

RECEIVED

By JKeyes at 10:44 am, Mar 21, 2016



APPROVED

CMU #140

CLOSURE REPORT

API No. 30-025-32923

Release Date: October 17, 2015

Unit Letter H, Section 18, Township 17 South, Range 33 East

NMOCD Case # 1R-3931

March 10, 2016

Prepared by:

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

Table of Contents

- 1 Introduction
- 2 Site Activities
- 3 Conclusion

APPENDICES

Appendix I – Initial C-141

Appendix II – Site Map

Appendix III – Laboratory Analyses

Appendix IV – Site Photos

Appendix V – Seeding Report

Appendix VI – Final C-141

Linn CMU #140

1 INTRODUCTION

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

The site is located southeast of Maljamar, NM, in Lea County. The spill site resulted from a broken 4" fiberglass "T". A total of 7 bbls of produced water was released with 0.5 barrels were recovered by a vacuum truck. The impacted area was approximately 65' long by 10' wide. An initial C-141 was submitted to the NMOCD on October 20, 2015 and approved on the same day (Appendix I).

2 SITE ACTIVITIES

On October 17, 2015, DFSI personnel responded to the site and exposed the line for repair. The release area was then scraped to minimize environmental impact (Appendix II).

On November 6, 2015 and January 15, 2016, DFSI personnel were on site to obtain samples within the leak area. Field samples were tested for chloride levels, as well as BTEX. The BTEX samples were performed using a Mini Rae Photoionization Detector (PID). Due to the Caprock Escarpment, DFSI personnel encountered auger refusal at depths of 1' and 2' bgs. DFSI personnel installed two bore holes to obtain additional samples. All clean field samples under NMOCD and BLM regulatory guidelines were submitted for laboratory analysis at Cardinal Laboratories of Hobbs, NM to obtain confirmation (Appendix III).

A work plan was submitted to NMOCD and BLM on December 1, 2015. Beginning February 16, 2016, DFSI personnel were on site to scrape the affected area to 6" bgs and backfill with clean, imported topsoil (Appendix IV). Contaminated soil was properly disposed of at an NMOCD approved facility. An approximate area of ½ acre was seeded with a mix of BLM #1 and BLM #2 on February 19, 2016 (Appendix V).

3 CONCLUSION

According to the U.S. Geological Survey and the NM Office of the State Engineer, depth to groundwater in the area averages 176 ft. bgs. Based on the report and work completed, any remaining chloride and BTEX components in the vadose zone will not affect groundwater beneath this site, with vegetation expected to return to normal; therefore, DFSI, on behalf of Linn, submits the final C-141 (Appendix VI) and respectfully requests the closure of this regulatory file.

Appendix I

INITIAL C-141

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

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

State of New Mexico
Energy Minerals and Natural Resources

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	E.L. Gonzales
Address	2130 W Bender Blvd Hobbs, NM 88240	Telephone No.	575-738-1739
Facility Name	CMU N. Inj Station Trunk Line (Closest well CMU A #140)	Facility Type	Injection

Surface Owner	State	Mineral Owner	API No. closest well 30-025-32923
---------------	-------	---------------	-----------------------------------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	18	17S	33E	2618	North	88	East	Lea

Latitude 32.8346519 Longitude -103.6942825

NATURE OF RELEASE

Type of Release	Produced Water	Volume of Release	7 bbls	Volume Recovered	.5 bbl.
Source of Release	FG- pipeline	Date and Hour of Occurrence	10/17/2015	Date and Hour of Discovery	10/17/2015 1:30am
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?			
By Whom?	Date and Hour				
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.*					



RECEIVED

By JKeyes at 2:01 pm, Oct 20, 2015

Describe Cause of Problem and Remedial Action Taken.* Received an alarm callout at approximately 1:30am for a pump failure. Upon arrival to location we noticed that the pump had turned off and we had lost pressure from the pump. This gave evidence that we had some type of release out in the field. We promptly shut in our injection lines and began searching for the release. Finding the leak however proved difficult due to the amount of visibility we had since it was dark outside. After several hours of searching we narrowed down the area where we believed the leak was in. Once the sun began to rise we were able to locate the release and found it just south of the CMU-A #140, or north of the CMU-A #151, or east of the CMU-A #18, or West of the CMU-A #19 to be exact. The release came from a 4 inch fiberglass T that gave way and caused the fluid to leak out.

