



# AE Order Number Banner

## Report Description

This report shows an AE Order Number in Barcode format for purposes of scanning. The Barcode format is Code 39.



**App Number: pTO1424554698**

**1RP - 2940**

**CONOCOPHILLIPS COMPANY**

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

State of New Mexico  
Energy Minerals and Natural Resources

Form C-141  
Revised August 8, 2011

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

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company <b>ConocoPhillips Company</b>	Contact <b>Jesse A. Sosa</b>
Address <b>3300 N. "A" St., Bldg. 6 #247 Midland, TX 79705-5</b>	Telephone No. <b>(505)391-3126</b>
Facility Name <b>Warren Unit Well #13</b>	Facility Type <b>Injection well</b>
Surface Owner <b>NMOCD</b>	Mineral Owner <b>BLM</b>
API No. <b>3002507881</b>	

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
Q	34	20S	38E	660	South	1980	East	Lea

Latitude N 32 31.4394 Longitude W 103. 08.0580

**NATURE OF RELEASE**

Type of Release <b>Produced Water</b>	Volume of Release <b>441</b>	Volume Recovered <b>21</b>
Source of Release <b>inch steel injection line</b>	Date and Hour of Occurrence <b>7/4/13 8:00 am</b>	Hour of Discovery <b>7/7 9 am</b>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Geoffrey Leking</b>	
By Whom? <b>Jesse Sosa</b>	Date and Hour <b>July 8, 2013 7:45 am</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

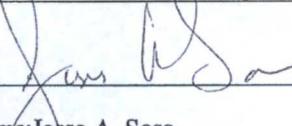
Describe Cause of Problem and Remedial Action Taken.\*

MSO was notified of an Injection line leaking 300 yards west of WU well #13. Employee isolated 2 inch steel line (25+ years) at the WU injection header and well.

Describe Area Affected and Cleanup Action Taken.\*

Employee called vacuum truck and 21 BPW was recovered. Spill volume is approximately 441 BPW. Two affected areas are 64' wide X 89' long X 60" deep and 44' long X 70' wide X 36" deep. Further assessment is needed for more accurate spill volumes. NMOCD was notified and C-141 report will follow when full assessment is done.

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

Signature: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: <b>Jesse A. Sosa</b>	Approved by Environmental Specialist:	
Title: <b>HSER Lead</b>	Approval Date:	Expiration Date:
E-mail Address: <b>Jesse.A.Sosa@conocophillips.com</b>	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <b>07/18/2013</b>	Phone: <b>(505)391-3126</b>	

\* Attach Additional Sheets If Necessary

# Rice Environmental Consulting & Safety

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P.O. Box 2948, Hobbs, NM 88241  
Phone 575.393.2967

**August 14<sup>th</sup>, 2013**

## **Geoffrey Leking**

New Mexico Energy, Minerals, & Natural Resources  
Oil Conservation Division, Environmental Bureau – District 1  
1625 N. French Dr.  
Hobbs, NM 88240-9273

**RE: Corrective Action Plan (CAP)  
Conoco-Phillips – Warren Unit Well #13 Injection Line Release  
UL/N sec. 34 T20S R38E  
API No. 3002507881**

Mr. Leking:

Conoco-Phillips has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the site referenced above.

An accidental discharge of produced water occurred from an injection line located 300 yards west of the Warren Unit #13 well on July 4<sup>th</sup>, 2013. A total of 441 barrels of produced water was released into the pasture. A vacuum truck was called to the site and recovered 21 barrels of produced water. NMOCD was notified of the release on July 8<sup>th</sup>, 2013, and an initial C-141 was submitted by Conoco-Phillips to NMOCD on July 18<sup>th</sup>, 2013 (Appendix A). The site is located in UL/N sec. 34 T20S R38E, in Lea County, New Mexico. Soil bore installation at the site determined that the depth to groundwater is approximately located at 71 ft bgs.

RECS personnel were on site beginning on July 12<sup>th</sup>, 2013 to initiate work on the release. The release and surrounding area were mapped and photos were taken of the release area. On July 17<sup>th</sup>, 2013, RECS received verbal permission from NMOCD to conduct verticals at the site. Eight verticals were installed at the site to determine the extent of the release (Figure 1). As the verticals were installed, field samples were taken every foot and field tested for chlorides and hydrocarbons. Representative samples were taken to a commercial laboratory for analysis. Verticals 1-3, located inside the release area, showed elevated laboratory chloride levels at all depths in the three verticals. Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) readings returned results of non-detect throughout all depths in the three verticals. Verticals 4-8, located outside the release area, showed laboratory chloride levels below 250 mg/kg throughout the five verticals and at all depths. GRO and DRO readings returned results of non-detect throughout the five verticals and at all depths (Appendix B).

To further delineate the site, soil bores were installed at the site on July 26<sup>th</sup> and on August 6<sup>th</sup> and 7<sup>th</sup>, 2013. A total of 20 soil bores were installed at the site (Figure 2 and 3). Between the July and August soil bore installations events, a caliche road was installed across the area to serve as a base for the soil bore rig. As the soil bores were

advanced, samples were taken at regular intervals and field tested for chlorides and hydrocarbons. Representative samples were taken to a commercial laboratory for analysis (Appendix C). Based on the soil bore data, as the release moves downward through the vadose zone, it hits a semi-permeable layer at 20-25 ft bgs, where the release moves horizontally over this layer. The outer soil bores delineate the edges of the release.

SB-20 was installed at the site on July 26<sup>th</sup>, 2013 to determine the depth to groundwater at the site. The bore was installed to a depth of 82 ft bgs and then left open for over 48 hours to allow groundwater to accumulate. The bore was gauged on July 29<sup>th</sup>, 2013 and depth to groundwater was determined to be at approximately 71 ft bgs. NMOCD was notified of potential groundwater impact at the site on July 26<sup>th</sup>, 2013.

Photo documentation of these activities can be found in Appendix D.

### **Corrective Action Plan**

RECS recommends that Conoco-Phillips excavate an area of 140 ft x 170 ft to a depth of approximately 4-5 ft bgs. A 20-mil reinforced poly liner will be installed and properly seated throughout the base of the excavation (Figure 2). The liner will provide a barrier that will inhibit the downward migration of residual constituents to groundwater. Approximately 2,000 yards of soil from the release area will be disposed of at a NMOCD approved facility. The remaining excavated soil will be evaluated for use as backfill and any soils requiring disposal will be properly disposed of at a NMOCD approved facility. Soils placed above the liner will have a laboratory chloride reading no greater than 500 mg/kg and a field PID reading below 100 ppm. The site will be backfilled with the remaining excavated soil and then clean soil will be imported to the site to replace the soil disposed of at a NMOCD approved facility. The excavation will be brought up to surface level with the imported soil and the site will be contoured to the surrounding location. The disturbed area will then be seeded with a blend of native vegetation. Vegetation provides an infiltration barrier for the site, since plants capture water through their roots thereby reducing the amount of water traveling through the vadose zone to groundwater.

It is evident from the soil bore data that the release may have affected groundwater beneath the site. Therefore, RECS recommends that Conoco-Phillips install a source monitor well at the site (Figure 2). The monitor well will be installed once the excavation for liner installation is completed. The monitor well will be sampled quarterly for chlorides and TDS. Additional monitor wells may need to be installed to fully delineate groundwater. Once the monitor well(s) have been sampled and the data analyzed, Conoco-Phillips will submit a report to NMOCD detailing the groundwater data and either proposing a groundwater remedy or requesting site closure.

RECS appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-2967 or me if you have any questions or wish to discuss the site.

Sincerely,



Lara Weinheimer  
Project Scientist  
RECS  
(575) 441-0431

Attachments:

- Figure 1 – Vertical Data
- Figure 2 – SB 1-3 Installation Data and Proposed MW Location
- Figure 3 – SB- 4-19 Installation Data and Proposed MW Location
- Appendix A – Initial C-141
- Appendix B – Vertical Installation Laboratory Analyses
- Appendix C – Soil Bore Installation Documentation
- Appendix D – Photo Documentation

DRAFT

# Vertical Data

Vertical #1					Vertical #2					Vertical #3				
CI-	PID	GRO	DRO		CI-	PID	GRO	DRO		CI-	PID	GRO	DRO	
surface	136	0.8			surface	174	0.1			surface	175	0.1		
6"	1970	1.2			6"	750	0.7			6"	816	8		
1'	1294	8.4			1'	142	0.1			1'	329	1.6		
2'	2962	7.2			2'	2129	0.6			2'	2493	0.4		
3'	6320	8.1	<10	<10	3'	1727	0.1			3'	4640	2.8	<10	<10
4'	3338	1.2			4'	3920	1.6	<10	<10	4'	2682	2.1		
5'	2202	2.1			5'	2624	2.7			5'	1873	2.4		
6'	3128	1.6			6'	2665	7.1			6'	3823	20.7		
7'	2736	1.7			7'	3431	1.1			7'	3703	19.7		
8'	2588	1.5			8'	1239	6.1			8'	1134	7.9		
9'	1612	2.7			9'	1274	2.1			9'	1025	6.1		
10'	914	3.1			10'	1557	2.1			10'	1772	6		
11'	1670	1.6			11'	1331	6.1			11'	1379	0.4		
12'	1852	1.7			12'	1694	2.1			12'	1503	6.9		
13'	2065	0.7			13'	2332	7.1			13'	2080	2		
14'	2863	0.8			14'	2982	4.1			14'	2159	8.9		
15'	2673	1.1			15'	2596	5.1			15'	3360	96.9	<10	<10
16'	2359	1.2			16'	2566	6.1							
17'	2170	1.7			17'	4880	8.1	<10	<10					
18'	1490	1.6	<10	<10										

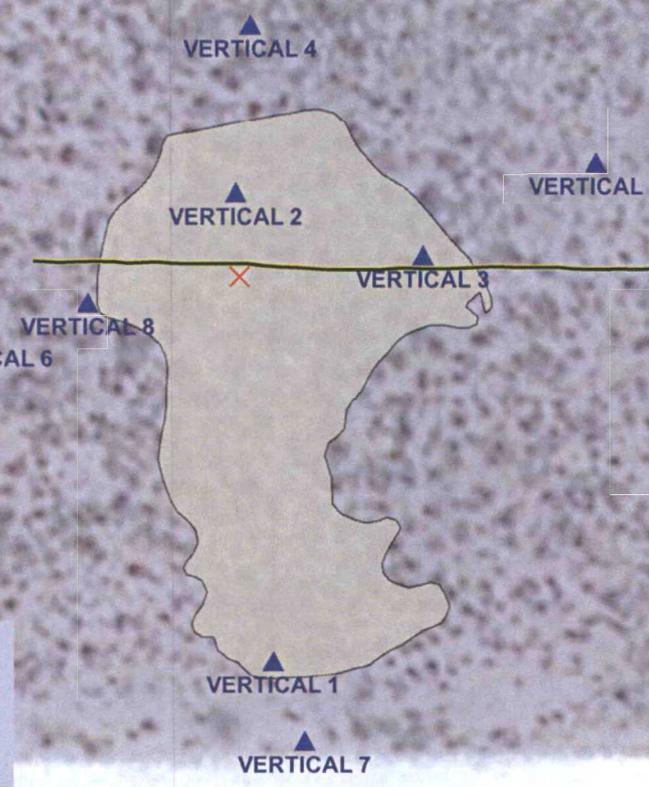
Vertical #4				
CI-	PID	GRO	DRO	
surface	<16	1.1	<10	<10
1'	136	1.6		
2'	125	0.7		
3'	137	1.1		
4'	<16	1	<10	<10

Vertical #6				
CI-	PID	GRO	DRO	
surface	<16	2.1	<10	<10
1'	131	0.1		
2'	105	0.6		
3'	142	1.1		
4'	<16	1.6	<10	<10

Vertical #5				
CI-	PID	GRO	DRO	
surface	<16	1	<10	<10
1'	131	0.6		
2'	123	0.9		
3'	143	0.7		
4'	<16	1.1	<10	<10

Vertical #7				
CI-	PID	GRO	DRO	
surface	<16	3.1	<10	<10
1'	120	2.1		
2'	110	1.7		
3'	113	0.6		
4'	<16	0.6	<10	<10

Vertical #8				
CI-	PID	GRO	DRO	
surface	<16	1.6	<10	<10
1'	114	3.1		
2'	105	3		
3'	103	4		
4'	<16	2.2	<10	<10



**Legend**

- ▲ SAMPLE POINT - VERTICAL
- × SOURCE
- 2 IN STEEL INJECTION LINE
- STAIN (9,482 sq ft)

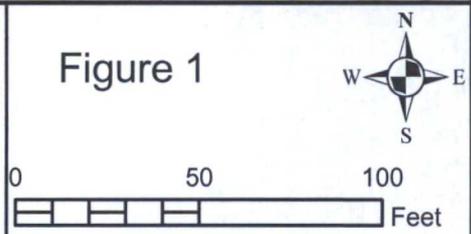
Landowner = McCasland Ltd Parntership Lea DGW = 71 ft



