

RECEIVED

NOV 20 2013  
NMOCB

## LINN ENERGY

2130 W. Bender Blvd.  
Hobbs, NM 88241  
Phone 575.738.1739

HE West B 10  
2RP-1995

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# Corrective Action Plan

API No. 3001505117

Release Date: October 14<sup>th</sup>, 2013

Unit Letter E, Section 9, Township 17S, Range 31E

# Rice Environmental Consulting & Safety

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

**November 18<sup>th</sup>, 2013**

## **Mike Bratcher**

New Mexico Energy, Minerals, & Natural Resources  
Oil Conservation Division, Environmental Bureau – District 2  
811 S. First St.  
Artesia, NM 88210

**RE: Corrective Action Plan (CAP)  
Linn Energy – HE West B 10 (2RP-1995)  
UL/E sec. 9 T17S R31E  
API No. 3001505117**

Mr. Bratcher:

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

## **Background and Previous Work**

The site is located approximately 6.2 miles northeast of Loco Hills, New Mexico at UL/E sec. 9 T17S R31E. This site is in an area of no known groundwater.

On October 14<sup>th</sup>, 2013, Linn used a pump truck with fresh water to discover the location of a release from a fiberglass pipeline. A total of 20 barrels of produced and fresh water was released from the fiberglass line and none of this water was recovered. The release affected 1,841 sq ft of pasture land. Linn notified BLM and NMOCD on October 16<sup>th</sup>, 2013 and an initial C-141 was submitted to both agencies (Appendix A).

RECS was on site beginning October 17<sup>th</sup>, 2013 to assess the site. Three points were sampled at the surface and two of the points were sampled with depth. The samples were field tested for chlorides and for organic vapors using a PID meter (Figure 1). Representative samples were taken to a commercial laboratory for analysis (Appendix B). Point 1 returned laboratory chloride readings below 1,000 mg/kg at 2.5 ft bgs and Point 3 returned laboratory chloride readings below 1,000 mg/kg at 4 ft bgs. Point 3 was advanced to 15.5 ft bgs to determine the extent of the vertical contamination. The laboratory chloride readings fell below 250 mg/kg at 15.5 ft bgs.

Photo documentation of these actions can be found in Appendix C.

## **Corrective Action Plan**

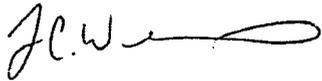
Based on the laboratory data, the area around Point 1 will be excavated to 2.5 ft bgs. The side walls and bottom of the excavation will be sampled to verify that the chloride values are below 1,000 mg/kg (Figure 2). At Point 2, the site will be scraped down six inches to

remove the staining. At Point 3, the area will be excavated to a depth of 4 ft bgs and the side walls of the excavation will be sampled to verify that the chloride values are below 1,000 mg/kg. At 4 ft bgs, a 20-mil poly liner will be installed and properly seated into the base of the excavation.

The excavated soil from all three areas will be taken to a NMOCD approved facility for disposal. Clean soil will be imported to use as backfill for the excavations and scrape and to contour the area to the surrounding location. Soil amendments will be added as needed and the site will be seeded with a blend of native vegetation.

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,

A handwritten signature in black ink, appearing to read 'L.W.', with a long, sweeping horizontal stroke extending to the right.

Lara Weinheimer  
Project Scientist  
RECS  
(575) 441-0431

Attachments:

- Figure 1 – Initial Sampling Data
- Figure 2 – Proposed Corrective Actions
- Appendix A – Initial C-141
- Appendix B – Laboratory Analyses
- Appendix C – Photo Documentation

