



Linn Energy JL Keel B #077

REMEDIATION WORK PLAN

API No. 30-015-28279

Release Date: 7/7/2012

Unit Letter H , Section 08 , Township 17 South, Range 31 East

RP# 2RP-1233

BLM Event# NU12162TG

November 25, 2015

Prepared by:

Environmental Department
Diversified Field Service, Inc.
3412 N. Dal Paso
Hobbs, NM 88240
Phone: (575)964-8394
Fax: (575)393-8396

Environmental Department

3412 N. Dal Paso

Hobbs, NM 88240

Phone: (575)964-8394

Fax: (575)964-8396

Mike Bratcher

Environmental Specialist

NM Oil Conservation District – Division 2

811 S. First St.

Artesia, NM 88210

RE: Linn Energy JL Keel B #77 – Remediation Work Plan

UL/H, Section 8, T17S, R31E

API No. 30-015-28279

Mr. Bratcher,

Linn Energy (Linn) has retained Diversified Field Service, Inc. (DFSI) to address environmental issues for the site detailed herein.

The site is located west of Maljamar NM, in Eddy County. The site resulted from a produced water leak from a buried 2" injection line. There was a release of approximately 21 bbls of fluids. The valve was closed at JL Keel B #76 location and the line repaired. No fluids were recovered. A significant amount of pasture was impacted. A form C-141 was submitted to the NMOCD on August 01, 2012.

Site Delineation

DFSI personnel used a hand auger to vertically delineate the leak area at several sample points. Soil samples were field screened for chloride. Headspace measurements were also performed using a Mini RAE Photoionization Detector (PID). Samples were collected at surface and in 1 ft. intervals until two consecutive samples show chloride well below 1,000 mg/kg. DFSI personnel delineated for 10 Sample Points and submitted to a commercial laboratory for analysis.

Conclusion

Laboratory confirmation has been received. Lab confirmed a significant reduction in Chlorides at depths of 1 to 4 ft bgs for sample points 1 thru 9. DFSI is proposing to excavate SP1 and SP2 located on the pad area to 1ft. bgs, backfill, and risk out at such time that the well is plugged. Excavate the area of SP4 to 3.5' bgs. In the areas in the arroyo we request to install erosion controls that will naturally backfill the arroyo during rain events. Upon approval of a plan, DFSI will complete remediation activities in accordance with NMOCD and BLM requirements, and then will submit a request to close the regulatory file for the site.

Diversified Field Service, Inc.

Wednesday, November 25, 2015

Environmental Department

3412 N. Dal Paso

Hobbs, NM 88240

Phone: (575)964-8394

Fax: (575)964-8396

Please contact me with any questions and/or concerns. Thank you.

Sincerely,



Michael Burton
Environmental Operations Director
Diversified Field Service, Inc.
206 West Snyder
Hobbs, NM 88240
Office: (575)964-8394
Mobile: (575)390-5454
Fax: (575)964-8396
Email: Mburton@diversifiedfsi.com

cc Shelly Tucker
NM Bureau of Land Management

Attachments: Site Photographs
Initial Form C-141
Lab analyticals
Site Diagram

Company Name: _____ Linn Energy
 Location Name: _____ JL Keel B #77

Date: 8/5/2013 2/26/2014
3/7/2014 6/30/2014

SP1	CHL	TPH
Surface	3520	
Surface	3598	
1'	1652	
2'	689	
3'	2655	
4'	AR	
2'	2560	
3'	299	
4'	374	
4'	240	
Surface	874	0.1
1'	549	0.1
2'	699	0.2
3'	624	0.2

SP2	CHL	TPH
Surface	<16	
2'	64	
Surface	343	
1'	331	
2'	355	
3'	AR	
3'	1620	
Surface	799	0.3
1'	524	0.1
2'	499	0.1

SP3	CHL
Surface	<16
2'	48
Surface	333
1'	346
2'	354
3'	310
4'	96

SP4	CHL
Surface	176
3'	2960
Surface	249
1'	249
2'	249
3'	3748
4'	199
5'	324
6'	249
7'	374
Surface	328
1'	703
2'	2147
3'	310

SP5	CHL
Surface	<16
1'	<16
Surface	354
1'	343
2'	417
3'	AR

SP6	CHL	TPH
Surface	48	
5'	224	
Surface	348	
1'	1399	
2'	3421	
3'	2570	
4'	1144	
5'	658	
6'	321	
Surface	724	0.1
1'	549	0.1
2'	524	0.1
3'	424	0.1

SP7	CHL	TPH
Surface	<16	
4'	96	
Surface	319	
1'	380	
2'	1061	
3'	1315	
4'	361	
5'	392	
Surface	0.32	0.1
1'	524	0.2
2'	549	0.1

