

Mike Bratcher
Environmental Specialist
NM Oil Conservation District – Division 2
811 S. First St.
Artesia, NM 88210

RE: Linn Energy JL Keel B #30 – Remediation Closure Report
UL/O, Section 06, T17S, R31E
API No. 30-015-21460

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 south west of Maljamar NM, in Eddy County. The spill was resulted from a corrosion on a nipple located on the wellhead, releasing 88 barrels of produced water, with 60 barrels of produced water recovered. A C-141 was submitted to the NMOCD on March 27, 2014 and approved March 31, 2014 (Appendix I).

Site Assessment and Delineation

On April 11, 2014 DFSI personnel obtained surface and delineation samples of the leak area, which included SP1-SP12. All but SP7 cleaned up below the required levels, SP1-SP6 and SP8-12 were sampled to 16' and found that contamination was still present. Then on 04/21/14 SP13-SP16 were sampled whereby indicating that contamination was present and we received augur refusal. At this time John Scarborough Drilling, Inc., was contracted to drill four bore holes at the JL Keel B #30 site. On May 23, 2014 the boreholes were drilled and was successful with finding the bottom of contamination.

Field samples were taken on sixteen sample points, along with four boreholes, each sample was tested for chlorides levels as well as BTEX. The BTEX samples were performed using a Mini Rae Photoionization Detector (PID). All clean field samples found under the BLM/NMOCD standards, were taken to Cardinal Lab of Hobbs to obtain confirmation samples. And the results confirmed that bottom samples of each sample point were as follows:

DFSI has conducted a groundwater study of the area and has determined that according to the New Mexico Office of the State Engineer the average depth to groundwater for this area is 236 foot below ground surface. Therefore, no eminent danger of groundwater impact or threat to life is anticipated.

Conclusion

DFSI submitted a work plan on 12/04/2015 to BLM and NMOCD. On 7/14/2017 DFSI personal began remediation activities. The entire spill area was excavated to 3' BGS. All contaminated material was stockpiled on 6ml liner until it was transported to a New Mexico approved landfill. On 8/10/2017 sidewalls samples were taken in the field and submitted to Hall Laboratories to ensure all contamination was removed not only vertically but horizontally as well. On 8/16/2017 a 20ML liner was installed at 3' BGS. The entire spill area was backfilled with imported topsoil that was also field tested to ensure that materiel was contamination free. The site was then contoured to the surrounding area and then seeded with a BLM approved seed. The site was then bermed off to surrounding area to restrict vehicle access.

Conclusion

Due to completion of approved remediation activities, DFSI, on behalf of Linn Energy, submits the final C-141 (Appendix VI) and respectfully requests the closure of the regulatory file for this site.

Please feel free to contact me with any questions concerning this closure request

Sincerely,



Michael Alves
Operations Supervisor
Diversified Field Service, Inc.
206 W. Snyder
Hobbs, NM 88240
Mobile: (575)631-3364
Email: malves@diversifiedfsi.com

cc Shelly Tucker, NM BLM

Appendix I	Initial Form C-141
Appendix II	Groundwater Study
Appendix III	Laboratory Analysis
Appendix IV	Site Photos
Appendix V	Seed Documentation
Appendix VI	Final Form C-141

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
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

RECEIVED

MAR 27 2014

Form C-141
Revised October 10, 2003

Appropriate District Office in
conformance with 19.15.29 NMAC

NMOCD ARTESIA

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Linn Operating	269324	Contact: Brian Wall
Address: 2130 W. Bender Hobbs, NM 88240		Telephone No.: 575-738-1739
Facility Name: Keel J L B #30		Facility Type: Injection
Surface Owner: Federal	Mineral Owner:	API No.: 30-015-21460

