

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

Table of Contents

- 1 Introduction
- 2 Site Activities
- 3 Conclusion

FIGURES

1 – Soil Delineation

APPENDICES

Appendix I – Initial C-141

Appendix II – Laboratory Analysis

Appendix III – Site Photos

Appendix IV – Final C-141

Linn Energy July 7, 2016

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

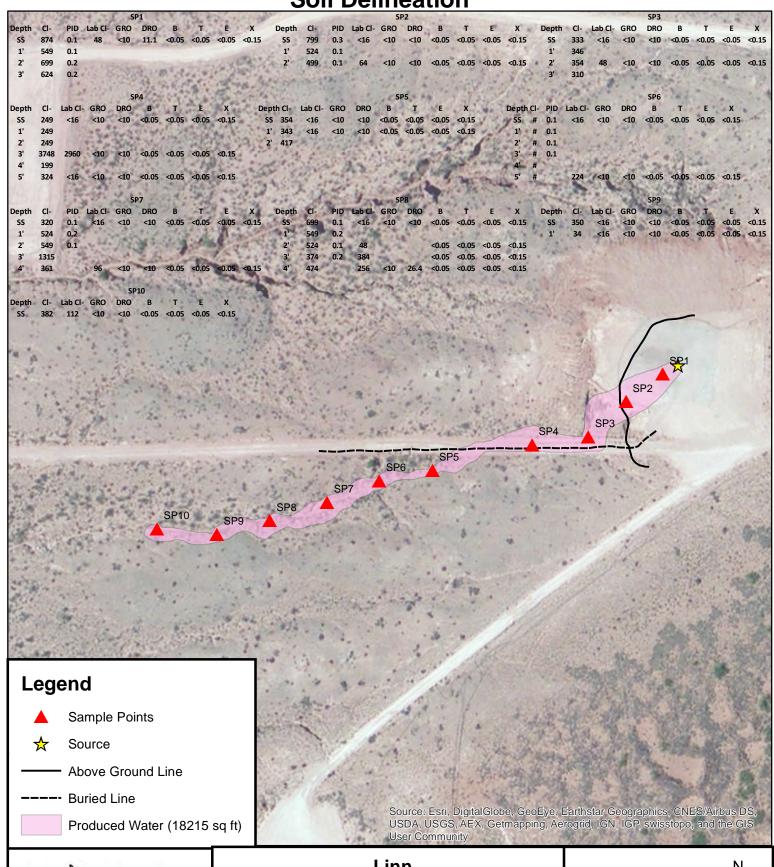
Beginning August 5, 2013, DFSI personnel were on site to obtain samples within the leak area (Figure 1). Ten samples were obtained and field sampled for chloride levels, as well as BTEX. The BTEX samples were performed using a Mini Rae Photoionization Detector (PID). All clean field samples under NMOCD 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





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

NMOCD Case #: 2R-1233

Mapped: 03/03/2014 LC Drafted by: L. Flores 06/24/2016 0 25 50 100 150 200

Feet

Appendix I

INITIAL C-141

REVISED

RECEIVED

JUL 16 2012

Form C-141

NMOGD APTESIANE District Office in accordance with 19.15.29 NMAC

ed October 10, 2003

Oil Conservation Division 1220 South St. Francis Dr.

Santa Fe, NM 87505

State of New Mexico

Energy Minerals and Natural Resources

Name of Company: Linn Operating 269324 Contact: Joe Hernandez Address: 2130 W. Bender Hobbs, NM 88240 Telephone No.: 575-738-1739	inal Report
Name of Company: Linn Operating 269324 Contact: Joe Hernandez Address: 2130 W. Bender Hobbs, NM 88240 Telephone No.: 575-738-1739	
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	
LOCATION OF RELEASE	
Unit Letter Section Township Range Feet from the North/South Line Feet from the East/West Line County	
H 08 17S 31E 1930 North 714 East Eddy	
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 Date and Hour of Discovery:	
07/07/2012 1pm 07/07/2012 1:30pm Was Immediate Notice Given? If YES, To Whom?	
Yes No Not Required M. Bratcher-NM OCD Terry Gregston-BLM	
By Whom? Joe Hernandez Date and Hour 07/09/2012 9am	
Was a Watercourse Reached? If YES, Volume Impacting the Watercourse.	
☐ Yes ☒ No	
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 to Keel B #76 well to close valve to isolate line.	ine. Went
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 rule	es and
regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may end 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 list should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, humor or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any of federal, state, or local laws and/or regulations.	anger ability an health
Signature: Signature: Signature: Signature: Approved by District Supervisor.	Fr
Title: Production Foreman Approval Date: Expiration Date.	

