

LINN ENERGY

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

J.L. Keel A #11
2RP-2031

Corrective Action Plan

API No. 3001505099

Release Date: August 22nd, 2011

Unit Letter H, Section 7, Township 17S, Range 31E

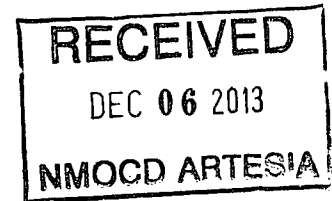
Rice Environmental Consulting & Safety

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

December 5th, 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

Linn Energy – J.L. Keel A #11 (2RP-2031)
UL/H sec. 7 T17S R31E
API No. 3001505099

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 5 miles northeast of Loco Hills, New Mexico at UL/H sec. 7 T17S R31E. This site is in an area of no known groundwater

On August 22nd, 2011, Linn discovered that an injection line ruptured at the buried 'T' intersection and released a total of 100 barrels of produced water. A total of 15 barrels of produced water was recovered from the site. The release affected 12,383 square feet of pasture land. BLM was notified of the release on August 22nd, 2011 and an initial C-141 was sent to BLM and NMOCD on October 29th, 2013 (Appendix A).

RECS personnel were on site beginning on October 28th, 2013 to assess the site. A total of 14 points were sampled at the surface along the release (Figure 1). Three points were sampled with depth to determine the vertical extent of the release. All samples were field tested for chlorides and for organic vapors with a PID meter. The samples were then taken to a commercial laboratory for analysis (Appendix B).

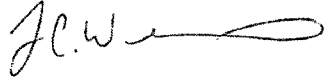
Photo documentation of the site will be found in Appendix C.

Corrective Action Plan

Based on the laboratory sampling, the site will be scraped down 6 inches to remove the elevated chlorides from the surface of the release and to remove visible staining. The scraped soil will be sent to a NMOCD approved facility for disposal. Clean soil will be imported to the site to serve as backfill and to contour the site 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 'J.C. Weinheimer', with a long, horizontal, slightly wavy line extending to the right.

Lara Weinheimer
Project Scientist
RECS
(575) 441-0431

Attachments:

- Figure 1 – Initial Sampling Data
- Appendix A – Initial C-141
- Appendix B – Laboratory Analysis
- Appendix C – Photo Documentation

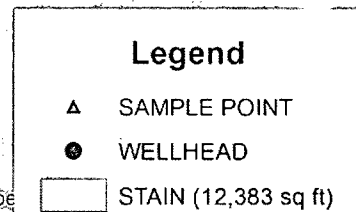
Figures

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

Initial Sampling Data

Point 1	Cl-	PID	GRO	DRO	B	T	E	X	BTEX
Surface	<16	0.2	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 2	Cl-	PID	GRO	DRO	B	T	E	X	BTEX
Surface	224	0.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 3	Cl-	PID	GRO	DRO	B	T	E	X	BTEX
Surface	736	0.2	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
6"	800	0.5	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
1'	752	0.04	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 4	Cl-	PID	GRO	DRO	B	T	E	X	BTEX
Surface	<16	0.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 5	Cl-	PID	GRO	DRO	B	T	E	X	BTEX
Surface	<16	0.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 6	Cl-	PID	GRO	DRO	B	T	E	X	BTEX
Surface	<16	0.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 7	Cl-	PID	GRO	DRO	B	T	E	X	BTEX
Surface	208	0.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 8	Cl-	PID	GRO	DRO	B	T	E	X	BTEX
Surface	976	0.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
6"	<16	0.8	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
1'	<16	0.9	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 9	Cl-	PID	GRO	DRO	B	T	E	X	BTEX
Surface	3640	0.7	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
6"	528	5.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
1'	192	12	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
1.5'	64	7.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 10	Cl-	PID	GRO	DRO	B	T	E	X	BTEX
Surface	<16	0.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 11	Cl-	PID	GRO	DRO	B	T	E	X	BTEX
Surface	48	0.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 12	Cl-	PID	GRO	DRO	B	T	E	X	BTEX
Surface	<16	0.2	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 13	Cl-	PID	GRO	DRO	B	T	E	X	BTEX
Surface	<16	0.1	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
Point 14	Cl-	PID	GRO	DRO	B	T	E	X	BTEX
Surface	<16	0.5	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3

DGW: NONE
LANDOWNER: BLM

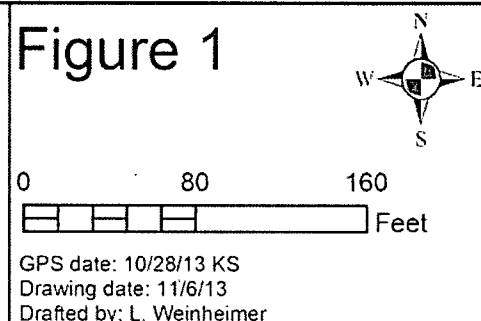


Source: Esri, DigitalGlobe, GeoEye, i-cube
Getmapping, Aerogrid, IGN, IGP, swisstopo



