



Linn Energy JL Keel B #94

CLOSURE REPORT

API No. 30-015-28251

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

RP# 2RP-709

BLM Event # 11NU051TG

March 9, 2015

Prepared by:

Environmental Department
Diversified Field Service, Inc.

206 W. Snyder
Hobbs, NM 88240
Phone: (575)964-8394
Fax: (575)393-8396

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JL Keel B #94

1 INTRODUCTION

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, Unit letter 'P', S8, T17S R34E, in Eddy County. The incident at this site resulted from a freeze and ultimate rupture in a flowline. The line was located approximately .5 miles west of the well. The release resulted in an overspray of produced water to the north and south of the lease road respectively, and impacted approximately 2,931 sq. ft. of pasture area (Figure). Linn Energy submitted a form C-141 to the NMOCD on April 05, 2011 **2RP-709**(Appendix I).

2 SITE ACTIVITIES

On October 31, 2013 DFSI personnel paid an initial visit to the site. A horizontal delineation was conducted in order to determine the surface area of impact. Representative soil samples were collected from five (5) sample points, and sent to a commercial laboratory for confirmation. The following is a recap of the analyses returned from the lab (Appendix V):

SP1: Surface 32.0 mg/kg Cl⁻, 442 mg/kg BTEX, <200 GRO, 9920 mg/kg DRO.
SP2: Surface 4040 mg/kg Cl⁻, <.300 mg/kg BTEX, <100 GRO, 6980 mg/kg DRO.
SP3: Surface 1840 mg/kg Cl⁻, <.300 mg/kg BTEX, <50.0 GRO, 5700 mg/kg DRO.
SP4: Surface 64.0 mg/kg Cl⁻, <.300 mg/kg BTEX, <50.0 GRO, 4140 mg/kg DRO.
SP5: Surface 480 mg/kg Cl⁻, <.300 mg/kg BTEX, <50.0 GRO, 6420 mg/kg DRO.

On March 26, 2014 an ARCH survey was conducted of the site by Boone Arch Services of NM. Whereby, it was ascertained that the site was negative of any significant cultural resources (Appendix IV).

On April 24, 2014 DFSI personnel returned to the site in order further delineation efforts. The sample points were vertically delineated to 2ft. bgs., and field screened utilizing a Mini Rae Photoionization Detector (PID). Representative soil samples were collected from all sample points and submitted to a commercial laboratory for analyses. The following is a recap of the returned analyses:

SP1: @ 2' <16.0 mg/kg Cl⁻, <.300 mg/kg BTEX, <10.0 GRO, 134 mg/kg DRO.
SP2: @ 2' 48.0 mg/kg Cl⁻, <.300 mg/kg BTEX, <10.0 GRO, <10.0 mg/kg DRO.
SP3: @ 2' 48.0 mg/kg Cl⁻, <.300 mg/kg BTEX, <10.0 GRO, <10.0 mg/kg DRO.

SP4: @ 2' 32.0 mg/kg Cl⁻, <.300 mg/kg BTEX, <10.0 GRO, 24.6 mg/kg DRO.

SP5: @ 2' <16.0 mg/kg Cl⁻, <.300 mg/kg BTEX, <10.0 GRO, <10.0 mg/kg DRO.

SP6: @ 2' 128 mg/kg Cl⁻, <.300 mg/kg BTEX, <10.0 GRO, 15.7 mg/kg DRO.

On June 10, 2014 a written plan of remediation for the site was submitted to the NMOCD and the BLM respectively. The plan was approved based on the following: Excavate SP2 to 1 bgs., and the remainder of impacted area was to be tilled and reseeded according to BLM guidelines.

On July 24, 2014 the area of SP2 was hand excavated to 1 ft. bgs., as proposed. DFSI personnel retrieved representative sidewall and base soil samples and sent to the commercial laboratory for confirmation of the vertical delineation. The following is a recap of the analyses returned by the laboratory:

SW1: East <16.0 mg/kg Cl⁻, <.300 mg/kg BTEX, GRO and DRO were non-detect.

SW2: West <16.0 mg/kg Cl⁻, <.300 mg/kg BTEX, GRO and DRO were non-detect.

SW3: North <16.0 mg/kg Cl⁻, <.300 mg/kg BTEX, GRO and DRO were non-detect.

SW4: South <16.0 mg/kg Cl⁻, <.300 mg/kg BTEX, GRO and DRO were non-detect.

BS1: <16.0 mg/kg Cl⁻, <.300 mg/kg BTEX, GRO and DRO were non-detect.

Based on the above confirmation. All impacted soils were removed to an NMOCD approved facility, and the excavated area backfilled with fresh topsoil.

Photographs of site activities can be viewed in Appendix II.

3 CONCLUSION

According to the U.S. Geological Survey and the NM Office of the State Engineer, there were no records of groundwater in the immediate vicinity, however depth to groundwater in the area averages greater than 220 ft. bgs indicating no potential threat to groundwater or life forms (Appendix III). On July 24, 2014 DFSI personnel ripped and reseeded the pasture area with 25 lbs. of Native Lesser Prairie Chicken seed mixture per the BLM Guidelines. With restoration of vegetation, the permeation of the vadose zone by residual chlorides is minimized. Based on the removal of soils containing elevated chloride and visual staining at the site, DFSI, on behalf of Linn, submits the final form C-141 (Appendix VI), and respectfully requests the closure of the regulatory file for the site.

Site Diagram

Linn, JL Keel B #94
UL/P, Sec. 8 T17S R31E
Eddy County, NM
Drafted By: Lance Crenshaw, 4-25-14

0 0.005 0.01 0.02 Miles

Legend

▲ sample_pts

★ Source

Pipeline

Type

— Above Ground Line

--- Buried Line

Spill

□ <all other values>

Spill_Media

□ Oil and Produced H2O

□ Oil

□ Other

□ Produced Water

Spill Area:
508 sq. ft.

SP6

Spill Area:
2,423 sq. ft.