## CONOCO PHILLIPS WARREN UNIT #013 INJECTION LINE AD

LEGALS UL/ N Sec. 34  
T20S - R38E  
LEA COUNTY, NM

Figure 1

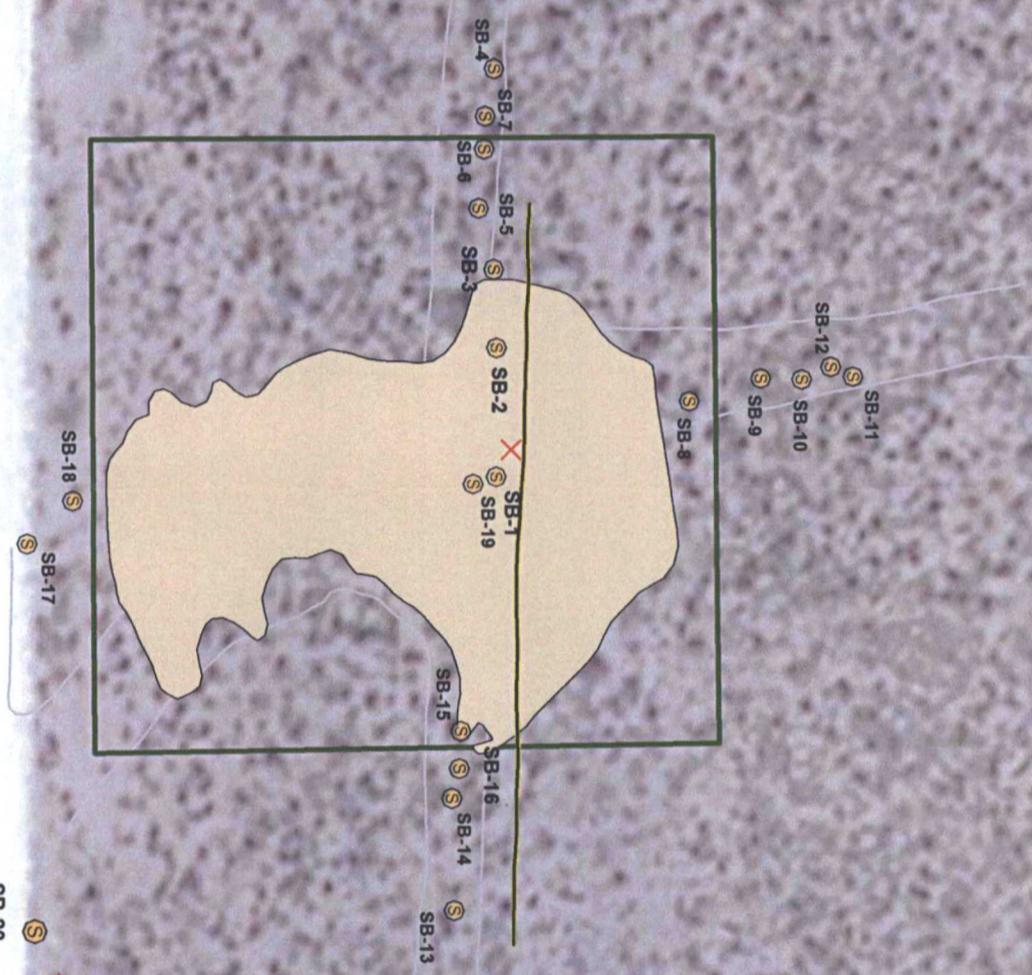


GPS date: 7-18-2013 KN  
Drawing date: 7-24-2013  
Drafted by: L. Weinheimer

**Legend**

- Ⓢ SOIL BORE
- ✕ SOURCE
- INSTALLED CALICHE PAD
- 2 IN STEEL INJECTION LINE
- STAIN - 9,482 sq ft
- PROPOSED LINER - 23,800 sq ft (140' x 170' @ 4-5' bgs)

Depth	CI	PID	GRO	DRO	B	T	E	X	BTEX
SS	417	0.1							
3	834	0.5							
6	3868	1.9							
9	1621	6.1							
12	1460	0.7							
15	2567	7.1							
18	5120	3.5	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
21	4377	0.5							
24	4400	0.4							
27	2916	0.3							
30	2569	0.8							
33	3145	0.5							
36	3146	0.6							
39	3645	0.4							
42	2863	0							
45	2334	0							
48	2693	0.1							
51	2810	0							
54	2610	0							
57	2629	0.3							
60	2406	0							
63	2304	0							
66	2000	0	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3



Depth	CI	PID	GRO	DRO	B	T	E	X	BTEX
SS	2267	0.1							
5	2307	0.1							
10	2583	0.1							
15	1453	0.1							
20	3098	0.1							
25	3509	0.1							
30	3778	0.1							
35	3880	0.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
40	3048	0.1							
45	2758	0.5							
50	2999	0.5							
55	2650	0.2							
60	2838	0.1							
65	2120	0.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3

Depth	CI	PID	GRO	DRO	B	T	E	X	BTEX
SS	<16	0	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
5	249	0.1							
10	1580	0.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3

Landowner = McCasland Ltd Partnership Lea

DGW = 71 ft



LEGALS UI./ N Sec. 34  
T205 - R38E  
LEA COUNTY, NM

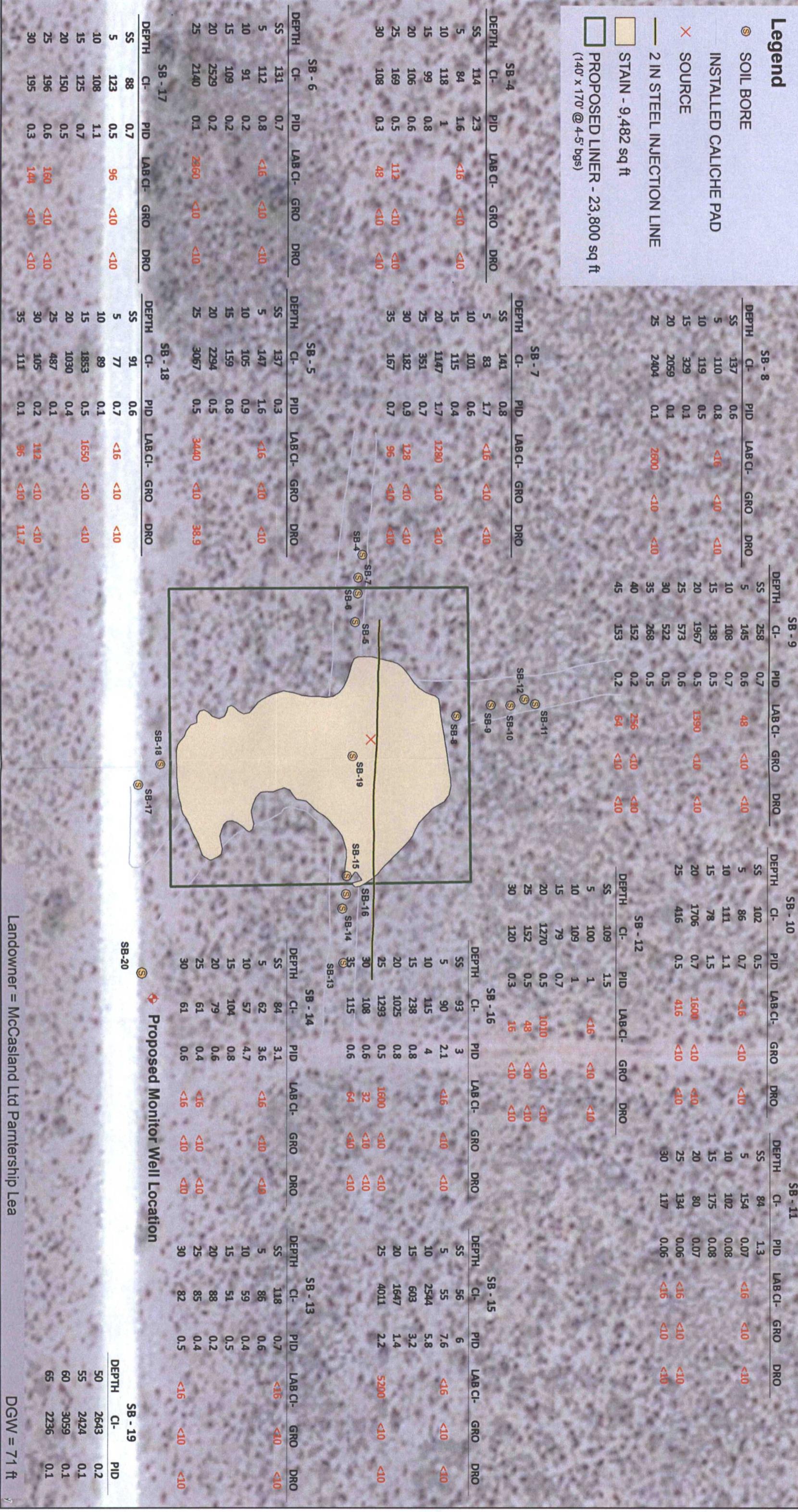
**CONOCO PHILLIPS  
WARREN UNIT #013  
INJECTION LINE AD**

**Soil Bore Data And  
Proposed Monitor Well**

GPS date: 8-7-2013 JK  
Drawing date: 8/7/13  
Drafted by: LS

**Legend**

- ⊙ SOIL BORE
- INSTALLED CALICHE PAD
- × SOURCE
- 2 IN STEEL INJECTION LINE
- STAIN - 9,482 sq ft
- PROPOSED LINER - 23,800 sq ft (140' x 170' @ 4-5' bgs)



**SB - 8**

DEPTH	CI	PID	LAB CI	GRO	DRO
SS	137	0.6			
5	110	0.8	<16	<10	<10
10	119	0.5			
15	329	0.1			
20	2059	0.1			
25	2404	0.1	2600	<10	<10

**SB - 7**

DEPTH	CI	PID	LAB CI	GRO	DRO
SS	141	0.8			
5	83	1.7	<16	<10	<10
10	101	0.6			
15	115	0.4			
20	1147	1.7	1280	<10	<10
25	351	0.7			
30	182	0.9	128	<10	<10
35	167	0.7	96	<10	<10

**SB - 6**

DEPTH	CI	PID	LAB CI	GRO	DRO
SS	131	0.7			
5	112	0.8	<16	<10	<10
10	91	0.2			
15	109	0.2			
20	2529	0.2			
25	2140	0.1	2960	<10	<10

**SB - 5**

DEPTH	CI	PID	LAB CI	GRO	DRO
SS	137	0.3			
5	147	1.6	<16	<10	<10
10	105	0.9			
15	159	0.8			
20	2294	0.5			
25	3067	0.5	3440	<10	38.9

**SB - 17**

DEPTH	CI	PID	LAB CI	GRO	DRO
SS	88	0.7			
5	123	0.5	96	<10	<10
10	108	1.1			
15	125	0.7			
20	150	0.5			
25	196	0.6	160	<10	<10
30	195	0.3	144	<10	<10

**SB - 18**

DEPTH	CI	PID	LAB CI	GRO	DRO
SS	91	0.6			
5	77	0.7	<16	<10	<10
10	89	0.1			
15	1853	0.5	1650	<10	<10
20	1030	0.4			
25	487	0.1			
30	105	0.2	112	<10	<10
35	111	0.1	96	<10	11.7

**SB - 9**

DEPTH	CI	PID	LAB CI	GRO	DRO
SS	258	0.7			
5	145	0.6	48	<10	<10
10	108	0.7			
15	138	0.5			
20	1967	0.5	1390	<10	<10
25	573	0.6			
30	522	0.5			
35	268	0.5			
40	152	0.2	256	<10	<10
45	153	0.2	64	<10	<10

**SB - 10**

DEPTH	CI	PID	LAB CI	GRO	DRO
SS	102	0.5			
5	86	0.7	<16	<10	<10
10	111	1.1			
15	78	1.5			
20	1706	0.7	1600	<10	<10
25	416	0.5	416	<10	<10

**SB - 12**

DEPTH	CI	PID	LAB CI	GRO	DRO
SS	109	1.5			
5	100	1	<16	<10	<10
10	109	1			
15	79	0.7			
20	1270	0.5	1010	<10	<10
25	152	0.5	48	<10	<10
30	120	0.3	16	<10	<10

**SB - 14**

DEPTH	CI	PID	LAB CI	GRO	DRO
SS	93	3			
5	90	2.1	<16	<10	<10
10	115	4			
15	238	0.8			
20	1025	0.8			
25	1293	0.5	1600	<10	<10
30	108	0.6	32	<10	<10
35	115	0.6	64	<10	<10

**SB - 15**

DEPTH	CI	PID	LAB CI	GRO	DRO
SS	56	6			
5	55	7.6	<16	<10	<10
10	2544	5.8			
15	603	3.2			
20	1647	1.4			
25	4011	2.2	5200	<10	<10

**SB - 16**

DEPTH	CI	PID	LAB CI	GRO	DRO
SS	84	3.1			
5	62	3.6	<16	<10	<10
10	57	4.7			
15	104	0.8			
20	79	0.6			
25	61	0.4	<16	<10	<10
30	61	0.6	<16	<10	<10

**SB - 19**

DEPTH	CI	PID	LAB CI	GRO	DRO
SS	118	0.7			
5	86	0.6	<16	<10	<10
10	59	0.4			
15	51	0.5			
20	88	0.2			
25	85	0.4			
30	82	0.5	<16	<10	<10

**Soil Bore Data And Proposed Monitor Well Location**

Landowner = McCasland Ltd Partnership Lea

DGW = 71 ft

Scale: 0 to 100 Feet

GPS date: 8-7-2013 JK  
 Drawing date: 8/14/13  
 Drafted by: LS

CONOCO PHILLIPS  
 WARREN UNIT #013  
 PROPOSED MONITOR WELL LOCATION

July 24, 2013

HACK CONDER

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

419 W. CAIN

HOBBS, NM 88240

RE: WARREN UNIT #13 AD

Enclosed are the results of analyses for samples received by the laboratory on 07/19/13 8:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

 Received: 07/19/2013  
 Reported: 07/24/2013  
 Project Name: WARREN UNIT #13 AD  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 07/18/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: VERTICAL 1 @ 3' (H301698-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>6320</b>	16.0	07/23/2013	ND	432	108	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/22/2013	ND	184	91.8	200	1.99		
DRO >C10-C28	<10.0	10.0	07/22/2013	ND	193	96.6	200	3.15		
<i>Surrogate: 1-Chlorooctane</i>	<i>90.5 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>110 %</i>	<i>63.6-154</i>								

**Sample ID: VERTICAL 1 @ 18' (H301698-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>1490</b>	16.0	07/23/2013	ND	432	108	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/22/2013	ND	184	91.8	200	1.99		
DRO >C10-C28	<10.0	10.0	07/22/2013	ND	193	96.6	200	3.15		
<i>Surrogate: 1-Chlorooctane</i>	<i>86.5 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>108 %</i>	<i>63.6-154</i>								