LINN
J. L. KEEL A #11
2RP-2031
UL H SECTION 7
T-17-S R-31-E
EDDY COUNTY, NM

Figure 1



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
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	Linn Energy	Contact	Brian Wall
Address	2130 W. Bender Blvd., Hobbs, NM 88240	Telephone No.	(806) 367-0645
Facility Name	J.L. Keel A #11	Facility Type	Injection Line Release
Surface Owner	BLM	Mineral Owner	API No. 3001505099

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	7	17S	31E	1945	FNL	762	FEL	Eddy

Latitude 32°51'3.227"N Longitude 103°54'10.98"W

NATURE OF RELEASE

Type of Release	Production water	Volume of Release	100 bbls	Volume Recovered	15 bbls
Source of Release	Injection Line	Date and Hour of Occurrence	8/22/11	Date and Hour of Discovery	8/22/11
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Terry Gregston - BLM		
By Whom?	Date and Hour 8/22/11				
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.*

The injection line to the injection well ruptured at the buried 'T' intersection affecting 12,383 sq ft of pasture land. A total of 100 bbls of produced water was released and a total of 15 bbls of produced water was recovered.

Describe Area Affected and Cleanup Action Taken.*

The site will be assessed vertically and horizontally and a Corrective Action Plan will be written with recommendations to remediate the site.

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.

OIL CONSERVATION DIVISION

Signature: *Fred B Wall*

Printed Name: Brian Wall

Title: Construction Foreman II

E-mail Address: Bwall@linenergy.com

Date: Phone: (806) 367-0645

Approved by Environmental Specialist:


Approval Date:

Expiration Date:

Conditions of Approval:

Attached ☐

* 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

November 04, 2013

JACOB KAMPLAIN

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

419 W. CAIN

HOBBS, NM 88240

RE: J. L. KEEL A #11

Enclosed are the results of analyses for samples received by the laboratory on 10/28/13 16:20.

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.

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: 10/28/2013
 Reported: 11/04/2013
 Project Name: J. L. KEEL A #11
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 10/28/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: POINT 1 @ SURFACE (H302610-01)

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	10/29/2013	ND	2.02	101	2.00	0.429	
Toluene*	<0.050	0.050	10/29/2013	ND	2.00	100	2.00	0.174	
Ethylbenzene*	<0.050	0.050	10/29/2013	ND	2.00	99.8	2.00	0.532	
Total Xylenes*	<0.150	0.150	10/29/2013	ND	5.85	97.5	6.00	0.0606	
Total BTEx	<0.300	0.300	10/29/2013	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	10/29/2013	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	10/29/2013	ND	210	105	200	1.98	
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	202	101	200	1.03	

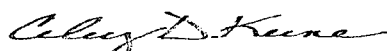
Surrogate: 1-Chlorooctane 95.5 % 65.2-140

Surrogate: 1-Chlorooctadecane 98.4 % 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: 10/28/2013
Reported: 11/04/2013
Project Name: J. L. KEEL A #11
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/28/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: POINT 2 @ SURFACE (H302610-02)

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	10/30/2013	ND	2.02	101	2.00	0.429	
Toluene*	<0.050	0.050	10/30/2013	ND	2.00	100	2.00	0.174	
Ethylbenzene*	<0.050	0.050	10/30/2013	ND	2.00	99.8	2.00	0.532	
Total Xylenes*	<0.150	0.150	10/30/2013	ND	5.85	97.5	6.00	0.0606	
Total BTEX	<0.300	0.300	10/30/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 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	224	16.0	10/29/2013	ND	416	104	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	10/29/2013	ND	199	99.5	200	3.71	
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	189	94.6	200	5.97	

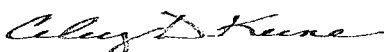
Surrogate: 1-Chlorooctane 96.8 % 65.2-140

Surrogate: 1-Chlorooctadecane 98.8 % 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: 10/28/2013
Reported: 11/04/2013
Project Name: J. L. KEEL A #11
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/28/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: POINT 3 @ SURFACE (H302610-03)

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	10/30/2013	ND	2.02	101	2.00	0.429	
Toluene*	<0.050	0.050	10/30/2013	ND	2.00	100	2.00	0.174	
Ethylbenzene*	<0.050	0.050	10/30/2013	ND	2.00	99.8	2.00	0.532	
Total Xylenes*	<0.150	0.150	10/30/2013	ND	5.85	97.5	6.00	0.0606	
Total BTEX	<0.300	0.300	10/30/2013	ND					

Surrogate: 4-Bromofluorobenzene (PII) 107 % 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	736	16.0	10/29/2013	ND	416	104	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	10/29/2013	ND	199	99.5	200	3.71		
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	189	94.6	200	5.97		

