Conditionally
APPROVED

SP1 should be delineated to 250ppm Cl-
Provide sidewall samples with closure report to ensure horizontal extent of contamination has been addressed.

LINN Energy

MGU Battery Flare

REMEDIATION WORK PLAN

API No. 30-025-33208

Release Date: December 30, 2015

Unit Letter F, Section 4, Township 17 South, Range 32 East

RP# 1RP-4082

June 8, 2016

Prepared by:

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

Jamie Keyes
Environmental Specialist
NM Oil Conservation District – Division 1
1625 N French Drive
Hobbs, NM 88240

RE: **Linn MGU Flare Battery – Remediation Work Plan**
UL/F, Section 4, T17S, R32E
API No. 30-025-33208
NMOCD Case #: 1R-4082

Mr. Keyes,

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

The site is located northwest of Maljamar, NM, in Lea County. The spill resulted from relief valve failure, allowing pressure to build within the heater, releasing a total of 30 barrels of oil, with 25 barrels recovered. The impacted area is adjacent to the flare stack fire walls and into the pasture area. An initial C-141 was submitted to the NMOCD on January 4, 2016, and approved on January 7, 2016 (Appendix I).

Site Assessment and Delineation

On January 12, 2016, DFSI personnel were on site to obtain samples within the leak area (Figure 1). Three samples were obtained and field sampled for chloride levels, as well as BTEX (Appendix II). The BTEX samples were performed using a Mini Rae Photoionization Detector (PID). Field samples were submitted for analysis at Cardinal Laboratories of Hobbs, NM to obtain confirmation, resulting in decreasing chloride concentrations to below BLM and NMOCD regulatory guidelines and low TPH concentrations (Appendix III).

DFSI has conducted a groundwater study of the area and has determined, according to the New Mexico Office of the State Engineer, there average depth to groundwater at this site is 132 ft bgs. Therefore, no eminent danger of groundwater impact or threat to life is anticipated (Appendix IV).

Conclusion

After careful review DFSI on behalf of Linn Energy would like to propose the following:

Excavate the area around SP1 to a depth of 4' bgs. At the base of the excavation, a 20-mil reinforced poly liner or river rock layer will be installed to inhibit the downward migration of constituents. The area around SP2 will be excavated to a depth of 3' bgs. Both excavated areas will be backfilled with clean, imported soil to ground surface and contoured to the surrounding. The release area, including SP3, will then be seeded with a BLM - NMOCD approved blend of native vegetation (Figure 2).

Following the approval of the above plan, DFSI will submit all proper closure documentation to the NMOCD and BLM in accordance to the State and Federal Guidelines set forth.

Please feel free to contact me with any questions concerning this remediation plan request.

Sincerely,

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

Figure 1 – Soil Delineation
Figure 2 – Proposed Work
Appendix I – Initial C-141
Appendix II – Site Photos
Appendix III – Laboratory Analysis
Appendix IV – Groundwater Study