SP5

SP4

SP3

SP2

SP1

Lance Crenshaw
GIS Technician

Soil Remediation and Ground Water Remediation
Environmental Assessments
Regulatory Compliance



Environmental

DFS

Services

Office: 575-964-8394

Fax: 575-964-8396

Cell: 575-441-2359

Email: lcrenshaw@diversifiedfsi.com

Source: Esri, DigitalGlobe, GeoEye, IGN, swisstopo, and the GIS User Community

4/24/2014

SP Date:	4/24/2014
Rel Date:	3/30/2011

[illegible]

Till and reseed

Page 1

Diversified Environmental Services

[illegible]

Till and reseed

	Lab Confirmation Sample
	Field Sampling
	Needs Delineation and confirmation samples

Diversified Environmental Services

[illegible]

	Lab Confirmation Sample
	Field Sampling
	Needs Delineation and confirmation samples

Diversified Environmental Services

[illegible]

	Lab Confirmation Sample
	Field Sampling
	Needs Delineation and confirmation samples

RECEIVED

MAR 31 2011

Form C-141

Revised October 10, 2003

NMOCD ARTESIA

Applies to appropriate District Office in accordance with Rule 116 on back side of form

District I
1025 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Release Notification and Corrective Action

NKMW 1109553848

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Linn Energy	Contact Dennis Potter
Address PO Box 69, Loco Hills, NM 88255	Telephone No. 575 677 2327
Facility Name J L Keel B #94	Facility Type Oil Well

Surface Owner BLM	Mineral Owner BLM	Lease No. NMLC029435B API 30-015-28251
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	8	17S	31E					Eddy

Latitude N32.8470 Longitude W103.8916 (Release Site)

NATURE OF RELEASE

Type of Release Produced Water/Hydrocarbons	Volume of Release Unknown	Volume Recovered Unknown
Source of Release Flow Line	Date and Hour of Occurrence Unknown	Date and Hour of Discovery Feb 11
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour N/A	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	
If a Watercourse was Impacted, Describe Fully.* N/A		
Describe Cause of Problem and Remedial Action Taken.* The release is a result of a flow line failure during freezing weather and is located approximately .5 miles west of the well. This release caused an "overspray" of fluid into the pasture on two sides of the lease road (north and south). The affected area on the north side of the road is approximately 150' x 150' and the south side is approximately 30' x 100'. Delineation will be conducted and the results used to formulate a work plan for submission to NM OCD and BLM for review and approval.		
Describe Area Affected and Cleanup Action Taken.*		
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: <i>Dennis Potter</i>
Printed Name: Dennis Potter
Title: Assistant Production Foreman
E-mail Address: dpotter@linnenergy.com
Date: 30Mar11 Phone: 505 206 7673

OIL CONSERVATION DIVISION

Signed By <i>Mike Brannon</i>	
Approved by District Supervisor:	
Approval Date: 4/5/11	Expiration Date:
Conditions of Approval:	Attached <input type="checkbox"/>

REMEDATION per OCD Rules and Guidelines. **SUBMIT REMEDIATION PROPOSAL BY:**

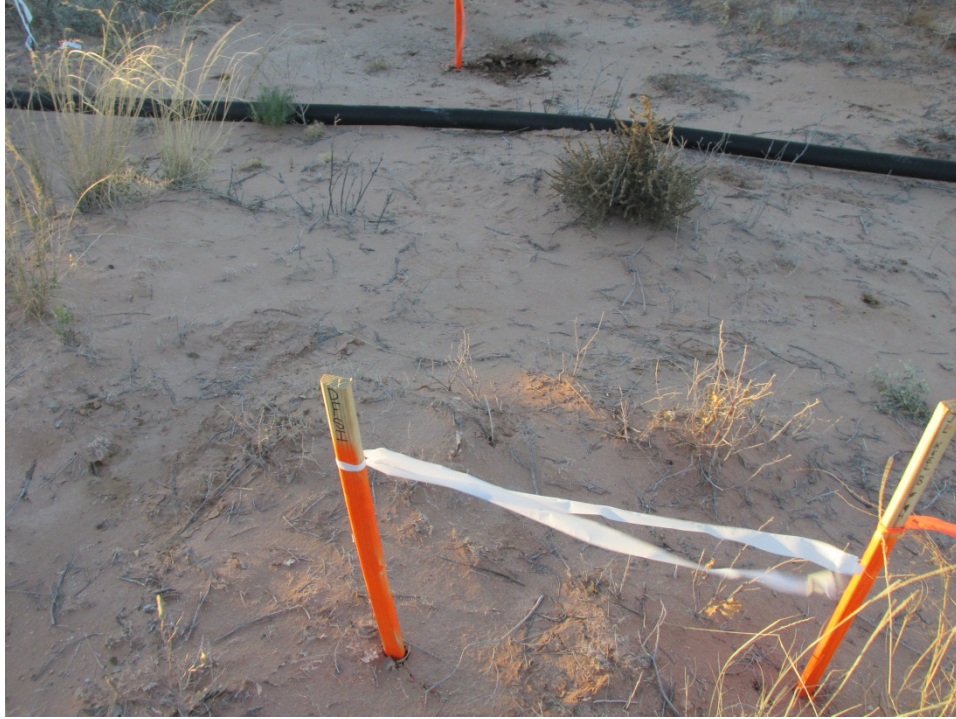
5/5/11

2RP-709

* Attach Additional Sheets If Necessary

Linn Energy J. L. Keel B #094

Unit Letter P, Section 8, T17S R31E



Sign marking location and leak source .5 mile west of well 11/02/13



Affected pasture west of flowline 11/02/13



Affected pasture area 11/02/13



Affected area west of lease road 11/02/13



Hand Excavation of SP2 07/24/2014



Tilling of pasture area 07/24/14



Seeding by hand 07/24/14



Pasture area at completion 07/24/14

GROUND WATER SEARCH

Linn Energy JL Keel B #94

UL: P

Sec: 8

T: 17S

R: 31E

Groundwater Depth: 220~ ft.

● = NM Office of the State Engineer

● = U.S. Geological Survey (unknown well)

✕ = Site Location

Date: 05/12/2014

By: Rebecca Pons

	16S 30E	288' 314' 16S 31E 295'	65' 260' 265' 248' 275' 254' 16S 32E 215' 210' 221' 200'	
	17S 30E 80'	✕ 17S 31E	132' 17S 32E 81'	
	18S 30E 44'	18S 31E	65' 430' 18S 32E 460'	

NMCRIS No.: 130135

NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

1. NMCRIS Activity No.: 130135	2a. Lead Agency: US Bureau of Land Management Carlsbad Field Office	2b. Other Agency(ies):	3. Lead Agency Report No.:
4. Title of Report: A Class III Archaeological Survey for Diversified Field Services, Inc.'s J.L. Keel B #94 Spill Clean-Up Author(s) Hill, Rebecca L and M. Jones			5. Type of Report <input checked="" type="checkbox"/> Negative <input type="checkbox"/> Positive
6. Investigation Type <input type="checkbox"/> Research Design <input checked="" type="checkbox"/> Archaeological Survey/Inventory <input type="checkbox"/> Architectural Survey/Inventory <input type="checkbox"/> Test Excavation <input type="checkbox"/> Excavation <input type="checkbox"/> Collections/Non-Field Study <input type="checkbox"/> Compliance Decision Based on Previous Inventory <input type="checkbox"/> Overview/Lit Review <input type="checkbox"/> Monitoring <input type="checkbox"/> Ethnographic Study <input type="checkbox"/> Site/Property Specific Visit <input type="checkbox"/> Historic Structures Report <input type="checkbox"/> Other			
7. Description of Undertaking (what does the project entail?): <p>A pedestrian cultural resources survey was conducted on 26 March 2014 for Diversified Field Services, Inc.'s J.L. Keel B #94 Spill Clean-Up. The spill area lies in Eddy County, NM on federal lands managed by the Bureau of Land Management/Carlsbad Field Office (BLM/CFO) in Section 8 (NW ¼ SE ¼)(NE ¼ SW ¼) of T17S R31E.</p> <p>The spill area measures 4,355.4 sq. ft. or 0.10 acres and was measured using 15 m (50 ft.) parallel transects. With the 100 ft. cultural buffer the entire survey area measures 85,801 sq. ft. or 1.97 acres.</p> <p>Both the spill and survey areas lie entirely on federal lands. Although no significant cultural resources were recorded or updated during the survey, five isolated occurrences (IOs) were found and recorded.</p>			
[] Continuation			
8. Dates of Investigation: from: 26-Mar-2014 to: 26-Mar-2014		9. Report Date: 27-Mar-2014	
10. Performing Agency/Consultant: Boone Arch Services of NM Principal Investigator: Rebecca L. Hill Field Supervisor: Rebecca L. Hill Field Personnel Names: Rebecca L. Hill Historian / Other:			
11. Performing Agency/Consultant Report No.: BASNM 02-14-47			
12. Applicable Cultural Resource Permit No(s): BLM Permit No.: 190-2920-12-S			