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

 Received: 07/19/2013  
 Reported: 07/24/2013  
 Project Name: WARREN UNIT #13 AD  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 07/18/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: VERTICAL 2 @ 4' (H301698-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>3920</b>	16.0	07/23/2013	ND	432	108	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/22/2013	ND	184	91.8	200	1.99		
DRO >C10-C28	<10.0	10.0	07/22/2013	ND	193	96.6	200	3.15		
<i>Surrogate: 1-Chlorooctane</i>	<i>81.7 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>97.0 %</i>	<i>63.6-154</i>								

**Sample ID: VERTICAL 2 @ 17' (H301698-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>4880</b>	16.0	07/23/2013	ND	432	108	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/22/2013	ND	184	91.8	200	1.99		
DRO >C10-C28	<10.0	10.0	07/22/2013	ND	193	96.6	200	3.15		
<i>Surrogate: 1-Chlorooctane</i>	<i>86.0 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>103 %</i>	<i>63.6-154</i>								

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

 Received: 07/19/2013  
 Reported: 07/24/2013  
 Project Name: WARREN UNIT #13 AD  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 07/18/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: VERTICAL 3 @ 3' (H301698-05)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>4640</b>	16.0	07/23/2013	ND	432	108	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/22/2013	ND	184	91.8	200	1.99		
DRO >C10-C28	<10.0	10.0	07/22/2013	ND	193	96.6	200	3.15		
<i>Surrogate: 1-Chlorooctane</i>	<i>89.6 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>110 %</i>	<i>63.6-154</i>								

**Sample ID: VERTICAL 3 @ 15' (H301698-06)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>3360</b>	16.0	07/23/2013	ND	432	108	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/22/2013	ND	184	91.8	200	1.99		
DRO >C10-C28	<10.0	10.0	07/22/2013	ND	193	96.6	200	3.15		
<i>Surrogate: 1-Chlorooctane</i>	<i>78.2 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>96.6 %</i>	<i>63.6-154</i>								

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

 Received: 07/19/2013  
 Reported: 07/24/2013  
 Project Name: WARREN UNIT #13 AD  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 07/18/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: VERTICAL 4 @ SURFACE (H301698-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/23/2013	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/22/2013	ND	184	91.8	200	1.99	
DRO >C10-C28	<10.0	10.0	07/22/2013	ND	193	96.6	200	3.15	
<i>Surrogate: 1-Chlorooctane</i>	<i>90.7 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>109 %</i>	<i>63.6-154</i>							

**Sample ID: VERTICAL 4 @ 4' (H301698-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/23/2013	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/22/2013	ND	184	91.8	200	1.99	
DRO >C10-C28	<10.0	10.0	07/22/2013	ND	193	96.6	200	3.15	
<i>Surrogate: 1-Chlorooctane</i>	<i>87.0 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>102 %</i>	<i>63.6-154</i>							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

 Received: 07/19/2013  
 Reported: 07/24/2013  
 Project Name: WARREN UNIT #13 AD  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 07/18/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: VERTICAL 5 @ SURFACE (H301698-09)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	07/23/2013	ND	432	108	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/22/2013	ND	183	91.5	200	4.00		
DRO >C10-C28	<10.0	10.0	07/22/2013	ND	190	95.2	200	9.00		
<i>Surrogate: 1-Chlorooctane</i>	<i>93.6 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>110 %</i>	<i>63.6-154</i>								

**Sample ID: VERTICAL 5 @ 4' (H301698-10)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	07/23/2013	ND	432	108	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/23/2013	ND	183	91.5	200	4.00		
DRO >C10-C28	<10.0	10.0	07/23/2013	ND	190	95.2	200	9.00		
<i>Surrogate: 1-Chlorooctane</i>	<i>71.6 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>85.0 %</i>	<i>63.6-154</i>								

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

 Received: 07/19/2013  
 Reported: 07/24/2013  
 Project Name: WARREN UNIT #13 AD  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 07/18/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: VERTICAL 6 @ SURFACE (H301698-11)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/23/2013	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/23/2013	ND	183	91.5	200	4.00	
DRO >C10-C28	<10.0	10.0	07/23/2013	ND	190	95.2	200	9.00	

Surrogate: 1-Chlorooctane 91.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 109 % 63.6-154

**Sample ID: VERTICAL 6 @ 4' (H301698-12)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/23/2013	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/22/2013	ND	183	91.5	200	4.00	
DRO >C10-C28	<10.0	10.0	07/22/2013	ND	190	95.2	200	9.00	

Surrogate: 1-Chlorooctane 88.2 % 65.2-140

Surrogate: 1-Chlorooctadecane 108 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

 Received: 07/19/2013  
 Reported: 07/24/2013  
 Project Name: WARREN UNIT #13 AD  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 07/18/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: VERTICAL 7 @ SURFACE (H301698-13)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	07/23/2013	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/22/2013	ND	183	91.5	200	4.00		
DRO >C10-C28	<10.0	10.0	07/22/2013	ND	190	95.2	200	9.00		
<i>Surrogate: 1-Chlorooctane</i>	<i>71.1 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>88.0 %</i>	<i>63.6-154</i>								

**Sample ID: VERTICAL 7 @ 4' (H301698-14)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	07/23/2013	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/22/2013	ND	183	91.5	200	4.00		
DRO >C10-C28	<10.0	10.0	07/22/2013	ND	190	95.2	200	9.00		
<i>Surrogate: 1-Chlorooctane</i>	<i>101 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>122 %</i>	<i>63.6-154</i>								

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

 Received: 07/19/2013  
 Reported: 07/24/2013  
 Project Name: WARREN UNIT #13 AD  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 07/18/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: VERTICAL 8 @ SURFACE (H301698-15)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	07/23/2013	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/23/2013	ND	183	91.5	200	4.00		
DRO >C10-C28	<10.0	10.0	07/23/2013	ND	190	95.2	200	9.00		
Surrogate: 1-Chlorooctane	85.9 %	65.2-140								
Surrogate: 1-Chlorooctadecane	101 %	63.6-154								

**Sample ID: VERTICAL 8 @ 4' (H301698-16)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	07/23/2013	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/22/2013	ND	183	91.5	200	4.00		
DRO >C10-C28	<10.0	10.0	07/22/2013	ND	190	95.2	200	9.00		
Surrogate: 1-Chlorooctane	65.2 %	65.2-140								
Surrogate: 1-Chlorooctadecane	72.8 %	63.6-154								

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



# CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603  
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: RECS  
 Project Manager: Hack Conder  
 Address: 419 W. Cain  
 City: Hobbs State: NM Zip: 88240  
 Phone #: Fax #: Project Owner:  
 Project #: Project Name:  
 Project Location: Warren Unit #13 AD  
 Sampler Name: Kyle Norman  
 P.O. #: Company:  
 Address: City: State: Zip:  
 Phone #: Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV	SAMPLING	ANALYSIS REQUEST					
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :			ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chlorides

H301698	Vertical @ 3'	1	1								7-18-13	11:10								
	Vertical 1 @ 18'	2	1								"	10:50								
	Vertical 2 @ 4'	3	1								"	11:15								
	Vertical 2 @ 17'	4	1								"	11:00								
	Vertical 3 @ 3'	5	1								"	11:20								
	Vertical 3 @ 15'	6	1								"	1:00								
	Vertical 4 @ Surface	7	1								"	1:05								
	Vertical 4 @ 4'	8	1								"	1:20								
	Vertical 5 @ Surface	9	1								"	2:10								
	Vertical 5 @ 4'	10	1								"	2:15								

PLEASE NOTE: Labby and Damages, Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analysis. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits, incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated causes of action.

Relinquished By: Kyle Norman Date: 7-19-13 Time: 8:15  
 Received By: Joelle Henderson  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_  
 Delivered By: (Circle One)  UPS  Bus  Other: \_\_\_\_\_  
 Sample Condition:  Cool  Intact  Yes  No  Yes  No  
 CHECKED BY: \_\_\_\_\_  
 Phone Result:  Yes  No Add'l Phone #: \_\_\_\_\_  
 Fax Result:  Yes  No Add'l Fax #: \_\_\_\_\_  
 REMARKS: \_\_\_\_\_  
 email\_results@rice-ecs.com  
 Knorman@rice-ecs.com  
 KJones@riceswd.com; jkamlain@rice-ecs.com  
 hconder@rice-ecs.com; Lweinheimer@rice-ecs.com

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

#54



**ARDINAL LABORATORIES**  
 101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603  
 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

**BILL TO**

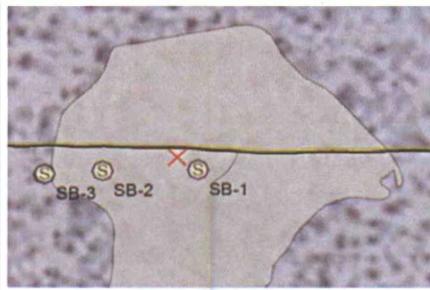
**ANALYSIS REQUEST**

Company Name: RECS		P.O. #:																
Project Manager: Hack Conder		Company:																
Address: 419 W. Cain		Attn:																
City: Hobbs		State: NM	Zip: 88240															
Phone #:		Fax #:																
Project #:		Project Owner:																
Project Name:		City:	State:	Zip:														
Project Location: Warren Unit #13 AD		Phone #:																
Sampler Name: Kyle Norman		Fax #:																
FOR LAB USE ONLY																		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.		DATE	TIME	Chlorides												
		# CONTAINERS																
H2D1698	11 Vertical 6 @ Surface	G 1		7-13	3:15	✓												
	12 Vertical 6 @ 4'	G 1		"	3:20	✓												
	13 Vertical 7 @ Surface	G 1		"	3:30	✓												
	14 Vertical 7 @ 4'	G 1		"	3:40	✓												
	15 Vertical 8 @ Surface	G 1		"	4:00	✓												
	16 Vertical 8 @ 4'	G 1		"	4:10	✓												
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analysis. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal. Inquiries of whether such claim is based upon any of the above stated reasons or otherwise.		Relinquished By: Kyle N		Date: 7-19-13	Time: 5:25	Received By: Adeli Henderson												
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		CHECKED BY: [Signature]														
Relinquished By: [Signature]		Date: [Blank]		Time: [Blank]		Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Addtl Phone #:										
REMARKS:		email results Knorman@rice-ecs.com Kjones@riceswd.com; jkamlain@rice-ecs.com hconder@rice-ecs.com; Lweihelmer@rice-ecs.com																

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

#54

**Logger:** Jake Kamplain & Kyle Norman  
**Driller:** White Drilling  
**Drilling Method:** Air rotary  
**Start Date:** 7/26/2013  
**End Date:** 7/26/2013

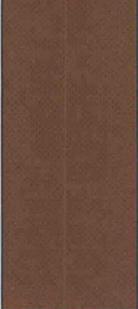


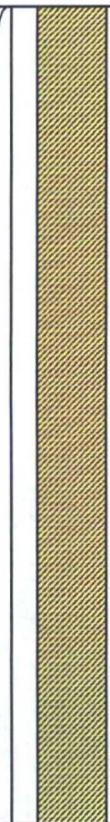
**Conoco Phillips Warren** Well ID:  
**Unit #13 Injection Line** SB-1

**Comments:** SB-1 is located 7 ft southeast of the source of the release. Samples were taken from split spoon.  
**DRAFTED BY:** L. Weinheimer  
 TD = 66 ft GW = 71 ft

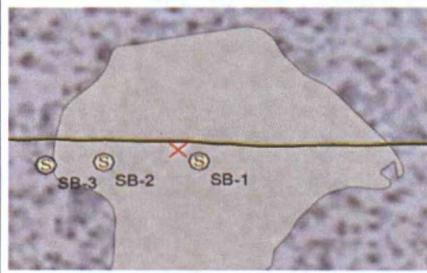
**Location:** UL/N sec. 34 T20S R38E  
**Lat:** 32°31'26.923"N **County:** Lea  
**Long:** 103°8'13.052"W **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Brown Sand		
SS	417		0.1			
				Tan/Gray Sand		
3 ft	834		0.5			
				Black/Gray Sand With Some Caliche		
6 ft	3868		1.9			
				Gray Sand		
9 ft	1621		6.1			
				Gray Sand With Some Caliche		
12 ft	1460		0.7			
15 ft	2567		7.1			
18 ft	4919	Cl- 5120	3.5	Moist Brown Sand		
	B <0.05 T <0.05 E <0.05		GRO <10			
	X <0.15 BTEX <0.3		DRO <10			
21 ft	4377		0.5			

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction			
54 ft	2610		0.0	Moist Red/Tan Sand With Some Sandstone					
51 ft	2810		0.0						
48 ft	2693		0.1						
45 ft	2334		0.0						
42 ft	2863		0.0				Caliche With Some Sandstone		
39 ft	3645		0.4						
36 ft	3146		0.6				Moist Red Sand With Some Caliche		
33 ft	3145		0.5						
30 ft	2569		0.8						
27 ft	2916		0.3	Moist Brown Sand					
24 ft	4400		0.4						
						seal bentonite			

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction			
57 ft	2629		0.3	Moist Red/Tan Sand With Some Sandstone					
60 ft	2406		0.0						
63 ft	2304		0.0						
66 ft	1918	Cl-2000	0.0						
GRO		B < 0.05 T < 0.05 E < 0.05					DRO		X < 0.15 BTEX < 0.3
									> 10
									> 10
									> 10
									> 10
									> 10

**Logger:** Jake Kamplain & Kyle Norman  
**Driller:** White Drilling  
**Drilling Method:** Air rotary  
**Start Date:** 7/26/2013  
**End Date:** 7/26/2013

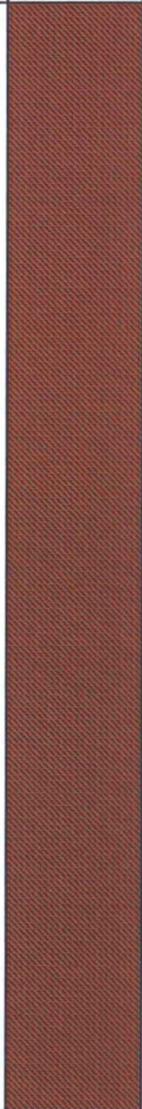


**Conoco Phillips Warren Well ID:**  
**Unit #13 Injection Line** SB-2

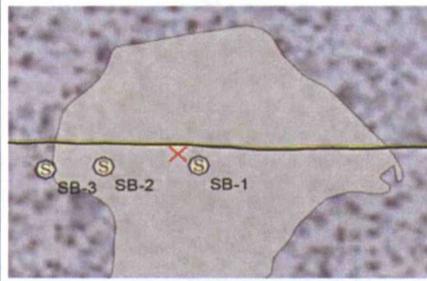
**Comments:** SB-2 is located 24 ft WSW of the source of the release. Samples were taken from split spoon.  
**DRAFTED BY:** L. Weinheimer  
 TD = 65 ft                                      GW = 71 ft

