



JL Keel B #077

CLOSURE REPORT

API No. 30-015-28279

Release Date: July 7, 2012

Unit Letter H, Section 8, Township 17 South, Range 31 East

NMOCD Case #: 2R-1233

July 7, 2016

Prepared by:

Laura Flores
Environmental Department
Diversified Field Service, Inc.
206 W. Snyder
Hobbs, NM 88240
Phone: (575)964-8394
Fax: (575)393-8396

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JL Keel B #077

1 INTRODUCTION

Linn Energy (Linn) has retained Diversified Environmental (DFSI) to address environmental issues for the site detailed herein.

The site is located west of Maljamar, NM, in Eddy County. The release resulted from a produced water leak from a buried 2" injection line. A total of approximately 21 barrels of produced water was released with none recovered. The impacted area is located on the pad and into the pasture area southwest of the site. An initial C-141 was submitted to the NMOCD on July 13, 2012 (Appendix I).

2 SITE ACTIVITIES

Beginning August 5, 2013, DFSI personnel were on site to obtain samples within the leak area (Figure 1). Ten samples were obtained and field sampled for chloride levels, as well as BTEX. The BTEX samples were performed using a Mini Rae Photoionization Detector (PID). All clean field samples under NMOCD and BLM regulatory guidelines were submitted for laboratory analysis at Cardinal Laboratories of Hobbs, NM to obtain confirmation (Appendix II).

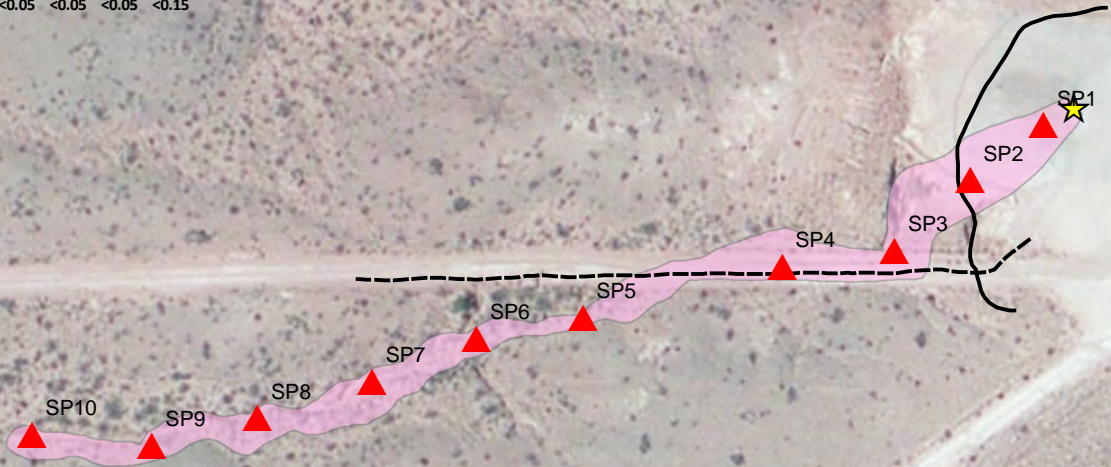
A work plan was submitted to BLM and NMOCD on November 25, 2015, and approved by NMOCD on December 2, 2015 and by BLM on February 3, 2016. Beginning May 5, 2016, DFSI personnel were on site to excavate the release area to 1' bgs around SP1 and SP2 and to 3.5' bgs at SP4. The excavated area on the pad was backfilled to ground surface with clean imported caliche and contoured to the surrounding area. Within the pasture area, erosion controls were installed to naturally backfill the arroyo during rain events. Contaminated soil was properly disposed of at an NMOCD approved facility (Appendix III).

3 CONCLUSION

According to the U.S. Geological Survey and the NM Office of the State Engineer, the site is located within a known area of no groundwater. Based on the report and work completed, any remaining chloride, TPH and BTEX components in the vadose zone will not affect groundwater beneath this site, with vegetation expected to return to normal; therefore, DFSI, on behalf of Linn, submits the final C-141 (Appendix IV) and respectfully requests the closure of this regulatory file.