NMCRIS No.: 130135

13. Client/Customer (project proponent):

Diversified Field Services, Inc.

Contact: Natalie Gladden

Address: 3412 North Dal Paso, Hobbs, NM 88240

Phone: 575-764-8394

14. Client/Customer Project No.:

15. Land Ownership Status (must be indicated on project map):

Land Owner (By Agency)

Acres Surveyed Acres in APE

US Bureau of Land Management Carlsbad Field Office	1.97	0.10
TOTALS	1.97	0.10

16. Records Search(es):

Date(s) of HPD/ARMS File Review: 21 Mar 14	Name of Reviewer(s): M. Jones	
Date(s) of Other Agency File Review: 21 Mar 14	Name of Reviewer(s): M. Jones	Agency: BLM/CFO

17. Survey Data:

a. Source Graphics [] NAD 27 [X] NAD 83 Note: NAD 83 is the NMCRIS standard.

☒ USGS 7.5' (1:24,000) topo map ☐ Other topo map, Scale:

☒ GPS Unit Accuracy ☒ <1.0m ☐ 1-10m ☐ 10-100m ☐ >100m ☐ Aerial Photo(s)

Other Source Graphic(s):

b. USGS 7.5' Topographic Map Name

USGS Quad Code

Loco Hills	32103-G8
------------	----------

c. County(ies): EDDY

d. Nearest City or Town: Loco Hills, NM

e. Legal Description:

Township (N/S)

Range (E/W)

Section

17S	31E	8
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Projected legal description? [] Yes [X] No [] Unplatted

f. Other Description (e.g. well pad footages, mile markers, plats, land grant name, etc.):

[] Continuation

18. Survey Field Methods:

Intensity: ☒ 100% coverage

☐ <100% coverage

Configuration: ☒ block survey units

☐ linear survey units (l x w):

NMCRIS No.: 130135

☐ other survey units (specify):

Scope: ☒ non-selective (all sites/properties recorded) ☐ selective/thematic (selected sites/properties recorded)

Coverage Method: ☒ systematic pedestrian coverage

☐ other method (describe):

Survey Interval (m): 15 Crew Size: 1 Fieldwork Dates: from: 26-Mar-2014 to: 26-Mar-2014

Survey Person Hours: 0.75 Recording Person Hours: 0.00 Total Hours: 0.75

Additional Narrative:

The spill area lies within one mile of one previously recorded archaeological site: LA 101464. The spill is at a distance sufficient to avoid impacting these sites. For additional information about these sites, see Table 1 on page. 5.

[] Continuation

19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.):

According to the Natural Resources Conservation Service's online database, the project area soil consists of Berino-Dune land complex, 0 to 3 % slopes, "loamy soil" and Kermit-Berino fine sands, 0 to 3% slopes, "deep, loamy, sandy soil". Loamy, sandy soil supports tobosa, black grama, and blue grama as the dominant species with dropseeds and bluestems throughout. Grass cover is uniformly distributed with few large bare areas and gently sloping dunes. Shrubs, such as sand sage, shinnery oak, and mesquite are sparsely and evenly distributed throughout. Other vegetation, such as soapweed yucca and winterfat were viewed in the project area.

The spill area lies approximately 5.25 miles southwest of Mescalero Ridge, 4.1 miles northwest of Taylor Draw and approximately 24.5 miles east of the Pecos River. The spill area ranges from 3730 ft. to 3710 ft. above mean sea level.

[] Continuation

20.a. Percent Ground Visibility: 75% b. Condition of Survey Area (grazed, bladed, undistributed, etc.):

The survey area crosses an existing lease road to the north and east.

[] Continuation

21. CULTURAL RESOURCE FINDINGS

☐ Yes, see next report section

☒ No, discuss why:

Although no significant cultural resources were recorded or updated during the survey, five IOs were found and recorded. For more information on the IOs see Table 2, page 5.

[] Continuation

22. Attachments (check all appropriate boxes):

[X] USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)

[X] Copy of NMCRIS Map Check (required)

[] LA Site Forms - new sites (with sketch map & topographic map) if applicable

[] LA Site Forms (update) - previously recorded & un-relocated sites (first 2 pages minimum)

[] Historic Cultural Property Inventory Forms, if applicable

[] List and Description of Isolates, if applicable

[] List and Description of Collections, if applicable

23. Other Attachments:

[] Photographs and Log

[X] Other Attachments
(Describe): BLM Map

NMCRIS No.: 130135

24. I certify the information provided above is correct and accurate and meets all applicable agency standards.

Principal Investigator/Qualified Supervisor: Printed Name: Rebecca L. Hill

Signature: Rebecca Hill Date: 28 Mar 2014 Title: Principal Investigator

25. Reviewing Agency

Reviewer's Name/Date:

Accepted []

Rejected []

26. SHPO

Reviewer's Name/Date:

HPD Log #:

Date sent to ARMS:

CULTURAL RESOURCE FINDINGS

[fill in appropriate section(s)]

SURVEY RESULTS:

Archaeological Sites discovered and registered: 0

Archaeological Sites discovered and NOT registered: 0

Previously recorded archaeological sites revisited (site update form required): 0

Previously recorded archaeological sites not relocated (site update form required): 0

TOTAL ARCHAEOLOGICAL SITES (visited & recorded): 0

Total isolates recorded: 5

☒ Non-selective isolate recording?