Describe Area Affected and Cleanup Action Taken.* The release itself was approximately 65ft long with the widest point going 10 ft. wide to the north of the release point and 5ft south of the actual release point for a total wide point of 15ft. The estimated amount lost is 7bbls with an estimated 1/2bbl recovered with a vac truck.

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: E.L. Gonzales	Approved by Environmental Specialist: 		
Title: Production Supervisor	Approval Date: 10/20/2015	Expiration Date: 12/20/2015	
E-mail Address: elgonzales@linenergy.com	Conditions of Approval: Discrete site samples required. Delineate and remediate per NMOCD guidelines.		Attached <input type="checkbox"/> IRP 3931
Date: 10/20/2015	Phone: 505-504-8002		

* Attach Additional Sheets If Necessary

Geotagged photos of remediation required.

nJXX1529350342
pJXX1529350415

Appendix II

SITE MAP

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

Site Diagram

Linn, CMU #140
UL/B, Sec. 17 T17S R33E
Lea County, NM
Drafted By: Lance Crenshaw, 10-19-15

0 0.003 0.006 0.012 Miles

Spill Area:
9,262 sq. ft.

Legend

Misc_points

Types

- Electrical Box
- Power Pole
- Headers
- Injection
- Pumpjacks
- Tanks
- Valves
- Other
- Soil Bores
- sample_pts
- Source

Pipeline

Type

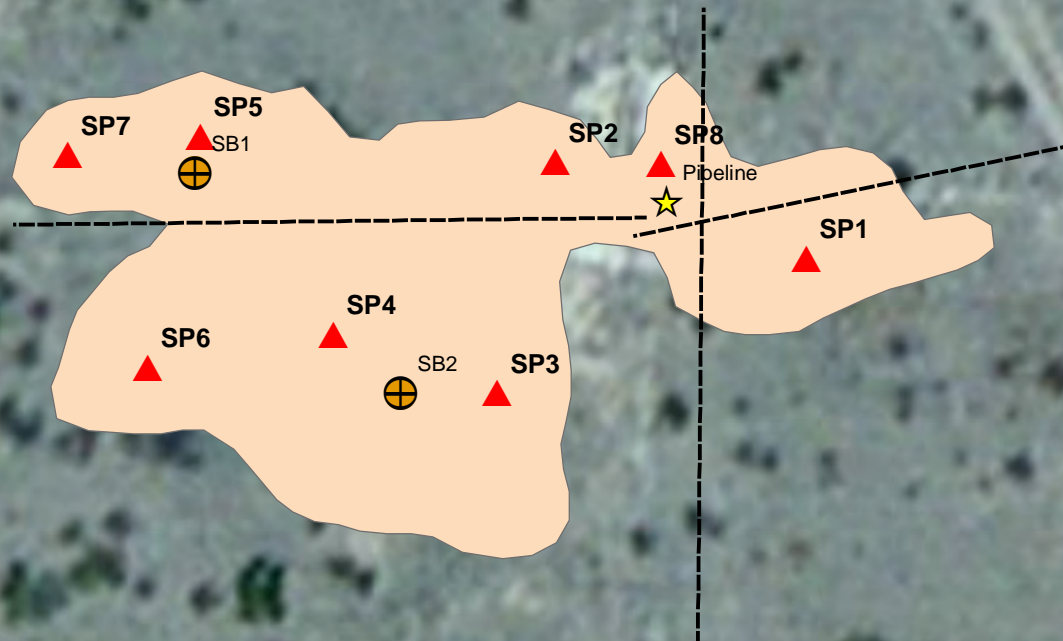
- Above Ground Line
- Buried Line

Spill

- <all other values>

Spill_Media

- Oil and Produced H2O
- Oil
- Other
- Produced Water



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, I-
 swisstopo, and the GIS User Communi

Appendix III

LABORATORY ANALYSES

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



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

February 17, 2016

JOE HERNANDEZ

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: CMU #140

Enclosed are the results of analyses for samples received by the laboratory on 02/16/16 11:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. 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". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received:	02/16/2016	Sampling Date:	02/16/2016
Reported:	02/17/2016	Sampling Type:	Soil
Project Name:	CMU #140	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	NOT GIVEN		