SP8	CHL	TPH
Surface	<16	
2'	48	
3'	384	
4'	368	
Surface	349	
1'	2099	
2'	2388	
3'	1274	
4'	35	
Surface	124	
2'	274	
3'	524	
4'	474	
Surface	16	
2'	48	
3'	384	
4'	368	
Surface	699	0.1
1'	549	0.2
2'	524	0.1
3'	374	0.2

SP9	CHL
Surface	<16
1'	<16
Surface	350
1'	34

SP10	CHL
Surface	<16
Surface	382

Aurger Refusal

SP11	CHL

SP12	CHL

SP13	CHL

SP14	CHL

SP15	CHL

SP21	CHL

SP22	CHL

SP22	CHL

SP23	CHL

SP24	CHL

SP25	CHL

SP26	CHL

SP27	CHL

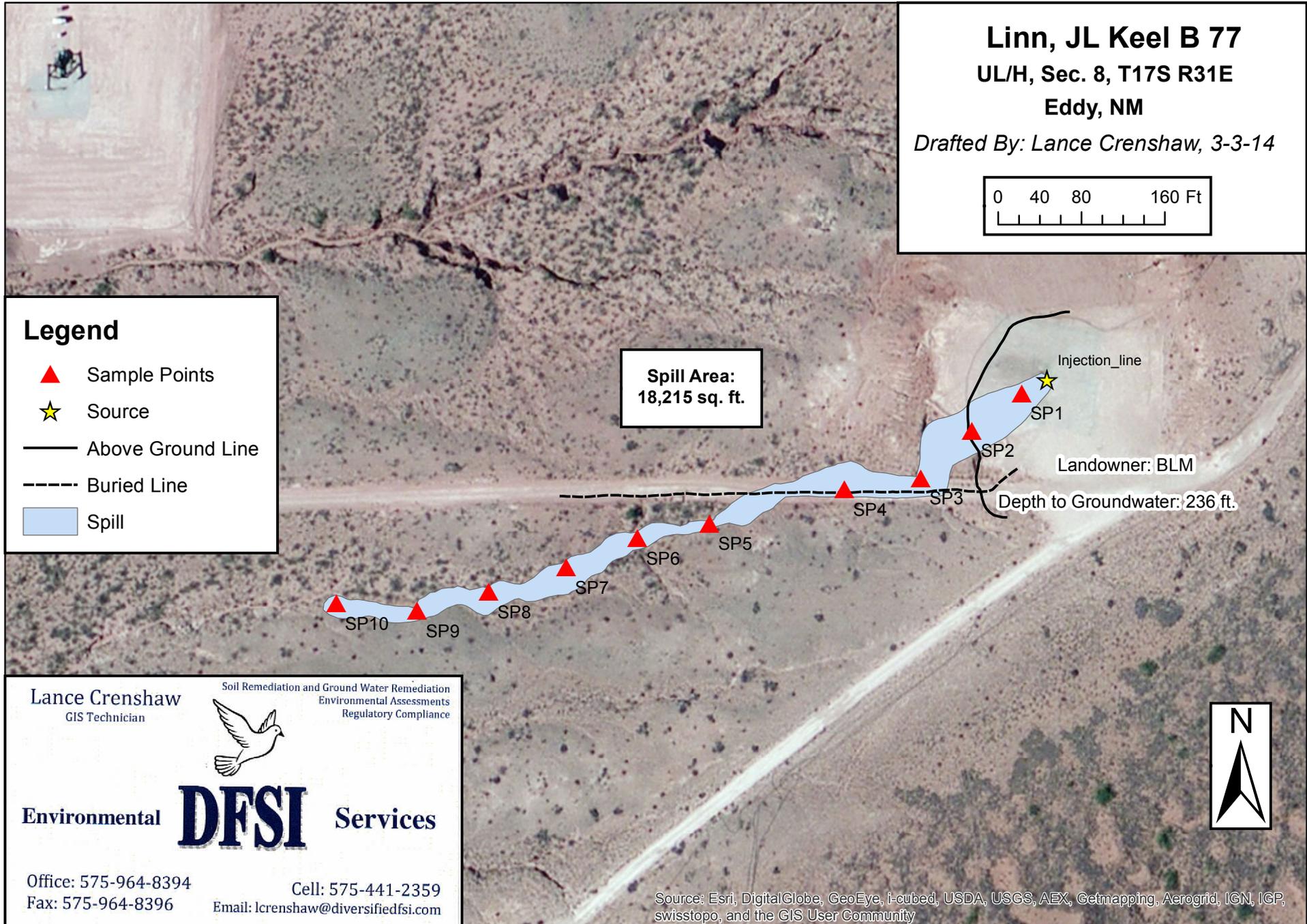
SP28	CHL

SP29	CHL

SP30	CHL

Lab Confirmation Sample
 Field Sampling
 Needs Delineation and confirmation samples
dddd Red lettering - indicated Btex or TPH Issue
 Etech Sample Confirmation