* Attach Additional Sheets If Necessary

Date: 07/13/2012

E-mail Address: jhernandez@linnenergy.com

Phone: 575-942-9492

<u>District 1</u> 1625 N. French Dr., Hobbs, NM 88240

1301 W. Grand Avenue, Artesia, NM 88210

1220 S St. Francis Dr., Santa Fe, NM 87505

1000 Rio Biazos Road, Aztec, NM 87410

District II

District []]

District IV

Remediation per OCD Rules & **Guidelines. SUBMIT REMEDIATION**

PROPOSAL NOT LATER THAN:

Conditions of Approval:

2RP-1233

Attached

Appendix II

LABORATORY ANALYSIS



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/ga/lab accred certif.html.

Cardinal Laboratories is accreditated 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.

Celey D. Kuno

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



LINN ENERGY BRIAN WALL RR1, BOX 24 B

KINGFISHER OK, 73750 Fax To: (405) 375-6693

Received: 08/14/2013 Sampling Date: 08/05/2013
Reported: 08/19/2013 Sampling Type: Soil

Project Name: J. L. KEEL B #77 Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Celey D. Keene

Project Location: MALJAMAR, NM

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

BTEX 8260B	mg,	kg	Analyze	d 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	% 61.3-14	2						
Surrogate: Toluene-d8	102	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	106	% 65.7-14	1						
Chloride, SM4500Cl-B	mg,	'kg	Analyze	d 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	Analyze	d 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	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	97.5	% 63.6-15	4						

Cardinal Laboratories *=Accredited Analyte

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LINN ENERGY **BRIAN WALL** RR1, BOX 24 B

KINGFISHER OK, 73750 Fax To: (405) 375-6693

Received: 08/14/2013 Sampling Date: 08/05/2013

Reported: 08/19/2013 Sampling Type: Soil

Project Name: J. L. KEEL B #77 Sampling Condition: Cool & Intact Sample Received By: Project Number: NONE GIVEN Celey D. Keene

Project Location: MALJAMAR, NM

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

BTEX 8260B	mg	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	alyzed Method Blank		% 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	% 61.3-14	2						
Surrogate: Toluene-d8	102	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	101	% 65.7-14	1						
Chloride, SM4500Cl-B	mg,	'kg	Analyze	d 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	Analyze	d 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	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	112	% 63.6-15	4						

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LINN ENERGY BRIAN WALL RR1, BOX 24 B

KINGFISHER OK, 73750 Fax To: (405) 375-6693

Received: 08/14/2013 Sampling Date: 08/05/2013

Reported: 08/19/2013 Sampling Type: Soil

Project Name: J. L. KEEL B #77 Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Celey D. Keene

Analyzed By: MC

Project Location: MALJAMAR, NM

ma/ka

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

RTFY 8260R

B1EX 8260B	mg,	/ Kg	Analyze	a 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	94.2	% 61.3-14	2						
Surrogate: Toluene-d8	102	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	103	% 65.7-14	1						
Chloride, SM4500Cl-B	mg	/kg	Analyze	d 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	Analyze	d 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	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	98.6	% 63.6-15	4						

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LINN ENERGY BRIAN WALL RR1, BOX 24 B

KINGFISHER OK, 73750 Fax To: (405) 375-6693

Received: 08/14/2013 Sampling Date: 08/05/2013

Reported: 08/19/2013 Sampling Type: Soil

Project Name: J. L. KEEL B #77 Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Celey D. Keene