HCPI properties discovered and registered: 0

HCPI properties discovered and NOT registered: 0

Previously recorded HCPI properties revisited: 0

Previously recorded HCPI properties not relocated: 0

TOTAL HCPI PROPERTIES (visited & recorded, including acequias): 0

MANAGEMENT SUMMARY:

While no significant cultural resources were recorded or updated during the survey, five IOs were noted and recorded. IOs are not eligible for the National Register of Historic Places and no treatment is recommended; therefore the clean-up is recommended for approval as planned. If cultural materials are encountered during the clean-up, work should be halted and archaeologists with BLM/CFO should be notified immediately.

[] Continuation

IF REPORT IS NEGATIVE, YOU ARE DONE AT THIS POINT.

SURVEY LA/HCPI NUMBER LOG

Sites/Properties Discovered:

LA/HCPI No. Field/Agency No.

Eligible? (Y/N/U, applicable criteria)

NMCRIS No.: 130135

Previously recorded revisited sites/HCPI properties:

LA/HCPI No. Field/Agency No.

Eligible? (Y/N/U, applicable criteria)

MONITORING LA NUMBER LOG (site form required)

Sites Discovered (site form required):

Previously recorded sites (site update form required):

LA No. Field/Agency No.

LA No. Field/Agency No.

Areas outside known nearby site boundaries monitored? [] Yes

[] No, Explain
why:

TESTING & EXCAVATION LA NUMBER LOG (site form required)

Tested LA number(s)

Excavated LA number(s)

Table 1. Previously Recorded Archaeological Sites Within One Mile

LA No.	Cultural/Temporal Affiliation	Eligibility
101464	Unknown Aboriginal (9500 BC – AD 1880)	Not Eligible

Table 2. Isolated Occurrences

IO No.	Description	Easting	Northing
1	Core, chert	603696	3634828
2	Bucket, 5 gallon, tar	603708	3634844
3	Core Reduction Flake, purple quartzite	603725	3634831
4	Core Reduction Flake, purple quartzite	603688	3634879
5	Burned Caliche Scatter, 10 fist size 2m x 1m	603699	3634878

DFSI Environmental Services
Proposed
JL Keel B #94 Spill Clean-Up

BASNM No.: 02-14-47
NMCRIS No.: 130135

Loco Hills
32103-G8
T17S R31E S 8

Proposed Project Area

1:24,000

1 inch = 2,000 feet

1 centimeter = 240 meters



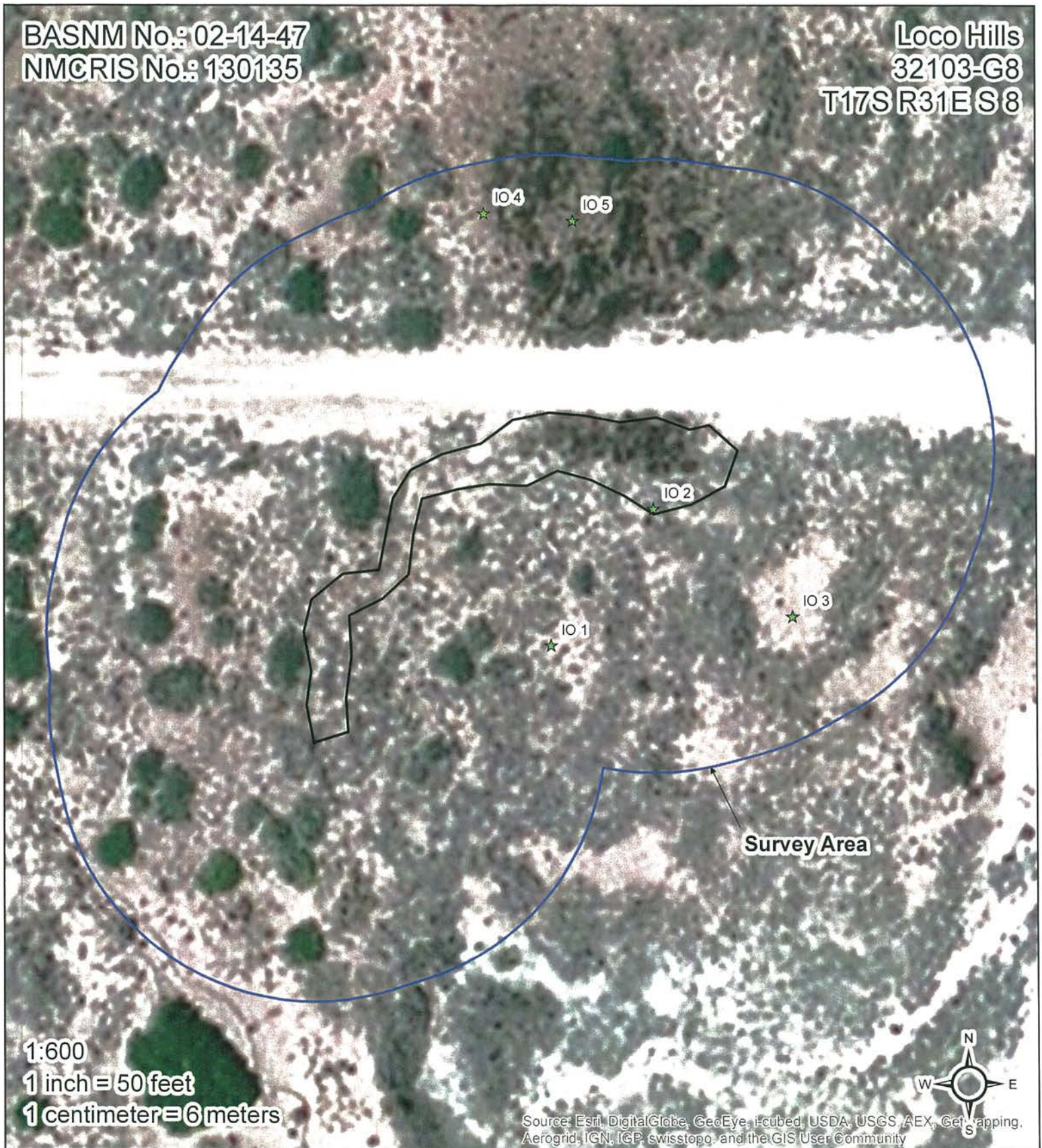
Legend

- | | | | | | |
|-------------------------|------------------|-------|-----------------------|-----------------|--------------------------|
| ■ Proposed Project Area | ■ BLM | ■ DOE | ■ BOI | ■ Private | ■ NM State Game and Fish |
| ■ BOR | ■ Forest Service | ■ NPS | ■ NM State Trust Land | ■ NM State Park | |