**Location:** UL/N sec. 34 T20S R38E  
**Lat:** 32°31'26.934"N                      **County:** Lea  
**Long:** 103°8'13.393"W                    **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
SS	2267		0.1	Tan Sand		
5 ft	2307		0.1			
10 ft	2583		0.1	Tan Sand With Some Caliche		
15 ft	1453		0.1			
20 ft	3098		0.1	Tan/Gray Sand		
				Brown Sand With Some Sandstone		
25 ft	3509		0.1			
30 ft	3778		0.1	Red Sand With Some Sandstone		
35 ft	3829	Cl-3880	0.1			bentonite seal

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
	B <0.05 T <0.05 E <0.05		GRO <10	Red Sand With Some Sandstone		
	X <0.15 BTEX <0.3		DRO <10			
40 ft	3048		0.1			
45 ft	2758		0.5			
50 ft	2999		0.5			
55 ft	2650		0.2			
60 ft	2838		0.1			
65 ft	2254	Cl- 2120	0.1			
	B <0.05 T <0.05 E <0.05		GRO <10			
	X <0.15 BTEX <0.3		DRO <10			

**Logger:** Jake Kamplain & Kyle Norman  
**Driller:** White Drilling  
**Drilling Method:** Air rotary  
**Start Date:** 7/26/2013  
**End Date:** 7/26/2013



**Conoco Phillips Warren** Well ID:  
**Unit #13 Injection Line** SB-3

Comments: SB-3 is located 42 ft WSW of the source of the release. Samples were taken from split spoon.  
**DRAFTED BY: L. Weinheimer**  
 TD = 10 ft GW = 71 ft

**Location:** UL/N sec. 34 T20S R38E  
**Lat:** 32°31'26.931"N **County:** Lea  
**Long:** 103°8'13.598"W **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
SS	232	Cl- <16	0	Tan Sand		bentonite seal
B <0.05 T <0.05 E <0.05			GRO <10			
X <0.15 BTEX <0.3			DRO <10			
5 ft	249		0.1			
10 ft	1694	Cl- 1580	0.1	Tan Sand With Some Caliche		
B <0.05 T <0.05 E <0.05			GRO <10			
X <0.15 BTEX <0.3			DRO <10			

Logger:	Kyle Norman		
Driller:	White Drilling		
Drilling Method:	Air rotary		<b>Conoco Phillips Warren Well ID:</b> <b>Unit #13 Injection Line</b> SB-4
Start Date:	8/6/2013		
End Date:	8/6/2013		

Comments: SB-4 is location 86 ft west of the source of the release  
 All samples were from cuttings.  
 DRAFTED BY: L. Weinheimer  
 TD = 30 ft      GW = 71 ft

**Location:** UL/N sec. 34 T210S R38E  
**Lat:** 32°31'26.931"N      **County:** Lea  
**Long:** 103°8'14.125"W      **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
SS	114		2.3	Brown Sand		
5 ft	84	Cl- <16	1.6			
		GRO <10				
		DRO <10				
10 ft	118		1.0	Tan Sand		
15 ft	99		0.8			
20 ft	106		0.6			
25 ft	169	Cl- 112	0.5	Tan/Brown Sand		
		GRO <10				
		DRO <10				
30 ft	108	Cl- 48	0.3			
		GRO <10				
		DRO <10				



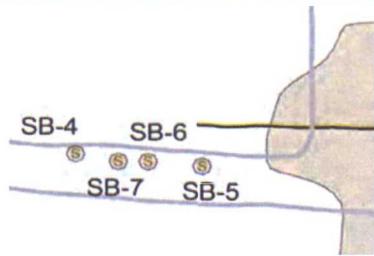
Logger:	Kyle Norman		
Driller:	White Drilling		
Drilling Method:	Air rotary		
Start Date:	8/6/2013		
End Date:	8/6/2013		
Conoco Phillips Warren Well ID: Unit #13 Injection Line SB-6			

Comments: SB-6 is location 68 ft west of the source of the release  
 All samples were from cuttings.  
 DRAFTED BY: L. Weinheimer  
 TD = 25 ft GW = 71 ft

Location: UL/N sec. 34 T210S R38E  
 Lat: 32°31'26.914"N County: Lea  
 Long: 103°8'13.91"W State: NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
SS	131		0.7	Brown Sand		
5 ft	112	Cl- <16 GRO <10 DRO <10	0.8	Tan Sand		bentonite seal
10 ft	91		0.2	Moist Tan Sand		
15 ft	109		0.2	Moist Red/Brown Sand		
20 ft	2529		0.2			
25 ft	2140	Cl- 2360 GRO <10 DRO <10	0.1	Moist Tan Sand		

**Logger:** Kyle Norman  
**Driller:** White Drilling  
**Drilling Method:** Air rotary  
**Start Date:** 8/6/2013  
**End Date:** 8/6/2013



**Conoco Phillips Warren Unit #13 Injection Line** Well ID: SB-7

**Comments:** SB-7 is location 75 ft west of the source of the release  
 All samples were from cuttings.  
**DRAFTED BY:** L. Weinheimer  
 TD = 35 ft GW = 71 ft

**Location:** UL/N sec. 34 T210S R38E  
**Lat:** 32°31'26.914"N **County:** Lea  
**Long:** 103°8'14.002"W **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
SS	141		0.8	Brown Sand		
5 ft	83	Cl- <16 GRO <10 DRO <10	1.7			
10 ft	101		0.6	Tan Sand		
15 ft	115		0.4			
20 ft	1147	Cl- 1280 GRO <10 DRO <10	1.7	Moist Brown/Tan Sand		bentonite seal
25 ft	351		0.7	Brown/Tan Sand		
30 ft	182	Cl- 128 GRO <10 DRO <10	0.9			
35 ft	167	Cl- 96 GRO <10 DRO <10	0.7	Red/Brown Sand		





Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Tan Sand With Some Sandstone		
40 ft	152	Cl- 256	0.2			
		GRO <10				
		DRO <10				
45 ft	153	Cl- 64	0.2			
		GRO <10				
		DRO <10				



Logger:	Kyle Norman		
Driller:	White Drilling		
Drilling Method:	Air rotary		
Start Date:	8/6/2013		
End Date:	8/6/2013		
Conoco Phillips Warren Well ID: Unit #13 Injection Line SB-11			

Comments: SB-11 is location 92 ft NW of the source of the release  
 All samples were from cuttings.  
 DRAFTED BY: L. Weinheimer  
 TD = 30 ft GW = 71 ft

Location: UL/N sec. 34 T210S R38E  
 Lat: 32°31'27.886"N County: Lea  
 Long: 103°8'13.32"W State: NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Brown Sand		
SS	84		1.3			
5 ft	154	Cl- <16 GRO <10 DRO <10	0.7	Tan Sand		
10 ft	102		0.8			
15 ft	175		0.8			
20 ft	80		0.7			
25 ft	134	Cl- <16 GRO <10 DRO <10	0.6	Red/Brown Sand		
30 ft	117	Cl- <16 GRO <10 DRO <10	0.6			

<b>Logger:</b>	Kyle Norman		
<b>Driller:</b>	White Drilling		
<b>Drilling Method:</b>	Air rotary		
<b>Start Date:</b>	8/6/2013		
<b>End Date:</b>	8/6/2013		

Conoco Phillips Warren Well ID:  
Unit #13 Injection Line SB-12

Comments: SB-12 is location 86 ft NW of the source of the release  
All samples were from cuttings.  
DRAFTED BY: L. Weinheimer  
TD = 30 ft GW = 71 ft

Location: UL/N sec. 34 T210S R38E  
Lat: 32°31'27.821"N County: Lea  
Long: 103°8'13.347"W State: NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Brown Sand		
SS	109		1.5			
5 ft	100	Cl- <16 GRO <10 DRO <10	1	Tan Sand		
10 ft	109		1			
15 ft	79		0.7			
20 ft	1270	Cl- 1010 GRO <10 DRO <10	0.5	Red/Brown Sand		
25 ft	152	Cl- 48 GRO <10 DRO <10	0.5			
30 ft	120	Cl- 16 GRO <10 DRO <10	0.3			

<b>Logger:</b>	Kyle Norman		
<b>Driller:</b>	White Drilling		
<b>Drilling Method:</b>	Air rotary		
<b>Start Date:</b>	8/7/2013		
<b>End Date:</b>	8/7/2013		

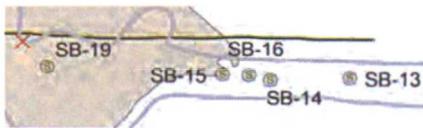
**Conoco Phillips Warren Well ID:**  
**Unit #13 Injection Line** SB-13

**Comments:** SB-13 is located 105 ft east of the release point. All the samples were from cuttings.  
**DRAFTED BY:** L. Weinheimer  
 TD = 30 ft GW = 71 ft

**Location:** UL/N sec. 34 T20S R38E  
**Lat:** 32°31'26.829"N **County:** Lea  
**Long:** 103°8'11.909"W **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Brown Sand		
SS	118	Cl- <16	0.7			
		GRO <10		Tan/Brown Sand		
		DRO <10				
5 ft	86		0.6			
				Tan Sand		
10 ft	59		0.4			
15 ft	51		0.5			
				Moist Tan Sand		
20 ft	88		0.2			
25 ft	85		0.4			
				Tan Sand		
30 ft	82	Cl- <16	0.5			
		GRO <10				
		DRO <10				

**Logger:** Kyle Norman  
**Driller:** White Drilling  
**Drilling Method:** Air rotary  
**Start Date:** 8/7/2013  
**End Date:** 8/7/2013



**Conoco Phillips Warren Unit #13 Injection Line** Well ID: SB-14

Comments: SB-14 is located 79 ft east of the release point. All the samples were from cuttings.  
 DRAFTED BY: L. Weinheimer  
 TD = 30 ft GW = 71 ft

**Location:** UL/N sec. 34 T20S R38E  
**Lat:** 32°31'26.829"N **County:** Lea  
**Long:** 103°8'12.205"W **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Brown Sand		
SS	84		3.1			
				Tan/Brown Sand		
5 ft	62	Cl- <16	3.6			
		GRO <10		Tan Sand		
10 ft	57	DRO <10	4.7			
				Moist Tan Sand		
15 ft	104		0.8			
20 ft	79		0.6			
				Moist Red/Brown Sand		
25 ft	61	Cl- <16	0.4			
		GRO <10				
		DRO <10				
30 ft	61	Cl- <16	0.6			
		GRO <10				
		DRO <10				

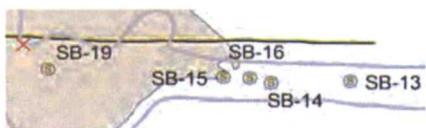
Logger:	Kyle Norman		
Driller:	White Drilling		
Drilling Method:	Air rotary		
Start Date:	8/7/2013		
End Date:	8/7/2013		
Conoco Phillips Warren Unit #13 Injection Line Well ID: SB-15			

Comments: SB-15 is located 64 ft east of the release point. All the samples were from cuttings.  
 DRAFTED BY: L. Weinheimer  
 TD = 25 ft GW = 71 ft

Location: UL/N sec. 34 T20S R38E  
 Lat: 32°31'26.849"N County: Lea  
 Long: 103°8'12.383"W State: NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Brown Sand		
SS	56		6.0			
				Moist Brown Sand		
5 ft	55	Cl- <16	7.6			
		GRO <10				
		DRO <10				
10 ft	2544		5.8	Moist Tan Sand		
15 ft	603		3.2			
20 ft	1647		1.4	Moist Red/Brown Sand		
25 ft	4011	Cl- 5200	2.2			
		GRO <10				
		DRO <10				

**Logger:** Kyle Norman  
**Driller:** White Drilling  
**Drilling Method:** Air rotary  
**Start Date:** 8/7/2013  
**End Date:** 8/7/2013



**Conoco Phillips Warren Unit #13 Injection Line** Well ID: SB-16

Comments: SB-16 is located 72 ft east of the release point. All the samples were from cuttings.  
 DRAFTED BY: L. Weinheimer  
 TD = 35 ft GW = 71 ft

**Location:** UL/N sec. 34 T20S R38E  
**Lat:** 32°31'26.849"N **County:** Lea  
**Long:** 103°8'12.284"W **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
SS	93		3.0	Brown Sand		bentonite seal
5 ft	90	Cl- <16 GRO <10 DRO <10	2.1	Tan Sand		
10 ft	115		4.0			
15 ft	238		0.8	Moist Tan Sand		
20 ft	1025		0.8			
25 ft	1293	Cl- 1600 GRO <10 DRO <10	0.5	Moist Red/Brown Sand		
30 ft	108	Cl- 32 GRO <10 DRO <10	0.6			
35 ft	115	Cl- 64 GRO <10 DRO <10	0.6	Red/Brown Sand		

**Logger:** Kyle Norman  
**Driller:** White Drilling  
**Drilling Method:** Air rotary  
**Start Date:** 8/7/2013  
**End Date:** 8/7/2013



**Conoco Phillips Warren Unit #13 Injection Line** Well ID: SB-17

Comments: SB-17 is located 131 ft south of the release point. All the samples were from cuttings.  
 DRAFTED BY: L. Weinheimer  
 TD = 30 ft GW = 71 ft