Analyzed By: MC

Project Location: MALJAMAR, NM

ma/ka

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

RTFY 8260R

B1EX 8260B	mg,	кg	Analyze	а ву: м5					
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	96.9	% 61.3-14	2						
Surrogate: Toluene-d8	102	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	102	% 65.7-14	1						
Chloride, SM4500Cl-B	mg	/kg	Analyze	ed 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	Analyze	ed 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	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	103	% 63.6-15	4						

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LINN ENERGY **BRIAN WALL** RR1, BOX 24 B

KINGFISHER OK, 73750 Fax To: (405) 375-6693

Received: 08/14/2013 Sampling Date: 08/06/2013

Reported: 08/19/2013 Sampling Type: Soil

Project Name: J. L. KEEL B #77 Sampling Condition: Cool & Intact Project Number: Sample Received By: NONE GIVEN Celey D. Keene

Project Location: MALJAMAR, NM

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

BTEX 8260B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Analyzed Method Blank		% 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	94.7	% 61.3-14	2						
Surrogate: Toluene-d8	104	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	104	% 65.7-14	1						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d 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	Analyze	d 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	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	98.3	% 63.6-15	4						

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LINN ENERGY BRIAN WALL RR1, BOX 24 B

KINGFISHER OK, 73750 Fax To: (405) 375-6693

 Received:
 08/14/2013
 Sampling Date:
 08/06/2013

 Reported:
 08/19/2013
 Sampling Type:
 Soil

Project Name: J. L. KEEL B #77 Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Celey D. Keene

Analyzed By: MC

Project Location: MALJAMAR, NM

ma/ka

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

RTFY 8260R

B1EX 8260B	mg/	кg	Analyze	а ву: м5					
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	95.3	% 61.3-14	2						
Surrogate: Toluene-d8	103	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	103	% 65.7-14	1						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	ed 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	Analyze	ed 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	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	102	% 63.6-15	4						

Cardinal Laboratories *=Accredited Analyte

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LINN ENERGY BRIAN WALL RR1, BOX 24 B

KINGFISHER OK, 73750 Fax To: (405) 375-6693

Received: 08/14/2013 Sampling Date: 08/06/2013

Reported: 08/19/2013 Sampling Type: Soil

Project Name: J. L. KEEL B #77 Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Celey D. Keene

Analyzed By: MC

Project Location: MALJAMAR, NM

ma/ka

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

RTFY 8260R

B1EX 8260B	mg,	кg	Anaiyze	а ву: м5					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/16/2013	08/16/2013 ND		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	94.5	% 61.3-14	22						
Surrogate: Toluene-d8	103	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	105	% 65.7-14	1						
Chloride, SM4500Cl-B	mg	/kg	Analyze	ed 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	Analyze	ed 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	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	106	% 63.6-15	4						

Cardinal Laboratories *=Accredited Analyte

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LINN ENERGY BRIAN WALL RR1, BOX 24 B

KINGFISHER OK, 73750 Fax To: (405) 375-6693

Received: 08/14/2013 Sampling Date: 08/06/2013

Reported: 08/19/2013 Sampling Type: Soil

Project Name: J. L. KEEL B #77 Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Celey D. Keene

Analyzed By: MC

Project Location: MALJAMAR, NM

ma/ka

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

RTFY 8260R

B1EX 8260B	mg/	кg	Analyze	а ву: м5					
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	% 61.3-14	2						
Surrogate: Toluene-d8	102	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	102	% 65.7-14	1						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	ed 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	Analyze	ed 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	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	95.6	% 63.6-15	4						