DFSI Environmental Services
Proposed
JL Keel B #94 Spill Clean-Up

BASNM No.: 02-14-47
NMCRIS No.: 130135

Loco Hills
32103-G8
T17S R31E S8



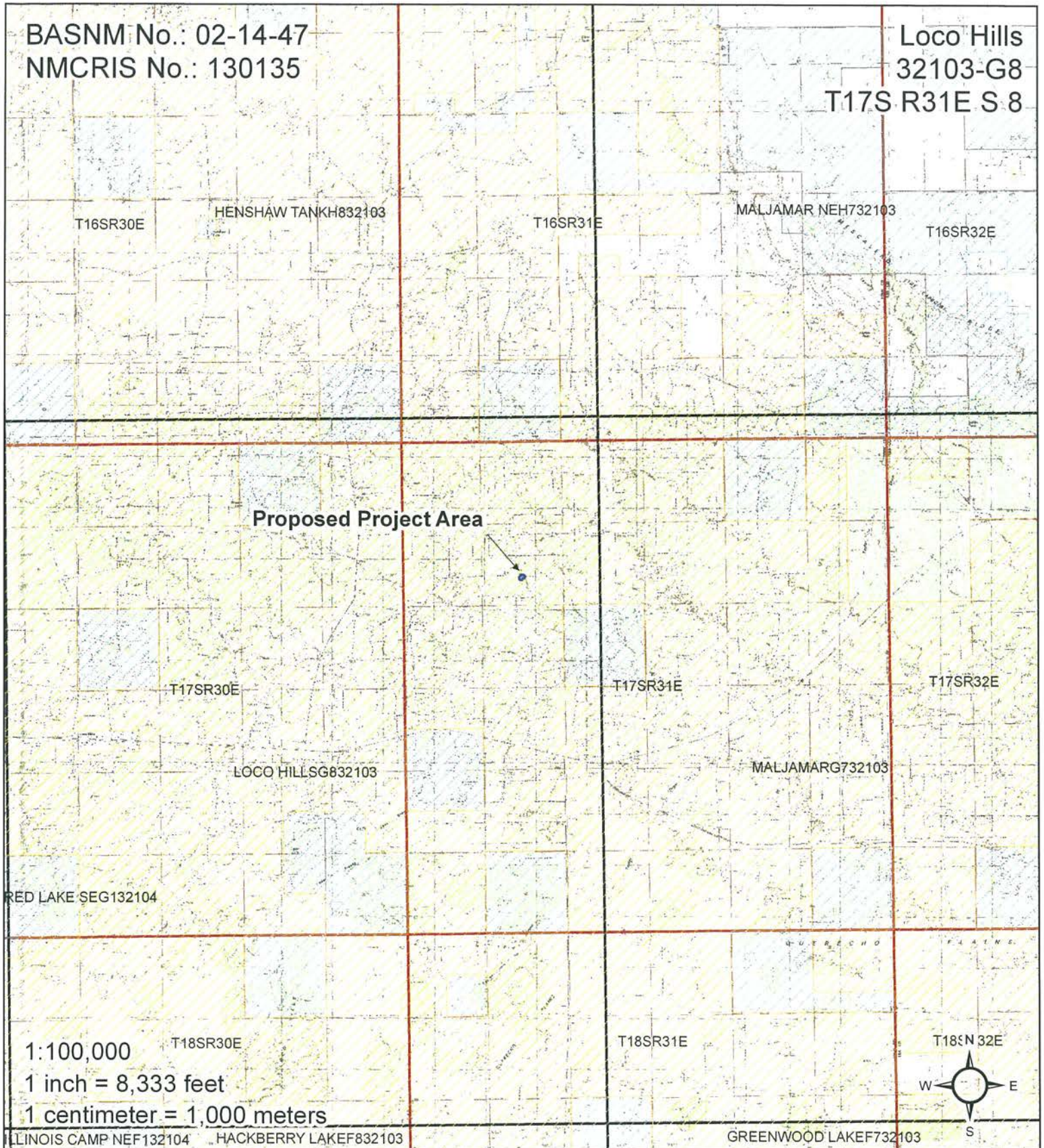
Legend

☆ IO ■ Survey Area ■ Spill ■ Archaeological Site

DFSI Environmental Services

Proposed

JL Keel B #94 Spill Clean-Up



Legend

- Proposed Project Area
- BLM
- DOE
- BOI
- Private
- NM State Game and Fish
- BOR
- Forest Service
- NPS
- NM State Trust Land
- NM State Park

November 06, 2013

BRIAN WALL

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: J. L. KEEL B #94

Enclosed are the results of analyses for samples received by the laboratory on 10/31/13 13:50.

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,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received: 10/31/2013
 Reported: 11/06/2013
 Project Name: J. L. KEEL B #94
 Project Number: NOT GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 10/31/2013
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Jodi Henson

Sample ID: SP 1 SURFACE (H302654-01)

BTX 8021B		mg/kg	Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/05/2013	ND	1.90	94.9	2.00	2.12	
Toluene*	0.055	0.050	11/05/2013	ND	1.89	94.7	2.00	2.22	
Ethylbenzene*	0.174	0.050	11/05/2013	ND	1.90	95.2	2.00	2.41	
Total Xylenes*	0.213	0.150	11/05/2013	ND	5.57	92.9	6.00	2.39	
Total BTX	0.442	0.300	11/05/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 150 % 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	32.0	16.0	11/01/2013	ND	400	100	400	0.00	

TPH 8015M		mg/kg	Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<200	200	11/01/2013	ND	185	92.5	200	0.526	
DRO >C10-C28	9920	200	11/01/2013	ND	174	87.0	200	2.20	

Surrogate: 1-Chlorooctane 64.9 % 65.2-140

Surrogate: 1-Chlorooctadecane 442 % 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 OPERATING-HOBBS
 BRIAN WALL
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

Received: 10/31/2013
 Reported: 11/06/2013
 Project Name: J. L. KEEL B #94
 Project Number: NOT GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 10/31/2013
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Jodi Henson

Sample ID: SP 2 SURFACE (H302654-02)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/05/2013	ND	1.90	94.9	2.00	2.12	
Toluene*	<0.050	0.050	11/05/2013	ND	1.89	94.7	2.00	2.22	
Ethylbenzene*	<0.050	0.050	11/05/2013	ND	1.90	95.2	2.00	2.41	
Total Xylenes*	<0.150	0.150	11/05/2013	ND	5.57	92.9	6.00	2.39	
Total BTX	<0.300	0.300	11/05/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4040	16.0	11/01/2013	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<100	100	11/01/2013	ND	185	92.5	200	0.526		
DRO >C10-C28	6980	100	11/01/2013	ND	174	87.0	200	2.20		

Surrogate: 1-Chlorooctane 82.8 % 65.2-140

Surrogate: 1-Chlorooctadecane 338 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 10/31/2013
 Reported: 11/06/2013
 Project Name: J. L. KEEL B #94
 Project Number: NOT GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 10/31/2013
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Jodi Henson