Soil Delineation

SP1

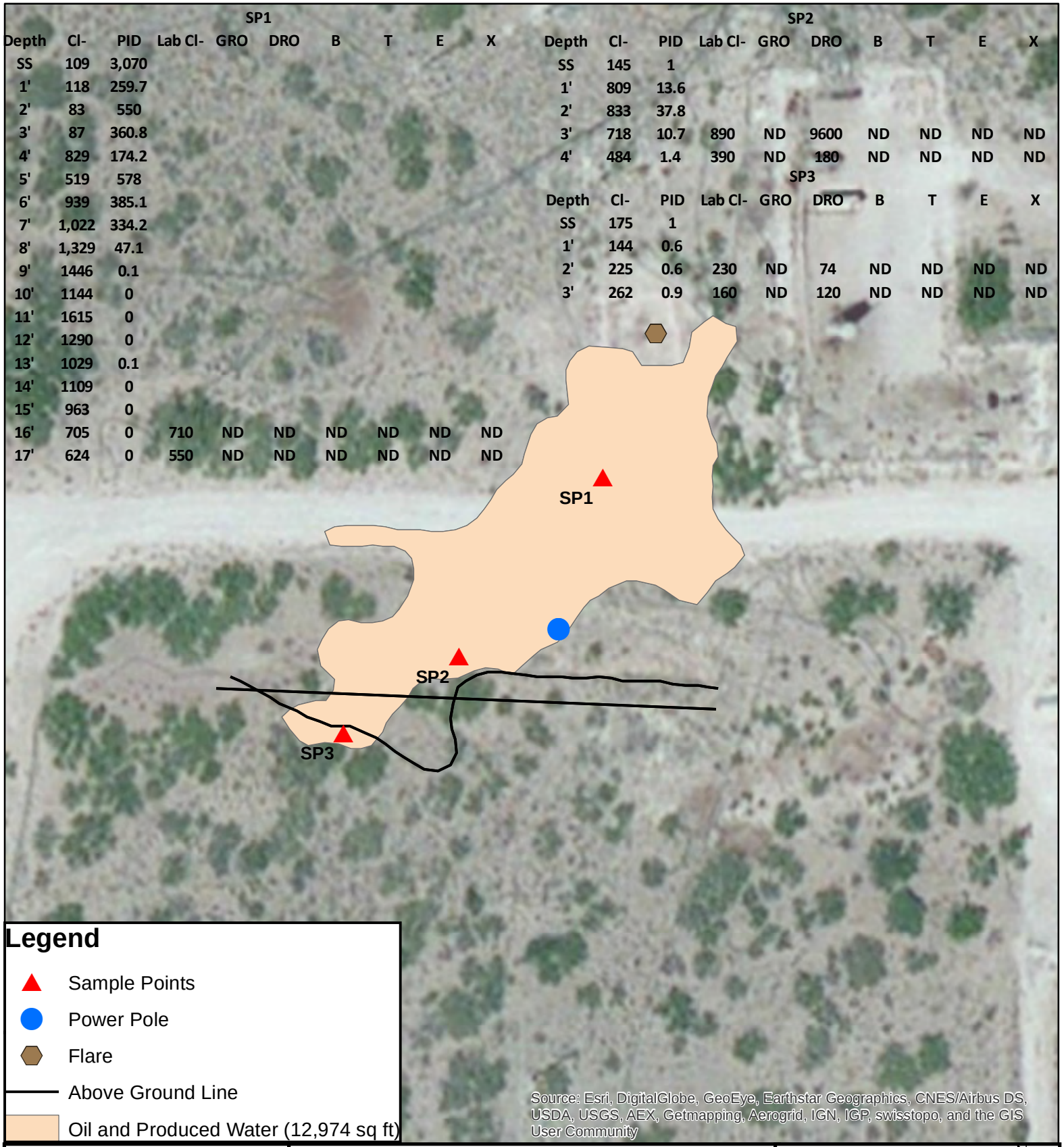
Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	109	3,070							
1'	118	259.7							
2'	83	550							
3'	87	360.8							
4'	829	174.2							
5'	519	578							
6'	939	385.1							
7'	1,022	334.2							
8'	1,329	47.1							
9'	1446	0.1							
10'	1144	0							
11'	1615	0							
12'	1290	0							
13'	1029	0.1							
14'	1109	0							
15'	963	0							
16'	705	0	710	ND	ND	ND	ND	ND	ND
17'	624	0	550	ND	ND	ND	ND	ND	ND

SP2

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	145	1							
1'	809	13.6							
2'	833	37.8							
3'	718	10.7	890	ND	9600	ND	ND	ND	ND
4'	484	1.4	390	ND	180	ND	ND	ND	ND

SP3

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	175	1							
1'	144	0.6							
2'	225	0.6	230	ND	74	ND	ND	ND	ND
3'	262	0.9	160	ND	120	ND	ND	ND	ND