Soil Delineation

SP1										SP2										SP3									
Depth	CI-	PID	Lab CI-	GRO	DRO	B	T	E	X	Depth	CI-	PID	Lab CI-	GRO	DRO	B	T	E	X	Depth	CI-	Lab CI-	GRO	DRO	B	T	E	X	
SS	874	0.1	48	<10	11.1	<0.05	<0.05	<0.05	<0.15	SS	799	0.3	<16	<10	<10	<0.05	<0.05	<0.05	<0.15	SS	333	<16	<10	<10	<0.05	<0.05	<0.05	<0.15	
1'	549	0.1								1'	524	0.1								1'	346								
2'	699	0.2								2'	499	0.1	64	<10	<10	<0.05	<0.05	<0.05	<0.15	2'	354	48	<10	<10	<0.05	<0.05	<0.05	<0.15	
3'	624	0.2																		3'	310								
SP4										SP5										SP6									
Depth	CI-	Lab CI-	GRO	DRO	B	T	E	X		Depth	CI-	Lab CI-	GRO	DRO	B	T	E	X		Depth	CI-	PID	Lab CI-	GRO	DRO	B	T	E	X
SS	249	<16	<10	<10	<0.05	<0.05	<0.05	<0.15		SS	354	<16	<10	<10	<0.05	<0.05	<0.05	<0.15		SS	#	0.1	<16	<10	<10	<0.05	<0.05	<0.05	<0.15
1'	249									1'	343	<16	<10	<10	<0.05	<0.05	<0.05	<0.15		1'	#	0.1							
2'	249									2'	417									2'	#	0.1							
3'	3748	2960	<10	<10	<0.05	<0.05	<0.05	<0.15												3'	#	0.1							
4'	199																			4'	#								
5'	324	<16	<10	<10	<0.05	<0.05	<0.05	<0.15												5'	#		224	<10	<10	<0.05	<0.05	<0.05	<0.15
SP7										SP8										SP9									
Depth	CI-	PID	Lab CI-	GRO	DRO	B	T	E	X	Depth	CI-	PID	Lab CI-	GRO	DRO	B	T	E	X	Depth	CI-	Lab CI-	GRO	DRO	B	T	E	X	
SS	320	0.1	<16	<10	<10	<0.05	<0.05	<0.05	<0.15	SS	699	0.1	<16	<10	<10	<0.05	<0.05	<0.05	<0.15	SS	350	<16	<10	<10	<0.05	<0.05	<0.05	<0.15	
1'	524	0.2								1'	549	0.2								1'	34	<16	<10	<10	<0.05	<0.05	<0.05	<0.15	
2'	549	0.1								2'	524	0.1	48				<0.05	<0.05	<0.05	<0.15									
3'	1315									3'	374	0.2	384				<0.05	<0.05	<0.05	<0.15									
4'	361		96	<10	<10	<0.05	<0.05	<0.05	<0.15	4'	474		256	<10	26.4	<0.05	<0.05	<0.05	<0.15										
SP10																													
Depth	CI-	Lab CI-	GRO	DRO	B	T	E	X																					
SS	382	112	<10	<10	<0.05	<0.05	<0.05	<0.15																					



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

▲ Sample Points

★ Source

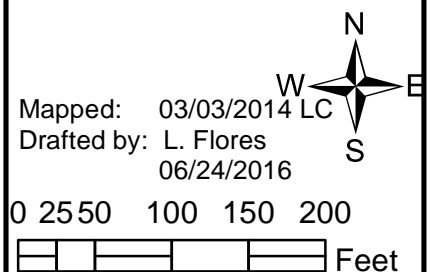
— Above Ground Line

----- Buried Line

Produced Water (18215 sq ft)



Linn
JL Keel B #077
Unit Letter H, Sec. 8, T17S, R31E
Eddy County, NM
API #: 30-015-28279
NMOCD Case #: 2R-1233



Appendix I

INITIAL C-141

Diversified Field Service, Inc.
206 W. Snyder
Hobbs, NM 88240
(575) 964-8394

REVISED

RECEIVED

JUL 16 2012

Form C-141

Revised October 10, 2003

NMOCD ARTESIA

Submit Copy to appropriate District Office in accordance with 19.15.29 NMAC

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

Release Notification and Corrective Action

nJMW12214 29082

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Linn Operating	Contact: Joe Hernandez
Address: 2130 W. Bender Hobbs, NM 88240	Telephone No.: 575-738-1739
Facility Name: JL Keel B #77	Facility Type: Injection

Surface Owner: Federal	Mineral Owner: Federal	API No.: 3001528279
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LOCATION OF RELEASE

Unit Letter H	Section 08	Township 17S	Range 31E	Feet from the 1930	North/South Line North	Feet from the 714	East/West Line East	County Eddy
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Latitude: 32.85099 Longitude: -103.88486

NATURE OF RELEASE

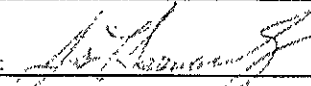
Type of Release: Produced Water	Volume of Release: 21	Volume Recovered: 0
Source of Release: Pipeline	Date and Hour of Occurrence 07/07/2012 1pm	Date and Hour of Discovery: 07/07/2012 1:30pm
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? M. Bratcher-NM OCD Terry Gregston-BLM	
By Whom? Joe Hernandez	Date and Hour 07/09/2012 9am	
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.*: Drove to location, noticed water coming out of ground from 2" fiberglass injection line. Went to Keel B #76 well to close valve to isolate line.

Describe Area Affected and Cleanup Action Taken *. 2' x 300yd Cleanup action pending....

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: 	OIL CONSERVATION DIVISION	
Printed Name: Joe Hernandez	Approved by District Supervisor: <u>Signed By Mike Hernandez</u>	
Title: Production Foreman	Approval Date: AUG 01 2012	Expiration Date:
E-mail Address: jhernandez@linnenergy.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 07/13/2012 Phone: 575-942-9492		

* Attach Additional Sheets If Necessary

Remediation per OCD Rules &
Guidelines. **SUBMIT REMEDIATION
PROPOSAL NOT LATER THAN:**

9/1/12

2RP-1233

Appendix II

LABORATORY ANALYSIS

Diversified Field Service, Inc.
206 W. Snyder
Hobbs, NM 88240
(575) 964-8394

August 19, 2013

BRIAN WALL

LINN ENERGY

RR1, BOX 24 B

KINGFISHER, OK 73750

RE: J. L. KEEL B #77

Enclosed are the results of analyses for samples received by the laboratory on 08/14/13 15:17.