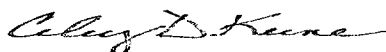
Surrogate: 1-Chlorooctane 95.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 95.9 % 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:	10/28/2013	Sampling Date:	10/28/2013
Reported:	11/04/2013	Sampling Type:	Soil
Project Name:	J. L. KEEL A #11	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: POINT 4 @ SURFACE (H302610-04)

BTX 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	10/30/2013	ND	2.02	101	2.00	0.429	
Toluene*	<0.050	0.050	10/30/2013	ND	2.00	100	2.00	0.174	
Ethylbenzene*	<0.050	0.050	10/30/2013	ND	2.00	99.8	2.00	0.532	
Total Xylenes*	<0.150	0.150	10/30/2013	ND	5.85	97.5	6.00	0.0606	
Total BTX	<0.300	0.300	10/30/2013	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	10/29/2013	ND	416	104	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	10/29/2013	ND	199	99.5	200	3.71		
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	189	94.6	200	5.97		

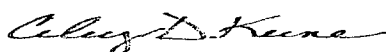
Surrogate: 1-Chlorooctane 106 % 65.2-140

Surrogate: 1-Chlorooctadecane 105 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

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

Received: 10/28/2013
Reported: 11/04/2013
Project Name: J. L. KEEL A #11
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/28/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: POINT 5 @ SURFACE (H302610-05)

BTX 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	10/30/2013	ND	2.02	101	2.00	0.429	
Toluene*	<0.050	0.050	10/30/2013	ND	2.00	100	2.00	0.174	
Ethylbenzene*	<0.050	0.050	10/30/2013	ND	2.00	99.8	2.00	0.532	
Total Xylenes*	<0.150	0.150	10/30/2013	ND	5.85	97.5	6.00	0.0606	
Total BTX	<0.300	0.300	10/30/2013	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	10/29/2013	ND	416	104	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	10/29/2013	ND	199	99.5	200	3.71	
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	189	94.6	200	5.97	


Surrogate: 1-Chlorooctane 97.4 % 65.2-140

Surrogate: 1-Chlorooctadecane 96.9 % 63.6-154

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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: 10/28/2013
Reported: 11/04/2013
Project Name: J. L. KEEL A #11
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/28/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: POINT 6 @ SURFACE (H302610-06)

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	10/30/2013	ND	2.02	101	2.00	0.429		
Toluene*	<0.050	0.050	10/30/2013	ND	2.00	100	2.00	0.174		
Ethylbenzene*	<0.050	0.050	10/30/2013	ND	2.00	99.8	2.00	0.532		
Total Xylenes*	<0.150	0.150	10/30/2013	ND	5.85	97.5	6.00	0.0606		
Total BTEx	<0.300	0.300	10/30/2013	ND						

Surrogate: 4-Bromofluorobenzene (PI) 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	10/29/2013	ND	416	104	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	10/29/2013	ND	199	99.5	200	3.71		
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	189	94.6	200	5.97		

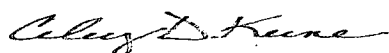
Surrogate: 1-Chlorooctane 92.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 89.9 % 63.6-154

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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: 10/28/2013
Reported: 11/04/2013
Project Name: J. L. KEEL A #11
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/28/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: POINT 7 @ SURFACE (H302610-07)

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	10/30/2013	ND	2.02	101	2.00	0.429		
Toluene*	<0.050	0.050	10/30/2013	ND	2.00	100	2.00	0.174		
Ethylbenzene*	<0.050	0.050	10/30/2013	ND	2.00	99.8	2.00	0.532		
Total Xylenes*	<0.150	0.150	10/30/2013	ND	5.85	97.5	6.00	0.0606		
Total BTEX	<0.300	0.300	10/30/2013	ND						

Surrogate: 4-Bromofluorobenzene (PI) 104 % 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	208	16.0	10/29/2013	ND	416	104	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	10/29/2013	ND	199	99.5	200	3.71		
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	189	94.6	200	5.97		

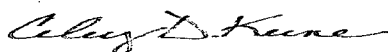
Surrogate: 1-Chlorooctane 97.6 % 65.2-140

Surrogate: 1-Chlorooctadecane 96.4 % 63.6-154

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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:	10/28/2013	Sampling Date:	10/28/2013
Reported:	11/04/2013	Sampling Type:	Soil
Project Name:	J. L. KEEL A #11	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: POINT 8 @ SURFACE (H302610-08)

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	11/01/2013	ND	2.06	103	2.00	0.153		
Toluene*	<0.050	0.050	11/01/2013	ND	2.05	103	2.00	0.309		
Ethylbenzene*	<0.050	0.050	11/01/2013	ND	2.07	104	2.00	0.301		
Total Xylenes*	<0.150	0.150	11/01/2013	ND	5.96	99.4	6.00	0.106		
Total BTEX	<0.300	0.300	11/01/2013	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	976	16.0	10/29/2013	ND	416	104	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	10/29/2013	ND	199	99.5	200	3.71		
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	189	94.6	200	5.97		