Legend

- Sample Points
- Power Pole
- Flare
- Above Ground Line
- Oil and Produced Water (12,974 sq ft)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

DFSI Environmental Services

Linn
MGU Battery Flare
Unit Letter F, Sec. 4, T17S, R32E
Lea County, NM
API #: 30-025-33208
NMOCD Case #: 1R-4082

Mapped: 04/14/2016 CF
Drafted: L. Flores
06/08/2016

N

0 12.5 25 50 75 100
Feet

Proposed Excavation

SP1

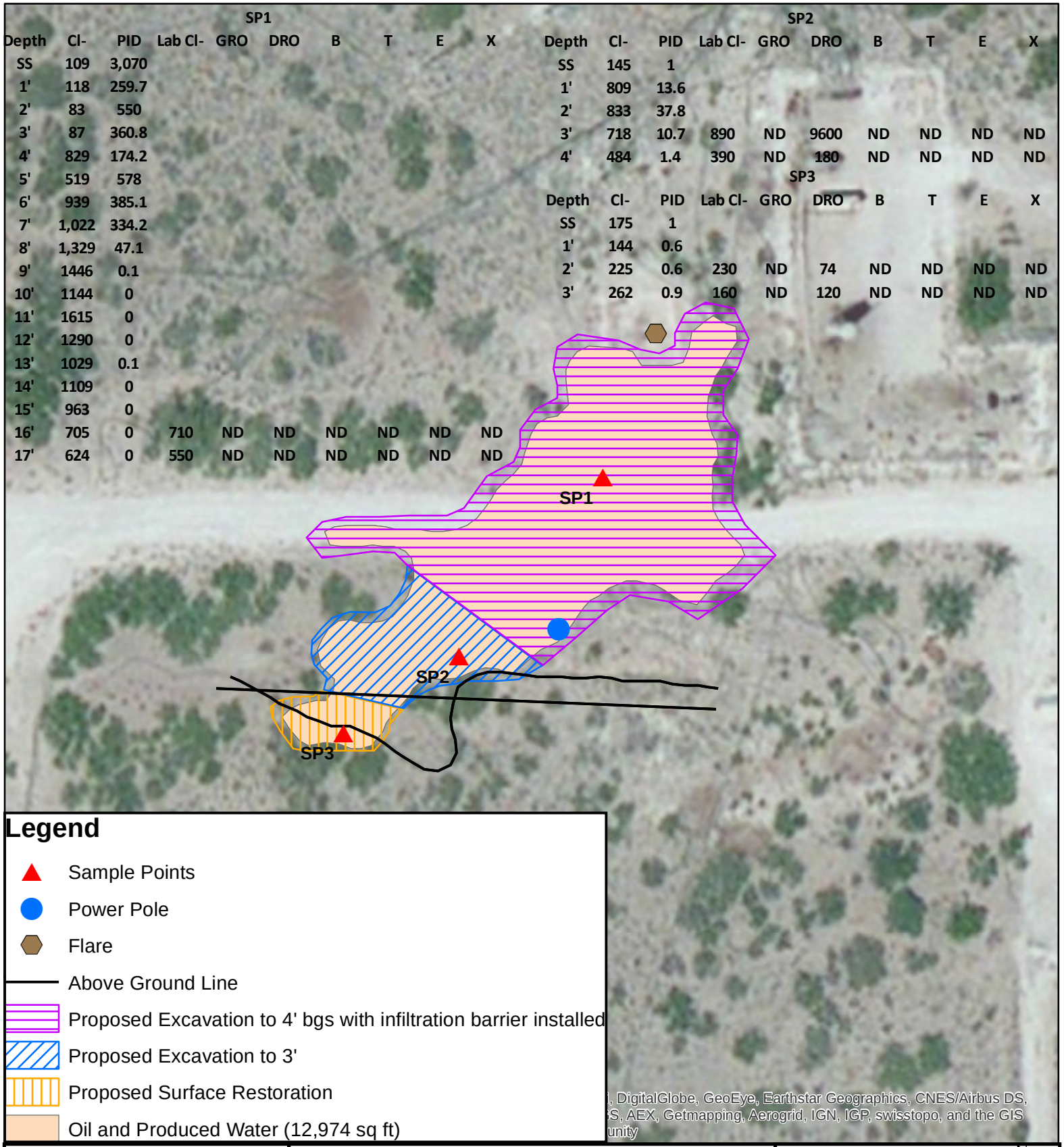
Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	109	3,070							
1'	118	259.7							
2'	83	550							
3'	87	360.8							
4'	829	174.2							
5'	519	578							
6'	939	385.1							
7'	1,022	334.2							
8'	1,329	47.1							
9'	1446	0.1							
10'	1144	0							
11'	1615	0							
12'	1290	0							
13'	1029	0.1							
14'	1109	0							
15'	963	0							
16'	705	0	710	ND	ND	ND	ND	ND	ND
17'	624	0	550	ND	ND	ND	ND	ND	ND