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,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

LINN ENERGY
 BRIAN WALL
 RR1, BOX 24 B
 KINGFISHER OK, 73750
 Fax To: (405) 375-6693

Received: 08/14/2013
 Reported: 08/19/2013
 Project Name: J. L. KEEL B #77
 Project Number: NONE GIVEN
 Project Location: MALJAMAR, NM

Sampling Date: 08/05/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: SP 5 @ 1' (H301931-01)

BTEX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/16/2013	ND	2.03	102	2.00	3.04	
Toluene*	<0.050	0.050	08/16/2013	ND	2.08	104	2.00	2.63	
Ethylbenzene*	<0.050	0.050	08/16/2013	ND	2.02	101	2.00	1.95	
Total Xylenes*	<0.150	0.150	08/16/2013	ND	6.03	101	6.00	1.89	
Total BTEX	<0.300	0.300	08/16/2013	ND					

Surrogate: Dibromofluoromethane 95.1 % 61.3-142

Surrogate: Toluene-d8 102 % 71.3-129

Surrogate: 4-Bromofluorobenzene 106 % 65.7-141

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	08/15/2013	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	08/16/2013	ND	172	86.2	200	3.38	
DRO >C10-C28	<10.0	10.0	08/16/2013	ND	185	92.6	200	2.28	

Surrogate: 1-Chlorooctane 84.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 97.5 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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LINN ENERGY
 BRIAN WALL
 RR1, BOX 24 B
 KINGFISHER OK, 73750
 Fax To: (405) 375-6693

Received: 08/14/2013
 Reported: 08/19/2013
 Project Name: J. L. KEEL B #77
 Project Number: NONE GIVEN
 Project Location: MALJAMAR, NM

Sampling Date: 08/05/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: SP 2 @ 2' (H301931-02)

BTEx 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/16/2013	ND	2.03	102	2.00	3.04	
Toluene*	<0.050	0.050	08/16/2013	ND	2.08	104	2.00	2.63	
Ethylbenzene*	<0.050	0.050	08/16/2013	ND	2.02	101	2.00	1.95	
Total Xylenes*	<0.150	0.150	08/16/2013	ND	6.03	101	6.00	1.89	
Total BTEx	<0.300	0.300	08/16/2013	ND					

Surrogate: Dibromofluoromethane 95.4 % 61.3-142
 Surrogate: Toluene-d8 102 % 71.3-129
 Surrogate: 4-Bromofluorobenzene 101 % 65.7-141

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	08/15/2013	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	08/16/2013	ND	172	86.2	200	3.38	
DRO >C10-C28	<10.0	10.0	08/16/2013	ND	185	92.6	200	2.28	

Surrogate: 1-Chlorooctane 95.8 % 65.2-140
 Surrogate: 1-Chlorooctadecane 112 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

LINN ENERGY
BRIAN WALL
RR1, BOX 24 B
KINGFISHER OK, 73750
Fax To: (405) 375-6693

Received: 08/14/2013
Reported: 08/19/2013
Project Name: J. L. KEEL B #77
Project Number: NONE GIVEN
Project Location: MALJAMAR, NM

Sampling Date: 08/05/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

Sample ID: SP 3 @ 2' (H301931-03)

BTX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/16/2013	ND	2.03	102	2.00	3.04	
Toluene*	<0.050	0.050	08/16/2013	ND	2.08	104	2.00	2.63	
Ethylbenzene*	<0.050	0.050	08/16/2013	ND	2.02	101	2.00	1.95	
Total Xylenes*	<0.150	0.150	08/16/2013	ND	6.03	101	6.00	1.89	
Total BTX	<0.300	0.300	08/16/2013	ND					

Surrogate: Dibromofluoromethane 94.2 % 61.3-142

Surrogate: Toluene-d8 102 % 71.3-129

Surrogate: 4-Bromofluorobenzene 103 % 65.7-141

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	08/15/2013	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	08/16/2013	ND	172	86.2	200	3.38	
DRO >C10-C28	<10.0	10.0	08/16/2013	ND	185	92.6	200	2.28	

Surrogate: 1-Chlorooctane 86.0 % 65.2-140

Surrogate: 1-Chlorooctadecane 98.6 % 63.6-154

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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 RR1, BOX 24 B
 KINGFISHER OK, 73750
 Fax To: (405) 375-6693

Received: 08/14/2013
 Reported: 08/19/2013
 Project Name: J. L. KEEL B #77
 Project Number: NONE GIVEN
 Project Location: MALJAMAR, NM

Sampling Date: 08/05/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: SP 4 @ 3' (H301931-04)

BTX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/16/2013	ND	2.03	102	2.00	3.04	
Toluene*	<0.050	0.050	08/16/2013	ND	2.08	104	2.00	2.63	
Ethylbenzene*	<0.050	0.050	08/16/2013	ND	2.02	101	2.00	1.95	
Total Xylenes*	<0.150	0.150	08/16/2013	ND	6.03	101	6.00	1.89	
Total BTX	<0.300	0.300	08/16/2013	ND					

Surrogate: Dibromofluoromethane 96.9 % 61.3-142

Surrogate: Toluene-d8 102 % 71.3-129

Surrogate: 4-Bromofluorobenzene 102 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2960	16.0	08/15/2013	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	08/16/2013	ND	172	86.2	200	3.38	
DRO >C10-C28	<10.0	10.0	08/16/2013	ND	185	92.6	200	2.28	

Surrogate: 1-Chlorooctane 93.2 % 65.2-140

Surrogate: 1-Chlorooctadecane 103 % 63.6-154

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

LINN ENERGY
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 RR1, BOX 24 B
 KINGFISHER OK, 73750
 Fax To: (405) 375-6693

