Turner A Battery - Turner A #51

REMEDIATION WORK PLAN

API No. 30-015-28758

Release Date: January 24, 2012

Unit Letter I, Section 19, Township 17 South, Range 31 East

RP# 2RP-1015

BLM Event# NU12074TG

April 7, 2016

Prepared by:

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

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

RE: **Linn - Turner A Battery - Turner A #51 – Remediation Work Plan**
UL/I, Section 19, T17S, R31E
API No. 30-015-28758
NMOCD Case #: 2R-1015
BLM Event #: NU12074TG

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 resulted from a worn clamp bolt, releasing a total of 100 barrels of produced water down a lease road, approximately 100 yards south, with 70 barrels recovered. An initial C-141 was submitted to the NMOCD on February 1, 2012, and approved on February 14, 2012 (Appendix I).

During inspection of the site, a non-reportable spill was located within the battery, near the heater treater. The secondary spill site will be remediated concurrently.

Site Assessment and Delineation

On May 15, 2014, DFSI personnel were on site to obtain samples within the leak area (Figure 1). Six samples were obtained and field sampled for chloride levels, as well as BTEX. The BTEX samples were performed using a Mini Rae Photoionization Detector (PID). All clean field samples under NMOCD and BLM regulatory guidelines were submitted for analysis at Cardinal Laboratories of Hobbs, NM to obtain confirmation (Appendix II). SP1 resulted in a chloride concentration of 176 mg/kg at 2’ bgs, SP2 resulted in a chloride concentration of 144 mg/kg at 2’ bgs, SP3 resulted in a chloride concentration of 608 mg/kg at 2’ bgs, SP4 resulted in a chloride concentration of 320 mg/kg at 2’ bgs, SP5 resulted in a chloride concentration of 352 mg/kg at 4’ and SP6 resulted in a chloride concentration below detectable limits at 2’. Concentrations of gasoline range organics (GRO), diesel range organics (DRO) and BTEX were below

detectable limits throughout, with the exception of SP1 DRO, 1,170 mg/kg at 2' bgs, SP2 DRO, 105 mg/kg at 2' bgs and SP3 DRO, 60.9 mg/kg at 2' bgs.

On May 16, 2014, DFSI personnel obtained samples within the secondary spill site. Two samples were obtained and field samples for chloride levels, as well as BTEX. The BTEX samples were performed using a Mini Rae Photoionization Detector (PID). All clean field samples under NMOCD and BLM regulatory guidelines were submitted for analysis at Cardinal Laboratories of Hobbs, NM to obtain confirmation (Appendix III). SP1 and SP2 resulted in chloride concentrations of 384 mg/kg at 10' and 176 mg/kg at 2' bgs, respectively. GRO, DRO and BTEX concentrations were below detectable limits throughout.

DFSI personnel returned to the site to resample and fully delineate the spill area on February 18 and March 28, 2016 (Figure 2). The initial six sample points were reevaluated for chloride levels, as well as BTEX. The BTEX samples were performed using a Mini Rae Photoionization Detector (PID). All clean field samples under NMOCD and BLM regulatory guidelines were submitted for analysis at Cardinal Laboratories of Hobbs, NM and Hall Environmental of Albuquerque, NM to obtain confirmation (Appendix IV). Chloride concentration results were 512 mg/kg at SP1 5' bgs, 144 mg/kg at SP2 4' bgs, 1,100 mg/kg at SP3 6' bgs, 560 mg/kg at SP4 4', below detectable limits at SP5 4' and 640 mg/kg at SP6 5'. GRO, DRO and BTEX concentrations were below detectable limits throughout.

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 280 foot below ground surface. Therefore, no eminent danger of groundwater impact or threat to life is anticipated (Appendix V).

Conclusion

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

Excavate the area of SP3 to a depth of 4' bgs. At the base of the excavation, a 20-mil reinforced poly liner or river rock will be installed to inhibit the downward migration of constituents. Excavate the areas around SP1, SP4 and SP 6 to 3' bgs. The areas around SP2 and SP5 will be scraped 6". The entire area will be backfilled with clean, imported soil to ground surface and contoured to the surrounding area. The pasture area will be seeded with an approved BLM-NMOCD mix.