LOCATION OF RELEASE

Unit Letter O	Section 06	Township 17S	Range 31E	Feet from the 430	North/South Line South	Feet from the 2250	East/West Line East	County Eddy
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Latitude: 32.85744 Longitude: -103.90692

nHMP1409029298

NATURE OF RELEASE

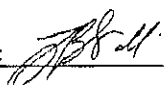
Type of Release: Produced Water	Volume of Release: 88 bbls	Volume Recovered: 60 bbls
Source of Release: Steel Pipeline	Date and Hour of Occurrence: 03/26/2014	Date and Hour of Discovery: 03/26/2014 10:30am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Burton-BLM Mike Bratcher- NM OCD	
By Whom? Brian Wall	Date and Hour 03/27/2014 0650	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*:

Describe Cause of Problem and Remedial Action Taken.*: Drove up to keel west water station started getting gauges on control panel noticed that injection pressure was at 1875 # when usually runs 1940-1950# turn pump off went up to header and spotted line #3 dropping down quick s/l master valve turn pump back on pressure went back to normal on header and control panel went out to inj wells to look for leak found leak North side of Keel A #23 location 150'.

Describe Area Affected and Cleanup Action Taken.*: Leak ran west average 10' wide X 450' long end of leak puddle 40' X 50' called vac truck and recover 60 BBLS of P/W from ground hauled to CRI dug out leak found a steel plug at the end of tee with a hole in it, had rain showers early this morning floor was wet was able to recover fluid. Site will be delineated by Diversified and the a CAP will be turned in. I will have estimate and PLA at that time.

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: Brian Wall	Approved by District Supervisor: 	
Title: Construction Foreman II	Approval Date: 3-31-14	Expiration Date: NA
E-mail Address: bwall@linenergy.com	Conditions of Approval: Remediation per OCD Rule 8.	Attached ☐
Date: 03/27/2014	Phone: 806-367-0645	

Guidelines. SUBMIT REMEDIATION
PROPOSAL NO LATER THAN:

5-1-14

2RP-2234

Appendix II

LABORATORY ANALYSIS

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



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 23, 2017

Michael Alves
Diversified Field Services, Inc
315 S. Leech St
Hobbs, NM 88240
TEL: (575) 964-8394
FAX

RE: JLKEEL B 30

OrderNo.: 1708819

Dear Michael Alves:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/12/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708819

Date Reported: 8/23/2017

CLIENT: Diversified Field Services, Inc

Client Sample ID: N. Wall #4 5pt

Project: JLKEEL B 30

Collection Date: 8/9/2017

Lab ID: 1708819-001

Matrix: SOIL

Received Date: 8/12/2017 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	85	30		mg/Kg	20	8/21/2017 8:19:07 PM	33475
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/16/2017 7:59:11 PM	33371
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/16/2017 7:59:11 PM	33371
Surr: DNOP	107	70-130		%Rec	1	8/16/2017 7:59:11 PM	33371
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/15/2017 12:09:12 PM	33358
Surr: BFB	79.7	54-150		%Rec	1	8/15/2017 12:09:12 PM	33358
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/15/2017 12:09:12 PM	33358
Toluene	ND	0.049		mg/Kg	1	8/15/2017 12:09:12 PM	33358
Ethylbenzene	ND	0.049		mg/Kg	1	8/15/2017 12:09:12 PM	33358
Xylenes, Total	ND	0.097		mg/Kg	1	8/15/2017 12:09:12 PM	33358
Surr: 4-Bromofluorobenzene	108	66.6-132		%Rec	1	8/15/2017 12:09:12 PM	33358

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708819

Date Reported: 8/23/2017

CLIENT: Diversified Field Services, Inc

Client Sample ID: N. Wall #5 5pt

Project: JLKEEL B 30

Collection Date: 8/9/2017

Lab ID: 1708819-002

Matrix: SOIL

Received Date: 8/12/2017 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	120	30		mg/Kg	20	8/21/2017 8:56:21 PM	33475
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/16/2017 8:21:27 PM	33371
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/16/2017 8:21:27 PM	33371
Surr: DNOP	103	70-130		%Rec	1	8/16/2017 8:21:27 PM	33371
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/15/2017 1:21:02 PM	33358
Surr: BFB	82.8	54-150		%Rec	1	8/15/2017 1:21:02 PM	33358
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/15/2017 1:21:02 PM	33358
Toluene	ND	0.048		mg/Kg	1	8/15/2017 1:21:02 PM	33358
Ethylbenzene	ND	0.048		mg/Kg	1	8/15/2017 1:21:02 PM	33358
Xylenes, Total	ND	0.096		mg/Kg	1	8/15/2017 1:21:02 PM	33358
Surr: 4-Bromofluorobenzene	113	66.6-132		%Rec	1	8/15/2017 1:21:02 PM	33358