SP2

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	145	1							
1'	809	13.6							
2'	833	37.8							
3'	718	10.7	890	ND	9600	ND	ND	ND	ND
4'	484	1.4	390	ND	180	ND	ND	ND	ND

SP3

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	175	1							
1'	144	0.6							
2'	225	0.6	230	ND	74	ND	ND	ND	ND
3'	262	0.9	160	ND	120	ND	ND	ND	ND



Legend

- Sample Points
- Power Pole
- Flare
- Above Ground Line
- Proposed Excavation to 4' bgs with infiltration barrier installed
- Proposed Excavation to 3'
- Proposed Surface Restoration
- Oil and Produced Water (12,974 sq ft)

DFSI Environmental Services

Linn
MGU Battery Flare
Unit Letter F, Sec. 4, T17S, R32E
Lea County, NM
API #: 30-025-33208
NMOCD Case #: 1R-4082

Mapped: 04/14/2016 CF
Drafted: L. Flores
06/08/2016

N

0 12.5 25 50 75 100
Feet

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 MGU Battery (Flare Stack) closest well is MGU #87	Facility Type Battery

Surface Owner Private	Mineral Owner	API No. closest well 30-025-33208

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	04	17S	32E	2623	North	1571	West	Lea

Latitude 32.8636742 **Longitude** -103.7750244

NATURE OF RELEASE

Type of Release Oil	Volume of Release 30 bbls	Volume Recovered 25 bbls
Source of Release Heater	Date and Hour of Occurrence 12/30/2015	Date and Hour of Discovery 8:00am 12/30/2015
Was Immediate Notice Given? ☐ Yes ☐ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES	

RECEIVED
By Kellie Jones at 8:20 am, Jan 07, 2016

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Upon arrival to the MGU battery I noticed my production heater at the battery was passing oil through the gas lines. I traced the lines and found a release at my flare stack. Somehow the production heater had pressured up and the relief valve never bypassed to allow the pressure to escape. The relief valve appeared to have frozen over the past several days with the cold weather that has passed through the area. Due to this, the pressure that had built inside the heater passed through the flare stack and released oil in to the area.

Describe Area Affected and Cleanup Action Taken.* The area that the oil released from spilt into the flare stack fire walls and into the pasture as well. The flare stack and firewall are located just west of the battery where the production heater sits about 25ft. The area in which we have oil on the ground is inside of the firewall and oil that ran south out of the fire wall and out into the pasture going about 20ft to the south until stopping next to the lease road. The widest point of the spill is 15ft going southeast of the battery and flare stack fire wall. The total amount of oil lost is roughly 30bbls with 25bbl being recovered from inside the firewall and another 5bbls that ran out of the firewall.