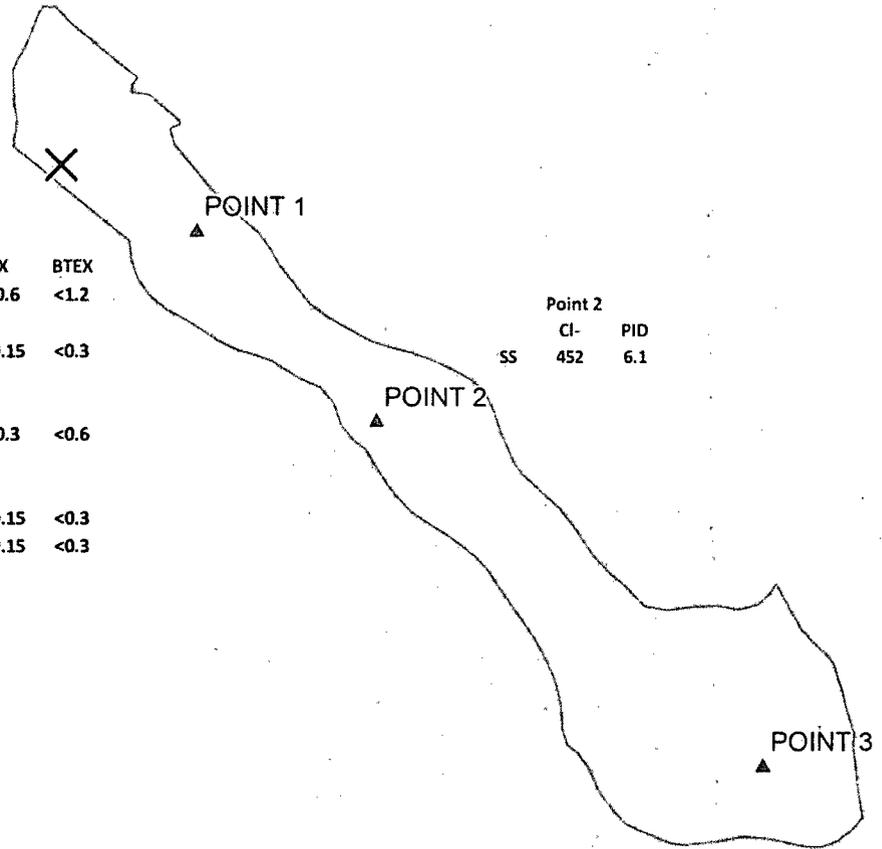
# Figures

**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 2948, Hobbs, NM 88241  
Phone 575.393.2967

# Initial Sampling Data

	CI-	PID	GRO	DRO	B	T	E	X	BTEX
SS	4560	95.6	<50	3150	<0.2	<0.2	<0.2	<0.6	<1.2
6"	2380	325.6							
1'	1782	30.4							
1.5'	2400	376.3	<10	61.5	<0.05	<0.05	<0.05	<0.15	<0.3
2'	1886	355.2							
2.5'	800	128.2	<10	10.3	<0.05	<0.05	<0.05	<0.15	<0.3

	CI-	PID	GRO	DRO	B	T	E	X	BTEX
SS	10300	360.1	<50	7230	<0.2	<0.2	<0.2	<0.6	<1.2
6"	2933	397.6							
1'	2760	385.5	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
1.5'	4469	36.8							
2'	6018	41.9							
2.5'	6000	377.2	<10	15.1	<0.1	<0.1	<0.1	<0.3	<0.6
3'	3313	23.7							
3.5'	3360	43.8							
4'	560	4.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
4.5'	512	12.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
5'	538	8.5							
5.5'	1619	10.7							
6'	375	13.3							
6.5'	319	7							
7'	480	4.2							
7.5'	454	6.7							
8'	679	12.8							
8.5'	765	8.3							
9'	823	6							
9.5'	854	7.1							
10'	515	6.7							
10.5'	480	11.1							
11'	446	7.3							
11.5'	480	4.4							
12'	486	0.5							
12.5'	391	0.7							
13'	508	0.4							
13.5'	204	0.3							
14'	598	0.3							
14.5'	403	0.2							
15'	361	0.3							
15.5'	80	0.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3