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708819

Date Reported: 8/23/2017

CLIENT: Diversified Field Services, Inc

Client Sample ID: S. Wall #4 5pt

Project: JLKEEL B 30

Collection Date: 8/9/2017

Lab ID: 1708819-003

Matrix: SOIL

Received Date: 8/12/2017 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/21/2017 9:08:46 PM	33475
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/16/2017 8:43:54 PM	33371
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/16/2017 8:43:54 PM	33371
Surr: DNOP	102	70-130		%Rec	1	8/16/2017 8:43:54 PM	33371
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/15/2017 2:32:59 PM	33358
Surr: BFB	82.6	54-150		%Rec	1	8/15/2017 2:32:59 PM	33358
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	8/15/2017 2:32:59 PM	33358
Toluene	ND	0.049		mg/Kg	1	8/15/2017 2:32:59 PM	33358
Ethylbenzene	ND	0.049		mg/Kg	1	8/15/2017 2:32:59 PM	33358
Xylenes, Total	ND	0.098		mg/Kg	1	8/15/2017 2:32:59 PM	33358
Surr: 4-Bromofluorobenzene	112	66.6-132		%Rec	1	8/15/2017 2:32:59 PM	33358

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708819

Date Reported: 8/23/2017

CLIENT: Diversified Field Services, Inc

Client Sample ID: S. Wall #5 5pt

Project: JLKEEL B 30

Collection Date: 8/9/2017

Lab ID: 1708819-004

Matrix: SOIL

Received Date: 8/12/2017 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	65	30		mg/Kg	20	8/21/2017 9:21:11 PM	33475
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/16/2017 9:06:16 PM	33371
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/16/2017 9:06:16 PM	33371
Surr: DNOP	105	70-130		%Rec	1	8/16/2017 9:06:16 PM	33371
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/15/2017 2:56:54 PM	33358
Surr: BFB	83.9	54-150		%Rec	1	8/15/2017 2:56:54 PM	33358
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/15/2017 2:56:54 PM	33358
Toluene	ND	0.049		mg/Kg	1	8/15/2017 2:56:54 PM	33358
Ethylbenzene	ND	0.049		mg/Kg	1	8/15/2017 2:56:54 PM	33358
Xylenes, Total	ND	0.098		mg/Kg	1	8/15/2017 2:56:54 PM	33358
Surr: 4-Bromofluorobenzene	113	66.6-132		%Rec	1	8/15/2017 2:56:54 PM	33358

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1708819

23-Aug-17

Client: Diversified Field Services, Inc

Project: JLKEEL B 30

Sample ID	MB-33475		SampType: mblk		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 33475		RunNo: 45096					
Prep Date:	8/21/2017		Analysis Date: 8/21/2017		SeqNo: 1428808		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-33475		SampType: lcs		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 33475		RunNo: 45096					
Prep Date:	8/21/2017		Analysis Date: 8/21/2017		SeqNo: 1428809		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.2	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1708819

23-Aug-17

Client: Diversified Field Services, Inc

Project: JLKEEL B 30

Sample ID	MB-33371		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 33371		RunNo: 44981					
Prep Date:	8/15/2017		Analysis Date: 8/16/2017		SeqNo: 1423234		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		105	70	130			

Sample ID	LCS-33371		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 33371		RunNo: 44981					
Prep Date:	8/15/2017		Analysis Date: 8/16/2017		SeqNo: 1423518		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	94.2	73.2	114			
Surr: DNOP	5.0		5.000		101	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1708819