Received: 08/14/2013
 Reported: 08/19/2013
 Project Name: J. L. KEEL B #77
 Project Number: NONE GIVEN
 Project Location: MALJAMAR, NM

Sampling Date: 08/06/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: SP 7 @ 4' (H301931-05)

BTX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/16/2013	ND	2.03	102	2.00	3.04	
Toluene*	<0.050	0.050	08/16/2013	ND	2.08	104	2.00	2.63	
Ethylbenzene*	<0.050	0.050	08/16/2013	ND	2.02	101	2.00	1.95	
Total Xylenes*	<0.150	0.150	08/16/2013	ND	6.03	101	6.00	1.89	
Total BTX	<0.300	0.300	08/16/2013	ND					

Surrogate: Dibromofluoromethane 94.7 % 61.3-142
 Surrogate: Toluene-d8 104 % 71.3-129
 Surrogate: 4-Bromofluorobenzene 104 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	08/15/2013	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	08/16/2013	ND	172	86.2	200	3.38	
DRO >C10-C28	<10.0	10.0	08/16/2013	ND	185	92.6	200	2.28	

Surrogate: 1-Chlorooctane 87.3 % 65.2-140
 Surrogate: 1-Chlorooctadecane 98.3 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

LINN ENERGY
 BRIAN WALL
 RR1, BOX 24 B
 KINGFISHER OK, 73750
 Fax To: (405) 375-6693

Received: 08/14/2013
 Reported: 08/19/2013
 Project Name: J. L. KEEL B #77
 Project Number: NONE GIVEN
 Project Location: MALJAMAR, NM

Sampling Date: 08/06/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: SP 6 @ 5' (H301931-06)

BTX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/16/2013	ND	2.03	102	2.00	3.04	
Toluene*	<0.050	0.050	08/16/2013	ND	2.08	104	2.00	2.63	
Ethylbenzene*	<0.050	0.050	08/16/2013	ND	2.02	101	2.00	1.95	
Total Xylenes*	<0.150	0.150	08/16/2013	ND	6.03	101	6.00	1.89	
Total BTX	<0.300	0.300	08/16/2013	ND					

Surrogate: Dibromofluoromethane 95.3 % 61.3-142
 Surrogate: Toluene-d8 103 % 71.3-129
 Surrogate: 4-Bromofluorobenzene 103 % 65.7-141

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	08/15/2013	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	08/16/2013	ND	172	86.2	200	3.38	
DRO >C10-C28	<10.0	10.0	08/16/2013	ND	185	92.6	200	2.28	

Surrogate: 1-Chlorooctane 91.0 % 65.2-140
 Surrogate: 1-Chlorooctadecane 102 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

LINN ENERGY
BRIAN WALL
RR1, BOX 24 B
KINGFISHER OK, 73750
Fax To: (405) 375-6693

Received: 08/14/2013
Reported: 08/19/2013
Project Name: J. L. KEEL B #77
Project Number: NONE GIVEN
Project Location: MALJAMAR, NM

Sampling Date: 08/06/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

Sample ID: SP 8 @ 4' (H301931-07)

BTX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/16/2013	ND	2.03	102	2.00	3.04	
Toluene*	<0.050	0.050	08/16/2013	ND	2.08	104	2.00	2.63	
Ethylbenzene*	<0.050	0.050	08/16/2013	ND	2.02	101	2.00	1.95	
Total Xylenes*	<0.150	0.150	08/16/2013	ND	6.03	101	6.00	1.89	
Total BTX	<0.300	0.300	08/16/2013	ND					

Surrogate: Dibromofluoromethane 94.5 % 61.3-142
Surrogate: Toluene-d8 103 % 71.3-129
Surrogate: 4-Bromofluorobenzene 105 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	08/15/2013	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	08/16/2013	ND	172	86.2	200	3.38	
DRO >C10-C28	26.4	10.0	08/16/2013	ND	185	92.6	200	2.28	

Surrogate: 1-Chlorooctane 91.8 % 65.2-140
Surrogate: 1-Chlorooctadecane 106 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

LINN ENERGY
BRIAN WALL
RR1, BOX 24 B
KINGFISHER OK, 73750
Fax To: (405) 375-6693

Received: 08/14/2013
Reported: 08/19/2013
Project Name: J. L. KEEL B #77
Project Number: NONE GIVEN
Project Location: MALJAMAR, NM

Sampling Date: 08/06/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

Sample ID: SP 9 @ 1' (H301931-08)

BTX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/16/2013	ND	2.03	102	2.00	3.04	
Toluene*	<0.050	0.050	08/16/2013	ND	2.08	104	2.00	2.63	
Ethylbenzene*	<0.050	0.050	08/16/2013	ND	2.02	101	2.00	1.95	
Total Xylenes*	<0.150	0.150	08/16/2013	ND	6.03	101	6.00	1.89	
Total BTX	<0.300	0.300	08/16/2013	ND					

Surrogate: Dibromofluoromethane 95.4 % 61.3-142
Surrogate: Toluene-d8 102 % 71.3-129
Surrogate: 4-Bromofluorobenzene 102 % 65.7-141

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	08/15/2013	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	08/16/2013	ND	172	86.2	200	3.38	
DRO >C10-C28	<10.0	10.0	08/16/2013	ND	185	92.6	200	2.28	