	CI-	PID
SS	452	6.1

LANDOWNER: BLM  
GROUNDWATER: NONE

Source: Esri, DigitalGlobe, Getmapping, AeroGrid, IGI

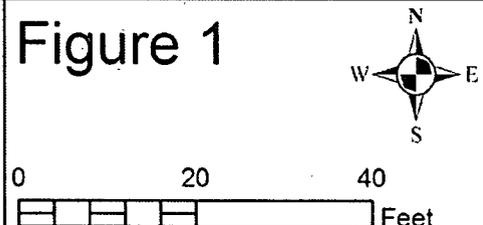
**Legend**

- ▲ SAMPLE POINTS
- ✕ SOURCE
- STAIN AREA- 1841 SQ FT



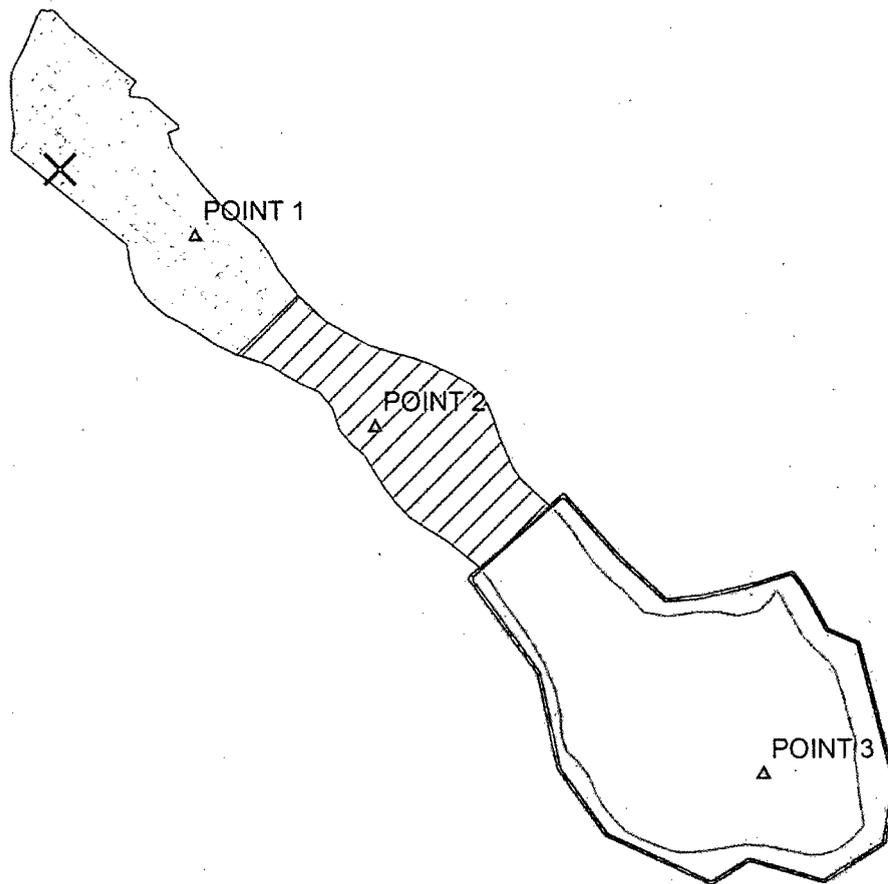
**LINN H.E.  
WEST B #10  
2RP-1995**  
UL E SECTION 9  
T-17-S R-31-E  
EDDY COUNTY, NM

Figure 1



GPS date: 11/4/13 KS  
Drawing date: 11/6/13  
Drafted by: L. Weinheimer

# Proposed Corrective Actions



LANDOWNER: BLM  
GROUNDWATER: NONE

Source: Esri, Getmapping, etc.