23-Aug-17

Client: Diversified Field Services, Inc

Project: JLKEEL B 30

Sample ID	MB-33358		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 33358		RunNo: 44943					
Prep Date:	8/14/2017		Analysis Date: 8/15/2017		SeqNo: 1422860		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	780		1000		78.3	54	150			

Sample ID	LCS-33358		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 33358		RunNo: 44943					
Prep Date:	8/14/2017		Analysis Date: 8/15/2017		SeqNo: 1422862		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.6	76.4	125			
Surr: BFB	890		1000		88.8	54	150			

Sample ID	1708819-002AMS	SampType: MS			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	N. Wall #5 5pt	Batch ID: 33358			RunNo: 44943					
Prep Date:	8/14/2017	Analysis Date: 8/15/2017			SeqNo: 1422869		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.6	23.19	0	112	77.8	128			
Surr: BFB	880		927.6		94.4	54	150			

Sample ID	1708819-002AMSD		SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	N. Wall #5 5pt		Batch ID: 33358		RunNo: 44943					
Prep Date:	8/14/2017		Analysis Date: 8/15/2017		SeqNo: 1422870		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	24.80	0	104	77.8	128	1.08	20	
Surr: BFB	880		992.1		88.5	54	150	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1708819

23-Aug-17

Client: Diversified Field Services, Inc

Project: JLKEEL B 30

Sample ID MB-33358	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 33358		RunNo: 44943							
Prep Date: 8/14/2017	Analysis Date: 8/15/2017		SeqNo: 1422882		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		107	66.6	132			

Sample ID LCS-33358	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 33358		RunNo: 44943							
Prep Date: 8/14/2017	Analysis Date: 8/15/2017		SeqNo: 1422884		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	97.4	80	120			
Toluene	0.97	0.050	1.000	0	96.7	80	120			
Ethylbenzene	0.97	0.050	1.000	0	97.3	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.8	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	66.6	132			

Sample ID 1708819-001AMS	SampType: MS		TestCode: EPA Method 8021B: Volatiles							
Client ID: N. Wall #4 5pt	Batch ID: 33358		RunNo: 44943							
Prep Date: 8/14/2017	Analysis Date: 8/15/2017		SeqNo: 1422889		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.023	0.9346	0	112	80.9	132			
Toluene	1.1	0.047	0.9346	0	115	79.8	136			
Ethylbenzene	1.1	0.047	0.9346	0	117	79.4	140			
Xylenes, Total	3.3	0.093	2.804	0	118	78.5	142			
Surr: 4-Bromofluorobenzene	1.0		0.9346		107	66.6	132			

Sample ID 1708819-001AMSD	SampType: MSD		TestCode: EPA Method 8021B: Volatiles							
Client ID: N. Wall #4 5pt	Batch ID: 33358		RunNo: 44943							
Prep Date: 8/14/2017	Analysis Date: 8/15/2017		SeqNo: 1422891		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.024	0.9579	0	112	80.9	132	2.24	20	
Toluene	1.1	0.048	0.9579	0	116	79.8	136	2.75	20	
Ethylbenzene	1.1	0.048	0.9579	0	116	79.4	140	2.11	20	
Xylenes, Total	3.4	0.096	2.874	0	119	78.5	142	2.93	20	
Surr: 4-Bromofluorobenzene	1.1		0.9579		110	66.6	132	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: DIVERSIFIED FIELD SE

Work Order Number: 1708819

RcptNo: 1

Received By: Andy Freeman 8/12/2017 10:05:00 AM

Completed By: Ashley Gallegos 8/14/2017 10:47:49 AM

Reviewed By:  8/14/17

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date	_____
By Whom:	_____	Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.4	Good	Yes			

Appendix III

GROUND WATER STUDY

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



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

PLSS Search:

Section(s): 36, 1, 12 **Township:** 17S **Range:** 30E

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

11/8/17 2:56 PM

WATER COLUMN/ AVERAGE
DEPTH TO WATER



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

PLSS Search:

Section(s): 31, 6, 7 **Township:** 17S **Range:** 31E

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

11/8/17 2:54 PM

WATER COLUMN/ AVERAGE
DEPTH TO WATER



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

PLSS Search:

Section(s): 32, 5, 8 **Township:** 17S **Range:** 32E

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

11/8/17 2:54 PM

WATER COLUMN/ AVERAGE
DEPTH TO WATER

Appendix IV

SITE PHOTOS

Site Photos:





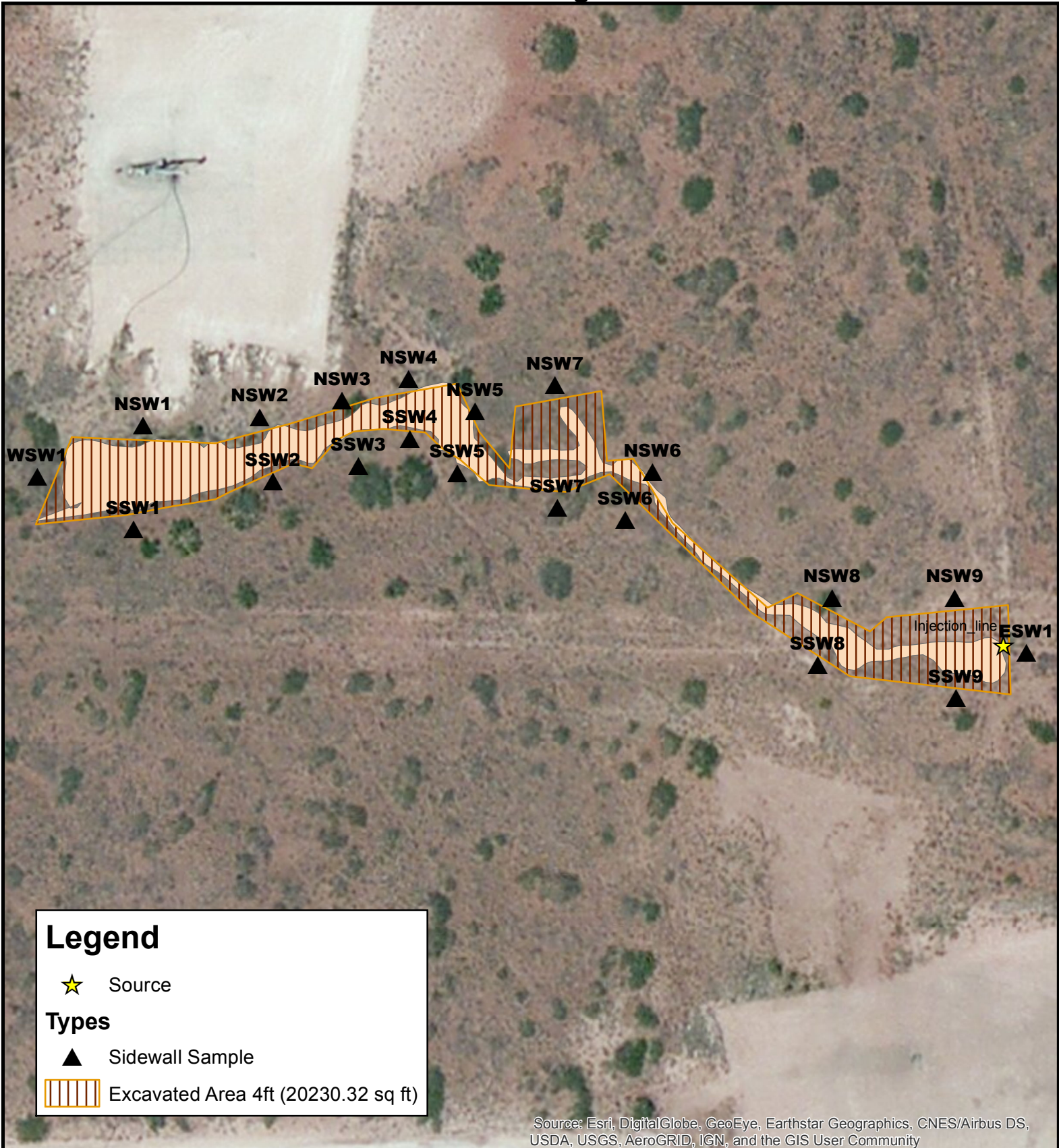




Appendix V

SIDE WALL SITE MAP

Site Side Wall Diagram



Legend

★ Source

Types

▲ Sidewall Sample

▨ Excavated Area 4ft (20230.32 sq ft)