Sample ID: SP 3 SURFACE (H302654-03)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/05/2013	ND	1.90	94.9	2.00	2.12	
Toluene*	<0.050	0.050	11/05/2013	ND	1.89	94.7	2.00	2.22	
Ethylbenzene*	<0.050	0.050	11/05/2013	ND	1.90	95.2	2.00	2.41	
Total Xylenes*	<0.150	0.150	11/05/2013	ND	5.57	92.9	6.00	2.39	
Total BTX	<0.300	0.300	11/05/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1840	16.0	11/01/2013	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	11/01/2013	ND	175	87.6	200	8.35	
DRO >C10-C28	5770	50.0	11/01/2013	ND	165	82.6	200	10.0	

Surrogate: 1-Chlorooctane 85.5 % 65.2-140

Surrogate: 1-Chlorooctadecane 252 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 10/31/2013
 Reported: 11/06/2013
 Project Name: J. L. KEEL B #94
 Project Number: NOT GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 10/31/2013
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Jodi Henson

Sample ID: SP 4 SURFACE (H302654-04)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/05/2013	ND	1.90	94.9	2.00	2.12	
Toluene*	<0.050	0.050	11/05/2013	ND	1.89	94.7	2.00	2.22	
Ethylbenzene*	<0.050	0.050	11/05/2013	ND	1.90	95.2	2.00	2.41	
Total Xylenes*	<0.150	0.150	11/05/2013	ND	5.57	92.9	6.00	2.39	
Total BTX	<0.300	0.300	11/05/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	11/01/2013	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	11/01/2013	ND	175	87.6	200	8.35	
DRO >C10-C28	4140	50.0	11/01/2013	ND	165	82.6	200	10.0	

Surrogate: 1-Chlorooctane 77.4 % 65.2-140

Surrogate: 1-Chlorooctadecane 186 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 10/31/2013
 Reported: 11/06/2013
 Project Name: J. L. KEEL B #94
 Project Number: NOT GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 10/31/2013
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Jodi Henson

Sample ID: SP 5 SURFACE (H302654-05)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/05/2013	ND	1.90	94.9	2.00	2.12	
Toluene*	<0.050	0.050	11/05/2013	ND	1.89	94.7	2.00	2.22	
Ethylbenzene*	<0.050	0.050	11/05/2013	ND	1.90	95.2	2.00	2.41	
Total Xylenes*	<0.150	0.150	11/05/2013	ND	5.57	92.9	6.00	2.39	
Total BTX	<0.300	0.300	11/05/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	480	16.0	11/01/2013	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	11/01/2013	ND	175	87.6	200	8.35	
DRO >C10-C28	6420	50.0	11/01/2013	ND	165	82.6	200	10.0	

Surrogate: 1-Chlorooctane 82.2 % 65.2-140

Surrogate: 1-Chlorooctadecane 259 % 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.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

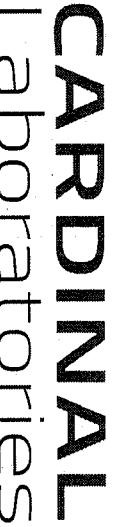
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Celey D. Keene, Lab Director/Quality Manager



Page 8 of 8

(575) 393-2326 FAX (575) 393-2476

as to (575) 3
#54

May 05, 2014

BRIAN WALL

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: J. L. KEEL B #94

Enclosed are the results of analyses for samples received by the laboratory on 04/28/14 15:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/28/2014
Reported: 05/05/2014
Project Name: J. L. KEEL B #94
Project Number: NOT GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 04/24/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP. 1 @ 2' (H401264-01)

BTEX 8260B			mg/kg		Analyzed By: ms			S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/02/2014	ND	2.48	124	2.00	0.626	
Toluene*	<0.050	0.050	05/02/2014	ND	2.13	107	2.00	5.57	
Ethylbenzene*	<0.050	0.050	05/02/2014	ND	2.05	102	2.00	6.01	
Total Xylenes*	<0.150	0.150	05/02/2014	ND	6.42	107	6.00	4.81	
Total BTEX	<0.300	0.300	05/02/2014	ND					

Surrogate: Dibromofluoromethane 104 % 61.3-142

Surrogate: Toluene-d8 92.2 % 71.3-129

Surrogate: 4-Bromofluorobenzene 185 % 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	04/30/2014	ND	400	100	400	0.00	

TPH 8015M			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/30/2014	ND	190	94.9	200	1.62	
DRO >C10-C28	134	10.0	04/30/2014	ND	206	103	200	0.365	

Surrogate: 1-Chlorooctane 107 % 65.2-140

Surrogate: 1-Chlorooctadecane 114 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/28/2014
Reported: 05/05/2014
Project Name: J. L. KEEL B #94
Project Number: NOT GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 04/24/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP. 2 @ 2' (H401264-02)

BTX 8260B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/02/2014	ND	2.48	124	2.00	0.626		
Toluene*	<0.050	0.050	05/02/2014	ND	2.13	107	2.00	5.57		
Ethylbenzene*	<0.050	0.050	05/02/2014	ND	2.05	102	2.00	6.01		
Total Xylenes*	<0.150	0.150	05/02/2014	ND	6.42	107	6.00	4.81		
Total BTX	<0.300	0.300	05/02/2014	ND						

Surrogate: Dibromofluoromethane 105 % 61.3-142

Surrogate: Toluene-d8 99.0 % 71.3-129

Surrogate: 4-Bromofluorobenzene 99.8 % 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	48.0	16.0	04/30/2014	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/30/2014	ND	190	94.9	200	1.62	
DRO >C10-C28	<10.0	10.0	04/30/2014	ND	206	103	200	0.365	

Surrogate: 1-Chlorooctane 111 % 65.2-140

Surrogate: 1-Chlorooctadecane 107 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/28/2014
 Reported: 05/05/2014
 Project Name: J. L. KEEL B #94
 Project Number: NOT GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 04/24/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP. 3 @ 2' (H401264-03)

BTX 8260B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/02/2014	ND	2.48	124	2.00	0.626		
Toluene*	<0.050	0.050	05/02/2014	ND	2.13	107	2.00	5.57		
Ethylbenzene*	<0.050	0.050	05/02/2014	ND	2.05	102	2.00	6.01		
Total Xylenes*	<0.150	0.150	05/02/2014	ND	6.42	107	6.00	4.81		
Total BTX	<0.300	0.300	05/02/2014	ND						

Surrogate: Dibromofluoromethane 98.3 % 61.3-142
Surrogate: Toluene-d8 103 % 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	48.0	16.0	04/30/2014	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/30/2014	ND	190	94.9	200	1.62	
DRO >C10-C28	<10.0	10.0	04/30/2014	ND	206	103	200	0.365	

Surrogate: 1-Chlorooctane 115 % 65.2-140
Surrogate: 1-Chlorooctadecane 108 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/28/2014
 Reported: 05/05/2014
 Project Name: J. L. KEEL B #94
 Project Number: NOT GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 04/24/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP. 4 @ 2' (H401264-04)