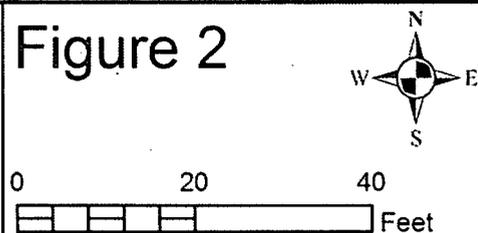
**Legend**

- ▲ SAMPLE POINTS
- ✕ SOURCE
- ▨ PROPOSED EXCAVATION TO 2.5 FT
- ▩ PROPOSED SCRAPE TO 6 IN
- ▭ PROPOSED 20-MIL POLY LINER AT 4 FT BGS
- STAIN AREA- 1841 SQ FT

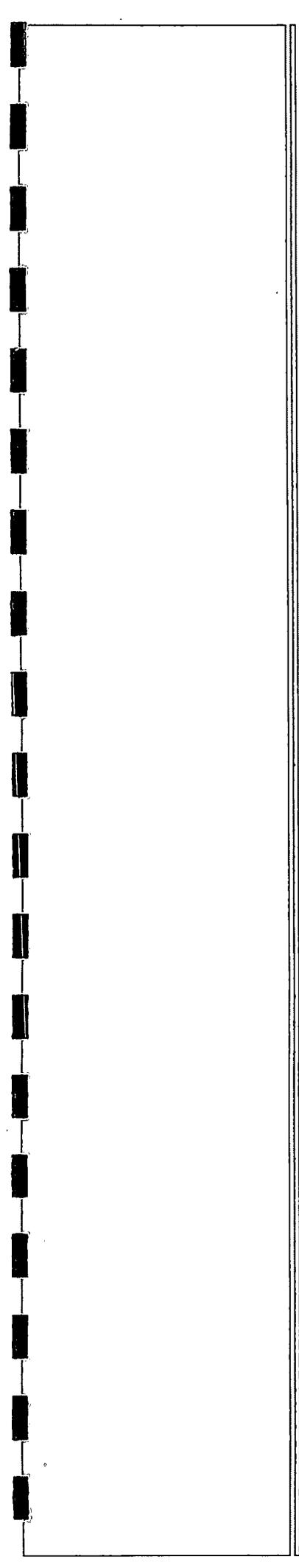


**LINN H.E.  
WEST B #10  
2RP-1995  
UL E SECTION 9  
T-17-S R-31-E  
EDDY COUNTY, NM**

**Figure 2**



GPS date: 11/4/13 KS  
Drawing date: 11/15/13  
Drafted by: L. Weinheimer



# Appendix A

Initial C-141

**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 2948 Hobbs, NM 88241  
Phone 575.393.2967

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

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

Form C-141  
Revised October 10, 2003

Submit 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: Linn Operating	Contact: Brian Wall
Address: 2130 W. Bender Hobbs, NM 88240	Telephone No.: 575-738-1739
Facility Name: HE West B 10	Facility Type: Injection

Surface Owner: Federal	Mineral Owner:	API No.: 3001505117
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**LOCATION OF RELEASE**

Unit Letter E	Section 09	Township 17S	Range 31E	Feet from the 1980	North/South Line North	Feet from the 660	East/West Line West	County Eddy
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Latitude: 32.85087 Longitude: -103.88039

**NATURE OF RELEASE**

Type of Release: Produced Water	Volume of Release: 20 bbls	Volume Recovered: 0
Source of Release: Fiberglass pipeline	Date and Hour of Occurrence: 10/14/2013 12:00pm	Date and Hour of Discovery: 10/14/2013 12:00pm
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Burton- BLM Mike Bratcher-NM OCD	
By Whom? Brian Wall	Date and Hour 10/16/2013 7:15am	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse	

**RECEIVED**

If a Watercourse was Impacted, Describe Fully.\*:

NOV 20 2013  
DMOCD

Describe Cause of Problem and Remedial Action Taken.\*: Found location of injection line leak which had put injection out of service in area. Spill composed of fresh and produced water. Approx 20 barrels total fluid. Were using pump truck with fresh water at time to find location of leak.