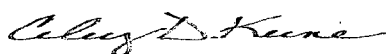
Surrogate: 1-Chlorooctane 100 % 65.2-140

Surrogate: 1-Chlorooctadecane 98.1 % 63.6-154

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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: 10/28/2013
Reported: 11/04/2013
Project Name: J. L. KEEL A #11
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/28/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: POINT 9 @ SURFACE (H302610-09)

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	11/01/2013	ND	2.06	103	2.00	0.153	
Toluene*	<0.050	0.050	11/01/2013	ND	2.05	103	2.00	0.309	
Ethylbenzene*	<0.050	0.050	11/01/2013	ND	2.07	104	2.00	0.301	
Total Xylenes*	<0.150	0.150	11/01/2013	ND	5.96	99.4	6.00	0.106	
Total BTEX	<0.300	0.300	11/01/2013	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	
Chloride	3640	16.0	10/29/2013	ND	416	104	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	10/29/2013	ND	199	99.5	200	3.71	
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	189	94.6	200	5.97	

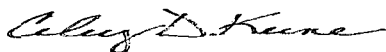
Surrogate: 1-Chlorooctane 95.5 % 65.2-140

Surrogate: 1-Chlorooctadecane 93.6 % 63.6-154

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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: 10/28/2013
Reported: 11/04/2013
Project Name: J. L. KEEL A #11
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/28/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: POINT 10 @ SURFACE (H302610-10)

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	11/01/2013	ND	2.06	103	2.00	0.153	
Toluene*	<0.050	0.050	11/01/2013	ND	2.05	103	2.00	0.309	
Ethylbenzene*	<0.050	0.050	11/01/2013	ND	2.07	104	2.00	0.301	
Total Xylenes*	<0.150	0.150	11/01/2013	ND	5.96	99.4	6.00	0.106	
Total BTEX	<0.300	0.300	11/01/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 106 % 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	10/29/2013	ND	416	104	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	10/29/2013	ND	199	99.5	200	3.71	
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	189	94.6	200	5.97	

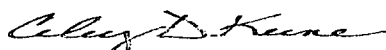
Surrogate: 1-Chlorooctane 87.8 % 65.2-140

Surrogate: 1-Chlorooctadecane 91.7 % 63.6-154

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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: 10/28/2013
Reported: 11/04/2013
Project Name: J. L. KEEL A #11
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/28/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: POINT 11 @ SURFACE (H302610-11)

BTX 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	11/01/2013	ND	2.06	103	2.00	0.153	
Toluene*	<0.050	0.050	11/01/2013	ND	2.05	103	2.00	0.309	
Ethylbenzene*	<0.050	0.050	11/01/2013	ND	2.07	104	2.00	0.301	
Total Xylenes*	<0.150	0.150	11/01/2013	ND	5.96	99.4	6.00	0.106	
Total BTX	<0.300	0.300	11/01/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 107 % 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	48.0	16.0	10/29/2013	ND	416	104	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	10/29/2013	ND	199	99.5	200	3.71	
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	189	94.6	200	5.97	

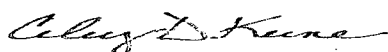
Surrogate: 1-Chlorooctane 92.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 94.1 % 63.6-154

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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: 10/28/2013
Reported: 11/04/2013
Project Name: J. L. KEEL A #11
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/28/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: POINT 12 @ SURFACE (H302610-12)

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	11/01/2013	ND	2.06	103	2.00	0.153	
Toluene*	<0.050	0.050	11/01/2013	ND	2.05	103	2.00	0.309	
Ethylbenzene*	<0.050	0.050	11/01/2013	ND	2.07	104	2.00	0.301	
Total Xylenes*	<0.150	0.150	11/01/2013	ND	5.96	99.4	6.00	0.106	
Total BTEX	<0.300	0.300	11/01/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 106 % 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	10/29/2013	ND	416	104	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	10/29/2013	ND	199	99.5	200	3.71	
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	189	94.6	200	5.97	

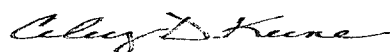
Surrogate: 1-Chlorooctane 89.4 % 65.2-140

Surrogate: 1-Chlorooctadecane 93.0 % 63.6-154

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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: 10/28/2013
Reported: 11/04/2013
Project Name: J. L. KEEL A #11
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/28/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: POINT 13 @ SURFACE (H302610-13)

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	11/01/2013	ND	2.06	103	2.00	0.153	
Toluene*	<0.050	0.050	11/01/2013	ND	2.05	103	2.00	0.309	
Ethylbenzene*	<0.050	0.050	11/01/2013	ND	2.07	104	2.00	0.301	
Total Xylenes*	<0.150	0.150	11/01/2013	ND	5.96	99.4	6.00	0.106	
Total BTEx	<0.300	0.300	11/01/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 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	10/29/2013	ND	416	104	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	10/29/2013	ND	199	99.5	200	3.71	
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	189	94.6	200	5.97	