Surrogate: 1-Chlorooctane 84.3 % 65.2-140
Surrogate: 1-Chlorooctadecane 95.6 % 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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: LINN ENERGY				BILL TO				ANALYSIS REQUEST																	
Project Manager:				P.O. #:																					
Address:				Company:																					
City:		State:		Zip:		Attn:																			
Phone #:		Fax #:		Address:																					
Project #:		Project Owner:		City:																					
Project Name: JL KEEL B 77				State:																Zip:					
Project Location: MALJAMAR				Phone #:																					
Sampler Name: DANIEL LOCKHART				Fax #:																					
FOR LAB USE ONLY																									
Lab I.D.		Sample I.D.		GRAB OR (C)OMP.		# CONTAINERS		MATRIX		PRESERV.		SAMPLING		DATE		TIME		BTEX		CL		TPH		BOISA	
								GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER		ACID/BASE		ICE / COOL		OTHER	
H301938																									
01		SP5 @ 1'		G		1																			
02		SP2 @ 2'		G		1																			
03		SP3 @ 2'		G		1																			
04		SP4 @ 3'		G		1																			
05		SP7 @ 4'		G		1																			
06		SP6 @ 5'		G		1																			
07		SP8 @ 4'		G		1																			
08		SP9 @ 1'		G		1																			

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Relinquished By: <i>[Signature]</i>		Date: 8/14/13		Received By: <i>[Signature]</i>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
Time: 3:17P						Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Relinquished By:		Date:		Received By:		REMARKS: aruth@diversifiedsi.com bwall@linnenergy.com			
Time:									
Delivered By: (Circle One) Sampler - UPS - Bus - Other:				Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No		CHECKED BY: (Initials) cdh			

October 08, 2013

BRIAN WALL

LINN ENERGY

RR1, BOX 24 B

KINGFISHER, OK 73750

RE: J. L. KEEL B #77

Enclosed are the results of analyses for samples received by the laboratory on 10/04/13 16:00.

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,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

LINN ENERGY
 BRIAN WALL
 RR1, BOX 24 B
 KINGFISHER OK, 73750
 Fax To: (405) 375-6693

Received: 10/04/2013
 Reported: 10/08/2013
 Project Name: J. L. KEEL B #77
 Project Number: NONE GIVEN
 Project Location: MALJAMAR, NM

Sampling Date: 10/04/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 4 @ 5' (H302415-01)

BTX 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	10/07/2013	ND	1.66	83.2	2.00	2.37	
Toluene*	<0.200	0.200	10/07/2013	ND	1.76	87.8	2.00	1.71	
Ethylbenzene*	<0.200	0.200	10/07/2013	ND	1.81	90.7	2.00	3.13	
Total Xylenes*	<0.600	0.600	10/07/2013	ND	5.47	91.1	6.00	2.26	
Total BTX	<1.20	1.20	10/07/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 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	10/08/2013	ND	400	100	400	7.69	

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	10/07/2013	ND	192	95.8	200	0.902	
DRO >C10-C28	<10.0	10.0	10/07/2013	ND	181	90.4	200	0.0160	

Surrogate: 1-Chlorooctane 94.6 % 65.2-140

Surrogate: 1-Chlorooctadecane 96.3 % 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

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



Page 4 of 4

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Relinquished By:		Date:		Received By:		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
Miguel Gomez		10/4/13		Jodi Benson		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Relinquished By:		Date:		Received By:		REMARKS: Bwall@Linnenergy.com aruth@diversifiedfsi.com			
		Time:							
Delivered By: (Circle One)				Sample Condition		CHECKED BY:			
Sampler - UPS - Bus - Other:				Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> Yes		<input checked="" type="checkbox"/> Initials <input type="checkbox"/> Signature			

March 05, 2014

BRIAN WALL

LINN ENERGY

RR1, BOX 24 B

KINGFISHER, OK 73750

RE: J. L. KEEL B #77

Enclosed are the results of analyses for samples received by the laboratory on 02/26/14 15:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

LINN ENERGY
BRIAN WALL
RR1, BOX 24 B
KINGFISHER OK, 73750
Fax To: (405) 375-6693

Received: 02/26/2014
Reported: 03/05/2014
Project Name: J. L. KEEL B #77
Project Number: NONE GIVEN
Project Location: MALJAMAR, NM

Sampling Date: 02/26/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP 8 @ SURFACE (H400583-01)

BTX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/03/2014	ND	2.27	113	2.00	0.367	
Toluene*	<0.050	0.050	03/03/2014	ND	2.21	111	2.00	1.13	
Ethylbenzene*	<0.050	0.050	03/03/2014	ND	2.08	104	2.00	0.277	
Total Xylenes*	<0.150	0.150	03/03/2014	ND	6.26	104	6.00	0.971	
Total BTX	<0.300	0.300	03/03/2014	ND					

Surrogate: Dibromofluoromethane 95.4 % 61.3-142

Surrogate: Toluene-d8 102 % 71.3-129

Surrogate: 4-Bromofluorobenzene 105 % 65.7-141

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	03/04/2014	ND	416	104	400	0.00	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

LINN ENERGY
BRIAN WALL
RR1, BOX 24 B
KINGFISHER OK, 73750
Fax To: (405) 375-6693

Received: 02/26/2014
Reported: 03/05/2014
Project Name: J. L. KEEL B #77
Project Number: NONE GIVEN
Project Location: MALJAMAR, NM

Sampling Date: 02/26/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP 8 @ 2 (H400583-02)