Excavation Plat



Linn Energy JL Keel B #077

Unit Letter H, Section 8, T17S R31E



Sign marking location 03/03/14



Excavated trench area east of lease road X573 03/03/14

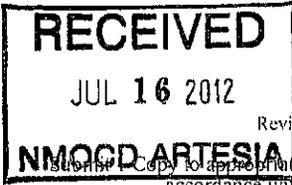


Impacted pasture arroyo area east of lease road 03/03/14



Marker of SP 8 north end of arroyo 03/03/14

REVISED



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

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

Form C-141
Revised October 10, 2003
Submit Copy to appropriate District Office in accordance with 19.15.29 NMAC

Release Notification and Corrective Action

nJMW12214 29082 OPERATOR [X] Initial Report [] Final Report
Name of Company: Linn Operating 269324 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

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
------------------	---------------	-----------------	--------------	-----------------------	---------------------------	----------------------	------------------------	----------------

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:	
Title: Production Foreman	Approval Date: AUG 07 2012	Expiration Date:
E-mail Address: jhernandez@lnnenergy.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

ZRP-1233

Bratcher, Mike, EMNRD

From: Theresa McCracken [TMcCracken@linnenergy.com]
Sent: Monday, July 16, 2012 1:03 PM
To: Bratcher, Mike, EMNRD; Terry Gregston (tgregsto@blm.gov)
Cc: Daniel Frick; Ron Ragland; Gary Wink; Joe Hernandez
Subject: Rev. Linn JL Keel B #77
Attachments: JL Keel B #77 7-7-12.pdf

Please find attached the revised initial C-141 for the above referenced location.

Thank you,

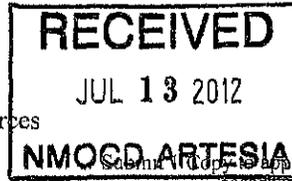


Theresa McCracken
2100 W Border
Tchibo, NV 88740
T: 575-735-1735 / F: 575-735-1740
tmccracken@linnenergy.com

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1220 South St. Francis Dr.
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Form C-141
Revised October 10, 2003
Submit Copy to appropriate District Office in accordance with 19.15.29 NMAC

Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company: Linn Operating	Contact: 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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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	
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Signature:	OIL CONSERVATION DIVISION	
Printed Name: Joe Hernandez	Approved by District Supervisor:	
Title: Production Foreman	Approval Date:	Expiration Date:
E-mail Address: jhernandez@linenergy.com	Conditions of Approval: .	Attached <input type="checkbox"/>
Date: 07/13/2012 Phone: 575-942-9492		

* Attach Additional Sheets If Necessary

Bratcher, Mike, EMNRD

From: Theresa McCracken [TMcCracken@linnenergy.com]
Sent: Friday, July 13, 2012 1:59 PM
To: Bratcher, Mike, EMNRD; Terry Gregston (tgregsto@blm.gov)
Cc: Daniel Frick; Ron Ragland; Joe Hernandez; Gary Wink
Subject: Linn- JL Keel B #77 Initial C-141
Attachments: JL Keel B #77 7-7-12.pdf

Please find attached initial C-141 for the above referenced location.

Thank you,



Theresa McCracken
2130 W Bondar
Fritch, NV 89240
T: 515-738-1739 / F: 515-738-1740
tmccracken@linnenergy.com

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Bratcher, Mike, EMNRD

From: Gregston, Terry G [tgregsto@blm.gov]
Sent: Monday, July 16, 2012 12:55 PM
To: Theresa McCracken; Bratcher, Mike, EMNRD
Subject: RE: Linn- JL Keel B #77 Initial C-141

Ms. McCracken,

The C141 for this event does not state whether oil or water was released (or both). Also, it is impossible to release a fluid into unlined containment and to recover exactly what was released (there should be some loss of fluid that is absorbed into the ground). Do you wish to revise this spill report and resubmit?