Excavate the area within the battery to a depth of 4' bgs. Backfill with caliche to ground surface and contour to the surrounding area.

Following the approval of one of the above plans, 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.

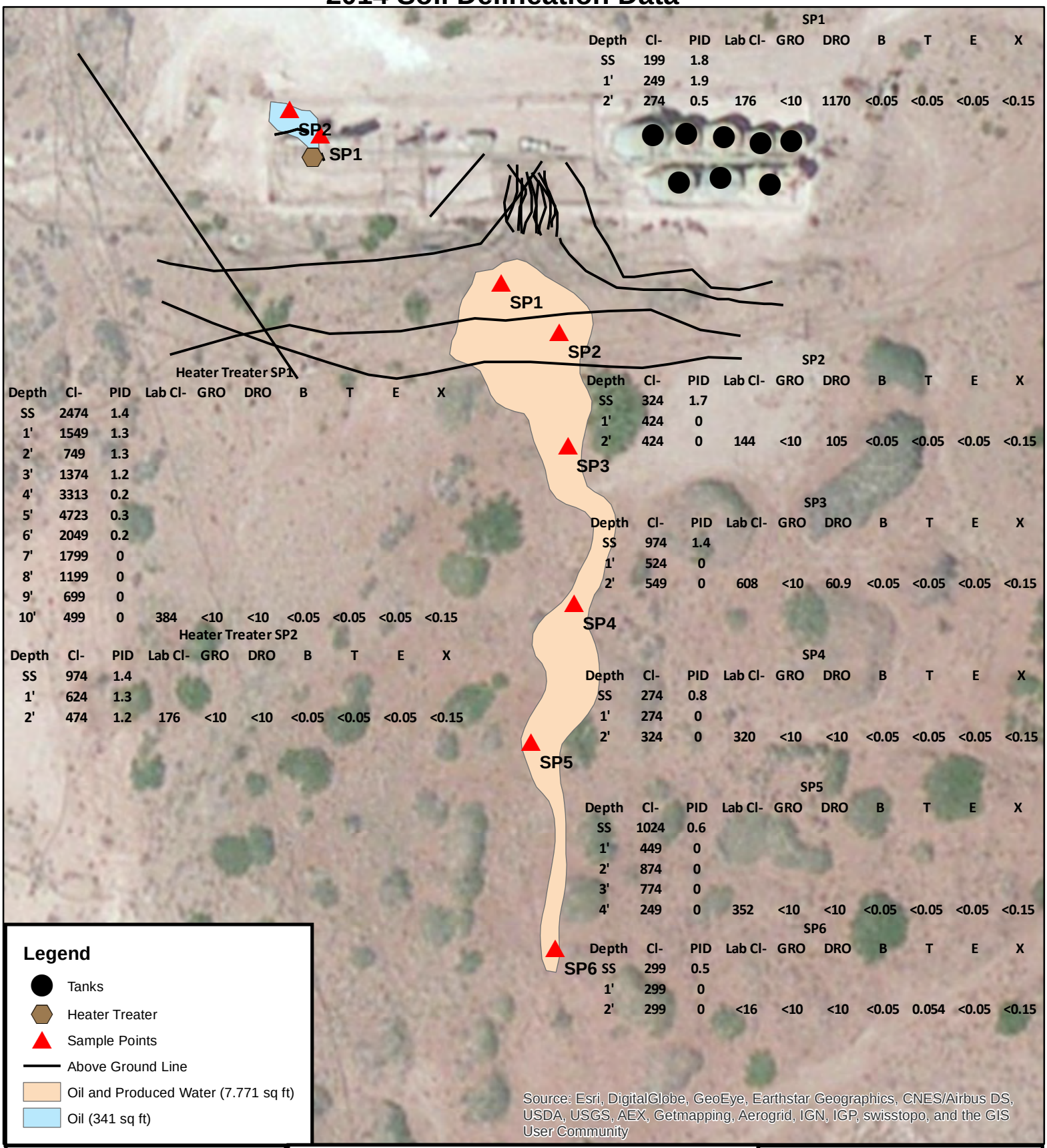
Sincerely,

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

cc Shelly Tucker

Figure 1 – 2014 Soil Delineation
Figure 2 – 2016 Soil Delineation
Appendix I – Initial C-141
Appendix II – 2014 Soil Delineation Laboratory Analysis
Appendix III – 2014 Soil Delineation Laboratory Analysis (Non-Reportable Spill)
Appendix IV – 2016 Soil Delineation Laboratory Analysis
Appendix V – Groundwater Study