BTX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/03/2014	ND	2.27	113	2.00	0.367	
Toluene*	<0.050	0.050	03/03/2014	ND	2.21	111	2.00	1.13	
Ethylbenzene*	<0.050	0.050	03/03/2014	ND	2.08	104	2.00	0.277	
Total Xylenes*	<0.150	0.150	03/03/2014	ND	6.26	104	6.00	0.971	
Total BTX	<0.300	0.300	03/03/2014	ND					

Surrogate: Dibromofluoromethane 98.1 % 61.3-142

Surrogate: Toluene-d8 103 % 71.3-129

Surrogate: 4-Bromofluorobenzene 105 % 65.7-141

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	03/04/2014	ND	416	104	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

LINN ENERGY
 BRIAN WALL
 RR1, BOX 24 B
 KINGFISHER OK, 73750
 Fax To: (405) 375-6693

Received: 02/26/2014
 Reported: 03/05/2014
 Project Name: J. L. KEEL B #77
 Project Number: NONE GIVEN
 Project Location: MALJAMAR, NM

Sampling Date: 02/26/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 8 @ 3 (H400583-03)

BTX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/03/2014	ND	2.27	113	2.00	0.367	
Toluene*	<0.050	0.050	03/03/2014	ND	2.21	111	2.00	1.13	
Ethylbenzene*	<0.050	0.050	03/03/2014	ND	2.08	104	2.00	0.277	
Total Xylenes*	<0.150	0.150	03/03/2014	ND	6.26	104	6.00	0.971	
Total BTX	<0.300	0.300	03/03/2014	ND					

Surrogate: Dibromofluoromethane 99.1 % 61.3-142

Surrogate: Toluene-d8 101 % 71.3-129

Surrogate: 4-Bromofluorobenzene 100 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	03/04/2014	ND	416	104	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 LINN ENERGY
 BRIAN WALL
 RR1, BOX 24 B
 KINGFISHER OK, 73750
 Fax To: (405) 375-6693

 Received: 02/26/2014
 Reported: 03/05/2014
 Project Name: J. L. KEEL B #77
 Project Number: NONE GIVEN
 Project Location: MALJAMAR, NM

 Sampling Date: 02/26/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 8 @ 4 (H400583-04)

BTX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/03/2014	ND	2.27	113	2.00	0.367	
Toluene*	<0.050	0.050	03/03/2014	ND	2.21	111	2.00	1.13	
Ethylbenzene*	<0.050	0.050	03/03/2014	ND	2.08	104	2.00	0.277	
Total Xylenes*	<0.150	0.150	03/03/2014	ND	6.26	104	6.00	0.971	
Total BTX	<0.300	0.300	03/03/2014	ND					

Surrogate: Dibromofluoromethane 98.9 % 61.3-142

Surrogate: Toluene-d8 98.8 % 71.3-129

Surrogate: 4-Bromofluorobenzene 104 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	03/04/2014	ND	416	104	400	0.00	

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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

April 10, 2015

DENNIS POTTER

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: J. L. KEEL B #77

Enclosed are the results of analyses for samples received by the laboratory on 04/02/15 14:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 LINN OPERATING-HOBBS
 DENNIS POTTER
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

 Received: 04/02/2015
 Reported: 04/10/2015
 Project Name: J. L. KEEL B #77
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 03/27/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP. 1 @ SURFACE (H500894-01)

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	04/08/2015	ND	2.01	101	2.00	2.84	
Toluene*	<0.050	0.050	04/08/2015	ND	2.26	113	2.00	4.73	
Ethylbenzene*	<0.050	0.050	04/08/2015	ND	2.10	105	2.00	4.96	
Total Xylenes*	<0.150	0.150	04/08/2015	ND	6.34	106	6.00	3.05	
Total BTX	<0.300	0.300	04/08/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 61-154

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	04/08/2015	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	04/07/2015	ND	190	94.9	200	3.74	
DRO >C10-C28	11.1	10.0	04/07/2015	ND	202	101	200	4.99	

Surrogate: 1-Chlorooctane 83.3 % 47.2-157

Surrogate: 1-Chlorooctadecane 85.7 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

LINN OPERATING-HOBBS
 DENNIS POTTER
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

Received:	04/02/2015	Sampling Date:	03/27/2015
Reported:	04/10/2015	Sampling Type:	Soil
Project Name:	J. L. KEEL B #77	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP. 2 @ SURFACE (H500894-02)

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	04/08/2015	ND	2.01	101	2.00	2.84		
Toluene*	<0.050	0.050	04/08/2015	ND	2.26	113	2.00	4.73		
Ethylbenzene*	<0.050	0.050	04/08/2015	ND	2.10	105	2.00	4.96		
Total Xylenes*	<0.150	0.150	04/08/2015	ND	6.34	106	6.00	3.05		
Total BTX	<0.300	0.300	04/08/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 61-154

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	04/08/2015	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	04/07/2015	ND	190	94.9	200	3.74	
DRO >C10-C28	<10.0	10.0	04/07/2015	ND	202	101	200	4.99	

Surrogate: 1-Chlorooctane 79.2 % 47.2-157

Surrogate: 1-Chlorooctadecane 81.1 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

LINN OPERATING-HOBBS
 DENNIS POTTER
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

Received:	04/02/2015	Sampling Date:	03/27/2015
Reported:	04/10/2015	Sampling Type:	Soil
Project Name:	J. L. KEEL B #77	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP. 3 @ SURFACE (H500894-03)