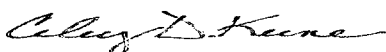
Surrogate: 1-Chlorooctane 85.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 87.0 % 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:	10/28/2013	Sampling Date:	10/28/2013
Reported:	11/04/2013	Sampling Type:	Soil
Project Name:	J. L. KEEL A #11	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: POINT 14 @ SURFACE (H302610-14)

BTX 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	11/01/2013	ND	2.06	103	2.00	0.153	
Toluene*	<0.050	0.050	11/01/2013	ND	2.05	103	2.00	0.309	
Ethylbenzene*	<0.050	0.050	11/01/2013	ND	2.07	104	2.00	0.301	
Total Xylenes*	<0.150	0.150	11/01/2013	ND	5.96	99.4	6.00	0.106	
Total BTX	<0.300	0.300	11/01/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 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	10/29/2013	ND	416	104	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	10/29/2013	ND	199	99.5	200	3.71	
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	189	94.6	200	5.97	

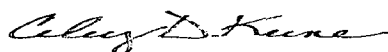
Surrogate: 1-Chlorooctane 89.5 % 65.2-140

Surrogate: 1-Chlorooctadecane 94.8 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

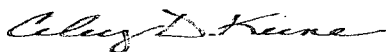
Notes and Definitions

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

BILL TO						ANALYSIS REQUEST																				
Company Name: RECS									P.O. #:																	
Project Manager: Jacob Kamplain									Company:																	
Address:									Attn:																	
City: Hobbs			State: NM			Zip: 88240			Address:																	
Phone #:			Fax #:			Project Owner:			City:																	
Project Name:									State:	Zip:																
Project Location: J.L. Kee I A #11									Phone #:																	
Sampler Name: Kyle Schnaidt									Fax #:																	
FOR LAB USE ONLY		Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP. # CONTAINERS	MATRIX					PRESERV.		SAMPLING		Chlorides TPH 8015 M BTEX Texas TPH Complete Cations/Anions TDS										
GROUNDEWATER	WASTEWATER	SOIL	OIL	SOLIDS	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME																
H30261D																										
1	Point 1 @ surface	G	I	X						X				10-25-13	2:15	X	X	X								
2	Point 2 @ surface	G	I	X						X					2:20	X	X	X								
3	Point 3 @ surface	G	I	X						X					2:25	X	X	X								
4	Point 4 @ surface	G	I	X						X					2:30	X	X	X								
5	Point 5 @ surface	G	I	X						X					2:35	X	X	X								
6	Point 6 @ surface	G	I	X						X					2:40	X	X	X								
7	Point 7 @ surface	G	I	X						X					2:45	X	X	X								
8	Point 8 @ surface	G	I	X						X					2:50	X	X	X								
9	Point 9 @ surface	G	I	X						X					2:55	X	X	X								
10	Point 10 @ surface	G	I	X						X					3:00	X	X	X								

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Relinquished By:
 Kyle Schnaidt
Date: 10-28-13
Time: 4:20

Received By:

Date:
Time:

Phone Result: ☐ Yes ☒ No Add'l Phone #: _____
Fax Result: ☐ Yes ☒ No Add'l Fax #: _____
REMARKS:
 kschnaidt@rice-ecs.com
 Knorman@rice-ecs.com
 KJones@riceswd.com; jkamplain@rice-ecs.com
 hconder@rice-ecs.com; Lweinheimer@rice-ecs.com

Delivered By: (Circle One)
 Sampler - UPS - Bus - Other:

Sample Condition
 Cool Intact
☒ Yes ☐ No ☐ Yes ☐ No

CHECKED BY:
 Initials:

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

#54



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 18 of 18

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Relinquished By:	Date: 10-28-15	Received By:	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Phone #:
Kyle Schnaidt	Time: 4:20	Jodi Henson	Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:
	Time:		kschnaidt@rice-ecs.com Knorman@rice-ecs.com Kjones@riceswd.com; jkamplain@rice-ecs.com hconder@rice-ecs.com; Lweinheimer@rice-ecs.com
Delivered By: (Circle One)	Sample Condition		CHECKED BY:
Sampler - UPS - Bus - Other:	Cool Intact	No Yes	(Initials) <i>[Signature]</i>
	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> No	

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2176

#54

November 06, 2013

JACOB KAMPLAIN

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

419 W. CAIN

HOBBS, NM 88240

RE: J. L. KEEL A #11

Enclosed are the results of analyses for samples received by the laboratory on 10/29/13 16:27.

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.