Linn

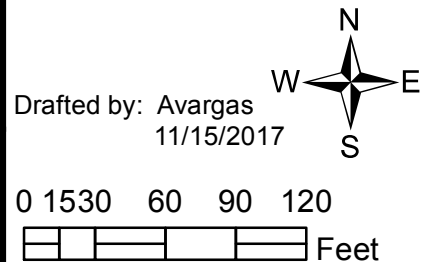
JL Keel B #030

Unit Letter O, Sec. 6, T17S, R31E

Eddy County, NM

API #: 30-015-21460

NMOCD Case #: 2R-2234



Site Diagram

Linn, JL Keel B 30
UL/O, Sec. 6 T17S R31E
Eddy County, NM
Drafted By: Lance Crenshaw, 4-1-14

0 0.005 0.01 0.02 Miles
|-----|-----|-----|

Legend

- Soil Bores
- sample_pts
- Source

Pipeline

Type

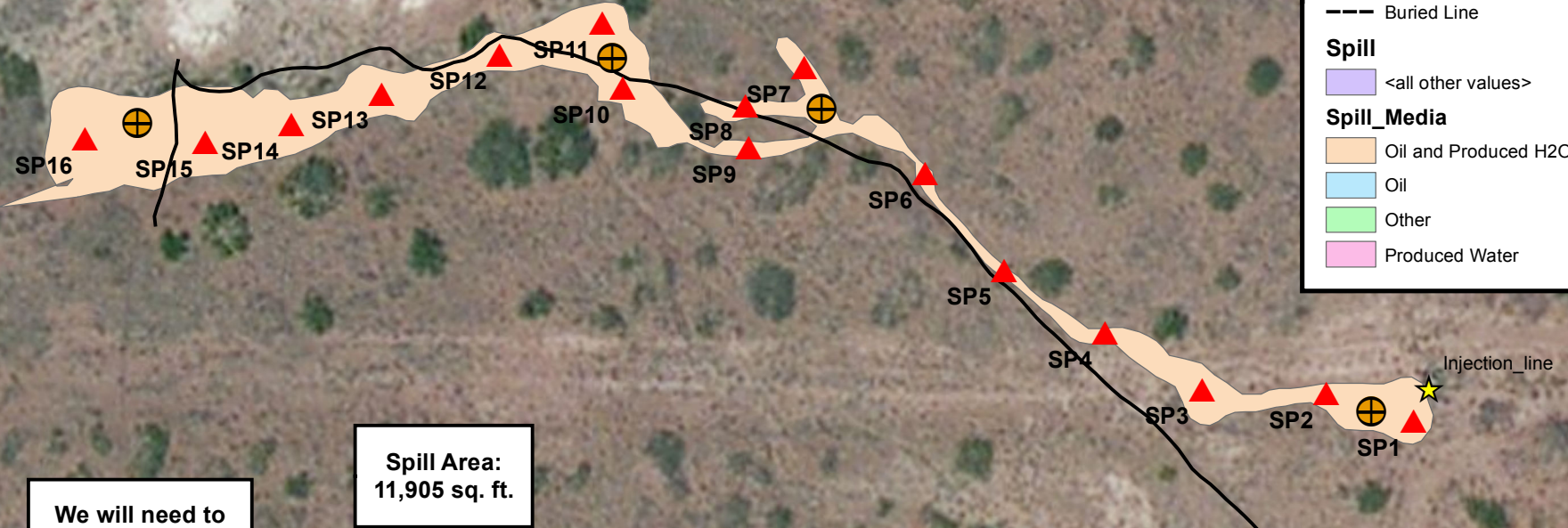
- Above Ground Line
- Buried Line

Spill

- <all other values>

Spill_Media

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



We will need to prepare a road for the drilling rig for each of the four soil bores.