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	04/08/2015	ND	2.01	101	2.00	2.84		
Toluene*	<0.050	0.050	04/08/2015	ND	2.26	113	2.00	4.73		
Ethylbenzene*	<0.050	0.050	04/08/2015	ND	2.10	105	2.00	4.96		
Total Xylenes*	<0.150	0.150	04/08/2015	ND	6.34	106	6.00	3.05		
Total BTX	<0.300	0.300	04/08/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 61-154

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	04/08/2015	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	04/07/2015	ND	190	94.9	200	3.74	
DRO >C10-C28	<10.0	10.0	04/07/2015	ND	202	101	200	4.99	

Surrogate: 1-Chlorooctane 79.9 % 47.2-157

Surrogate: 1-Chlorooctadecane 80.0 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

LINN OPERATING-HOBBS
 DENNIS POTTER
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

Received:	04/02/2015	Sampling Date:	03/27/2015
Reported:	04/10/2015	Sampling Type:	Soil
Project Name:	J. L. KEEL B #77	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP. 4 @ SURFACE (H500894-04)

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	04/08/2015	ND	2.01	101	2.00	2.84		
Toluene*	<0.050	0.050	04/08/2015	ND	2.26	113	2.00	4.73		
Ethylbenzene*	<0.050	0.050	04/08/2015	ND	2.10	105	2.00	4.96		
Total Xylenes*	<0.150	0.150	04/08/2015	ND	6.34	106	6.00	3.05		
Total BTX	<0.300	0.300	04/08/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 61-154

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	04/08/2015	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	04/08/2015	ND	198	98.8	200	0.0602	
DRO >C10-C28	<10.0	10.0	04/08/2015	ND	212	106	200	1.41	

Surrogate: 1-Chlorooctane 103 % 47.2-157

Surrogate: 1-Chlorooctadecane 109 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

LINN OPERATING-HOBBS
 DENNIS POTTER
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

Received: 04/02/2015
 Reported: 04/10/2015
 Project Name: J. L. KEEL B #77
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 03/27/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP. 5 @ SURFACE (H500894-05)

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	04/09/2015	ND	2.01	101	2.00	2.84		
Toluene*	<0.050	0.050	04/09/2015	ND	2.26	113	2.00	4.73		
Ethylbenzene*	<0.050	0.050	04/09/2015	ND	2.10	105	2.00	4.96		
Total Xylenes*	<0.150	0.150	04/09/2015	ND	6.34	106	6.00	3.05		
Total BTEx	<0.300	0.300	04/09/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 61-154

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	04/08/2015	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	04/08/2015	ND	198	98.8	200	0.0602	
DRO >C10-C28	<10.0	10.0	04/08/2015	ND	212	106	200	1.41	

Surrogate: 1-Chlorooctane 108 % 47.2-157

Surrogate: 1-Chlorooctadecane 114 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 LINN OPERATING-HOBBS
 DENNIS POTTER
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

 Received: 04/02/2015
 Reported: 04/10/2015
 Project Name: J. L. KEEL B #77
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 03/27/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP. 6 @ SURFACE (H500894-06)

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	04/09/2015	ND	2.01	101	2.00	2.84		
Toluene*	<0.050	0.050	04/09/2015	ND	2.26	113	2.00	4.73		
Ethylbenzene*	<0.050	0.050	04/09/2015	ND	2.10	105	2.00	4.96		
Total Xylenes*	<0.150	0.150	04/09/2015	ND	6.34	106	6.00	3.05		
Total BTEx	<0.300	0.300	04/09/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 61-154

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	04/08/2015	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	04/08/2015	ND	198	98.8	200	0.0602	
DRO >C10-C28	<10.0	10.0	04/08/2015	ND	212	106	200	1.41	

Surrogate: 1-Chlorooctane 107 % 47.2-157

Surrogate: 1-Chlorooctadecane 111 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

LINN OPERATING-HOBBS
 DENNIS POTTER
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

Received:	04/02/2015	Sampling Date:	03/27/2015
Reported:	04/10/2015	Sampling Type:	Soil
Project Name:	J. L. KEEL B #77	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP. 7 @ SURFACE (H500894-07)

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	04/09/2015	ND	2.01	101	2.00	2.84		
Toluene*	<0.050	0.050	04/09/2015	ND	2.26	113	2.00	4.73		
Ethylbenzene*	<0.050	0.050	04/09/2015	ND	2.10	105	2.00	4.96		
Total Xylenes*	<0.150	0.150	04/09/2015	ND	6.34	106	6.00	3.05		
Total BTEx	<0.300	0.300	04/09/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 61-154

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	04/08/2015	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	04/08/2015	ND	198	98.8	200	0.0602	
DRO >C10-C28	<10.0	10.0	04/08/2015	ND	212	106	200	1.41	

Surrogate: 1-Chlorooctane 109 % 47.2-157

Surrogate: 1-Chlorooctadecane 114 % 52.1-176

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

LINN OPERATING-HOBBS
 DENNIS POTTER
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

Received: 04/02/2015
 Reported: 04/10/2015
 Project Name: J. L. KEEL B #77
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 03/27/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP. 8 @ SURFACE (H500894-08)

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	04/09/2015	ND	1.91	95.5	2.00	3.64		
Toluene*	<0.050	0.050	04/09/2015	ND	1.75	87.4	2.00	0.366		
Ethylbenzene*	<0.050	0.050	04/09/2015	ND	1.70	85.1	2.00	0.951		
Total Xylenes*	<0.150	0.150	04/09/2015	ND	5.36	89.3	6.00	0.554		
Total BTEx	<0.300	0.300	04/09/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 61-154