Sample ID: SAMPLE PT. 5 @ 1.5' (H600353-01)

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	02/16/2016	ND	1.99	99.4	2.00	6.93	
Toluene*	<0.050	0.050	02/16/2016	ND	1.96	97.9	2.00	6.53	
Ethylbenzene*	<0.050	0.050	02/16/2016	ND	1.79	89.4	2.00	6.11	
Total Xylenes*	<0.150	0.150	02/16/2016	ND	5.51	91.9	6.00	5.87	
Total BTX	<0.300	0.300	02/16/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	02/17/2016	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/16/2016	ND	208	104	200	1.10	
DRO >C10-C28	<10.0	10.0	02/16/2016	ND	218	109	200	0.367	

Surrogate: 1-Chlorooctane 91.9 % 35-147

Surrogate: 1-Chlorooctadecane 99.8 % 28-171

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

Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

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



CARDINAL Laboratories

RUSH

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: <u>Linn</u>				BILL TO				ANALYSIS REQUEST																			
Project Manager: <u>Joe Hernandez</u>				P.O. #:																							
Address:				Company:																							
City:		State:		Zip:		Attn:																					
Phone #:		Fax #:		Address:																							
Project #:		Project Owner:		City:																							
Project Name: <u>Linn</u>				State:																Zip:							
Project Location: <u>CMU #140</u>				Phone #:																							
Sampler Name: <u>Chris Flores</u>				Fax #:																							
FOR LAB USE ONLY		Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		MATRIX		PRESERV.		SAMPLING		DATE		TIME		Chloride		TPH		BTEX			
		H600353-01		Sample Point 5 @ 1-5'		G		1		GROUNDWATER								2/16/2016		9:45AM		X		X		X	
										WASTEWATER																	
										SOIL																	
										OIL																	
										SLUDGE																	
										OTHER:																	
										ACID/BASE:																	
										ICE / COOL																	
										OTHER:																	

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 the client for the 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 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 services hereunder by Cardinal regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: <u>[Signature]</u>		Date: <u>2/16/2016</u>		Received By: <u>[Signature]</u>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
Relinquished By: <u>[Signature]</u>		Time: <u>11:25</u>		Received By: <u>[Signature]</u>		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Delivered By: (Circle One)		Date:		Time:		REMARKS: Email to: <u>males@diversifiedfsi.com</u> <u>miburton</u> @ <u>mpatterson</u> @ <u>c.flores</u> @			
Sampler - UPS - Bus - Other:		Date:		Time:					
3.8		Sample Condition		CHECKED BY:					
		Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		(Initials)					
		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Yes <input type="checkbox"/> No <input type="checkbox"/>					

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

Appendix IV

SITE PHOTOS



Linn Energy CMU #140

PHOTO PAGE



Release area

10/17/2015



Release area

10/17/2015



Release area

10/17/2015



Release area

10/17/2015



Collecting samples by augering, facing east
11/6/2015



Collecting samples by auguring, facing northwest
1/15/2016



Installing SB-1, facing north
1/15/2016



Excavating site, facing west
2/16/2016



Collecting samples, facing east
2/16/2016



Exporting soil, facing northwest
2/16/2016



Backfilling site, facing west 2/18/2016



Backfill completed, facing west 2/18/2016



Site completed, facing southwest 2/18/2016

Appendix V

SEEDING REPORT

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

DIVERSIFIED FIELD SERVICES, INC.

Project: CMU 140

Date Started: 2/19/16

Seed and lbs used: 1/2 acre DPM 1+2

Date Completed: 2/19/16

Curtis and Curtis, Inc.

4500 North Prince
Clovis, NM 88101
Phone: (575) 762-4759
www.curtisseed.com

Diversified Construction
1/2 Acre BLM #1 & #2, Broadcast Rate
1 - 1/2 Acre Bag @ 29.31 Bulk Pounds Each
Job: Lynn Energy CMU #140