Describe Area Affected and Cleanup Action Taken.\* : spill located across road to North East about 200 ft from well next to cattle guard.

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: Brian Wall	Approved by District Supervisor:	
Title: Construction Foreman II	Approval Date:	Expiration Date:
E-mail Address: bwall@linenergy.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 10/16/2013 Phone: 806-367-0645		

\* Attach Additional Sheets If Necessary

# Appendix B

## Laboratory Analyses

**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 2948 Hobbs, NM 88241  
Phone 575.393.2967

October 28, 2013

JACOB KAMPLAIN

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

419 W. CAIN

HOBBS, NM 88240

RE: H. E. WEST B #10

Enclosed are the results of analyses for samples received by the laboratory on 10/23/13 15:40.

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/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/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  
 JACOB KAMPLAIN  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	10/23/2013	Sampling Date:	10/23/2013
Reported:	10/28/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #10	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: POINT 1 @ SURFACE (H302572-01)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	10/25/2013	ND	1.89	94.4	2.00	0.364		
Toluene*	<0.200	0.200	10/25/2013	ND	1.94	97.1	2.00	0.484		
Ethylbenzene*	<0.200	0.200	10/25/2013	ND	1.95	97.7	2.00	0.395		
Total Xylenes*	<0.600	0.600	10/25/2013	ND	5.87	97.8	6.00	0.0827		
Total BTEX	<1.20	1.20	10/25/2013	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	
<b>Chloride</b>	<b>4560</b>	16.0	10/24/2013	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10	<50.0	50.0	10/25/2013	ND	185	92.3	200	0.942			
<b>DRO &gt;C10-C28</b>	<b>3150</b>	50.0	10/25/2013	ND	173	86.6	200	1.03			

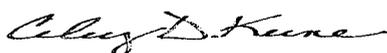
Surrogate: 1-Chlorooctane 91.5 % 65.2-140

Surrogate: 1-Chlorooctadecane 185 % 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

**Analytical Results For:**

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

Received:	10/23/2013	Sampling Date:	10/23/2013
Reported:	10/28/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #10	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: POINT 3 @ SURFACE (H302572-02)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	10/25/2013	ND	1.89	94.4	2.00	0.364		
Toluene*	<0.200	0.200	10/25/2013	ND	1.94	97.1	2.00	0.484		
Ethylbenzene*	<0.200	0.200	10/25/2013	ND	1.95	97.7	2.00	0.395		
Total Xylenes*	<0.600	0.600	10/25/2013	ND	5.87	97.8	6.00	0.0827		
Total BTEX	<1.20	1.20	10/25/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 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>10300</b>	16.0	10/24/2013	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10	<50.0	50.0	10/25/2013	ND	185	92.3	200	0.942			
<b>DRO &gt;C10-C28</b>	<b>7230</b>	50.0	10/25/2013	ND	173	86.6	200	1.03			

Surrogate: 1-Chlorooctane 104 % 65.2-140

Surrogate: 1-Chlorooctadecane 282 % 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  
 JACOB KAMPLAIN  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	10/23/2013	Sampling Date:	10/23/2013
Reported:	10/28/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #10	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: POINT 1 @ 1.5' (H302572-03)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/25/2013	ND	1.89	94.4	2.00	0.364		
Toluene*	<0.050	0.050	10/25/2013	ND	1.94	97.1	2.00	0.484		
Ethylbenzene*	<0.050	0.050	10/25/2013	ND	1.95	97.7	2.00	0.395		
Total Xylenes*	<0.150	0.150	10/25/2013	ND	5.87	97.8	6.00	0.0827		
Total BTEX	<0.300	0.300	10/25/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 103 % 89.4-126