**Location:** UL/N sec. 34 T20S R38E  
**Lat:** 32°31'25.7"N **County:** Lea  
**Long:** 103°8'12.873"W **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
SS	88		0.7	Tan Sand		
5 ft	123	Cl-96 GRO <10 DRO <10	0.5			
10 ft	108		1.1	Moist Tan Sand		
15 ft	125		0.7			bentonite seal
20 ft	150		0.5	Moist Red/Brown Sand		
25 ft	196	Cl-160 GRO <10 DRO <10	0.6			
30 ft	195	Cl-144 GRO <10 DRO <10	0.3	Red/Brown Sand		

**Logger:** Kyle Norman  
**Driller:** White Drilling  
**Drilling Method:** Air rotary  
**Start Date:** 8/7/2013  
**End Date:** 8/7/2013



**Conoco Phillips Warren Unit #13 Injection Line** Well ID: SB-18

Comments: SB-18 is located 118 ft south of the release point. All the samples were from cuttings.  
 DRAFTED BY: L. Weinheimer  
 TD = 35 ft GW = 71 ft

**Location:** UL/N sec. 34 T20S R38E  
**Lat:** 32°31'25.822"N **County:** Lea  
**Long:** 103°8'12.985"W **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Brown Sand		
SS	91		0.6			
5 ft	77	Cl- <16	0.7	Tan Sand		
		GRO <10				
		DRO <10				
10 ft	89		0.1			
				Moist Red/Brown Sand		
15 ft	1853	Cl- 1650	0.5			
		GRO <10		Moist Tan/Brown Sand		
		DRO <10				
20 ft	1030		0.4			
				Tan/Brown Sand		
25 ft	487		0.1			
				Tan Sand		
30 ft	105	Cl- 112	0.2			
		GRO <10				
		DRO <10				
35 ft	111	Cl- 96	0.1			
		GRO <10				
		DRO 11.7				





Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction		
40 ft				NO SAMPLES TAKEN AS THE SB WAS INSTALLED				plugged in total with bentonite
45 ft								
50 ft								
55 ft								
60 ft								
65 ft								
70 ft								
75 ft								
80 ft								
82 ft								

August 05, 2013

HACK CONDER

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

419 W. CAIN

HOBBS, NM 88240

RE: WARREN UNIT #13 AD

Enclosed are the results of analyses for samples received by the laboratory on 07/30/13 8:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

 Received: 07/30/2013  
 Reported: 08/05/2013  
 Project Name: WARREN UNIT #13 AD  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 07/26/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SB #1 @ 18' (H301784-01)**

BTEX 8021B		mg/kg		Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/01/2013	ND	2.04	102	2.00	2.20		
Toluene*	<0.050	0.050	08/01/2013	ND	2.05	102	2.00	1.43		
Ethylbenzene*	<0.050	0.050	08/01/2013	ND	2.15	108	2.00	0.897		
Total Xylenes*	<0.150	0.150	08/01/2013	ND	6.63	110	6.00	1.41		
Total BTEX	<0.300	0.300	08/01/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 104 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5120	16.0	07/30/2013	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/31/2013	ND	185	92.3	200	2.16		
DRO >C10-C28	<10.0	10.0	07/31/2013	ND	199	99.3	200	3.94		

Surrogate: 1-Chlorooctane 78.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 106 % 63.6-154

Cardinal Laboratories

\* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

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 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

 Received: 07/30/2013  
 Reported: 08/05/2013  
 Project Name: WARREN UNIT #13 AD  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 07/26/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SB #1 @ 66' (H301784-02)**

BTEX 8021B		mg/kg		Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/01/2013	ND	2.04	102	2.00	2.20		
Toluene*	<0.050	0.050	08/01/2013	ND	2.05	102	2.00	1.43		
Ethylbenzene*	<0.050	0.050	08/01/2013	ND	2.15	108	2.00	0.897		
Total Xylenes*	<0.150	0.150	08/01/2013	ND	6.63	110	6.00	1.41		
Total BTEX	<0.300	0.300	08/01/2013	ND						

Surrogate: 4-Bromofluorobenzene (PII) 104 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2000	16.0	07/30/2013	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/31/2013	ND	185	92.3	200	2.16		
DRO >C10-C28	<10.0	10.0	07/31/2013	ND	199	99.3	200	3.94		

Surrogate: 1-Chlorooctane 88.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 115 % 63.6-154

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

 Received: 07/30/2013  
 Reported: 08/05/2013  
 Project Name: WARREN UNIT #13 AD  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 07/26/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SB #2 @ 35' (H301784-03)**

BTEX 8021B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/01/2013	ND	2.04	102	2.00	2.20	
Toluene*	<0.050	0.050	08/01/2013	ND	2.05	102	2.00	1.43	
Ethylbenzene*	<0.050	0.050	08/01/2013	ND	2.15	108	2.00	0.897	
Total Xylenes*	<0.150	0.150	08/01/2013	ND	6.63	110	6.00	1.41	
Total BTEX	<0.300	0.300	08/01/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 104 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3880	16.0	07/30/2013	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/31/2013	ND	185	92.3	200	2.16	
DRO >C10-C28	<10.0	10.0	07/31/2013	ND	199	99.3	200	3.94	

Surrogate: 1-Chlorooctane 80.9 % 65.2-140

Surrogate: 1-Chlorooctadecane 102 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

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 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

 Received: 07/30/2013  
 Reported: 08/05/2013  
 Project Name: WARREN UNIT #13 AD  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 07/26/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SB #2 @ 65' (H301784-04)**

BTEX 8021B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/01/2013	ND	2.04	102	2.00	2.20	
Toluene*	<0.050	0.050	08/01/2013	ND	2.05	102	2.00	1.43	
Ethylbenzene*	<0.050	0.050	08/01/2013	ND	2.15	108	2.00	0.897	
Total Xylenes*	<0.150	0.150	08/01/2013	ND	6.63	110	6.00	1.41	
Total BTEX	<0.300	0.300	08/01/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 104 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>2120</b>	16.0	07/30/2013	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/31/2013	ND	185	92.3	200	2.16	
DRO >C10-C28	<10.0	10.0	07/31/2013	ND	199	99.3	200	3.94	

Surrogate: 1-Chlorooctane 78.5 % 65.2-140

Surrogate: 1-Chlorooctadecane 102 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

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 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

 Received: 07/30/2013  
 Reported: 08/05/2013  
 Project Name: WARREN UNIT #13 AD  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 07/26/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SB #3 @ SURFACE (H301784-05)**

BTEX 8021B		mg/kg		Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/01/2013	ND	2.04	102	2.00	2.20		
Toluene*	<0.050	0.050	08/01/2013	ND	2.05	102	2.00	1.43		
Ethylbenzene*	<0.050	0.050	08/01/2013	ND	2.15	108	2.00	0.897		
Total Xylenes*	<0.150	0.150	08/01/2013	ND	6.63	110	6.00	1.41		
Total BTEX	<0.300	0.300	08/01/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 105 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	07/30/2013	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/31/2013	ND	185	92.3	200	2.16		
DRO >C10-C28	<10.0	10.0	07/31/2013	ND	199	99.3	200	3.94		

Surrogate: 1-Chlorooctane 90.4 % 65.2-140

Surrogate: 1-Chlorooctadecane 114 % 63.6-154

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

 Received: 07/30/2013  
 Reported: 08/05/2013  
 Project Name: WARREN UNIT #13 AD  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 07/26/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SB #3 @ 10' (H301784-06)**

BTEX 8021B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/01/2013	ND	2.04	102	2.00	2.20	
Toluene*	<0.050	0.050	08/01/2013	ND	2.05	102	2.00	1.43	
Ethylbenzene*	<0.050	0.050	08/01/2013	ND	2.15	108	2.00	0.897	
Total Xylenes*	<0.150	0.150	08/01/2013	ND	6.63	110	6.00	1.41	
Total BTEX	<0.300	0.300	08/01/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 105 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1580	16.0	07/30/2013	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/31/2013	ND	185	92.3	200	2.16	
DRO >C10-C28	<10.0	10.0	07/31/2013	ND	199	99.3	200	3.94	

Surrogate: 1-Chlorooctane 83.9 % 65.2-140

Surrogate: 1-Chlorooctadecane 107 % 63.6-154

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



# ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603  
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: RECS  
Project Manager: Hack Conder  
Address: 419 W. Cain  
City: Hobbs  
State: NM Zip: 88240  
Phone #: Fax #:  
Project #: Project Owner:  
Project Name:  
Project Location: Warren Unit #13 Injection Line AD  
Sampler Name: Kyle Norman

P.O. #: Company:  
Attn: Address:  
City: State: Zip:  
Phone #: Fax #:

FOR LAB USE ONLY  
Lab I.D. Sample I.D.  
H301784  
1 SB # 1 @ 18'  
2 SB # 1 @ 66'  
3 SB # 2 @ 35'  
4 SB # 2 @ 65'  
5 SB # 3 @ Surface  
6 SB # 3 @ 10'

BILL TO  
ANALYSIS REQUEST  
Chlorides  
TPH 8015 M  
BTEX  
Texas TPH  
Complete Cations/Anions  
TDS

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV		DATE	TIME						
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL								

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Relinquished By: *Kyle Norman*  
Date: 7-20-13  
Time: 8:10  
Received By: *Spoke Henderson*  
Date: \_\_\_\_\_  
Time: \_\_\_\_\_  
Delivered By: (Circle One)  
Sampler - UPS - Bus - Other: \_\_\_\_\_

Sample Condition  
Cool Intact  
Yes  No   
Checked By: *[Signature]*  
Phone Result:  Yes  No  
Fax Result:  Yes  No  
Add'l Phone #: \_\_\_\_\_  
Add'l Fax #: \_\_\_\_\_  
REMARKS:  
email results  
Knorman@rice-ecs.com  
KJones@riceswd.com; jkplain@rice-ecs.com  
hconder@rice-ecs.com; Lweinheimer@rice-ecs.com

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2676 #54

August 13, 2013

HACK CONDER

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

419 W. CAIN

HOBBS, NM 88240

RE: WARREN UNIT #13 INJECTION LINE AD

Enclosed are the results of analyses for samples received by the laboratory on 08/08/13 10:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

 Received: 08/08/2013  
 Reported: 08/13/2013  
 Project Name: WARREN UNIT #13 INJECTION LINE AD  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/06/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SB-4 @ 5' (H301856-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/12/2013	ND	432	108	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/10/2013	ND	181	90.4	200	2.80	
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	193	96.3	200	3.04	
<i>Surrogate: 1-Chlorooctane</i>		<i>97.6 %</i>	<i>65.2-140</i>						
<i>Surrogate: 1-Chlorooctadecane</i>		<i>117 %</i>	<i>63.6-154</i>						

**Sample ID: SB-4 @ 25' (H301856-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>112</b>	16.0	08/12/2013	ND	432	108	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/10/2013	ND	181	90.4	200	2.80	
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	193	96.3	200	3.04	
<i>Surrogate: 1-Chlorooctane</i>		<i>97.3 %</i>	<i>65.2-140</i>						
<i>Surrogate: 1-Chlorooctadecane</i>		<i>117 %</i>	<i>63.6-154</i>						

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/06/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-4 @ 30' (H301856-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	08/12/2013	ND	432	108	400	3.77		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/10/2013	ND	181	90.4	200	2.80		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	193	96.3	200	3.04		
Surrogate: 1-Chlorooctane	97.3 %	65.2-140								
Surrogate: 1-Chlorooctadecane	116 %	63.6-154								

**Sample ID: SB-5 @ 5' (H301856-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	08/12/2013	ND	432	108	400	3.77		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/10/2013	ND	181	90.4	200	2.80		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	193	96.3	200	3.04		
Surrogate: 1-Chlorooctane	96.4 %	65.2-140								
Surrogate: 1-Chlorooctadecane	117 %	63.6-154								

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**Analytical Results For:**

RICE ENVIRONMENTAL CONSULTING &amp; SAFETY

HACK CONDER

419 W. CAIN

HOBBS NM, 88240

Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/06/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-5 @ 25' (H301856-05)**

Chloride, SM4500Cl-B

mg/kg

Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method	Blank	BS	% Recovery	True Value	QC	RPD	Qualifier
Chloride	3440	16.0	08/12/2013	ND		432	108	400		3.77	
TPH 8015M			Analyzed By: MS								
GRO C6-C10	<10.0	10.0	08/10/2013	ND		181	90.4	200		2.80	
DRO >C10-C28	38.9	10.0	08/10/2013	ND		193	96.3	200		3.04	

Surrogate: 1-Chlorooctadecane

97.0%

63.6-154

**Sample ID: SB-6 @ 5' (H301856-06)**

Chloride, SM4500Cl-B

mg/kg

Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method	Blank	BS	% Recovery	True Value	QC	RPD	Qualifier
Chloride	<16.0	16.0	08/12/2013	ND		432	108	400		3.77	
TPH 8015M			Analyzed By: MS								
GRO C6-C10	<10.0	10.0	08/10/2013	ND		181	90.4	200		2.80	
DRO >C10-C28	<10.0	10.0	08/10/2013	ND		193	96.3	200		3.04	

Surrogate: 1-Chlorooctadecane

101%

63.6-154

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 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

 Received: 08/08/2013  
 Reported: 08/13/2013  
 Project Name: WARREN UNIT #13 INJECTION LINE AD  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/06/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SB-6 @ 25' (H301856-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2360	16.0	08/12/2013	ND	432	108	400	3.77		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/10/2013	ND	181	90.4	200	2.80		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	193	96.3	200	3.04		
Surrogate: 1-Chlorooctane	98.0 %	65.2-140								
Surrogate: 1-Chlorooctadecane	115 %	63.6-154								

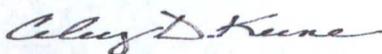
**Sample ID: SB-7 @ 5' (H301856-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	08/12/2013	ND	432	108	400	3.77		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/10/2013	ND	181	90.4	200	2.80		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	193	96.3	200	3.04		
Surrogate: 1-Chlorooctane	94.0 %	65.2-140								
Surrogate: 1-Chlorooctadecane	114 %	63.6-154								

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Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/06/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-7 @ 20' (H301856-09)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>1280</b>	16.0	08/12/2013	ND	432	108	400	3.77		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/10/2013	ND	181	90.4	200	2.80		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	193	96.3	200	3.04		
<i>Surrogate: 1-Chlorooctane</i>		<i>94.0 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>		<i>114 %</i>	<i>63.6-154</i>							