Terry Gregston

Environmental Protection Specialist
Bureau of Land Management
620 E. Greene St.
Carlsbad, NM 88220
Office (575) 234-5958
Cell (575) 361-2635
Fax (575) 234-5927

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From: Theresa McCracken [mailto:TMcCracken@linnenergy.com]
Sent: Friday, July 13, 2012 1:59 PM
To: Mike Bratcher (mike.bratcher@state.nm.us); Gregston, Terry G
Cc: Daniel Frick; Ron Ragland; Joe Hernandez; Gary Wink
Subject: Linn- JL Keel B #77 Initial C-141

Please find attached initial C-141 for the above referenced location.

Thank you,



Theresa McCracken
2130 W Bondar
Robbs, NV 88240
T. 575 736-1739 / F. 575 736-1740
tmccracken@linnenergy.com

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Bratcher, Mike, EMNRD

From: Gregston, Terry G [tgregsto@blm.gov]
Sent: Monday, July 16, 2012 1:02 PM
To: Theresa McCracken; Bratcher, Mike, EMNRD
Subject: RE: Linn- JL Keel B #77 Initial C-141

Okay, I guess it's Monday...your report *does* state that it was produced water but it doesn't state the measurement (gallons, barrels, pounds, etc.). I am assuming that it is barrels, but it is best if the company states that rather than me.

Also the amount released and recovered should not be the same.

Sorry for the confusion and the second email...

Terry Gregston

Environmental Protection Specialist
Bureau of Land Management
620 E. Greene St.
Carlsbad, NM 88220
Office (575) 234-5958
Cell (575) 361-2635
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From: Gregston, Terry G
Sent: Monday, July 16, 2012 12:55 PM
To: 'Theresa McCracken'; Mike Bratcher (mike.bratcher@state.nm.us)
Subject: RE: Linn- JL Keel B #77 Initial C-141

Ms. McCracken,

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Terry Gregston

Environmental Protection Specialist
Bureau of Land Management
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Carlsbad, NM 88220
Office (575) 234-5958
Cell (575) 361-2635
Fax (575) 234-5927

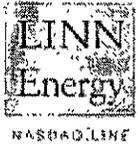
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Sent: Friday, July 13, 2012 1:59 PM
To: Mike Bratcher (mike.bratcher@state.nm.us); Gregston, Terry G
Cc: Daniel Frick; Ron Ragland; Joe Hernandez; Gary Wink
Subject: Linn- JL Keel B #77 Initial C-141

Please find attached initial C-141 for the above referenced location.

Thank you,



Theresa McCracken
2130 W Bender
Hobbs, NV 89240
T 575 738 1738 / F 575 738 1740
tmccracken@linnenergy.com

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August 12, 2013

GARY WINK

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 08/07/13 16:50.

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,

A handwritten signature in cursive script that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received:	08/07/2013	Sampling Date:	08/05/2013
Reported:	08/12/2013	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 1 @ SURFACE (H301852-01)

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	08/10/2013	ND	2.17	108	2.00	3.04		
Toluene*	<0.050	0.050	08/10/2013	ND	1.97	98.7	2.00	2.03		
Ethylbenzene*	<0.050	0.050	08/10/2013	ND	1.97	98.5	2.00	2.23		
Total Xylenes*	<0.150	0.150	08/10/2013	ND	5.82	97.0	6.00	2.41		
Total BTEX	<0.300	0.300	08/10/2013	ND						

Surrogate: Dibromofluoromethane 99.3 % 61.3-142

Surrogate: Toluene-d8 93.7 % 71.3-129

Surrogate: 4-Bromofluorobenzene 97.0 % 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	3520	16.0	08/12/2013	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/10/2013	ND	183	91.3	200	3.63		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	189	94.4	200	3.98		

Surrogate: 1-Chlorooctane 92.3 % 65.2-140

Surrogate: 1-Chlorooctadecane 109 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 08/07/2013
 Reported: 08/12/2013
 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: Jodi Henson

Sample ID: SP 2 @ SURFACE (H301852-02)

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	08/10/2013	ND	2.17	108	2.00	3.04		
Toluene*	<0.050	0.050	08/10/2013	ND	1.97	98.7	2.00	2.03		
Ethylbenzene*	<0.050	0.050	08/10/2013	ND	1.97	98.5	2.00	2.23		
Total Xylenes*	<0.150	0.150	08/10/2013	ND	5.82	97.0	6.00	2.41		
Total BTEX	<0.300	0.300	08/10/2013	ND						

Surrogate: Dibromofluoromethane 98.1 % 61.3-142

Surrogate: Toluene-d8 94.1 % 71.3-129

Surrogate: 4-Bromofluorobenzene 97.0 % 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	08/12/2013	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/10/2013	ND	183	91.3	200	3.63		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	189	94.4	200	3.98		

