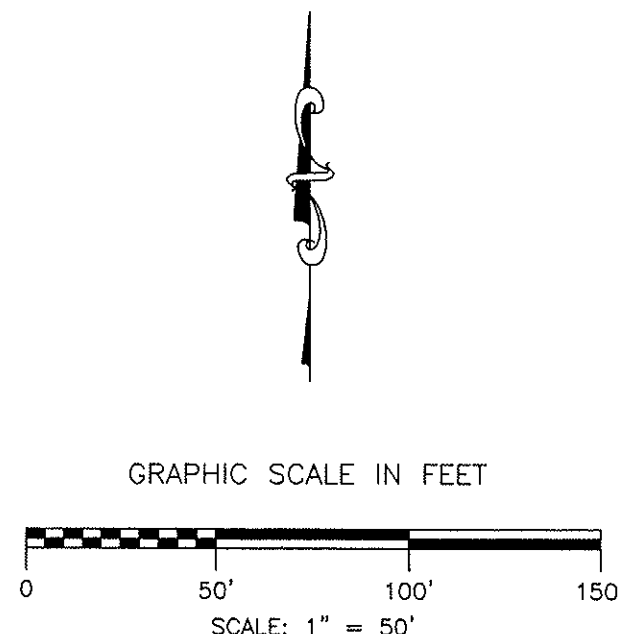






**LEGEND**

BH-13 ● SOIL BORING LOCATION



**FIGURE #2**

LEA COUNTY, NEW MEXICO

**CHEVRONTExaco**

EXPLORATION AND PRODUCTION COMPANY

McKINLEY LEASE

NE/4, NE/4, SEC. 30, T-18-S, R-38-E

EXCAVATION DRAWING AND  
BOREHOLE LOCATIONS

DATE	8-2-04
NAME:	SJA
FILE:	2-0100

**Larson & Associates, Inc.**  
Environmental Consultants



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**

Governor

**Joanna Prukop**

Cabinet Secretary

**Mark E. Fesmire, P.E.**

Director

**Oil Conservation Division**

8/16/2005  
Denise Beckham  
Chevron Inc.  
POB 1150  
Midland, Texas 79702

Reference: Texaco McKinley Lease  
Site Location UL-A Sec.30-T18S-R38E

Dear Denise:

Texaco Inc. has delineated the site. Groundwater tests revealed no contaminants above New Mexico Water Quality Commission standards based on information provided to the New Mexico Oil Conservation Division (NMOCD). There is no further action required.

Please be advised that NMOCD approval does not relieve Texaco Inc. of any future liability should their operations fail to adequately protect groundwater, surface water, human health or the environment. In addition, NMOCD approval does not relieve Texaco Inc. of responsibility for compliance with any Federal, State, or local laws or regulations.

NMOCD District 1 Supervisor

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS  
  
Action 4751

CONDITIONS

Operator: CHEVRON TEXACO EXPLORATION & PRODUCTION CO. 15 Smith Road Midland, TX 79705	OGRID: 216419
	Action Number: 4751
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bbillings	Closed under 1r-372 no incident umber	3/22/2022