**Sample ID: SB-7 @ 30' (H301856-10)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>128</b>	16.0	08/12/2013	ND	432	108	400	3.77		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/10/2013	ND	181	90.4	200	2.80		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	193	96.3	200	3.04		
<i>Surrogate: 1-Chlorooctane</i>		<i>97.2 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>		<i>116 %</i>	<i>63.6-154</i>							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/06/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-7 @ 35' (H301856-11)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>96.0</b>	16.0	08/12/2013	ND	432	108	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/10/2013	ND	181	90.4	200	2.80	
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	193	96.3	200	3.04	
<i>Surrogate: 1-Chlorooctane</i>		<i>94.7 %</i>	<i>65.2-140</i>						
<i>Surrogate: 1-Chlorooctadecane</i>		<i>114 %</i>	<i>63.6-154</i>						

**Sample ID: SB-8 @ 5' (H301856-12)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>&lt;16.0</b>	16.0	08/12/2013	ND	432	108	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/10/2013	ND	181	90.4	200	2.80	
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	193	96.3	200	3.04	
<i>Surrogate: 1-Chlorooctane</i>		<i>99.0 %</i>	<i>65.2-140</i>						
<i>Surrogate: 1-Chlorooctadecane</i>		<i>118 %</i>	<i>63.6-154</i>						

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/06/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-8 @ 25' (H301856-13)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>2600</b>	16.0	08/12/2013	ND	432	108	400	3.77		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/10/2013	ND	181	90.4	200	2.80		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	193	96.3	200	3.04		
<i>Surrogate: 1-Chlorooctane</i>	<i>99.6 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>117 %</i>	<i>63.6-154</i>								

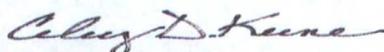
**Sample ID: SB-9 @ 5' (H301856-14)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>48.0</b>	16.0	08/12/2013	ND	432	108	400	3.77		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/10/2013	ND	181	90.4	200	2.80		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	193	96.3	200	3.04		
<i>Surrogate: 1-Chlorooctane</i>	<i>101 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>120 %</i>	<i>63.6-154</i>								

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 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/06/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-9 @ 20' (H301856-15)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>1390</b>	16.0	08/12/2013	ND	432	108	400	3.77		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		

Surrogate: 1-Chlorooctane      88.4 %      65.2-140

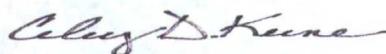
Surrogate: 1-Chlorooctadecane      107 %      63.6-154

**Sample ID: SB-9 @ 40' (H301856-16)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>256</b>	16.0	08/12/2013	ND	432	108	400	3.77		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		

Surrogate: 1-Chlorooctane      86.1 %      65.2-140

Surrogate: 1-Chlorooctadecane      109 %      63.6-154



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 HACK CONDER  
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 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/06/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-9 @ 45' (H301856-17)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	08/12/2013	ND	432	108	400	3.77		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		
<i>Surrogate: 1-Chlorooctane</i>		<i>87.9 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>		<i>104 %</i>	<i>63.6-154</i>							

**Sample ID: SB-10 @ 5' (H301856-18)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		
<i>Surrogate: 1-Chlorooctane</i>		<i>83.7 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>		<i>102 %</i>	<i>63.6-154</i>							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/06/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-10 @ 20' (H301856-19)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>1600</b>	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		
<i>Surrogate: 1-Chlorooctane</i>	<i>89.7 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>106 %</i>	<i>63.6-154</i>								

**Sample ID: SB-10 @ 25' (H301856-20)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>416</b>	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		
<i>Surrogate: 1-Chlorooctane</i>	<i>90.3 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>107 %</i>	<i>63.6-154</i>								

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Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/06/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-11 @ 5' (H301856-21)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		
<i>Surrogate: 1-Chlorooctane</i>		<i>84.0 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>		<i>98.7 %</i>	<i>63.6-154</i>							

**Sample ID: SB-11 @ 25' (H301856-22)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		
<i>Surrogate: 1-Chlorooctane</i>		<i>91.3 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>		<i>103 %</i>	<i>63.6-154</i>							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/06/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-11 @ 30' (H301856-23)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		

Surrogate: 1-Chlorooctane      88.3 %      65.2-140

Surrogate: 1-Chlorooctadecane      103 %      63.6-154

**Sample ID: SB-12 @ 5' (H301856-24)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		

Surrogate: 1-Chlorooctane      86.4 %      65.2-140

Surrogate: 1-Chlorooctadecane      100 %      63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/06/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-12 @ 20' (H301856-25)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>1010</b>	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		

Surrogate: 1-Chlorooctane      91.6 %      65.2-140

Surrogate: 1-Chlorooctadecane      106 %      63.6-154

**Sample ID: SB-12 @ 25' (H301856-26)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>48.0</b>	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		

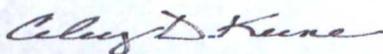
Surrogate: 1-Chlorooctane      89.7 %      65.2-140

Surrogate: 1-Chlorooctadecane      107 %      63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/06/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-12 @ 30' (H301856-27)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>16.0</b>	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		

Surrogate: 1-Chlorooctane 87.4 % 65.2-140

Surrogate: 1-Chlorooctadecane 103 % 63.6-154

**Sample ID: SB-13 @ SURFACE (H301856-28)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>&lt;16.0</b>	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		

Surrogate: 1-Chlorooctane 87.4 % 65.2-140

Surrogate: 1-Chlorooctadecane 103 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/07/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-13 @ 30' (H301856-29)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		
<i>Surrogate: 1-Chlorooctane</i>		<i>91.8 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>		<i>108 %</i>	<i>63.6-154</i>							

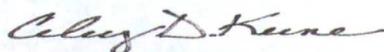
**Sample ID: SB-14 @ 5' (H301856-30)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		
<i>Surrogate: 1-Chlorooctane</i>		<i>83.2 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>		<i>99.6 %</i>	<i>63.6-154</i>							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/07/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-14 @ 25' (H301856-31)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		

Surrogate: 1-Chlorooctane 90.9 % 65.2-140

Surrogate: 1-Chlorooctadecane 105 % 63.6-154

**Sample ID: SB-14 @ 30' (H301856-32)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		

Surrogate: 1-Chlorooctane 88.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 107 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/07/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-15 @ 5' (H301856-33)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		

Surrogate: 1-Chlorooctane 92.5 % 65.2-140

Surrogate: 1-Chlorooctadecane 106 % 63.6-154

**Sample ID: SB-15 @ 25' (H301856-34)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5200	16.0	08/12/2013	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/11/2013	ND	185	92.6	200	3.63		
DRO >C10-C28	<10.0	10.0	08/11/2013	ND	194	96.8	200	4.57		

Surrogate: 1-Chlorooctane 88.2 % 65.2-140

Surrogate: 1-Chlorooctadecane 109 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/07/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-16 @ 5' (H301856-35)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/12/2013	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/12/2013	ND	189	94.7	200	1.66	
DRO >C10-C28	<10.0	10.0	08/12/2013	ND	205	103	200	4.93	
<i>Surrogate: 1-Chlorooctane</i>		<i>90.3 %</i>	<i>65.2-140</i>						
<i>Surrogate: 1-Chlorooctadecane</i>		<i>110 %</i>	<i>63.6-154</i>						

**Sample ID: SB-16 @ 25' (H301856-36)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>1600</b>	16.0	08/12/2013	ND	416	104	400	3.92	
TPH 8015M		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/12/2013	ND	189	94.7	200	1.66	
DRO >C10-C28	<10.0	10.0	08/12/2013	ND	205	103	200	4.93	
<i>Surrogate: 1-Chlorooctane</i>		<i>92.9 %</i>	<i>65.2-140</i>						
<i>Surrogate: 1-Chlorooctadecane</i>		<i>113 %</i>	<i>63.6-154</i>						

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/07/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-16 @ 30' (H301856-37)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>32.0</b>	16.0	08/12/2013	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/12/2013	ND	189	94.7	200	1.66		
DRO >C10-C28	<10.0	10.0	08/12/2013	ND	205	103	200	4.93		
Surrogate: 1-Chlorooctane	89.7 %	65.2-140								
Surrogate: 1-Chlorooctadecane	109 %	63.6-154								

**Sample ID: SB-16 @ 35' (H301856-38)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>64.0</b>	16.0	08/12/2013	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/12/2013	ND	189	94.7	200	1.66		
DRO >C10-C28	<10.0	10.0	08/12/2013	ND	205	103	200	4.93		
Surrogate: 1-Chlorooctane	92.7 %	65.2-140								
Surrogate: 1-Chlorooctadecane	111 %	63.6-154								

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/07/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-17 @ 5' (H301856-39)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>96.0</b>	16.0	08/12/2013	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/12/2013	ND	189	94.7	200	1.66		
DRO >C10-C28	<10.0	10.0	08/12/2013	ND	205	103	200	4.93		

Surrogate: 1-Chlorooctane 88.5 % 65.2-140

Surrogate: 1-Chlorooctadecane 107 % 63.6-154

**Sample ID: SB-17 @ 25' (H301856-40)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>160</b>	16.0	08/12/2013	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/12/2013	ND	189	94.7	200	1.66		
DRO >C10-C28	<10.0	10.0	08/12/2013	ND	205	103	200	4.93		

Surrogate: 1-Chlorooctane 90.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 111 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/07/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-17 @ 30' (H301856-41)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	08/12/2013	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/12/2013	ND	189	94.7	200	1.66		
DRO >C10-C28	<10.0	10.0	08/12/2013	ND	205	103	200	4.93		
<i>Surrogate: 1-Chlorooctane</i>		<i>89.6 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>		<i>107 %</i>	<i>63.6-154</i>							

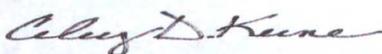
**Sample ID: SB-18 @ 5' (H301856-42)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	08/12/2013	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/12/2013	ND	189	94.7	200	1.66		
DRO >C10-C28	<10.0	10.0	08/12/2013	ND	205	103	200	4.93		
<i>Surrogate: 1-Chlorooctane</i>		<i>91.0 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>		<i>107 %</i>	<i>63.6-154</i>							

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**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/07/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-18 @ 15' (H301856-43)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>1650</b>	16.0	08/12/2013	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/12/2013	ND	189	94.7	200	1.66		
DRO >C10-C28	<10.0	10.0	08/12/2013	ND	205	103	200	4.93		
<i>Surrogate: 1-Chlorooctane</i>	<i>89.2 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>111 %</i>	<i>63.6-154</i>								

**Sample ID: SB-18 @ 30' (H301856-44)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>112</b>	16.0	08/12/2013	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/12/2013	ND	189	94.7	200	1.66		
DRO >C10-C28	<10.0	10.0	08/12/2013	ND	205	103	200	4.93		
<i>Surrogate: 1-Chlorooctane</i>	<i>91.2 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>111 %</i>	<i>63.6-154</i>								

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 HACK CONDER  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	08/08/2013	Sampling Date:	08/07/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	WARREN UNIT #13 INJECTION LINE AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SB-18 @ 35' (H301856-45)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>96.0</b>	16.0	08/12/2013	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/12/2013	ND	189	94.7	200	1.66		
<b>DRO &gt;C10-C28</b>	<b>11.7</b>	10.0	08/12/2013	ND	205	103	200	4.93		

<i>Surrogate: 1-Chlorooctane</i>	<i>103 %</i>	<i>65.2-140</i>
<i>Surrogate: 1-Chlorooctadecane</i>	<i>126 %</i>	<i>63.6-154</i>

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



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101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603  
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

1 of 5

Company Name: RECS **BILL TO** ANALYSIS REQUEST

Project Manager: Hack Conder P.O. #:

Address: 419 W. Cain Company:

City: Hobbs State: NM Zip: 88240 Attn:

Phone #: 575-393-2967 Fax #: Address:

Project #: Project Owner: City: State: Zip:

Project Name: Project Location: Warren Unit #13 Injection Line AD Phone #: Fax #:

Sampler Name: Kyle Norman

FOR LAB USE ONLY MATRIX PRESERV SAMPLING

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TDS	
H3D1856	1	SB-4 @ 5'	7	✓									8/6/13	07:30	✓	✓					
	2	SB-4 @ 25'	5	✓									8/6/13	07:40	✓	✓					
	3	SB-4 @ 30'	5	✓									8/6/13	08:00	✓	✓					
	4	SB-5 @ 5'	5	✓									8/6/13	08:15	✓	✓					
	5	SB-5 @ 25'	5	✓									8/6/13	08:40	✓	✓					
	6	SB-6 @ 5'	5	✓									8/6/13	08:55	✓	✓					
	7	SB-6 @ 25'	5	✓									8/6/13	09:15	✓	✓					
	8	SB-7 @ 5'	5	✓									8/6/13	09:25	✓	✓					
	9	SB-7 @ 20'	5	✓									8/6/13	09:45	✓	✓					
	10	SB-7 @ 30'	5	✓									8/6/13	09:55	✓	✓					

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Relinquished By: *[Signature]* Date: 8-8-13 Time: 10:40

Received By: *[Signature]* Date: \_\_\_\_\_ Time: \_\_\_\_\_

Delivered By: (Circle One)  UPS  Bus  Other: \_\_\_\_\_

Sample Condition:  Cool  Intact  Yes  No

CHECK BY: *[Signature]*

Phone Result:  Yes  No Add'l Phone #: \_\_\_\_\_

Fax Result:  Yes  No Add'l Fax #: \_\_\_\_\_

REMARKS: email results: Knorman@rice-ecs.com  
jkamplain@rice-ecs.com; hconder@rice-ecs.com;  
Lweinheimer@rice-ecs.com

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476 #54



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 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