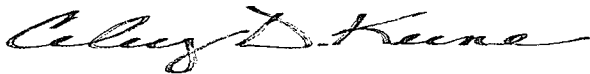
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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,



Caley 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: 10/29/2013
Reported: 11/06/2013
Project Name: J. L. KEEL A #11
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/29/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: POINT 9 @ 6" (H302629-01)

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	11/01/2013	ND	2.06	103	2.00	0.153	
Toluene*	<0.050	0.050	11/01/2013	ND	2.05	103	2.00	0.309	
Ethylbenzene*	<0.050	0.050	11/01/2013	ND	2.07	104	2.00	0.301	
Total Xylenes*	<0.150	0.150	11/01/2013	ND	5.96	99.4	6.00	0.106	
Total BTEX	<0.300	0.300	11/01/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 106 % 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	528	16.0	10/30/2013	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	10/30/2013	ND	199	99.5	200	3.71	
DRO >C10-C28	<10.0	10.0	10/30/2013	ND	189	94.6	200	5.97	

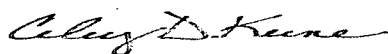
Surrogate: 1-Chlorooctane 74.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 76.5 % 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: 10/29/2013
Reported: 11/06/2013
Project Name: J. L. KEEL A #11
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/29/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: POINT 9 @ 1' (H302629-02)

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	11/01/2013	ND	2.06	103	2.00	0.153		
Toluene*	<0.050	0.050	11/01/2013	ND	2.05	103	2.00	0.309		
Ethylbenzene*	<0.050	0.050	11/01/2013	ND	2.07	104	2.00	0.301		
Total Xylenes*	<0.150	0.150	11/01/2013	ND	5.96	99.4	6.00	0.106		
Total BTEX	<0.300	0.300	11/01/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 106 % 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	192	16.0	10/30/2013	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	10/30/2013	ND	199	99.5	200	3.71		
DRO >C10-C28	<10.0	10.0	10/30/2013	ND	189	94.6	200	5.97		

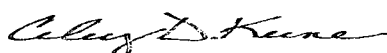
Surrogate: 1-Chlorooctane 80.4 % 65.2-140

Surrogate: 1-Chlorooctadecane 83.1 % 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:	10/29/2013	Sampling Date:	10/29/2013
Reported:	11/06/2013	Sampling Type:	Soil
Project Name:	J. L. KEEL A #11	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: POINT 9 @ 1.5' (H302629-03)

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	11/01/2013	ND	2.06	103	2.00	0.153	
Toluene*	<0.050	0.050	11/01/2013	ND	2.05	103	2.00	0.309	
Ethylbenzene*	<0.050	0.050	11/01/2013	ND	2.07	104	2.00	0.301	
Total Xylenes*	<0.150	0.150	11/01/2013	ND	5.96	99.4	6.00	0.106	
Total BTEX	<0.300	0.300	11/01/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 107 % 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	64.0	16.0	10/30/2013	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	10/30/2013	ND	199	99.5	200	3.71	
DRO >C10-C28	<10.0	10.0	10/30/2013	ND	189	94.6	200	5.97	

Surrogate: 1-Chlorooctane 82.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 86.2 % 63.6-154

Cardinal Laboratories

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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: 10/29/2013
Reported: 11/06/2013
Project Name: J. L. KEEL A #11
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/29/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: POINT 3 @ 6" (H302629-04)
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	11/01/2013	ND	2.06	103	2.00	0.153	
Toluene*	<0.050	0.050	11/01/2013	ND	2.05	103	2.00	0.309	
Ethylbenzene*	<0.050	0.050	11/01/2013	ND	2.07	104	2.00	0.301	
Total Xylenes*	<0.150	0.150	11/01/2013	ND	5.96	99.4	6.00	0.106	
Total BTEX	<0.300	0.300	11/01/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 107 % 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	800	16.0	10/30/2013	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	10/30/2013	ND	199	99.5	200	3.71	
DRO >C10-C28	<10.0	10.0	10/30/2013	ND	189	94.6	200	5.97	

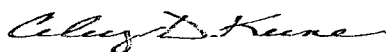
Surrogate: 1-Chlorooctane 84.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 86.7 % 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: 10/29/2013
Reported: 11/06/2013
Project Name: J. L. KEEL A #11
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/29/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: POINT 3 @ 1' (H302629-05)

BTX 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	11/01/2013	ND	2.06	103	2.00	0.153		
Toluene*	<0.050	0.050	11/01/2013	ND	2.05	103	2.00	0.309		
Ethylbenzene*	<0.050	0.050	11/01/2013	ND	2.07	104	2.00	0.301		
Total Xylenes*	<0.150	0.150	11/01/2013	ND	5.96	99.4	6.00	0.106		
Total BTX	<0.300	0.300	11/01/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 106 % 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	752	16.0	10/30/2013	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	10/30/2013	ND	191	95.5	200	2.85		
DRO >C10-C28	<10.0	10.0	10/30/2013	ND	181	90.4	200	2.73		

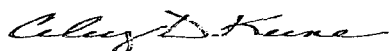
Surrogate: 1-Chlorooctane 96.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 104 % 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: 10/29/2013
Reported: 11/06/2013
Project Name: J. L. KEEL A #11
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/29/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: POINT 8 @ 6" (H302629-06)