Surrogate: 1-Chlorooctane 88.3 % 65.2-140

Surrogate: 1-Chlorooctadecane 105 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	08/07/2013	Sampling Date:	08/05/2013
Reported:	08/12/2013	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 3 @ SURFACE (H301852-03)

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	08/10/2013	ND	2.17	108	2.00	3.04		
Toluene*	<0.050	0.050	08/10/2013	ND	1.97	98.7	2.00	2.03		
Ethylbenzene*	<0.050	0.050	08/10/2013	ND	1.97	98.5	2.00	2.23		
Total Xylenes*	<0.150	0.150	08/10/2013	ND	5.82	97.0	6.00	2.41		
Total BTEX	<0.300	0.300	08/10/2013	ND						

Surrogate: Dibromofluoromethane 98.7 % 61.3-142

Surrogate: Toluene-d8 94.7 % 71.3-129

Surrogate: 4-Bromofluorobenzene 97.7 % 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	08/12/2013	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/10/2013	ND	183	91.3	200	3.63		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	189	94.4	200	3.98		

Surrogate: 1-Chlorooctane 91.2 % 65.2-140

Surrogate: 1-Chlorooctadecane 109 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 08/07/2013
 Reported: 08/12/2013
 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: Jodi Henson

Sample ID: SP 4 @ SURFACE (H301852-04)

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	08/10/2013	ND	2.17	108	2.00	3.04		
Toluene*	<0.050	0.050	08/10/2013	ND	1.97	98.7	2.00	2.03		
Ethylbenzene*	<0.050	0.050	08/10/2013	ND	1.97	98.5	2.00	2.23		
Total Xylenes*	<0.150	0.150	08/10/2013	ND	5.82	97.0	6.00	2.41		
Total BTEX	<0.300	0.300	08/10/2013	ND						

Surrogate: Dibromofluoromethane 95.7 % 61.3-142

Surrogate: Toluene-d8 92.6 % 71.3-129

Surrogate: 4-Bromofluorobenzene 95.7 % 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	176	16.0	08/12/2013	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/10/2013	ND	183	91.3	200	3.63		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	189	94.4	200	3.98		

Surrogate: 1-Chlorooctane 87.2 % 65.2-140

Surrogate: 1-Chlorooctadecane 104 % 63.6-154

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Analytical Results For:

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

Received:	08/07/2013	Sampling Date:	08/05/2013
Reported:	08/12/2013	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 5 @ SURFACE (H301852-05)

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	08/10/2013	ND	2.17	108	2.00	3.04		
Toluene*	<0.050	0.050	08/10/2013	ND	1.97	98.7	2.00	2.03		
Ethylbenzene*	<0.050	0.050	08/10/2013	ND	1.97	98.5	2.00	2.23		
Total Xylenes*	<0.150	0.150	08/10/2013	ND	5.82	97.0	6.00	2.41		
Total BTEX	<0.300	0.300	08/10/2013	ND						

Surrogate: Dibromofluoromethane 96.0 % 61.3-142

Surrogate: Toluene-d8 93.7 % 71.3-129

Surrogate: 4-Bromofluorobenzene 97.4 % 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	08/12/2013	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/10/2013	ND	183	91.3	200	3.63		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	189	94.4	200	3.98		

Surrogate: 1-Chlorooctane 95.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 117 % 63.6-154

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Analytical Results For:

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

 Received: 08/07/2013
 Reported: 08/12/2013
 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: Jodi Henson

Sample ID: SP 6 @ SURFACE (H301852-06)

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	08/10/2013	ND	2.17	108	2.00	3.04		
Toluene*	<0.050	0.050	08/10/2013	ND	1.97	98.7	2.00	2.03		
Ethylbenzene*	<0.050	0.050	08/10/2013	ND	1.97	98.5	2.00	2.23		
Total Xylenes*	<0.150	0.150	08/10/2013	ND	5.82	97.0	6.00	2.41		
Total BTEX	<0.300	0.300	08/10/2013	ND						

Surrogate: Dibromofluoromethane 100 % 61.3-142
 Surrogate: Toluene-d8 94.8 % 71.3-129
 Surrogate: 4-Bromofluorobenzene 98.1 % 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	08/12/2013	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/10/2013	ND	183	91.3	200	3.63		
DRO >C10-C28	28.3	10.0	08/10/2013	ND	189	94.4	200	3.98		

Surrogate: 1-Chlorooctane 93.0 % 65.2-140
 Surrogate: 1-Chlorooctadecane 116 % 63.6-154

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Analytical Results For:

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

 Received: 08/07/2013
 Reported: 08/12/2013
 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: Jodi Henson

Sample ID: SP 7 @ SURFACE (H301852-07)