2014 Soil Delineation Data



SP1

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	199	1.8							
1'	249	1.9							
2'	274	0.5	176	<10	1170	<0.05	<0.05	<0.05	<0.15

Heater Treater SP1

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	2474	1.4							
1'	1549	1.3							
2'	749	1.3							
3'	1374	1.2							
4'	3313	0.2							
5'	4723	0.3							
6'	2049	0.2							
7'	1799	0							
8'	1199	0							
9'	699	0							
10'	499	0	384	<10	<10	<0.05	<0.05	<0.05	<0.15

SP2

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	324	1.7							
1'	424	0							
2'	424	0	144	<10	105	<0.05	<0.05	<0.05	<0.15

SP3

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	974	1.4							
1'	524	0							
2'	549	0	608	<10	60.9	<0.05	<0.05	<0.05	<0.15

Heater Treater SP2

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	974	1.4							
1'	624	1.3							
2'	474	1.2	176	<10	<10	<0.05	<0.05	<0.05	<0.15

SP4

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	274	0.8							
1'	274	0							
2'	324	0	320	<10	<10	<0.05	<0.05	<0.05	<0.15

SP5

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	1024	0.6							
1'	449	0							
2'	874	0							
3'	774	0							
4'	249	0	352	<10	<10	<0.05	<0.05	<0.05	<0.15

SP6

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	299	0.5							
1'	299	0							
2'	299	0	<16	<10	<10	<0.05	0.054	<0.05	<0.15

Legend

- Tanks
- Heater Treater
- Sample Points
- Above Ground Line
- Oil and Produced Water (7.771 sq ft)
- Oil (341 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
Turner A Battery - Turner A #51
Unit Letter I, Sec. 19, T17S, R31E
Eddy County, NM
API #: 30-015-28758
NMOCD Case #: 2R-1015