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, AeroGRID, IGN, and the GIS User Community

Appendix VI

SEEDING DOCUMENTATION

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

BUNK'S FEED BARN

3128 S. EUNICE HWY
HOBBS, NM 88240
575-397-1228 Fax: 575-397-1250
www.bunksfeedbarn.com

Invoice #: 505640

Invoice Date: 7/27/2017

Page: 1

Customer #: 408

Ship To:

J & M WELDING (DIVERSIFIED)
314 SOUTH LEECH
HOBBS, NM 88240
USA

Bill To:

J & M WELDING (DIVERSIFIED)
P. O. BOX 5966
HOBBS, NM 88241
USA

Phone: 575-397-6437

Cust PO: 8547

Terms:

Reference: JL Kell #030

Ship Via:

Salesperson:

Stock Code	Description	Quantity	Price	Extended
1370	BLM MIX - LPC SAND/SHINNERY GRASS MIX 1#	61.00	17.30	1,055.30

DATE

ACCT

MEMO/REF:

UNIT

CUST/JOB

CLASS

Mat Bill Enviro

Linn
823

RECEIVED

AUG 25 2017

BY: QBMC

SubTotal: 1,055.30

Tax: 0.00

Shipping: 0.00

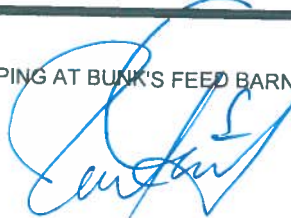
Total: 1,055.30

Credit: 0.00 Cash: 0.00 Check: 0.00 Charge: 0.00 Debit: 0.00

Balance: 1,055.30

THANK YOU FOR SHOPPING AT BUNK'S FEED BARN

Alejandro H. Sotelo Ch.



Appendix VII

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

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 Aaron Hickert
Address 2130 W Bender Blvd Hobbs, NM 88240	Telephone No. 432-363-9496
Facility Name Keel J L B#30	Facility Type Injection

Surface Owner Federal	Mineral Owner	API No. 30-015-21460
------------------------------	---------------	-----------------------------

LOCATION OF RELEASE

Unit Letter O	Section 06	Township 17S	Range 31E	Feet from the 430	North/South Line South	Feet from the 2250	East/West Line East	County Eddy
-------------------------	----------------------	------------------------	---------------------	-----------------------------	----------------------------------	------------------------------	-------------------------------	-----------------------

Latitude 32.85744 Longitude -103.90692

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 88 Bbls	Volume Recovered 60 Bbls
Source of Release Steel Pipeline	Date and Hour of Occurrence 03/26/2014	Date and Hour of Discovery 03/26/2014 10:30am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Burton-BLM Mike Bratcher- NM OCD	
By Whom? Brian Wall	Date and Hour 03/27/2014 0650	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* **Drove up to Keel West Water Station and started getting gauges. On control panel, I noticed that injection pressure was at 1875# when it usually runs 1940-1950#. Turn pump off and went up to header and spotted line #3 dropping down quick. Shut in master valve, turn pump back on, and pressure went back to normal on header and control panel. Went out to injection wells to look for leak and found leak on North side of Keel A #23 location about 150'.**

Describe Area Affected and Cleanup Action Taken. **Leak ran West average 10' wide X 450' long end of leak puddle 40' X 50'. Called vac truck and recovered 60 Bbls of PW from ground and hauled to CR1 dug out leak found a steel plug at the end of tee with a hole in it. Had rain showers early this morning Door was wet was able to recover fluid. Site will be delineated by Diversified and the a CAP will be turned in. I will have estimate and PLA at that time.**

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: Aaron Hickert		Approved by Environmental Specialist:	
Title: Sr. EH&S Representative		Approval Date:	Expiration Date:
E-mail Address: ahickert@linnenergy.com		Conditions of Approval:	Attached ☐
Date: 02/20/2018		Phone: 432-363-9496	