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:

Printed Name: E.L. Gonzales

Title: Production Supervisor

E-mail Address: elgonzales@linnenergy.com

Date: 01/04/2016 Phone: 505-504-8002

OIL CONSERVATION DIVISION

Approved by Environmental Specialist:

Approval Date: 01/07/2016 Expiration Date: 03/07/2016

Conditions of Approval:
Site samples required. Delineate and remediate as per MNOCD guides. Geotag photographs of remediation recommended.

Attached ☐
1RP-4082

nKJ1600730224
pKJ1600730391

* Attach Additional Sheets If Necessary

Appendix II

SITE PHOTOS

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

MGU Battery Flare

Unit Letter F, Section 4, T17S, R32E | NMOCD Case #: 1R-4082

PHOTO PAGE

Site prior, facing southwest 1/12/2016

Site prior, facing northeast 1/12/2016

Collecting sample, facing northeast 1/12/2016

Collecting sample, facing east 1/12/2016

Appendix III

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

April 22, 2016

Michael Burton

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

RE: Linn MGU Battery Flare OrderNo.: 1604711

Dear Michael Burton:

Hall Environmental Analysis Laboratory received 6 sample(s) on 4/16/2016 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 qualifers 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1604711**
Date Reported: **4/22/2016**

CLIENT: Diversified Field Services, Inc
Client Sample ID: Sample Point 1 @ 16'
Project: Linn MGU Battery Flare
Collection Date: 4/14/2016 1:50:00 PM
Lab ID: 1604711-001 **Matrix:** SOIL **Received Date:** 4/16/2016 11:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	710	30		mg/Kg	20	4/21/2016 6:25:53 PM	24950
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/19/2016 11:43:07 AM	24865
Surr: DNOP	100	70-130		%Rec	1	4/19/2016 11:43:07 AM	24865
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/19/2016 11:57:11 PM	24853
Surr: BFB	94.9	80-120		%Rec	1	4/19/2016 11:57:11 PM	24853
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	4/19/2016 11:57:11 PM	24853
Toluene	ND	0.049		mg/Kg	1	4/19/2016 11:57:11 PM	24853
Ethylbenzene	ND	0.049		mg/Kg	1	4/19/2016 11:57:11 PM	24853
Xylenes, Total	ND	0.098		mg/Kg	1	4/19/2016 11:57:11 PM	24853
Surr: 4-Bromofluorobenzene	95.4	80-120		%Rec	1	4/19/2016 11:57:11 PM	24853

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
R	RPD outside accepted recovery limits	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.

CLIENT: Diversified Field Services, Inc
Client Sample ID: Sample Point 1 @ 17'
Project: Linn MGU Battery Flare
Collection Date: 4/14/2016 2:20:00 PM
Lab ID: 1604711-002 **Matrix:** SOIL **Received Date:** 4/16/2016 11:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	550	30		mg/Kg	20	4/21/2016 7:03:06 PM	24950
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/19/2016 1:53:21 PM	24846
Surr: DNOP	94.4	70-130		%Rec	1	4/19/2016 1:53:21 PM	24846
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/20/2016 1:31:22 AM	24853
Surr: BFB	94.6	80-120		%Rec	1	4/20/2016 1:31:22 AM	24853
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	4/20/2016 1:31:22 AM	24853
Toluene	ND	0.050		mg/Kg	1	4/20/2016 1:31:22 AM	24853
Ethylbenzene	ND	0.050		mg/Kg	1	4/20/2016 1:31:22 AM	24853
Xylenes, Total	ND	0.10		mg/Kg	1	4/20/2016 1:31:22 AM	24853
Surr: 4-Bromofluorobenzene	94.9	80-120		%Rec	1	4/20/2016 1:31:22 AM	24853

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
R	RPD outside accepted recovery limits	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.