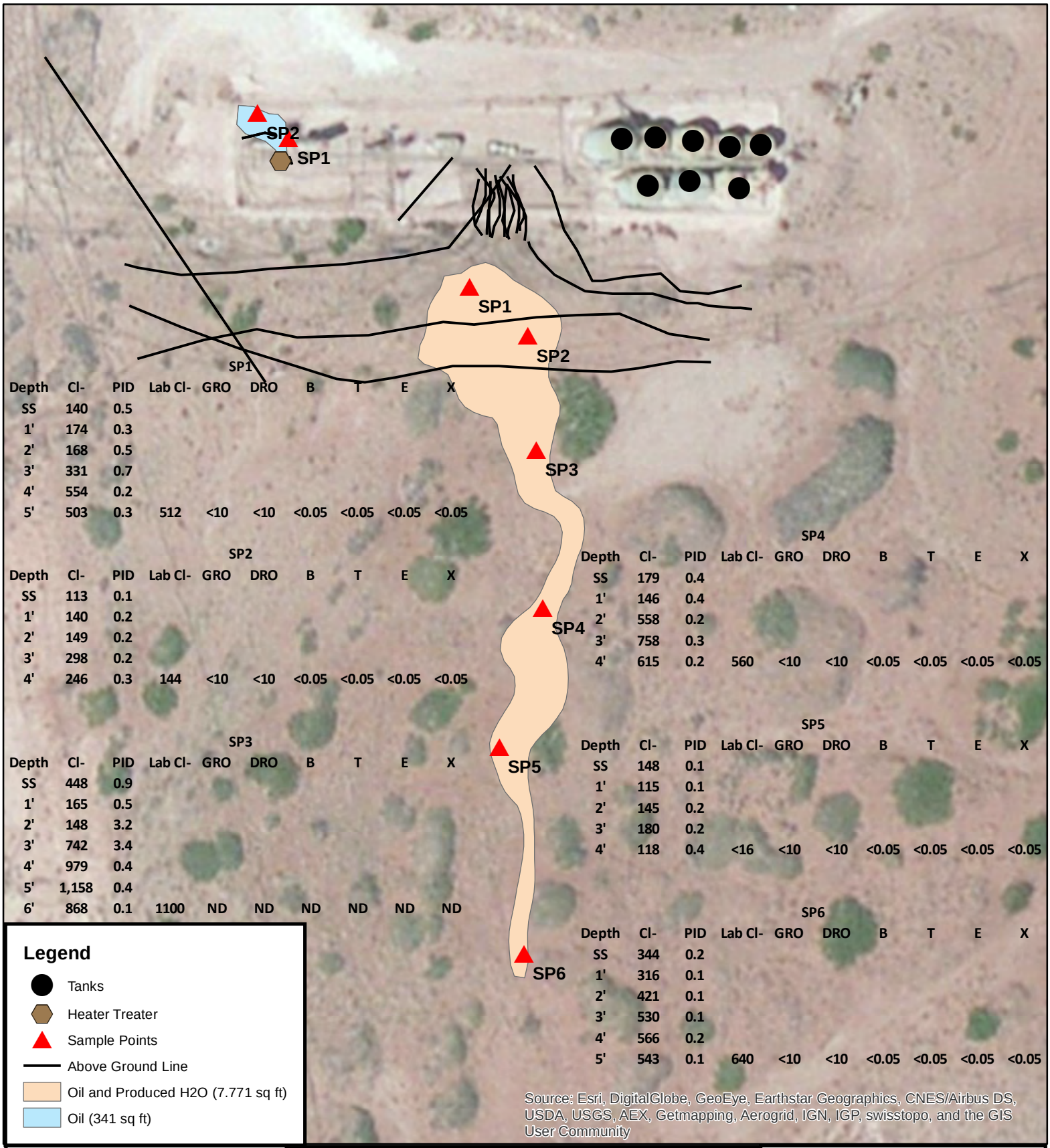
Figure 1

Drafted by: L. Flores
04/06/2016

N W E S

0 12.525 50 75 100 Feet

2016 Soil Delineation Data



SP1

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	140	0.5							
1'	174	0.3							
2'	168	0.5							
3'	331	0.7							
4'	554	0.2							
5'	503	0.3	512	<10	<10	<0.05	<0.05	<0.05	<0.05

SP2

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	113	0.1							
1'	140	0.2							
2'	149	0.2							
3'	298	0.2							
4'	246	0.3	144	<10	<10	<0.05	<0.05	<0.05	<0.05

SP3

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	448	0.9							
1'	165	0.5							
2'	148	3.2							
3'	742	3.4							
4'	979	0.4							
5'	1,158	0.4							
6'	868	0.1	1100	ND	ND	ND	ND	ND	ND

SP4

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	179	0.4							
1'	146	0.4							
2'	558	0.2							
3'	758	0.3							
4'	615	0.2	560	<10	<10	<0.05	<0.05	<0.05	<0.05

SP5

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	148	0.1							
1'	115	0.1							
2'	145	0.2							
3'	180	0.2							
4'	118	0.4	<16	<10	<10	<0.05	<0.05	<0.05	<0.05

SP6

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X
SS	344	0.2							
1'	316	0.1							
2'	421	0.1							
3'	530	0.1							
4'	566	0.2							
5'	543	0.1	640	<10	<10	<0.05	<0.05	<0.05	<0.05

Legend

- Tanks
- Heater Treater
- Sample Points
- Above Ground Line
- Oil and Produced H2O (7.771 sq ft)
- Oil (341 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
Turner A Battery - Turner A #51
Unit Letter I, Sec. 19, T17S, R31E
Eddy County, NM
API #: 30-015-28758
NMOCD Case #: 2R-1015

Figure 2

Drafted by: L. Flores
04/06/2016

N W E S

0 12.525 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
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
FEB 01 2012
NMOCD ARTESIA

Form C-141
Revised October 10, 2003

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 269324	Contact: Joe Hernandez
Address: 2130 W. Bender Hobbs, NM 88240	Telephone No.: 575-738-1739
Facility Name: Turner A Battery- Turner A #51	Facility Type: WaterFlood