2 of 5

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

Company Name: RECS		P.O. #:		<b>BILLET</b>		<b>ANALYSIS REQUEST</b>	
Project Manager: Hack Conder		Company:					
Address: 419 W. Cain		Attn:					
City: Hobbs		State: NM Zip: 88240					
Phone #: 575-393-2967		Fax #:					
Project #:		Project Owner:					
Project Name:		State:					
Project Location: Warren Unit #13 Injection Line AD		City:					
Sampler Name: Kyle Norman		Phone #:					
FOR LAB USE ONLY		Fax #:					
Lab I.D.		Sample I.D.					
H301856		(G)RAB OR (C)OMP.					
		# CONTAINERS					
		GROUNDWATER					
		WASTEWATER					
		SOIL					
		OIL					
		SLUDGE					
		OTHER:					
		ACID/BASE:					
		ICE / COOL					
		OTHER:					
		DATE					
		TIME					
11	SB-7 @ 35'	1	8/6/13	10:15	✓	✓	
12	SB-8 @ 5'	1	8/6/13	10:35	✓	✓	
13	SB-8 @ 25'	1	8/6/13	10:45	✓	✓	
14	SB-9 @ 5'	1	8/6/13	10:55	✓	✓	
15	SB-9 @ 20'	1	8/6/13	11:25	✓	✓	
16	SB-9 @ 40'	1	8/6/13	11:35	✓	✓	
17	SB-9 @ 45'	1	8/6/13	11:45	✓	✓	
18	SB-10 @ 5'	1	8/6/13	12:45	✓	✓	
19	SB-10 @ 20'	1	8/6/13	01:00	✓	✓	
20	SB-10 @ 25'	1	8/6/13	01:15	✓	✓	

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Relinquished By: <i>Kyle Norman</i>	Date: 8/8/13	Time: 10:40	Received By: <i>Spaci Jensen</i>
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool <input type="checkbox"/> Attract <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	Checked By: <i>[Signature]</i>	Remarks: email results: Knorman@rice-ecs.com jkamplain@rice-ecs.com; hconder@rice-ecs.com; Lweinheimer@rice-ecs.com

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476 #54





50f5

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

**CARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603  
 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

<p><b>Company Name:</b> RECS  <b>Project Manager:</b> Hack Conder  <b>Address:</b> 419 W. Cain  <b>City:</b> Hobbs <b>State:</b> NM <b>Zip:</b> 88240  <b>Phone #:</b> 575-393-2967 <b>Fax #:</b>  <b>Project #:</b> <b>Project Owner:</b>  <b>Project Name:</b>  <b>Project Location:</b> Warren Unit #13 Injection Line AD  <b>Sampler Name:</b> Kyle Norman</p>										<p><b>ANALYSIS REQUEST</b></p>									
<p><b>FOR LAB USE ONLY</b></p>										<p><b>Chlorides</b></p>									
<p><b>TPH 8015 M</b></p>										<p><b>BTEX</b></p>									
<p><b>Texas TPH</b></p>										<p><b>Complete Cations/Anions</b></p>									
<p><b>TDS</b></p>																			
<p><b>Lab I.D.</b></p>										<p><b>DATE</b></p>									
<p>1301856</p>										<p>8/7/13 09:00</p>									
<p>38 SB-16 @ 35'</p>										<p>✓</p>									
<p>39 SB-17 @ 5'</p>										<p>✓</p>									
<p>40 SB-17 @ 25'</p>										<p>✓</p>									
<p>41 SB-17 @ 30'</p>										<p>✓</p>									
<p>42 SB-18 @ 5'</p>										<p>✓</p>									
<p>43 SB-18 @ 15'</p>										<p>✓</p>									
<p>44 SB-18 @ 30'</p>										<p>✓</p>									
<p>45 SB-18 @ 35'</p>										<p>✓</p>									
<p><b>MATRIX</b></p>										<p><b>PRESERV</b></p>									
<p>GROUNDWATER</p>										<p>ICE / COOL</p>									
<p>WASTEWATER</p>										<p>ACID/BASE</p>									
<p>SOIL</p>										<p>OTHER</p>									
<p>SLUDGE</p>										<p>OTHER</p>									
<p># CONTAINERS</p>										<p>DATE</p>									
<p>1</p>										<p>8/7/13 09:00</p>									
<p>1</p>										<p>8/7/13 09:30</p>									
<p>1</p>										<p>8/7/13 09:50</p>									
<p>1</p>										<p>8/7/13 10:00</p>									
<p>1</p>										<p>8/7/13 10:30</p>									
<p>1</p>										<p>8/7/13 10:45</p>									
<p>1</p>										<p>8/7/13 11:00</p>									
<p>1</p>										<p>8/7/13 11:15</p>									
<p><b>(G)RAB OR (COMP)</b></p>										<p><b>TIME</b></p>									
<p>1</p>										<p>8/7/13 09:00</p>									
<p>1</p>										<p>8/7/13 09:30</p>									
<p>1</p>										<p>8/7/13 09:50</p>									
<p>1</p>										<p>8/7/13 10:00</p>									
<p>1</p>										<p>8/7/13 10:30</p>									
<p>1</p>										<p>8/7/13 10:45</p>									
<p>1</p>										<p>8/7/13 11:00</p>									
<p>1</p>										<p>8/7/13 11:15</p>									
<p><b>Received By:</b> <i>Kyle Norman</i></p>										<p><b>Received By:</b> <i>Jodi Benson</i></p>									
<p><b>Date:</b> 8-8-13</p>										<p><b>Date:</b> 8-8-13</p>									
<p><b>Time:</b> 10:40</p>										<p><b>Time:</b> 10:40</p>									
<p><b>Relinquished By:</b></p>										<p><b>Relinquished By:</b></p>									
<p><b>Delivered By: (Circle One)</b></p>										<p><b>Delivered By: (Circle One)</b></p>									
<p><b>Sampler - UPS - Bus - Other:</b></p>										<p><b>Sampler - UPS - Bus - Other:</b></p>									
<p><b>Sample Condition</b></p>										<p><b>Sample Condition</b></p>									
<p>Cool <input type="checkbox"/> Intact <input type="checkbox"/></p>										<p>Cool <input type="checkbox"/> Intact <input type="checkbox"/></p>									
<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>										<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>									
<p><b>Checked By:</b></p>										<p><b>Checked By:</b></p>									
<p><i>[Signature]</i></p>										<p><i>[Signature]</i></p>									
<p><b>Phone Result:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>										<p><b>Phone Result:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>									
<p><b>Fax Result:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>										<p><b>Fax Result:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>									
<p><b>Add'l Phone #:</b></p>										<p><b>Add'l Phone #:</b></p>									
<p><b>Add'l Fax #:</b></p>										<p><b>Add'l Fax #:</b></p>									
<p><b>REMARKS:</b></p>										<p><b>REMARKS:</b></p>									
<p>email results: Knorman@rice-ecs.com jkamplain@rice-ecs.com; hconder@rice-ecs.com; Lweinheimer@rice-ecs.com</p>																			

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† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

# 54

# Conoco Phillips Warren Unit #13 Injection Line AD

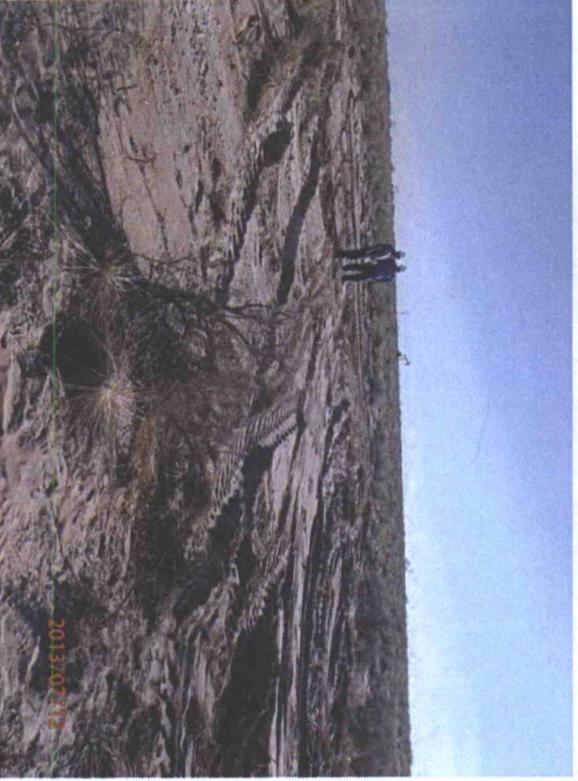
Unit Letter N, Section 34, T20S, R38E



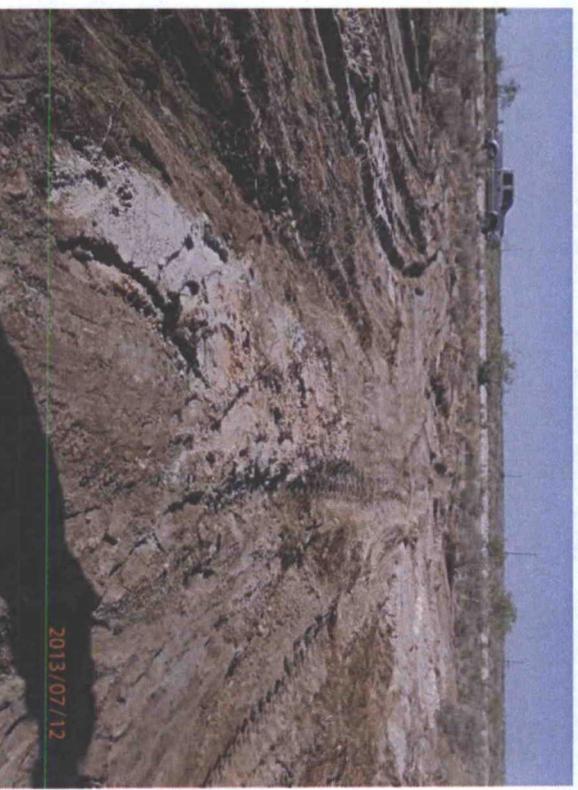
Initial release area, facing south 7/12/13



Initial release area, facing west 7/12/13



Initial release area, facing northeast 7/12/13



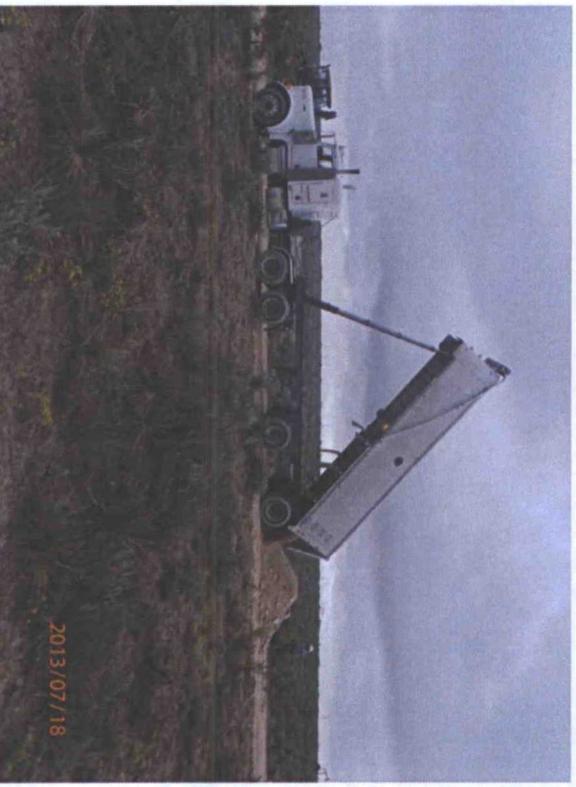
Initial release area, facing south 7/12/13



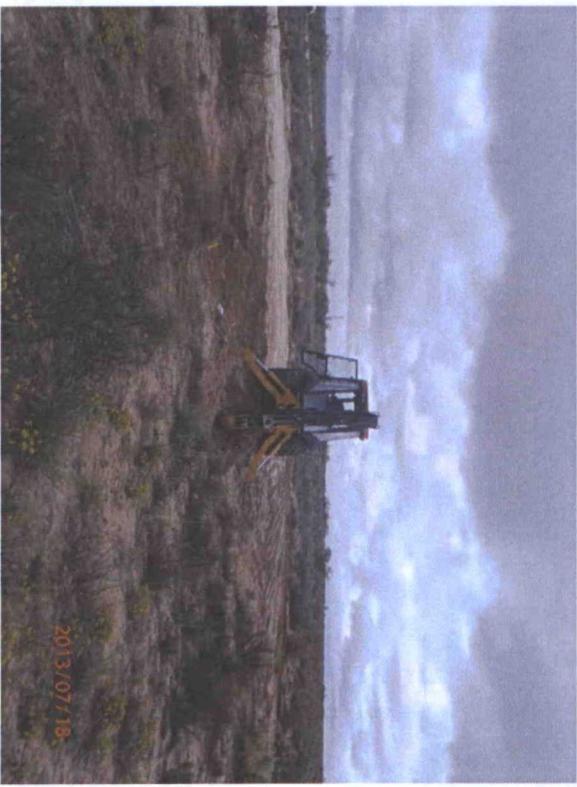
Installing vertical #1, facing west  
7/18/13



Installing vertical #2, facing west  
7/18/13



Import caliche to build surface for soil bore installations facing, west  
7/18/13