CLIENT: Diversified Field Services, Inc
Client Sample ID: Sample Point 2 @ 3'
Project: Linn MGU Battery Flare
Collection Date: 4/14/2016 9:30:00 AM
Lab ID: 1604711-003 **Matrix:** SOIL **Received Date:** 4/16/2016 11:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	890	30		mg/Kg	20	4/21/2016 7:40:20 PM	24950
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	9600	930		mg/Kg	100	4/19/2016 2:36:49 PM	24846
Surr: DNOP	0	70-130	S	%Rec	100	4/19/2016 2:36:49 PM	24846
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	9.3	D	mg/Kg	2	4/20/2016 1:54:56 AM	24853
Surr: BFB	93.3	80-120	D	%Rec	2	4/20/2016 1:54:56 AM	24853
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.046	D	mg/Kg	2	4/20/2016 1:54:56 AM	24853
Toluene	ND	0.093	D	mg/Kg	2	4/20/2016 1:54:56 AM	24853
Ethylbenzene	ND	0.093	D	mg/Kg	2	4/20/2016 1:54:56 AM	24853
Xylenes, Total	ND	0.19	D	mg/Kg	2	4/20/2016 1:54:56 AM	24853
Surr: 4-Bromofluorobenzene	96.2	80-120	D	%Rec	2	4/20/2016 1:54:56 AM	24853

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
R	RPD outside accepted recovery limits	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.

CLIENT: Diversified Field Services, Inc
Client Sample ID: Sample Point 2 @ 4
Project: Linn MGU Battery Flare
Collection Date: 4/14/2016 9:45:00 AM
Lab ID: 1604711-004 **Matrix:** SOIL **Received Date:** 4/16/2016 11:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	390	30		mg/Kg	20	4/21/2016 7:52:45 PM	24950
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	180	96		mg/Kg	10	4/19/2016 3:20:11 PM	24846
Surr: DNOP	0	70-130	S	%Rec	10	4/19/2016 3:20:11 PM	24846
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/20/2016 2:18:27 AM	24853
Surr: BFB	94.5	80-120		%Rec	1	4/20/2016 2:18:27 AM	24853
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/20/2016 2:18:27 AM	24853
Toluene	ND	0.047		mg/Kg	1	4/20/2016 2:18:27 AM	24853
Ethylbenzene	ND	0.047		mg/Kg	1	4/20/2016 2:18:27 AM	24853
Xylenes, Total	ND	0.094		mg/Kg	1	4/20/2016 2:18:27 AM	24853
Surr: 4-Bromofluorobenzene	95.3	80-120		%Rec	1	4/20/2016 2:18:27 AM	24853

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
R	RPD outside accepted recovery limits	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.

CLIENT: Diversified Field Services, Inc
Client Sample ID: Sample Point 3 @ 2'
Project: Linn MGU Battery Flare
Collection Date: 4/14/2016 10:50:00 AM
Lab ID: 1604711-005 **Matrix:** SOIL **Received Date:** 4/16/2016 11:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	230	30		mg/Kg	20	4/21/2016 8:05:10 PM	24950
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	74	9.5		mg/Kg	1	4/19/2016 4:03:33 PM	24846
Surr: DNOP	112	70-130		%Rec	1	4/19/2016 4:03:33 PM	24846
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/20/2016 2:41:49 AM	24853
Surr: BFB	93.4	80-120		%Rec	1	4/20/2016 2:41:49 AM	24853
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/20/2016 2:41:49 AM	24853
Toluene	ND	0.048		mg/Kg	1	4/20/2016 2:41:49 AM	24853
Ethylbenzene	ND	0.048		mg/Kg	1	4/20/2016 2:41:49 AM	24853
Xylenes, Total	ND	0.096		mg/Kg	1	4/20/2016 2:41:49 AM	24853
Surr: 4-Bromofluorobenzene	94.5	80-120		%Rec	1	4/20/2016 2:41:49 AM	24853

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
R	RPD outside accepted recovery limits	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.