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>2400</b>	16.0	10/24/2013	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	10/25/2013	ND	185	92.3	200	0.942		
<b>DRO &gt;C10-C28</b>	<b>61.5</b>	10.0	10/25/2013	ND	173	86.6	200	1.03		

Surrogate: 1-Chlorooctane 94.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 101 % 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  
 JACOB KAMPLAIN  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	10/23/2013	Sampling Date:	10/23/2013
Reported:	10/28/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #10	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: POINT 1 @ 2.5' (H302572-04)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/25/2013	ND	1.89	94.4	2.00	0.364		
Toluene*	<0.050	0.050	10/25/2013	ND	1.94	97.1	2.00	0.484		
Ethylbenzene*	<0.050	0.050	10/25/2013	ND	1.95	97.7	2.00	0.395		
Total Xylenes*	<0.150	0.150	10/25/2013	ND	5.87	97.8	6.00	0.0827		
Total BTEX	<0.300	0.300	10/25/2013	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>800</b>	16.0	10/24/2013	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	10/25/2013	ND	185	92.3	200	0.942		
<b>DRO &gt;C10-C28</b>	<b>10.3</b>	10.0	10/25/2013	ND	173	86.6	200	1.03		

Surrogate: 1-Chlorooctane 94.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 98.6 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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Received:	10/23/2013	Sampling Date:	10/23/2013
Reported:	10/28/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #10	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: POINT 3 @ 1' (H302572-05)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/27/2013	ND	1.89	94.4	2.00	0.364		
Toluene*	<0.050	0.050	10/27/2013	ND	1.94	97.1	2.00	0.484		
Ethylbenzene*	<0.050	0.050	10/27/2013	ND	1.95	97.7	2.00	0.395		
Total Xylenes*	<0.150	0.150	10/27/2013	ND	5.87	97.8	6.00	0.0827		
Total BTEX	<0.300	0.300	10/27/2013	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2760	16.0	10/24/2013	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	10/25/2013	ND	185	92.3	200	0.942		
DRO >C10-C28	<10.0	10.0	10/25/2013	ND	173	86.6	200	1.03		

Surrogate: 1-Chlorooctane 93.4 % 65.2-140

Surrogate: 1-Chlorooctadecane 97.9 % 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  
 JACOB KAMPLAIN  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	10/23/2013	Sampling Date:	10/23/2013
Reported:	10/28/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #10	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: POINT 3 @ 2.5' (H302572-06)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.100	0.100	10/27/2013	ND	1.89	94.4	2.00	0.364		
Toluene*	<0.100	0.100	10/27/2013	ND	1.94	97.1	2.00	0.484		
Ethylbenzene*	<0.100	0.100	10/27/2013	ND	1.95	97.7	2.00	0.395		
Total Xylenes*	<0.300	0.300	10/27/2013	ND	5.87	97.8	6.00	0.0827		
Total BTEX	<0.600	0.600	10/27/2013	ND						

Surrogate: 4-Bromofluorobenzene (PI) 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>6000</b>	16.0	10/24/2013	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	10/25/2013	ND	185	92.3	200	0.942		
<b>DRO &gt;C10-C28</b>	<b>15.1</b>	10.0	10/25/2013	ND	173	86.6	200	1.03		

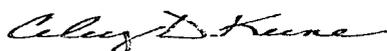
Surrogate: 1-Chlorooctane 93.4 % 65.2-140

Surrogate: 1-Chlorooctadecane 101 % 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  
 JACOB KAMPLAIN  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	10/23/2013	Sampling Date:	10/23/2013
Reported:	10/28/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #10	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: POINT 3 @ 4' (H302572-07)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/27/2013	ND	1.89	94.4	2.00	0.364		
Toluene*	<0.050	0.050	10/27/2013	ND	1.94	97.1	2.00	0.484		
Ethylbenzene*	<0.050	0.050	10/27/2013	ND	1.95	97.7	2.00	0.395		
Total Xylenes*	<0.150	0.150	10/27/2013	ND	5.87	97.8	6.00	0.0827		
Total BTEX	<0.300	0.300	10/27/2013	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	
<b>Chloride</b>	<b>560</b>	16.0	10/24/2013	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	10/25/2013	ND	185	92.3	200	0.942		
DRO >C10-C28	<10.0	10.0	10/25/2013	ND	173	86.6	200	1.03		