Lot#: M-13462

Item	Origin	Purity	Clean	Dormant	Total Germination	Test Date	Total PLS Pounds
Blue Grama VNS	New Mexico	5.33%	69.0%	27.00%	96.00%	10/15	1.50
Sand Dropseed VNS	New Mexico	3.55%	23.00%	73.00%	96.00%	11/15	1.00
Sideoats Grama	Texas	21.60%	77.00%	2.00%	79.00%	09/15	5.00
El Reno Sand Dropseed VNS	New Mexico	7.11%	23.00%	3.00%	96.00%	11/15	2.00
Sand Bluestem Chet	Kansas	10.55%	96.00%	1.00%	97.00%	11/15	3.00
Little Bluestem	Texas	10.73%	62.00%	33.00%	95.00%	01/16	3.00
Aldous Coreopsis Plains	Colorado	7.59%	84.00%	6.00%	90.00%	09/15	2.00
Plains Bristlegrass VNS	Texas	20.55%	83.00%	0.00%	83.00%	09/15	5.00
Total Bulk Pounds:							29
Other Crop:	1.17%	There Are 1 Bags For This Mix This Bag Weighs 29.31 Bulk Pounds Use This Bag For 1/2 Acres					
Weed Seed:	0.23%						
Inert Matter:	11.54%						

Supervisor: [Signature]

Appendix VI

FINAL C-141

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

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

State of New Mexico
Energy Minerals and Natural Resources

Form C-141
Revised August 8, 2011

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

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Linn Energy	Contact: EL Gonzales
Address: 2130 W Bender, Hobbs, NM 88240	Telephone No. 575-738-1739
Facility Name: CMU N. Inj Station Trunk Line (Closest well CMU A #140)	Facility Type: Injection

Surface Owner: State	Mineral Owner:	API No. 30-025-32923
----------------------	----------------	----------------------

LOCATION OF RELEASE

Unit Letter H	Section 18	Township 17S	Range 33E	Feet from the 2618	North/South Line North	Feet from 88	East/West Line East	County Lea
------------------	---------------	-----------------	--------------	-----------------------	---------------------------	-----------------	------------------------	---------------

Latitude: 32.8346519 Longitude: -103.6942825

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 7 bbls	Volume Recovered: 0.5 bbl
Source of Release: FG - pipeline	Date and Hour of Occurrence 10/17/2015	Date and Hour of Discovery 10/17/2015 1:30 am
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

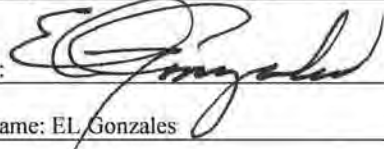

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Received an alarm callout at approximately 1:30 am for a pump failure. Upon arrival to location we noticed that the pump had turned off and we had lost pressure from the pump. This gave evidence that we had some type of release out in the field. We promptly shut in our injection lines and began searching for the release. Finding the leak however proved difficult due to the amount of visibility we had since it was dark outside. After several hours of searching we narrowed down the area where we believed the leak was in. Once the sun began to rise we were able to locate the released and found it just south of the CMU-A #140, or north of the CMU-A #151, or east of the CMU-A #18, or West of the CMU-A #19 to be exact. The release came from a 4 inch fiberglass T that gave way and caused the fluid to leak out.

Describe Area Affected and Cleanup Action Taken.

On October 17, 2015, DFSI personnel responded to the site and exposed the line for repair. The release area was then scraped to minimize environmental impact. On November 6, 2015 and January 15, 2016, DFSI personnel were on site to obtain six samples within the leak area. Field samples were tested for chloride levels, as well as BTEX. The BTEX samples were performed using a Mini Rae Photoionization Detector (PID). Due to the Caprock Escarpment, DFSI personnel encountered auger refusal at depths of 1' and 2' bgs. DFSI personnel installed two bore holes to obtain additional samples. All clean field samples under NMOCD and BLM regulatory guidelines were submitted for laboratory analysis at Cardinal Laboratories of Hobbs, NM to obtain confirmation. A work plan was submitted to NMOCD and BLM on December 1, 2015. Beginning February 16, 2016, DFSI personnel were on site to scrape the affected area to 6" bgs and backfill with clean, imported topsoil. Contaminated soil was properly disposed of at an NMOCD approved facility. The site was seeded with a blend of native vegetation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION		
Printed Name: EL Gonzales	Approved by Environmental Specialist: 		
Title: Production Supervisor	Approval Date: 03/21/2016	Expiration Date: ///	
E-mail Address: elgonzales@linenergy.com	Conditions of Approval: ///	Attached <input type="checkbox"/> IRP 3931	
Date: 2/25/2016 Phone: 575-504-8002			

* Attach Additional Sheets If Necessary