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	08/10/2013	ND	2.17	108	2.00	3.04		
Toluene*	<0.050	0.050	08/10/2013	ND	1.97	98.7	2.00	2.03		
Ethylbenzene*	<0.050	0.050	08/10/2013	ND	1.97	98.5	2.00	2.23		
Total Xylenes*	<0.150	0.150	08/10/2013	ND	5.82	97.0	6.00	2.41		
Total BTEX	<0.300	0.300	08/10/2013	ND						

Surrogate: Dibromofluoromethane 99.8 % 61.3-142

Surrogate: Toluene-d8 95.2 % 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	<16.0	16.0	08/12/2013	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/10/2013	ND	183	91.3	200	3.63		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	189	94.4	200	3.98		

Surrogate: 1-Chlorooctane 89.6 % 65.2-140

Surrogate: 1-Chlorooctadecane 108 % 63.6-154

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Analytical Results For:

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

 Received: 08/07/2013
 Reported: 08/12/2013
 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: Jodi Henson

Sample ID: SP 8 @ SURFACE (H301852-08)

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	08/10/2013	ND	2.17	108	2.00	3.04		
Toluene*	<0.200	0.200	08/10/2013	ND	1.97	98.7	2.00	2.03		
Ethylbenzene*	<0.200	0.200	08/10/2013	ND	1.97	98.5	2.00	2.23		
Total Xylenes*	<0.600	0.600	08/10/2013	ND	5.82	97.0	6.00	2.41		
Total BTEX	<1.20	1.20	08/10/2013	ND						

Surrogate: Dibromofluoromethane 98.5 % 61.3-142
 Surrogate: Toluene-d8 94.2 % 71.3-129
 Surrogate: 4-Bromofluorobenzene 98.3 % 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	08/12/2013	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10	<100	100	08/10/2013	ND	183	91.3	200	3.63			
DRO >C10-C28	1230	100	08/10/2013	ND	189	94.4	200	3.98			

Surrogate: 1-Chlorooctane 84.5 % 65.2-140
 Surrogate: 1-Chlorooctadecane 191 % 63.6-154

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Analytical Results For:

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

 Received: 08/07/2013
 Reported: 08/12/2013
 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: Jodi Henson

Sample ID: SP 9 @ SURFACE (H301852-09)

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	08/10/2013	ND	2.17	108	2.00	3.04		
Toluene*	<0.050	0.050	08/10/2013	ND	1.97	98.7	2.00	2.03		
Ethylbenzene*	<0.050	0.050	08/10/2013	ND	1.97	98.5	2.00	2.23		
Total Xylenes*	<0.150	0.150	08/10/2013	ND	5.82	97.0	6.00	2.41		
Total BTEX	<0.300	0.300	08/10/2013	ND						

Surrogate: Dibromofluoromethane 98.0 % 61.3-142

Surrogate: Toluene-d8 94.2 % 71.3-129

Surrogate: 4-Bromofluorobenzene 97.5 % 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	08/12/2013	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/10/2013	ND	183	91.3	200	3.63		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	189	94.4	200	3.98		

Surrogate: 1-Chlorooctane 93.3 % 65.2-140

Surrogate: 1-Chlorooctadecane 112 % 63.6-154

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Analytical Results For:

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

 Received: 08/07/2013
 Reported: 08/12/2013
 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: Jodi Henson

Sample ID: SP 10 @ SURFACE (H301852-10)

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	08/11/2013	ND	2.17	108	2.00	3.04		
Toluene*	<0.200	0.200	08/11/2013	ND	1.97	98.7	2.00	2.03		
Ethylbenzene*	<0.200	0.200	08/11/2013	ND	1.97	98.5	2.00	2.23		
Total Xylenes*	<0.600	0.600	08/11/2013	ND	5.82	97.0	6.00	2.41		
Total BTEX	<1.20	1.20	08/11/2013	ND						

Surrogate: Dibromofluoromethane 97.9 % 61.3-142

Surrogate: Toluene-d8 95.5 % 71.3-129

Surrogate: 4-Bromofluorobenzene 97.9 % 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	08/12/2013	ND	416	104	400	3.77		

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

Surrogate: 1-Chlorooctane 88.4 % 65.2-140

Surrogate: 1-Chlorooctadecane 109 % 63.6-154

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Analytical Results For:

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

 Received: 08/07/2013
 Reported: 08/12/2013
 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: Jodi Henson

Sample ID: SP 11 @ SURFACE (H301852-11)