Cardinal Laboratories *=Accredited Analyte

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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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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name	LINN ENERGY						BILL			BILL TO										ANA	LY	SIS	R	EQL	JES	T		
Project Manage							P.	0. #.											T	T			T					
Address:							Co	omp	any	:	0	,		1													1	
City:	State:	Zip):				At	ttn:			N			1														
Phone #:	Fax #:						Ac	ddre	sø:	7	7		17	1					1	1				-1				
Project #:	Project Owne	er:				City:			7				1							- 1								
Project Name:	JL KEEL B 77						State: Zip:					1																
Project Locatio	n: MALJAMAR						Phone #:						1															
Sampler Name:	DANIEL LOCKHART							x #:						1			2											
FOR LAB USE ONLY		Т	Т		MAT	RIX		PRE		RV.	SAMPL	ING		1	1	1	15		1									
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	SOIL	OIL	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	Т	TIME	BTEX		زد	TPH BOISMA											
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26	5P6 @5'	6	1		X				X		8-6-13			X	X	_	4											
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Delivered By: Sampler - UPS		0.8	·c	Cor	II Ir	ondit		((1	CKI		b	Wã	711(0	09 1	in	ne	enu	erc	13	. (m					



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/ga/lab accred certif.html.

Cardinal Laboratories is accreditated 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.

Celey D. Keene

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



LINN ENERGY BRIAN WALL RR1, BOX 24 B

KINGFISHER OK, 73750 Fax To: (405) 375-6693

Received: 10/04/2013 Sampling Date: 10/04/2013

Reported: 10/08/2013 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: MALJAMAR, NM

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

BTEX 8021B	mg/	kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	10/07/2013	10/07/2013 ND		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 BTEX	<1.20	1.20	10/07/2013	ND					
Surrogate: 4-Bromofluorobenzene (PID	118 9	89.4-12	6						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d 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	Analyze	d 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	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	96.3	% 63.6-15	4						

Cardinal Laboratories *=Accredited Analyte

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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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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476 Company Name: Link

eher & X

Project Manager: Rrian Wall	P.O. #:	_
Address:	Company:	
City: State: Zip:	Attn:	
Phone #: Fax #:	Address:	
Project #: Project Owner:	City:	
Project Name:	State: Zip:	
Project Location: JL Keel B #77	Phone #:	<u> </u>
Sampler Name: March Gomes	Fax #:	<u> </u>
Ma R	RIX PRESERV. SAMPLING	\$1000 X
#30942 CONTAINERS GROUNDWATER WASTEWATER SOIL	OIL SILUDGE OTHER: ACID/BASE: ICE / COOL OTHER:	
1 Sed © 2, 20 Minor Market 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	OIL OIL OTHER: OTHER: OTHER: OTHER:	
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Relinquished By:	Phone F Fax Res	sult:
Relinquished By: Time: Time:	HUNDY REMAR	wall@Linnenergy.com whodiversifiedfsi.com
	Condition CHECKED BY:	Uth a versitied to 1, Curi
Sampler - UPS - Bus - Other:	Intact Yes No	

9/4470

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



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/ga/lab accred certif.html.

Cardinal Laboratories is accreditated 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.

Celey D. Kuno

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



LINN ENERGY BRIAN WALL RR1, BOX 24 B

KINGFISHER OK, 73750 Fax To: (405) 375-6693

Received: 02/26/2014 Sampling Date: 02/26/2014

Reported: 03/05/2014 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: MALJAMAR, NM

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

BTEX 8260B	mg/l	kg	Analyze	d 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 BTEX	<0.300	0.300	03/03/2014	ND					
Surrogate: Dibromofluoromethane	95.4 %	% 61.3-14	2						
Surrogate: Toluene-d8	102 %	6 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	105 %	65.7-14	1						
Chloride, SM4500CI-B	mg/	kg	Analyze	d 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	

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LINN ENERGY BRIAN WALL RR1, BOX 24 B

KINGFISHER OK, 73750 Fax To: (405) 375-6693

Received: 02/26/2014 Sampling Date: 02/26/2014

Reported: 03/05/2014 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: MALJAMAR, NM

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

BTEX 8260B	mg/l	kg	Analyze	d 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 BTEX	<0.300	0.300	03/03/2014	ND					
Surrogate: Dibromofluoromethane	98.1 %	61.3-14	2						
Surrogate: Toluene-d8	103 %	6 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	105 %	65.7-14	1						
Chloride, SM4500CI-B	mg/l	kg	Analyze	d 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	