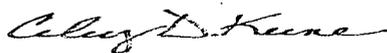
Surrogate: 1-Chlorooctane 94.4 % 65.2-140

Surrogate: 1-Chlorooctadecane 96.1 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- 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



November 11, 2013

JACOB KAMPLAIN

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

419 W. CAIN

HOBBS, NM 88240

RE: H. E. WEST B #10

Enclosed are the results of analyses for samples received by the laboratory on 11/05/13 15:55.

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  
 JACOB KAMPLAIN  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	11/05/2013	Sampling Date:	11/04/2013
Reported:	11/11/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #10	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: POINT 3 @ 4.5' (H302698-01)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/09/2013	ND	1.86	92.9	2.00	2.84		
Toluene*	<0.050	0.050	11/09/2013	ND	1.87	93.4	2.00	2.58		
Ethylbenzene*	<0.050	0.050	11/09/2013	ND	1.89	94.6	2.00	2.28		
Total Xylenes*	<0.150	0.150	11/09/2013	ND	5.57	92.8	6.00	1.69		
Total BTEX	<0.300	0.300	11/09/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 109 % 89.4-126

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	512	16.0	11/07/2013	ND	432	108	400	4.01		

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	11/06/2013	ND	198	98.8	200	1.81		
DRO >C10-C28	<10.0	10.0	11/06/2013	ND	224	112	200	17.8		

Surrogate: 1-Chlorooctane 108 % 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  
 JACOB KAMPLAIN  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	11/05/2013	Sampling Date:	11/04/2013
Reported:	11/11/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #10	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: POINT 3 @ 15.5' (H302698-02)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/08/2013	ND	2.02	101	2.00	0.0983		
Toluene*	<0.050	0.050	11/08/2013	ND	2.01	100	2.00	0.0618		
Ethylbenzene*	<0.050	0.050	11/08/2013	ND	2.01	101	2.00	0.0369		
Total Xylenes*	<0.150	0.150	11/08/2013	ND	5.90	98.4	6.00	0.540		
Total BTEX	<0.300	0.300	11/08/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 108 % 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	80.0	16.0	11/07/2013	ND	432	108	400	4.01		

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	11/06/2013	ND	198	98.8	200	1.81		
DRO >C10-C28	<10.0	10.0	11/06/2013	ND	224	112	200	17.8		

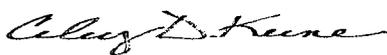
Surrogate: 1-Chlorooctane 104 % 65.2-140

Surrogate: 1-Chlorooctadecane 109 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

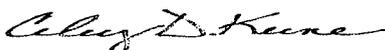
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported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

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

Company Name: <u>RECS</u>		<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																					
Project Manager: <u>Jacob Kramplam</u>		P.O. #:																									
Address:		Company:																									
City:	State:	Zip:	Attn:																								
Phone #:	Fax #:		Address:																								
Project #:	Project Owner:			City:																							
Project Name:		State:		Zip:																							
Project Location: <u>H.E. West B #10</u>		Phone #:																									
Sampler Name: <u>Kyle Schwaidt</u>		Fax #:																									
FOR LAB USE ONLY																											
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX												PRESERV.	SAMPLING										
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME													
<u>H302698</u>																											
	<u>1 Point 3 @ 4.5'</u>	<u>G</u>	<u>1</u>			<u>X</u>							<u>11-4-13</u>	<u>3:00</u>	<u>X</u>	<u>X</u>	<u>X</u>										
	<u>2 Point 3 @ 15.5'</u>	<u>G</u>	<u>1</u>			<u>X</u>							<u>11-4-13</u>	<u>3:05</u>	<u>X</u>	<u>X</u>	<u>X</u>										