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	04/08/2015	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	04/08/2015	ND	198	98.8	200	0.0602	
DRO >C10-C28	<10.0	10.0	04/08/2015	ND	212	106	200	1.41	

Surrogate: 1-Chlorooctane 105 % 47.2-157

Surrogate: 1-Chlorooctadecane 109 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

LINN OPERATING-HOBBS
 DENNIS POTTER
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

Received: 04/02/2015
 Reported: 04/10/2015
 Project Name: J. L. KEEL B #77
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 03/27/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP. 9 @ SURFACE (H500894-09)

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	04/09/2015	ND	1.91	95.5	2.00	3.64		
Toluene*	<0.050	0.050	04/09/2015	ND	1.75	87.4	2.00	0.366		
Ethylbenzene*	<0.050	0.050	04/09/2015	ND	1.70	85.1	2.00	0.951		
Total Xylenes*	<0.150	0.150	04/09/2015	ND	5.36	89.3	6.00	0.554		
Total BTEx	<0.300	0.300	04/09/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 61-154

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	04/08/2015	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	04/08/2015	ND	198	98.8	200	0.0602	
DRO >C10-C28	<10.0	10.0	04/08/2015	ND	212	106	200	1.41	

Surrogate: 1-Chlorooctane 111 % 47.2-157

Surrogate: 1-Chlorooctadecane 114 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 LINN OPERATING-HOBBS
 DENNIS POTTER
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

 Received: 04/02/2015
 Reported: 04/10/2015
 Project Name: J. L. KEEL B #77
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 03/27/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP. 10 @ SURFACE (H500894-10)

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	04/09/2015	ND	1.91	95.5	2.00	3.64		
Toluene*	<0.050	0.050	04/09/2015	ND	1.75	87.4	2.00	0.366		
Ethylbenzene*	<0.050	0.050	04/09/2015	ND	1.70	85.1	2.00	0.951		
Total Xylenes*	<0.150	0.150	04/09/2015	ND	5.36	89.3	6.00	0.554		
Total BTEx	<0.300	0.300	04/09/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	04/08/2015	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	04/08/2015	ND	198	98.8	200	0.0602	
DRO >C10-C28	<10.0	10.0	04/08/2015	ND	212	106	200	1.41	

Surrogate: 1-Chlorooctane 106 % 47.2-157

Surrogate: 1-Chlorooctadecane 112 % 52.1-176

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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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Reinforced by: Reinforced by:

Relinquished By: <i>[Signature]</i>		Date: <i>9/2/15</i>		Received By: <i>[Signature]</i>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
Time: <i>2:30</i>						Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Relinquished By:		Date:		Received By:		REMARKS:			
		Time:							
Delivered By: (Circle One)				Sample Condition		CHECKED BY:			
Sampler - UPS - Bus - Other:				Cool Intact		(Initials)			
				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<i>-12.6g</i> <i>[Signature]</i>			

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

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Appendix III

SITE PHOTOS

JL Keel B #077

Photo Page



Site prior



Site prior



Site prior



Site prior



Excavating site



Excavation completed

Appendix IV

FINAL C-141

Diversified Field Service, Inc.
206 W. Snyder
Hobbs, NM 88240
(575) 964-8394

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: EL Gonzales
Address: 2130 W Bender, Hobbs, NM 88240	Telephone No. 575-738-1739
Facility Name: JL Keel B #077	Facility Type: Injection

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-28279
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LOCATION OF RELEASE

Unit Letter H	Section 8	Township 17S	Range 31E	Feet from the 1930	North/South Line North	Feet from 714	East/West Line East	County Eddy
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Latitude: 32.85099 Longitude: -103.88486

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 21 bbls	Volume Recovered: 0 bbls
Source of Release: Pipeline	Date and Hour of Occurrence 07/07/2012 1:00 PM	Date and Hour of Discovery 07/07/2012 1:30 PM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? M. Bratcher - NMOCD Terry Gregston - BLM	
By Whom? Joe Hernandez	Date and Hour: 07/09/2012 9:00 AM	
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.*

Drove to location, noticed water coming out of ground from 2" fiberglass injection line. Went to Keel B #076 well to close valve to isolate line. 2' x 300 yard area.

Describe Area Affected and Cleanup Action Taken.

Beginning August 5, 2013, DFSI personnel were on site to obtain samples within the leak area. Ten samples were obtained and field sampled for chloride levels, as well as BTEX. The BTEX samples were performed using a Mini Rae Photoionization Detector (PID). All clean field samples under NMOCD and BLM regulatory guidelines were submitted for laboratory analysis at Cardinal Laboratories of Hobbs, NM to obtain confirmation. A work plan was submitted to BLM and NMOCD on November 25, 2015, and approved by NMOCD on December 2, 2015 and by BLM on February 3, 2016. Beginning May 5, 2016, DFSI personnel were on site to excavate the release area to 1' bgs around SP1 and SP2 and to 3.5' bgs at SP4. The excavated area on the pad was backfilled to ground surface with clean imported caliche and contoured to the surrounding area. Within the pasture area, erosion controls were installed to naturally backfill the arroyo during rain events. Contaminated soil was properly disposed of at an NMOCD approved facility.

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: 	OIL CONSERVATION DIVISION		
Printed Name: EL Gonzales	Approved by Environmental Specialist:		
Title: Production Supervisor	Approval Date:	Expiration Date:	
E-mail Address: elgonzales@linnenergy.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 7/7/2016 Phone: 575-504-8002			

* Attach Additional Sheets If Necessary