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LINN ENERGY BRIAN WALL RR1, BOX 24 B

KINGFISHER OK, 73750 Fax To: (405) 375-6693

Received: 02/26/2014 Sampling Date: 02/26/2014

Reported: 03/05/2014 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: MALJAMAR, NM

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

BTEX 8260B	mg/l	kg	Analyze	d 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 BTEX	<0.300	0.300	03/03/2014	ND					
Surrogate: Dibromofluoromethane	99.1 %	61.3-14	22						
Surrogate: Toluene-d8	101 %	6 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	100 %	65.7-14	1						
Chloride, SM4500Cl-B	mg/l	kg	Analyze	d 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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LINN ENERGY BRIAN WALL RR1, BOX 24 B

KINGFISHER OK, 73750 Fax To: (405) 375-6693

Received: 02/26/2014 Sampling Date: 02/26/2014

Reported: 03/05/2014 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: MALJAMAR, NM

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

BTEX 8260B	mg/l	kg	Analyze	d 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 BTEX	<0.300	0.300	03/03/2014	ND					
Surrogate: Dibromofluoromethane	98.9 %	61.3-14	2						
Surrogate: Toluene-d8	98.8 %	71.3-12	9						
Surrogate: 4-Bromofluorobenzene	104 %	65.7-14	1						
Chloride, SM4500CI-B	mg/l	kg	Analyze	d 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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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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Notile

Company Name:

Project Manager:

Address:

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ANALYSIS REQUEST

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

giodden

City:	State:	Zi	p:				A	ttn:	No	<i>wil</i>	c gled	den							ļ					1
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analyses. All claims include service. In no event shall C affiliates or successors are	ng those for negligence and any other cause whatsoever sl ardinal be liable for incidental or consequental damages, in ing out of or related to the performance of services hereund	nall be deem cluding with er by Cardin	ned waiv out limit nal, rega	ed unl tation, l ardless	ess made i ousiness in of whether	n writing a terruption	and rec s, loss	eived l of use,	oy Cardir or loss	nal wit of prof	hin 30 days afti fits incurred by	er completion of t client, its subsidia	he applica aries,	ble			٠.			·				
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BILL TO

P.O. #:

Company: DUST



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/ga/lab accred certif.html.

Cardinal Laboratories is accreditated 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.

Celey D. Keine

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



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)

BTEX 8021B	mg/	kg	Analyze	d 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 BTEX	<0.300	0.300	04/08/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 %	61-154							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d 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	Analyze	d 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 %	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	85.7 9	52.1-17	6						

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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)

BTEX 8021B	mg/	kg	Analyze	d 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 BTEX	<0.300	0.300	04/08/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 9	% 61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d 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	Analyze	d 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	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	81.1	% 52.1-17	6						

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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)

BTEX 8021B	mg/	kg	Analyze	d 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 BTEX	<0.300	0.300	04/08/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 9	61-154	!						
Chloride, SM4500CI-B	mg/	kg	Analyze	d 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	Analyze	d 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	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	80.0	% 52.1-17	6						

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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: Sample Received By: NONE GIVEN Jodi Henson

Project Location: **NOT GIVEN**

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

BTEX 8021B	mg/	kg	Analyze	d 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 BTEX	<0.300	0.300	04/08/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 9	% 61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d 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	Analyze	d 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 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	109	% 52 1-17	6						

109 % Surrogate: 1-Chlorooctadecane 52.1-176

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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: Sample Received By: NONE GIVEN Jodi Henson

Project Location: **NOT GIVEN**

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

BTEX 8021B	mg/	kg	Analyze	d 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 9	% 61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d 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	Analyze	d 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 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	114	% 52 1-17	6						

114 % 52.1-176 Surrogate: 1-Chlorooctadecane

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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. 6 @ SURFACE (H500894-06)