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	11/04/2013	ND	2.14	107	2.00	0.0370	
Toluene*	<0.050	0.050	11/04/2013	ND	2.13	107	2.00	0.437	
Ethylbenzene*	<0.050	0.050	11/04/2013	ND	2.15	107	2.00	0.656	
Total Xylenes*	<0.150	0.150	11/04/2013	ND	6.29	105	6.00	0.890	
Total BTEx	<0.300	0.300	11/04/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 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	10/30/2013	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	10/30/2013	ND	191	95.5	200	2.85	
DRO >C10-C28	<10.0	10.0	10/30/2013	ND	181	90.4	200	2.73	

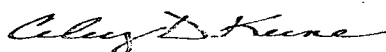
Surrogate: 1-Chlorooctane 95.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 96.4 % 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: 10/29/2013
Reported: 11/06/2013
Project Name: J. L. KEEL A #11
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 10/29/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: POINT 8 @ 1' (H302629-07)

BTX 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	11/04/2013	ND	2.14	107	2.00	0.0370	
Toluene*	<0.050	0.050	11/04/2013	ND	2.13	107	2.00	0.437	
Ethylbenzene*	<0.050	0.050	11/04/2013	ND	2.15	107	2.00	0.656	
Total Xylenes*	<0.150	0.150	11/04/2013	ND	6.29	105	6.00	0.890	
Total BTX	<0.300	0.300	11/04/2013	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	10/30/2013	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	10/30/2013	ND	191	95.5	200	2.85	
DRO >C10-C28	<10.0	10.0	10/30/2013	ND	181	90.4	200	2.73	

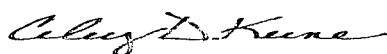
Surrogate: 1-Chlorooctane 89.2 % 65.2-140

Surrogate: 1-Chlorooctadecane 95.8 % 63.6-154

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

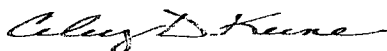
Notes and Definitions

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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Caley D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: RECS				BILL TO				ANALYSIS REQUEST																		
Project Manager: Jacob Kamplain				P.O. #:																						
Address:				Company:																						
City: Hobbs State: NM Zip: 88240				Attn:																						
Phone #: Fax #:				Address:																						
Project #: Project Owner:				City:																						
Project Name:				State: Zip:																						
Project Location: J.L. Keel A #11				Phone #:																						
Sampler Name: Kyle Schnaidt				Fax #:																						
FOR LAB USE ONLY																										
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.	SAMPLING		Chlorides TPH 8015 M BTEX Texas TPH Complete Cations/Anions TDS											
						GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :											DATE	TIME
H302629																										
1 Point 9 @ 6"				6	1			X					X												10-29-93	11:15
2 Point 9 @ 1'				6	1			X					X													11:20
3 Point 9 @ 1.5'				6	1			X					X													11:25
4 Point 3 @ 6"				6	1			X					X													11:30
5 Point 3 @ 1'				6	1			X					X													12:35
6 Point 8 @ 6"				6	1			X					X													11:35
7 Point 8 @ 1'				6	1			X					X			12:30										
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Relinquished By: Kyle Schnaidt		Date: 10-29-93 Time: 4:27		Received By: Jodi Henson		Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Phone #: Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Fax #: REMARKS: kschnaidt@rice-ecs.com Knorman@rice-ecs.com Kjones@riceswd.com; jkamplain@rice-ecs.com hconder@rice-ecs.com; Lweinheimer@rice-ecs.com																				
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Date: Time:		Received By:		CHECKED BY: 4.90c																				