CLIENT: Diversified Field Services, Inc
Client Sample ID: Sample Point 3 @ 3'
Project: Linn MGU Battery Flare
Collection Date: 4/14/2016 11:10:00 AM
Lab ID: 1604711-006 **Matrix:** SOIL **Received Date:** 4/16/2016 11:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	160	30		mg/Kg	20	4/21/2016 8:17:35 PM	24950
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	120	9.9		mg/Kg	1	4/19/2016 4:47:03 PM	24846
Surr: DNOP	104	70-130		%Rec	1	4/19/2016 4:47:03 PM	24846
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/20/2016 3:05:16 AM	24853
Surr: BFB	95.1	80-120		%Rec	1	4/20/2016 3:05:16 AM	24853
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	4/20/2016 3:05:16 AM	24853
Toluene	ND	0.047		mg/Kg	1	4/20/2016 3:05:16 AM	24853
Ethylbenzene	ND	0.047		mg/Kg	1	4/20/2016 3:05:16 AM	24853
Xylenes, Total	ND	0.094		mg/Kg	1	4/20/2016 3:05:16 AM	24853
Surr: 4-Bromofluorobenzene	95.9	80-120		%Rec	1	4/20/2016 3:05:16 AM	24853

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
R	RPD outside accepted recovery limits	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#: **1604711**

22-Apr-16

Client: Diversified Field Services, Inc

Project: Linn MGU Battery Flare

Sample ID	**MB-24950**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**24950**	RunNo:	**33718**					
Prep Date:	**4/21/2016**	Analysis Date:	**4/21/2016**	SeqNo:	**1038629**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-24950**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**24950**	RunNo:	**33718**					
Prep Date:	**4/21/2016**	Analysis Date:	**4/21/2016**	SeqNo:	**1038630**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.7	90	110			

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	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#: **1604711**

22-Apr-16

Client: Diversified Field Services, Inc

Project: Linn MGU Battery Flare

Sample ID **MB-24865**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **24865**	RunNo: **33618**
Prep Date: **4/19/2016**	Analysis Date: **4/19/2016**	SeqNo: **1034542** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	9.5		10.00		94.8	70	130			

Sample ID **LCS-24865**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **24865**	RunNo: **33618**
Prep Date: **4/19/2016**	Analysis Date: **4/19/2016**	SeqNo: **1035160** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.2	65.8	136			
Surr: DNOP	4.7		5.000		93.4	70	130			

Sample ID **MB-24846**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **24846**	RunNo: **33618**
Prep Date: **4/18/2016**	Analysis Date: **4/19/2016**	SeqNo: **1035550** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	9.2		10.00		92.5	70	130			

Sample ID **LCS-24846**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **24846**	RunNo: **33618**
Prep Date: **4/18/2016**	Analysis Date: **4/19/2016**	SeqNo: **1035611** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.7	65.8	136			
Surr: DNOP	4.6		5.000		92.5	70	130			

Qualifiers:

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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
R	RPD outside accepted recovery limits	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#: **1604711**

22-Apr-16

Client: Diversified Field Services, Inc

Project: Linn MGU Battery Flare

Sample ID **MB-24853**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **24853**	RunNo: **33642**
Prep Date: **4/18/2016**	Analysis Date: **4/19/2016**	SeqNo: **1035851** 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	940		1000		94.3	80	120			

Sample ID **LCS-24853**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **24853**	RunNo: **33642**
Prep Date: **4/18/2016**	Analysis Date: **4/19/2016**	SeqNo: **1035852** 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	96.8	80	120			
Surr: BFB	1000		1000		101	80	120			

Sample ID **1604711-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **Sample Point 1 @ 1**	Batch ID: **24853**	RunNo: **33642**
Prep Date: **4/18/2016**	Analysis Date: **4/19/2016**	SeqNo: **1035858** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.7	23.65	0	103	59.3	143			
Surr: BFB	990		946.1		104	80	120			

Sample ID **1604711-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **Sample Point 1 @ 1**	Batch ID: **24853**	RunNo: **33642**
Prep Date: **4/18/2016**	Analysis Date: **4/19/2016**	SeqNo: **1035859** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.7	23.67	0	90.2	59.3	143	13.0	20	
Surr: BFB	990		947.0		104	80	120	0	0	