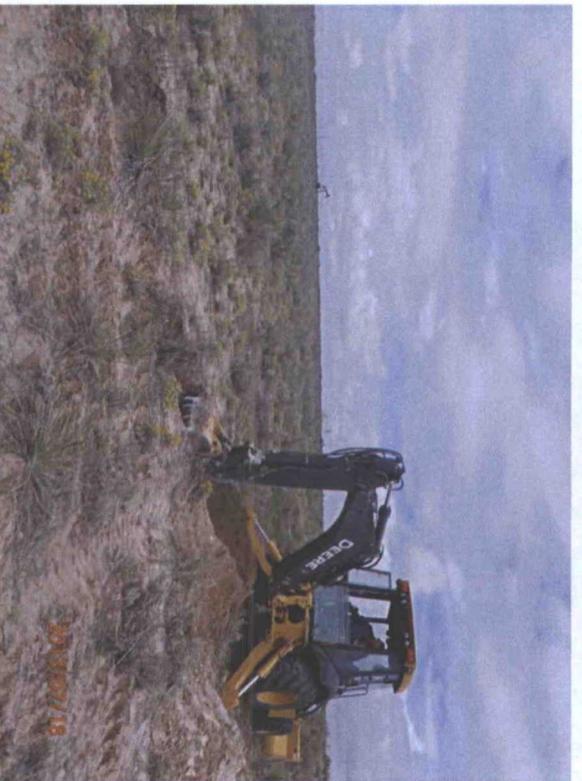


Installing vertical #3, facing west  
7/18/13



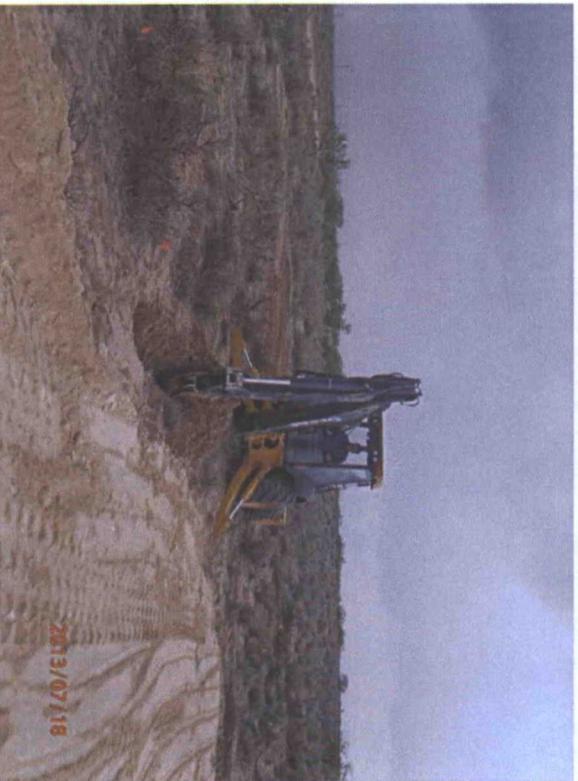
Installing vertical #4, facing west

7/18/13



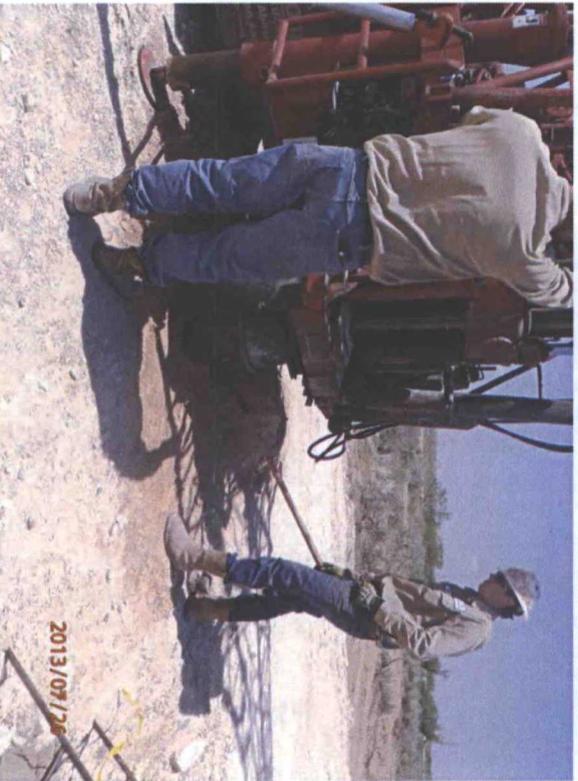
Installing vertical #5, facing north

7/18/13



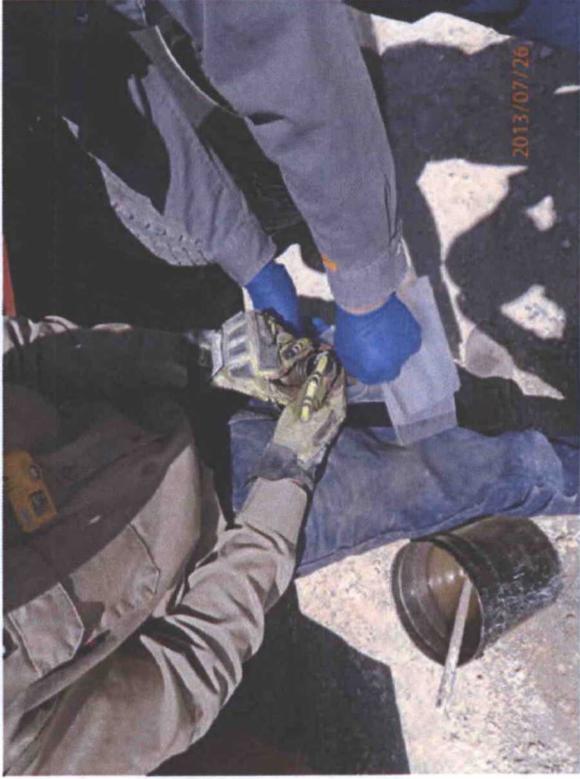
Installing vertical #7, facing south

7/18/13

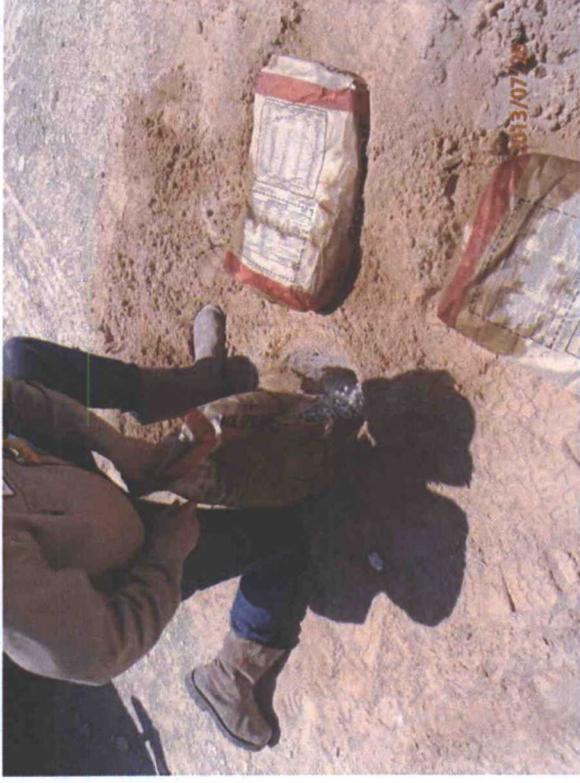


Installing soil bore #1, facing southwest

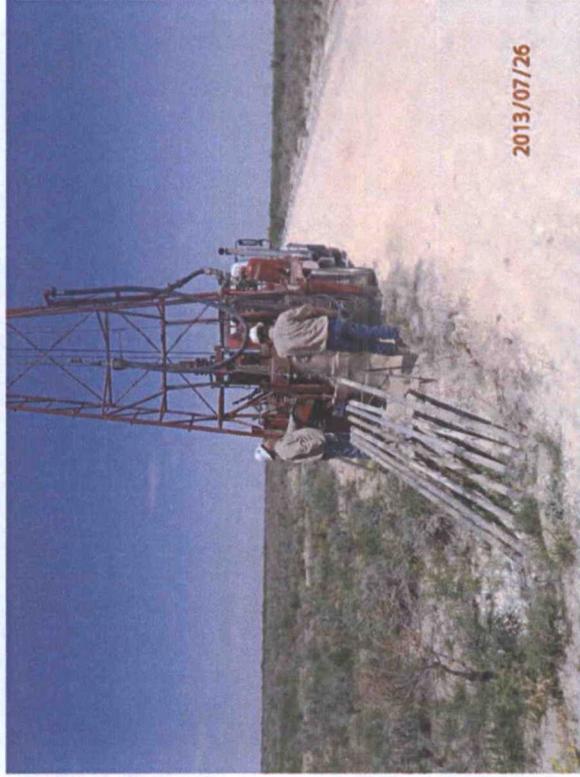
7/26/13



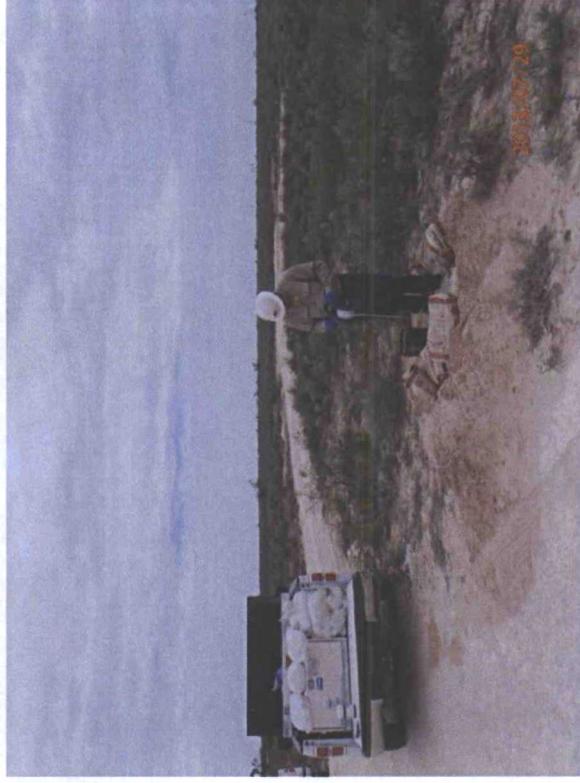
Collecting sample, facing west 7/26/13



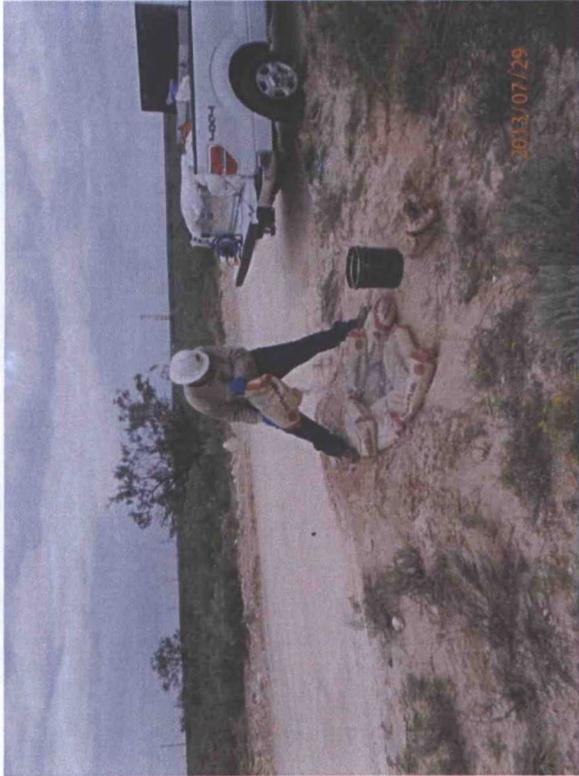
Plugging soil bore #1 in total with bentonite 7/26/13



Installing temporary MW, facing east 7/26/13



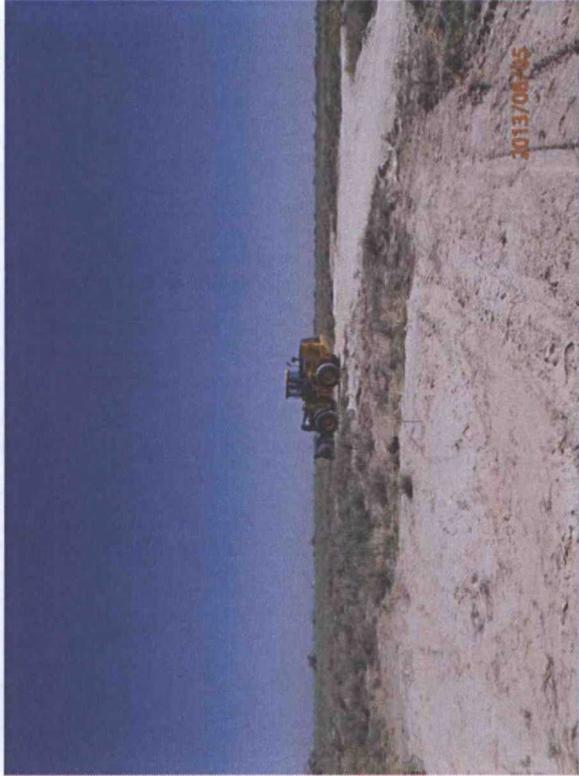
Gauging temporary MW, facing northwest 7/29/13



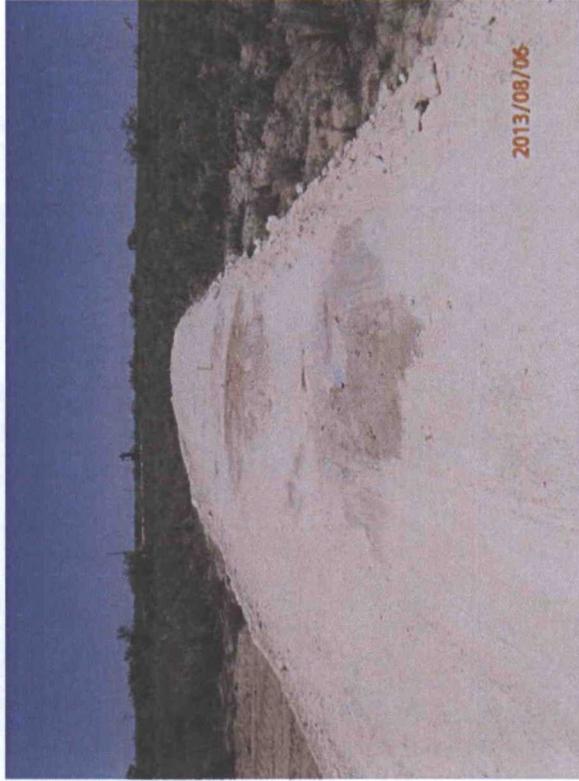
Plugging temporary MW in total with bentonite, facing southwest 7/29/13



Completed temporary MW, facing northwest 7/29/13



Building road for additional soil bore installations, facing west 8/5/13



Completed soil bores, facing west 8/6/13