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

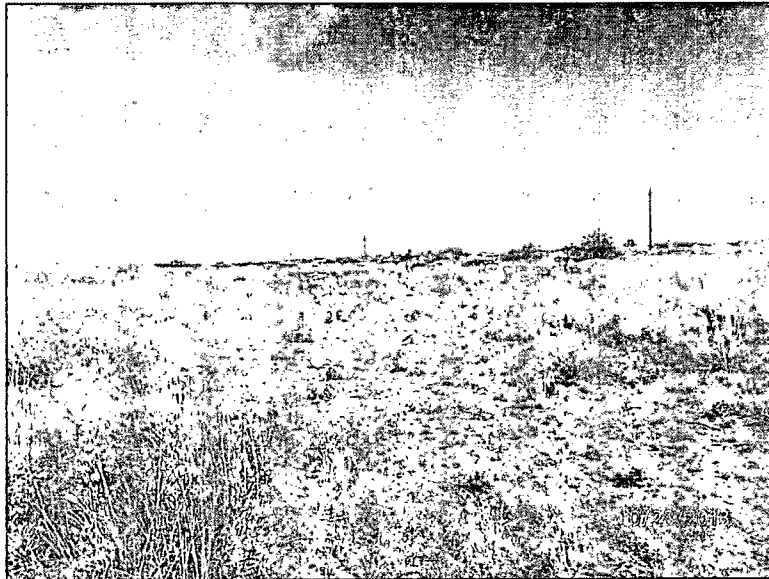
~~#A~~ 54

Appendix C

Photo Documentation

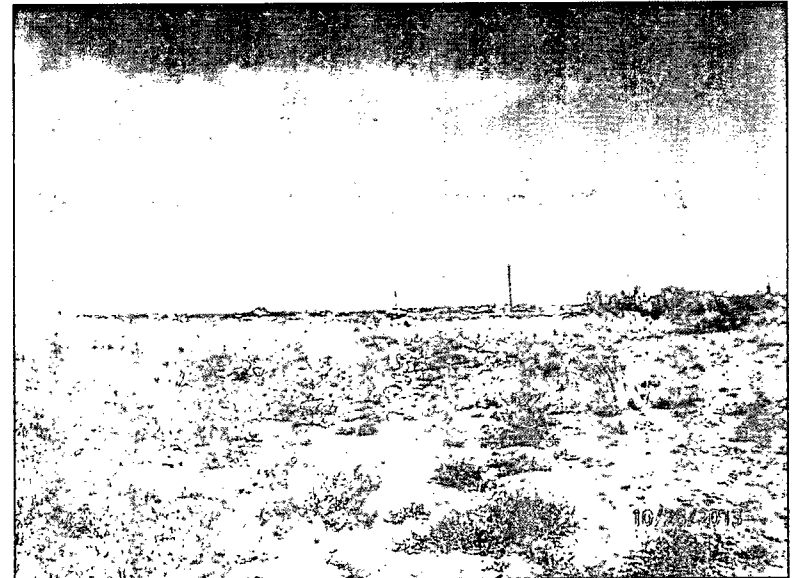
RICE Environmental Consulting and Safety (RECS)
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

Linn J.L. Keel A #11
Unit Letter H, Section 7, T17S, R31E



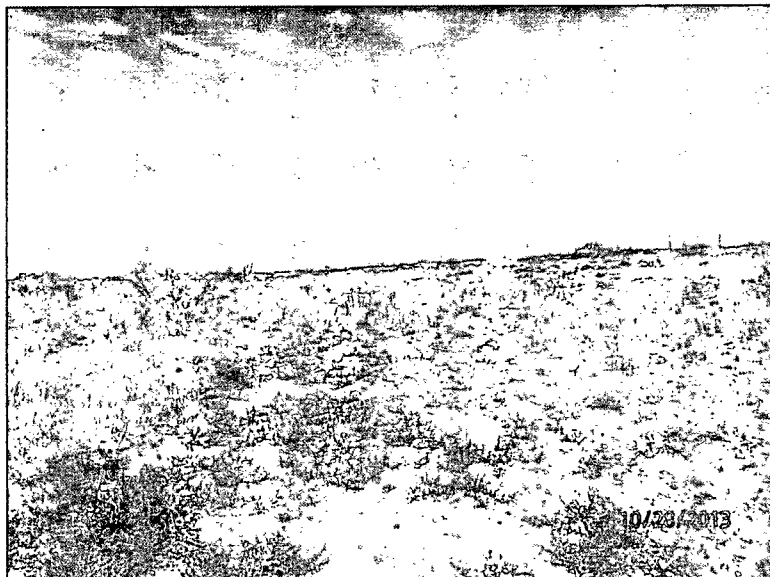
Initial release area, facing north

10/28/13



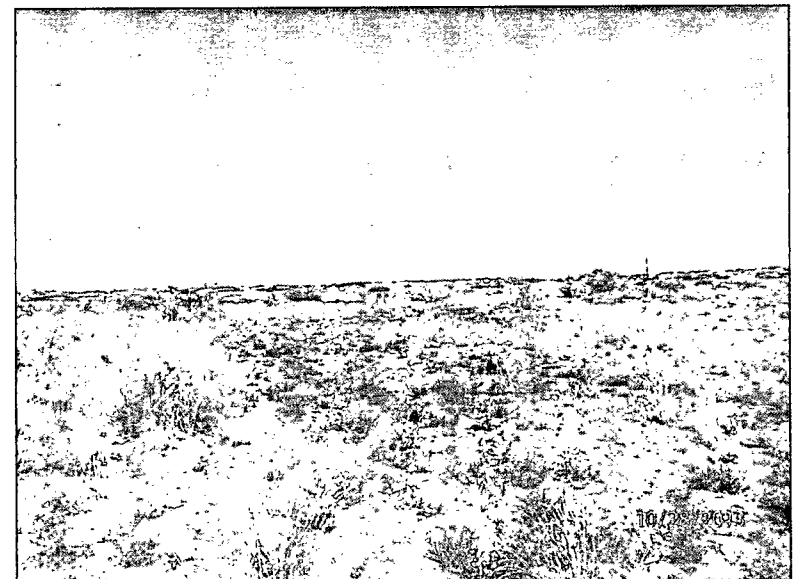
Initial release area, facing north

10/28/13



Initial release area, facing north

10/28/13



Initial release area, facing south

10/28/13