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Relinquished By:	Date: <u>11-9-13</u>	Received By:	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
<u>Kyle Schwaidt</u>	Time: <u>3:55</u>	<u>Jodi Benson</u>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:	
	Time:		<u>send to All</u>	
Delivered By: (Circle One)	Sample Condition	CHECKED BY:		
Sampler - UPS - Bus - Other:	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<u>JH</u>		

# Appendix C

Photo Documentation

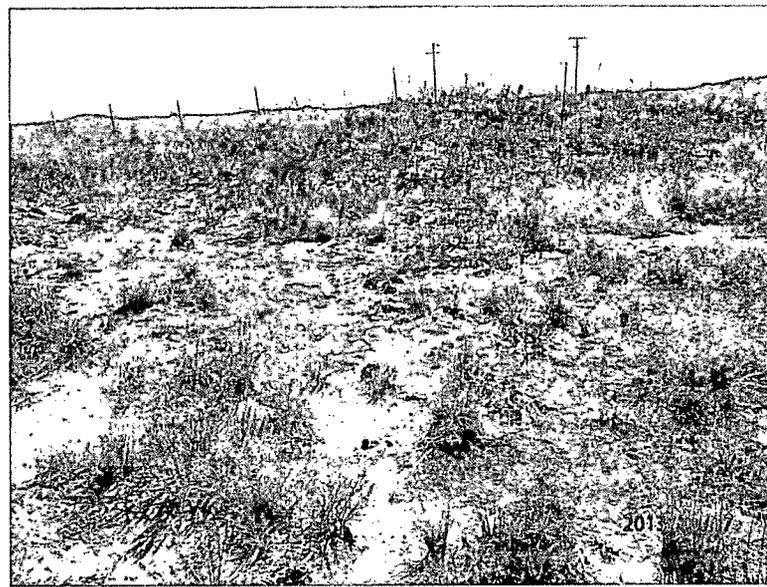
**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 2948 Hobbs, NM 88241  
Phone 575.393.2967

**Linn H.E. West B #10**  
Unit Letter E, Section 9, T17S, R31E



Source of release, facing south

10/17/13



Initial release area, facing south

10/17/13



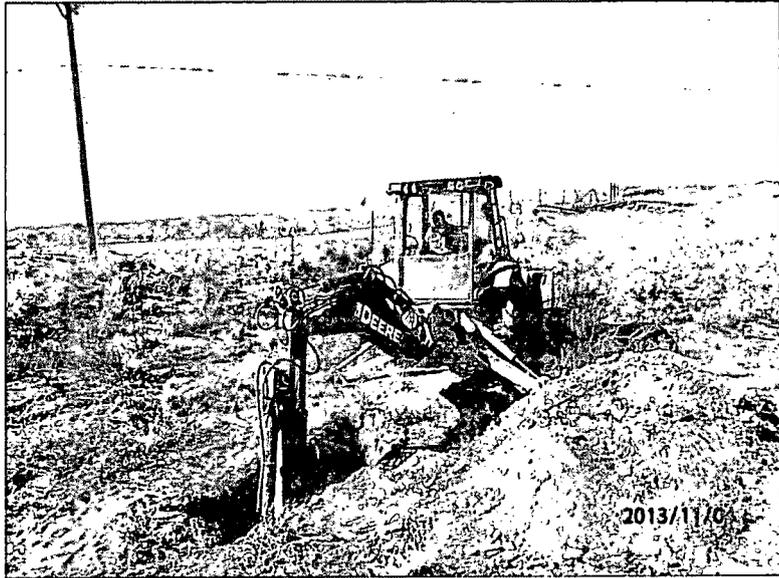
Initial release area, facing west

10/17/13



Initial release area, facing northwest

10/17/13



Installing vertical, facing west

11/4/13