BTEX 8021B	mg/	kg	Analyze	d 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, SM4500Cl-B	mg/	kg	Analyze	d 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	Analyze	d 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 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	111 9	6 52.1-17	6						

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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: Sample Received By: NONE GIVEN Jodi Henson

Project Location: **NOT GIVEN**

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

BTEX 8021B	mg/	kg	Analyze	d 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 9	% 61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d 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	Analyze	d 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 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	114	% 52 1-17	6						

114 % 52.1-176 Surrogate: 1-Chlorooctadecane

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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. 8 @ SURFACE (H500894-08)

BTEX 8021B	mg/	kg	Analyze	d 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		Analyze	d 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	Analyze	d 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 %	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	109 9	6 52.1-17	6						

Cardinal Laboratories *=Accredited Analyte

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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. 9 @ SURFACE (H500894-09)

BTEX 8021B	mg/	kg	Analyze	d 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 9	% 61-154	!						
Chloride, SM4500Cl-B	mg/kg		Analyze	d 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	Analyze	d 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 %	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	114 9	% 52.1-17	6						

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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. 10 @ SURFACE (H500894-10)

BTEX 8021B	mg/	kg	Analyze	d 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		Analyze	d 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	Analyze	d 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 %	6 47.2-15	7						
Surrogate: 1-Chlorooctadecane	112 %	6 52.1-17	6						

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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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Celeg D. Freene



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Linn Energy							B	ILL TO	Jat C.				ANA	II YSI	REQ	IECT		
Project Manag	er: Mike Burton					P.O. 1				T	T	T	T	T	I TE G	1	1	
ddress:						Comp	any:	inn F	neral	1								
City:	Sta	te: Zip	:			Company: Linn Energy Attn: Deun's Potter					1	1 1						
hone #:	Fax					Addre		41) 101	101		1							
roject#:	Proje	ect Owner:				City:				1								
Project Name:						State:		Zip:		1	1							
oject Locatio	ocation: FIL Keel B#77						#:	Σip.	_	1								
Sampler Hame:							-											
OR LAB USE ONLY		T		MATE	-	Fax #	ESERV	SAMPL	ING	-				1 1				
Lab I.D.	Sample I.D.	G)RAB OR (C)OMP	# CONTAINERS GROUNDWATER	WASTEWATER SOIL	SLUDGE	OTHER. ACID/BASE	ICE / COOL OTHER	DATE	TIME	CL	HAL	B-tex						
1	SP.10 SUFF	9	1	> 00 C	3 00	0 4	χ	3-27-15	_	-	~		-		_	-		_
2	SP.1@ SUPF SP.2@ SUPF SP.3@ SUPF SP.4@ SUPF	9	1	X	11	-	X	377 15	7:52	XX	×	X	-	-	_			
3	SP.3@ SurF	9	1	X	+	1	K	3-27-15	8:15	X	XXX	×	-	\vdash	_	-		-
4	SP. 4@ surF	5	1	X			X	3-27-15		V	$\hat{\nabla}$	X	-	-	-	-		-
5	SP.5@ SurF	5	1				X	3-27-15		V	~		_	\vdash		-	_	-
6	SP. 6@ SUFF SP.7@ SUFF	191	1	X			X	3-27-15	8:38	S.	×	X	-	-			_	-
7	SP.7@ SUFF	9	1	X			X	3-27-15	8:50	X	X	X	_		_	+	-	-
8	SP.8@ SUFF	9	1	X			X		9:00	X	X	X	_		_	-	_	-
9		9	1	X			X	3-27-15	9:10	7	X	2	-	1		+		
10	SP. 10@ surf	9	1	X	TT		X	3-27-5	9:17	X	X	X	+			+	_	+
	nd Damages Cardinal's liability and client's exclusiving those for negligence and any other cause whats:	e remedy for any claim rever shall be deemed	arising whel	ther based in	contract or	lort shall	be limited	to the amount pai	d by the client for	the	/	/(
es or successors arisi	ng out of or related to the performance of services h		emeation, bu	isiness interio	iptions, loss	s of use, o	r loss of pr	ofits incurred by o	äent, its subsidiar	nes.	ie							
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Appendix III