Qualifiers:

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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
R	RPD outside accepted recovery limits	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#: **1604711**

22-Apr-16

Client: Diversified Field Services, Inc

Project: Linn MGU Battery Flare

Sample ID **MB-24853**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **24853**	RunNo: **33642**
Prep Date: **4/18/2016**	Analysis Date: **4/19/2016**	SeqNo: **1035903** 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	0.95		1.000		95.4	80	120			

Sample ID **LCS-24853**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **24853**	RunNo: **33642**
Prep Date: **4/18/2016**	Analysis Date: **4/19/2016**	SeqNo: **1035904** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	100	75.3	123			
Toluene	0.93	0.050	1.000	0	93.4	80	124			
Ethylbenzene	0.90	0.050	1.000	0	89.8	82.8	121			
Xylenes, Total	2.7	0.10	3.000	0	89.1	83.9	122			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

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
R	RPD outside accepted recovery limits	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

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: **1604711** RcptNo: **1**

Received by/date: 04/16/16

Logged By: **Lindsay Mangin** **4/16/2016 11:00:00 AM**

Completed By: **Lindsay Mangin** **4/18/2016 9:25:37 AM**

Reviewed By: 04/18/16

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?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° 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 ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
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 ☐	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	1.1	Good	Yes			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Diversified Environmental

Mailing Address: 206. W. Snyder st

Phone #: (575) 631-4661

Email or Fax#: lflores@diversifiedfsi.com

QA/QC Package: ☑ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ NELAP ☐ Other

EDD (Type)

Turn-Around Time: ☑ Standard ☐ Rush results by 4/22/16

Project Name: LINN MGU BATTERY (FLARE)

Project #:

Project Manager: M Burton

Sampler: Chris Flores

On Ice: ☑ Yes ☐ No

Sample Temperature: 1.1

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1604711	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F^-, Cl^-, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
4/1/2016	1:50PM	Soil	Sample Point 1 @16'	4oz glass	ice	-001	✓		✓					✓				
	2:20PM		Sample Point 1 @17'			-002												
	9:30AM		Sample Point 2 @ 3'			-003												
	9:45AM		Sample Point 2 @ 4'			-004												
	10:50AM		Sample Point 3 @ 2'			-005												
↓	11:10AM	↓	Sample Point 3 @ 3	↓	↓	-006	↓		↓					↓				

Date: 4/5/2016 Time: 0645 Relinquished by:

Received by: Date: 4/15/16 Time: 0645

Date: 4/15/16 Time: 1400 Relinquished by:

Received by: Date: 04/16/16 Time: 1100

Remarks: email to: lflores@diversifiedfsi.com
mwalves@
mburton@
mpatterson@
cflores@

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Appendix IV

GROUNDWATER SURVEY

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

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

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

POD Number	POD Sub-basin	Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 04021 POD3	L		LE		3	4	03	17S	32E	616761	3636252*	247		
L 04021 S	L		LE	2	4	4	03	17S	32E	617262	3636354*	260		
L 13050 POD1	L		LE	2	2	1	10	17S	32E	616463	3635945*	156	132	24
RA 08855			LE	4	1	1	10	17S	32E	616061	3635742*	158		
RA 09505			LE	2	2	1	10	17S	32E	616462	3635944	147		
RA 09505 S			LE	2	2	1	10	17S	32E	616463	3635945*	144		
RA 11734 POD1			LE	2	2	1	10	17S	32E	616556	3635929	165		

Average Depth to Water: **132 feet**

Minimum Depth: **132 feet**

Maximum Depth: **132 feet**

Record Count: 7

PLSS Search:

Section(s): 3, 4, 5, 8, 9, 10 **Township:** 17S **Range:** 32E

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

No records found.

PLSS Search:

Section(s): 32, 33, 34 **Township:** 16S **Range:** 32E