BTX 8260B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/02/2014	ND	2.48	124	2.00	0.626		
Toluene*	<0.050	0.050	05/02/2014	ND	2.13	107	2.00	5.57		
Ethylbenzene*	<0.050	0.050	05/02/2014	ND	2.05	102	2.00	6.01		
Total Xylenes*	<0.150	0.150	05/02/2014	ND	6.42	107	6.00	4.81		
Total BTX	<0.300	0.300	05/02/2014	ND						

Surrogate: Dibromofluoromethane 101 % 61.3-142
 Surrogate: Toluene-d8 99.5 % 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	32.0	16.0	04/30/2014	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/30/2014	ND	190	94.9	200	1.62	
DRO >C10-C28	24.6	10.0	04/30/2014	ND	206	103	200	0.365	

Surrogate: 1-Chlorooctane 111 % 65.2-140
 Surrogate: 1-Chlorooctadecane 110 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/28/2014
 Reported: 05/05/2014
 Project Name: J. L. KEEL B #94
 Project Number: NOT GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 04/24/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP. 5 @ 2' (H401264-05)

BTX 8260B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/03/2014	ND	2.48	124	2.00	0.626	
Toluene*	<0.050	0.050	05/03/2014	ND	2.13	107	2.00	5.57	
Ethylbenzene*	<0.050	0.050	05/03/2014	ND	2.05	102	2.00	6.01	
Total Xylenes*	<0.150	0.150	05/03/2014	ND	6.42	107	6.00	4.81	
Total BTX	<0.300	0.300	05/03/2014	ND					

Surrogate: Dibromofluoromethane 102 % 61.3-142
Surrogate: Toluene-d8 100 % 71.3-129
Surrogate: 4-Bromofluorobenzene 97.1 % 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	<16.0	16.0	04/30/2014	ND	400	100	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/30/2014	ND	190	94.9	200	1.62	
DRO >C10-C28	<10.0	10.0	04/30/2014	ND	206	103	200	0.365	

Surrogate: 1-Chlorooctane 115 % 65.2-140
Surrogate: 1-Chlorooctadecane 107 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/28/2014
Reported: 05/05/2014
Project Name: J. L. KEEL B #94
Project Number: NOT GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 04/24/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP. 6 @ 2' (H401264-06)

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	05/03/2014	ND	2.48	124	2.00	0.626		
Toluene*	<0.050	0.050	05/03/2014	ND	2.13	107	2.00	5.57		
Ethylbenzene*	<0.050	0.050	05/03/2014	ND	2.05	102	2.00	6.01		
Total Xylenes*	<0.150	0.150	05/03/2014	ND	6.42	107	6.00	4.81		
Total BTEx	<0.300	0.300	05/03/2014	ND						

Surrogate: Dibromofluoromethane 104 % 61.3-142

Surrogate: Toluene-d8 98.7 % 71.3-129

Surrogate: 4-Bromofluorobenzene 99.6 % 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	128	16.0	04/30/2014	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/30/2014	ND	190	94.9	200	1.62	
DRO >C10-C28	15.7	10.0	04/30/2014	ND	206	103	200	0.365	

Surrogate: 1-Chlorooctane 111 % 65.2-140

Surrogate: 1-Chlorooctadecane 110 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



ANALYSIS REQUEST

Page 9 of 9



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

May 22, 2014

BRIAN WALL

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: J. L. KEEL B #94

Enclosed are the results of analyses for samples received by the laboratory on 05/16/14 13:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:LINN OPERATING-HOBBS
BRIAN WALL
2130 W. BENDER
HOBBS NM, 88240
Fax To: (575) 738-1740Received: 05/16/2014
Reported: 05/22/2014
Project Name: J. L. KEEL B #94
Project Number: NOT GIVEN
Project Location: EDDY COUNTY, NMSampling Date: 05/16/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson**Sample ID: SP 2 @ 1' (H401508-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	05/21/2014	ND	416	104	400	3.92	

Sample ID: SP. 1,3,4,5,6 COMP (H401508-02)

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	05/21/2014	ND	416	104	400	3.92	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



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

Page 4 of 4



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

August 01, 2014

BRIAN WALL

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: J. L. KEEL B #94

Enclosed are the results of analyses for samples received by the laboratory on 07/25/14 15:20.

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 "Hope S. Moreno". The signature is written in a cursive, flowing style.

Hope S. Moreno For Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

 Received: 07/25/2014
 Reported: 08/01/2014
 Project Name: J. L. KEEL B #94
 Project Number: [none]
 Project Location: EDDY COUNTY, NM

 Sampling Date: 07/25/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SW 1 EAST (H402296-01)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2014	ND	2.04	102	2.00	5.35	
Toluene*	<0.050	0.050	07/30/2014	ND	2.07	103	2.00	4.93	
Ethylbenzene*	<0.050	0.050	07/30/2014	ND	2.10	105	2.00	5.15	
Total Xylenes*	<0.150	0.150	07/30/2014	ND	6.43	107	6.00	4.74	
Total BTX	<0.300	0.300	07/30/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 126 % 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	07/31/2014	ND	416	104	400	7.41		

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	07/29/2014	ND	179	89.7	200	14.0	
DRO >C10-C28	<10.0	10.0	07/29/2014	ND	209	104	200	14.8	

Surrogate: 1-Chlorooctane 123 % 65.2-140

Surrogate: 1-Chlorooctadecane 137 % 63.6-154

Cardinal Laboratories

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Hope S. Moreno For Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 07/25/2014
 Reported: 08/01/2014
 Project Name: J. L. KEEL B #94
 Project Number: [none]
 Project Location: EDDY COUNTY, NM

 Sampling Date: 07/25/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SW 2 WEST (H402296-02)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2014	ND	2.04	102	2.00	5.35	
Toluene*	<0.050	0.050	07/30/2014	ND	2.07	103	2.00	4.93	
Ethylbenzene*	<0.050	0.050	07/30/2014	ND	2.10	105	2.00	5.15	
Total Xylenes*	<0.150	0.150	07/30/2014	ND	6.43	107	6.00	4.74	
Total BTEx	<0.300	0.300	07/30/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 126 % 89.4-126

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/31/2014	ND	416	104	400	7.41	

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	07/29/2014	ND	179	89.7	200	14.0	
DRO >C10-C28	<10.0	10.0	07/29/2014	ND	209	104	200	14.8	

Surrogate: 1-Chlorooctane 124 % 65.2-140

Surrogate: 1-Chlorooctadecane 142 % 63.6-154

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Hope S. Moreno For Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 07/25/2014
 Reported: 08/01/2014
 Project Name: J. L. KEEL B #94
 Project Number: [none]
 Project Location: EDDY COUNTY, NM

 Sampling Date: 07/25/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SW 3 NORTH (H402296-03)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2014	ND	2.04	102	2.00	5.35	
Toluene*	<0.050	0.050	07/30/2014	ND	2.07	103	2.00	4.93	
Ethylbenzene*	<0.050	0.050	07/30/2014	ND	2.10	105	2.00	5.15	
Total Xylenes*	<0.150	0.150	07/30/2014	ND	6.43	107	6.00	4.74	
Total BTEX	<0.300	0.300	07/30/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 126 % 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	07/31/2014	ND	416	104	400	7.41	