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	08/11/2013	ND	2.17	108	2.00	3.04		
Toluene*	<0.200	0.200	08/11/2013	ND	1.97	98.7	2.00	2.03		
Ethylbenzene*	<0.200	0.200	08/11/2013	ND	1.97	98.5	2.00	2.23		
Total Xylenes*	<0.600	0.600	08/11/2013	ND	5.82	97.0	6.00	2.41		
Total BTEX	<1.20	1.20	08/11/2013	ND						

Surrogate: Dibromofluoromethane 99.9 % 61.3-142

Surrogate: Toluene-d8 95.5 % 71.3-129

Surrogate: 4-Bromofluorobenzene 99.9 % 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	08/12/2013	ND	416	104	400	3.77		

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

Surrogate: 1-Chlorooctane 95.3 % 65.2-140

Surrogate: 1-Chlorooctadecane 115 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 08/07/2013
 Reported: 08/12/2013
 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: Jodi Henson

Sample ID: SP 12 @ SURFACE (H301852-12)

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	08/11/2013	ND	2.17	108	2.00	3.04		
Toluene*	<0.050	0.050	08/11/2013	ND	1.97	98.7	2.00	2.03		
Ethylbenzene*	<0.050	0.050	08/11/2013	ND	1.97	98.5	2.00	2.23		
Total Xylenes*	<0.150	0.150	08/11/2013	ND	5.82	97.0	6.00	2.41		
Total BTEX	<0.300	0.300	08/11/2013	ND						

Surrogate: Dibromofluoromethane 99.4 % 61.3-142

Surrogate: Toluene-d8 95.6 % 71.3-129

Surrogate: 4-Bromofluorobenzene 97.9 % 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	176	16.0	08/12/2013	ND	416	104	400	3.77		

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

Surrogate: 1-Chlorooctane 93.2 % 65.2-140

Surrogate: 1-Chlorooctadecane 115 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 08/07/2013
 Reported: 08/12/2013
 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: Jodi Henson

Sample ID: SP 13 @ SURFACE (H301852-13)

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.100	0.100	08/11/2013	ND	2.17	108	2.00	3.04		
Toluene*	<0.100	0.100	08/11/2013	ND	1.97	98.7	2.00	2.03		
Ethylbenzene*	<0.100	0.100	08/11/2013	ND	1.97	98.5	2.00	2.23		
Total Xylenes*	<0.300	0.300	08/11/2013	ND	5.82	97.0	6.00	2.41		
Total BTEX	<0.600	0.600	08/11/2013	ND						

Surrogate: Dibromofluoromethane 96.6 % 61.3-142

Surrogate: Toluene-d8 94.7 % 71.3-129

Surrogate: 4-Bromofluorobenzene 97.3 % 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	08/12/2013	ND	432	108	400	3.77		

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

Surrogate: 1-Chlorooctane 99.8 % 65.2-140

Surrogate: 1-Chlorooctadecane 119 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	08/07/2013	Sampling Date:	08/06/2013
Reported:	08/12/2013	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 14 @ SURFACE (H301852-14)

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	08/11/2013	ND	2.17	108	2.00	3.04		
Toluene*	<0.050	0.050	08/11/2013	ND	1.97	98.7	2.00	2.03		
Ethylbenzene*	<0.050	0.050	08/11/2013	ND	1.97	98.5	2.00	2.23		
Total Xylenes*	<0.150	0.150	08/11/2013	ND	5.82	97.0	6.00	2.41		
Total BTEX	<0.300	0.300	08/11/2013	ND						

Surrogate: Dibromofluoromethane 97.4 % 61.3-142

Surrogate: Toluene-d8 93.9 % 71.3-129

Surrogate: 4-Bromofluorobenzene 96.8 % 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	08/12/2013	ND	432	108	400	3.77		

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

Surrogate: 1-Chlorooctane 95.3 % 65.2-140

Surrogate: 1-Chlorooctadecane 117 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 08/07/2013
 Reported: 08/12/2013
 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: Jodi Henson

Sample ID: SP 15 @ SURFACE (H301852-15)

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	08/11/2013	ND	2.17	108	2.00	3.04		
Toluene*	<0.050	0.050	08/11/2013	ND	1.97	98.7	2.00	2.03		
Ethylbenzene*	<0.050	0.050	08/11/2013	ND	1.97	98.5	2.00	2.23		
Total Xylenes*	<0.150	0.150	08/11/2013	ND	5.82	97.0	6.00	2.41		
Total BTEX	<0.300	0.300	08/11/2013	ND						

Surrogate: Dibromofluoromethane 97.7 % 61.3-142

Surrogate: Toluene-d8 94.7 % 71.3-129

Surrogate: 4-Bromofluorobenzene 99.5 % 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	08/12/2013	ND	432	108	400	3.77		