SITE PHOTOS

JL Keel B #077

Photo Page



Site prior



Site prior



Excavating site



Site prior



Site prior



Excavation completed

Appendix IV

FINAL C-141

<u>District I</u> 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. Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

			Dal			, NM 873								
			Kei	ease Notific				Action	500	LEVE 3	_			
NCO	02.0000000 1	· · · · ·				OPERATOR ☐ Initial Report ☐ Final Report ☐ Contact: EL Gonzales								
		Linn Energy der, Hobbs,		40				720						
Facility Na			NW 882	40			No. 575-738-17	139						
racinty Na	me: JL Kee	EI B #0//			- 1	racility Typ	e: Injection			_				
Surface Ov	vner: Fede	ral		Mineral (Owner:	Federal			API No	. 30-015-2	28279			
				LOC	ATION	OF REI	EASE							
Unit Letter							Feet from	East/V	Vest Line	_				
Н	8	178	31E	1930		orth	714	200000000000000000000000000000000000000	ast	County Eddy				
						OF REL								
Type of Rele							Release: 21 bbl			Recovered:				
Source of Re	elease: Pipe	eline				07/07/2012	lour of Occurrer	ice		Hour of Dis 12 1:30 PM				
Was Immed	iate Notice (Given?	7-7-			If YES, To			07/07/20	12 1.30 FW	1			
			Yes [☐ No ☐ Not R	equired		er – NMOCD Te	erry Gregs	ston – BLA	Л				
By Whom?	Joe Hernand	dez				Date and I	lour: 07/09/2012	2 9:00 AN	M					
Was a Water	rcourse Read		1 v 5	7 1		If YES, Vo	olume Impacting	the Wate	ercourse.					
			Yes 2	7 NO										
Beginning A levels, as we and BLM re, submitted to May 5, 2016 was backfille installed to r	august 5, 20 ell as BTEX. gulatory gui BLM and N b, DFSI pers ed to ground naturally bac	The BTEX delines were MOCD on N onnel were or I surface with ekfill the arroy	sonnel wer samples w submitted lovember: a site to ex clean imp	ken. e on site to obtain vere performed usi for laboratory and 25, 2015, and app cavate the release orted caliche and rain events. Cont	ing a Mir alysis at 0 proved by area to 1 contoure aminated	ni Rae Photoi Cardinal Lab NMOCD on I' bgs around ed to the surre soil was pro	onization Detect oratories of Hob December 2, 20 SP1 and SP2 are ounding area. W perly disposed o	tor (PID). bs, NM to 015 and by nd to 3.5' Vithin the of at an NN	All clean o obtain co y BLM on bgs at SP4 pasture are MOCD app	field sample onfirmation. February 3, I. The excavea, erosion corroved facili	A work, 2016. vated are controls ity.	r NMOCD k plan was Beginning ea on the pad were		
regulations a public health should their or the environment	all operators n or the envi operations h onment. In a	are required ronment. The ave failed to	to report a e acceptan adequately OCD accep	nd/or file certain ce of a C-141 rep y investigate and ptance of a C-141	release no ort by the remediate	otifications a NMOCD m contaminati	nd perform corre arked as "Final on that pose a the e the operator of	ective acti Report" d nreat to gr f responsi	ions for rel oes not rel ound wate bility for c	eases which ieve the ope r, surface we compliance v	may er erator of ater, hur with any	ndanger Fliability man health		
Signature:	9	my	la				OIL CON			DIVISIO	<u>NC</u>			
Printed Nam	e; EL Gonz	ales			1	Approved by	Environmental	Specialist	i:					
Title: Produc	ction Superv	visor				Approval Da	ie:	I	Expiration	Date:				
E-mail Addr	ess: elgonza	ales@linnener	gy.com			Conditions of	Approval:			Attached	· 🗆			
Date: 7/	7/2016	Phone: 575-50	14-8002											

^{*} Attach Additional Sheets If Necessary