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	07/29/2014	ND	179	89.7	200	14.0	
DRO >C10-C28	<10.0	10.0	07/29/2014	ND	209	104	200	14.8	

Surrogate: 1-Chlorooctane 119 % 65.2-140

Surrogate: 1-Chlorooctadecane 130 % 63.6-154

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/25/2014
 Reported: 08/01/2014
 Project Name: J. L. KEEL B #94
 Project Number: [none]
 Project Location: EDDY COUNTY, NM

Sampling Date: 07/25/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SW 4 SOUTH (H402296-04)

BTEX 8021B		mg/kg		Analyzed By: MS				A-01, S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/31/2014	ND	1.75	87.3	2.00	2.83		
Toluene*	<0.050	0.050	07/31/2014	ND	1.78	89.1	2.00	5.77		
Ethylbenzene*	<0.050	0.050	07/31/2014	ND	1.77	88.6	2.00	4.92		
Total Xylenes*	<0.150	0.150	07/31/2014	ND	5.38	89.6	6.00	5.16		
Total BTEX	<0.300	0.300	07/31/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 85.1 % 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	07/31/2014	ND	416	104	400	7.41		

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	07/29/2014	ND	179	89.7	200	14.0	
DRO >C10-C28	<10.0	10.0	07/29/2014	ND	209	104	200	14.8	

Surrogate: 1-Chlorooctane 123 % 65.2-140

Surrogate: 1-Chlorooctadecane 140 % 63.6-154

Cardinal Laboratories

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Hope S. Moreno For Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 07/25/2014
 Reported: 08/01/2014
 Project Name: J. L. KEEL B #94
 Project Number: [none]
 Project Location: EDDY COUNTY, NM

 Sampling Date: 07/25/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: BS 1 (H402296-05)

BTX 8021B		mg/kg		Analyzed By: MS				A-01, S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/31/2014	ND	1.75	87.3	2.00	2.83		
Toluene*	<0.050	0.050	07/31/2014	ND	1.78	89.1	2.00	5.77		
Ethylbenzene*	<0.050	0.050	07/31/2014	ND	1.77	88.6	2.00	4.92		
Total Xylenes*	<0.150	0.150	07/31/2014	ND	5.38	89.6	6.00	5.16		
Total BTX	<0.300	0.300	07/31/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 85.6 % 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	07/31/2014	ND	416	104	400	7.41		

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	07/29/2014	ND	179	89.7	200	14.0	
DRO >C10-C28	<10.0	10.0	07/29/2014	ND	209	104	200	14.8	

Surrogate: 1-Chlorooctane 123 % 65.2-140

Surrogate: 1-Chlorooctadecane 140 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Hope S. Moreno For Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
A-01	Surrogate recovery marginally low. Target analytes within acceptance limits.
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

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.



Hope S. Moreno For Celey D. Keene, Lab Director/Quality Manager



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

+ Cardinal cannot accept verbal change. Please for written change to 15751202-2926.

DIVERSIFIED FIELD SERVICES, INC.

Project: J L Keel B 94

Date Started: 7-24-14

Seed and lbs. used: 25 #

Date Completed: 7-24-14

Supervisor: Stephen Mason

Bamert Seed Company Inc.

1897 CR 1018 Muleshoe, TX 79347

(800) 262-9892

Permit # TX00905

LPC Sand Shinery W/Fourwing & Ragweed 650#

INV53965

Description	Pure Seed	Germ	Dormant	Hard Seed	Origin
Bluestem, Big "Kaw" (Andropogon gerardii)	16.62%	95.00%	0.00%	0.00%	TX
Bluestem, Little "Cimarron" (Schizachyrium scoparium)	8.00%	90.00%	8.00%	0.00%	TX
Bluestem, Sand "Woodward" (Andropogon hallii)	13.80%	95.00%	0.00%	0.00%	TX
Bristlegrass, Plains, "VNS" (Setaria vulpiseta)	14.48%	90.00%	0.00%	0.00%	TX
Coreopsis-Plains (Coreopsis tinctoria)	5.39%	97.00%	0.00%	0.00%	TX
Dropseed, Sand, "VNS" (Sporobolus cryptandrus)	2.68%	95.00%	3.00%	0.00%	TX
Fourwing saltbush, "VNS" (Atriplex canescens)	15.59%	52.00%	15.00%	0.00%	NM
Ragweed, White (Ambrosia L.)	6.79%	9.00%	68.00%	0.00%	KY
Purity: 83.35%	Inert Matter: 10.31%	Other Crop Seed: 6.32%		Weed Seed: 0.02%	

Noxious Weeds: None

Test Date: 02/2014

Net Wt: 25.00 lbs

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

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Linn Operating, Inc.	Contact: Brian Wall	
Address: 2130 W. Bender Hobbs, NM 88240	Telephone No. (575)-738-1739	
Facility Name: JL Keel B #94	Facility Type: Production	
Surface Owner Federal	Mineral Owner Federal	API No. 30-015-28251

LOCATION OF RELEASE

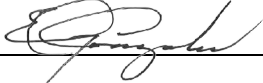
Unit Letter P	Section 8	Township 17S	Range 31E	Feet from the 1309	North/South Line South	Feet from 1299	East/West Line East	County Eddy
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Latitude: 32.8470 Longitude -103.8916

NATURE OF RELEASE

Type of Release: Produced Water/Hydrocarbons	Volume of Release Unknown	Volume Recovered Unknown
Source of Release: Flow line	Date and Hour of Occurrence Unknown	Date and Hour of Discovery Feb 2011
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour: N/A	
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.* NA		
Describe Cause of Problem and Remedial Action Taken.* The release was as the result of a flow line failure from freezing temperatures and is located approximately .5 miles west of the well. This release caused an "overspray" of fluids on the pasture on two sides of the lease road (north and south). The affected area on the north side of the road was approximately 150' x 150' and the south side is measured approximately 30'x100'. DFSI was retained to remediate the site.		
Describe Area Affected and Cleanup Action Taken: On June 10, 2014 submitted remediation plans to the BLM and NMOCD. Impacted soils were removed and pasture area restored per BLM guidelines. DFSI respectfully request closure of this incident.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		

OIL CONSERVATION DIVISION

Signature: 	Approved by Environmental Specialist:	
Printed Name: Brian Wall E.L. Gonzales		
Title: Construction Foreman II Production Supervisor	Approval Date:	Expiration Date:
E-mail Address: bwall@linenergy.com elgonzales@linenergy.com	Conditions of Approval:	
Date: 03/09/2015 10/13/2014	Phone: 806-367-0645 505-504-8002	Attached <input type="checkbox"/>

* Attach Additional Sheets If Necessary