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

Surrogate: 1-Chlorooctane 87.5 % 65.2-140

Surrogate: 1-Chlorooctadecane 106 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report



Celey D. Keene, Lab Director/Quality Manager

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	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		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

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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 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	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 3 @ 2' (H301931-03)

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 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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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	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 4 @ 3' (H301931-04)

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 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

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 7 @ 4' (H301931-05)

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 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)

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 95.3 % 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)

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 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	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
Project Location:	MALJAMAR, NM		

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

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 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



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

BILL TO

ANALYSIS REQUEST

Company Name: LINN ENERGY P.O. #:
 Project Manager: _____ Company:
 Address: _____ Attn: JANE
 City: _____ State: _____ Zip: _____
 Phone #: _____ Fax #: _____
 Project #: _____ Project Owner: _____
 Project Name: DL KEEL B 77 City: _____ State: _____ Zip: _____
 Project Location: MALJAMAR Phone #: _____
 Sampler Name: DANIEL LOCKHART Fax #: _____

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV	SAMPLING	DATE	TIME	BTEX	CL	TPH	8015M
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :								
<u>H39938-1</u>	<u>01 SP5 @ 1'</u>	G	1	X							8-5-13 11:44	11:44	X	X	X		
	<u>02 SP2 @ 2'</u>	G	1	X							8-5-13 11:11	11:11	X	X	X		
	<u>03 SP3 @ 2'</u>	G	1	X							8-5-13 11:32	11:32	X	X	X		
	<u>04 SP4 @ 3'</u>	G	1	X							8-5-13 2:05	2:05	X	X	X		
	<u>05 SP7 @ 4'</u>	G	1	X							8-6-13 9:45	9:45	X	X	X		
	<u>06 SP6 @ 5'</u>	G	1	X							8-6-13 10:20	10:20	X	X	X		
	<u>07 SP8 @ 4'</u>	G	1	X							8-6-13 10:00	10:00	X	X	X		
	<u>08 SP9 @ 1'</u>	G	1	X							8-6-13 10:05	10:05	X	X	X		

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Relinquished By: _____ Date: 8/14/13 Received By: _____
 Relinquished By: Daniel Lockhart Date: 8/17/13 Received By: Jane Keel

Phone Result: Yes No Add'l Phone #:
 Fax Result: Yes No Add'l Fax #:
 REMARKS: aruth@diversifiedsi.com
busall@linnenergy.com

Delivered By: (Circle One) _____
 Sampler - UPS - Bus - Other: -68°C
 Sample Condition: Intact Cool Yes No Yes No
 CHECKED BY: ck

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

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	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	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 BTEX	<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



Celey D. Keene, Lab Director/Quality Manager



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,

A handwritten signature in black ink that reads "Celey D. Keene".

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	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/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 BTEX	<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

*=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 @ 2 (H400583-02)

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	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 % 61.3-142

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)

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	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 % 61.3-142

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)

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	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 % 61.3-142

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



Celey D. Keene, Lab Director/Quality Manager



CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

BILL TO

ANALYSIS REQUEST

Company Name: DUST
Project Manager: Natie Gledson

P.O. #:
Company: DUST
Attn: Natie Gledson

Address:
City: State: Zip:

Address:
City: State: Zip:

Phone #: Fax #:
Project Owner:

City: State: Zip:

Project Name:
Project Location: SL keel B 47

Phone #: Fax #:

Sample Name: Michael Auger

Phone #: Fax #:

FOR LAB USE ONLY

(G)RAB OR (C)OMP.
CONTAINERS
GROUNDWATER
WASTEWATER
SOIL
OIL
SLUDGE
OTHER:
ACID/BASE:
ICE / COOL
OTHER:

MATRIX
PRESERV
SAMPLING

Lab I.D. Sample I.D.

H400582

1 sp. 8 @ 50ft
2 sp. 8 @ 2
3 sp. 8 @ 3
4 sp. 8 @ 4

DATE TIME
7/26/14 11:15
7/26/14 11:30
7/26/14 11:45
7/26/14 1:50

2
+
+
+

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Relinquished By:

Date: 7/26/14
Type: 3:05
Time:

Received By: Debi Newberry

Phone Result: Yes No
Fax Result: Yes No
Add'l Phone #:
Add'l Fax #:
REMARKS: Natie Gledson@diversified.com

Relinquished By: [Signature]

Date: 7/26/14
Type: 3:05
Time:

Received By: Debi Newberry

Delivered By: (Circle One)

Sample Condition
Cool Intact
Yes No

CHEMIST BY: [Signature]

Sampler - UPS - Bus - Other:

5:20

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