Surface Owner: BLM	Mineral Owner: BLM	API No.: 3001528758

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	19	17S	31E	2632	North	75	East	Eddy

Latitude: N32° 49' 16.2" **Longitude:** W103° 44' 48.2"

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 100	Volume Recovered: 70
Source of Release: Pipeline	Date and Hour of Occurrence: 01/24/2012 9:00am	Date and Hour of Discovery: 01/24/2012 9:30am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? M. Bratcher -NM OCD Terry Gregston-BLM	
By Whom? Joe Hernandez	Date and Hour 01/24/2012 3:00pm	
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 *: Bolts on clamp rotted. Transfer pump was running and caused water to leak and run down lease road south about 100 yards. Shut down leases and replaced with new piece of pipe and two clamps on both sides. Next day pressure up and no leaks.

Describe Area Affected and Cleanup Action Taken.* : Loco Hills East on 82 to mile marker 137, turn north .3miles leak on west side of lease road. Sucked up water.

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: Joe Hernandez

Title: Production Foreman

E-mail Address. jhernandez@linnenergy.com

Date: 2/01/2012 Phone: 575-942-9492

OIL CONSERVATION DIVISION

Signed By Mike Bratcher

Approved by District Supervisor:

Approval Date: FEB 14 2012

Expiration Date:

Conditions of Approval:

Remediation per OCD Rules & Guidelines. **SUBMIT REMEDIATION PROPOSAL NOT LATER THAN:** 3/14/2012

Attached ☐

2RP-1015

* Attach Additional Sheets If Necessary

Appendix II

2014 Soil Delineation Laboratory Analysis

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

CARDINAL Laboratories

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

May 22, 2014

BRIAN WALL

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: TURNER A BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 05/15/14 13:40.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	05/15/2014	Sampling Date:	05/15/2014
Reported:	05/22/2014	Sampling Type:	Soil
Project Name:	TURNER A BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: SP. 1 @ 2' (H401479-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/20/2014	ND	1.83	91.7	2.00	1.37	
Toluene*	<0.050	0.050	05/20/2014	ND	1.83	91.6	2.00	1.43	
Ethylbenzene*	<0.050	0.050	05/20/2014	ND	1.76	88.2	2.00	1.56	
Total Xylenes*	<0.150	0.150	05/20/2014	ND	5.53	92.2	6.00	1.68	
Total BTEX	<0.300	0.300	05/20/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID *100 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**176**	16.0	05/19/2014	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS **S-06**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<100	100	05/22/2014	ND	201	100	200	1.21	
DRO >C10-C28	**1170**	100	05/22/2014	ND	220	110	200	1.57	

Surrogate: 1-Chlorooctane *104 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *203 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	05/15/2014	Sampling Date:	05/15/2014
Reported:	05/22/2014	Sampling Type:	Soil
Project Name:	TURNER A BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: SP. 2 @ 2' (H401479-02)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/20/2014	ND	1.83	91.7	2.00	1.37	
Toluene*	<0.050	0.050	05/20/2014	ND	1.83	91.6	2.00	1.43	
Ethylbenzene*	<0.050	0.050	05/20/2014	ND	1.76	88.2	2.00	1.56	
Total Xylenes*	<0.150	0.150	05/20/2014	ND	5.53	92.2	6.00	1.68	
Total BTEX	<0.300	0.300	05/20/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.4 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	05/19/2014	ND	400	100	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	05/22/2014	ND	201	100	200	1.21	
DRO >C10-C28	**105**	10.0	05/22/2014	ND	220	110	200	1.57	

Surrogate: 1-Chlorooctane *113 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *122 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	05/15/2014	Sampling Date:	05/15/2014
Reported:	05/22/2014	Sampling Type:	Soil
Project Name:	TURNER A BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: SP. 3 @ 2' (H401479-03)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/20/2014	ND	1.83	91.7	2.00	1.37	
Toluene*	<0.050	0.050	05/20/2014	ND	1.83	91.6	2.00	1.43	
Ethylbenzene*	<0.050	0.050	05/20/2014	ND	1.76	88.2	2.00	1.56	
Total Xylenes*	<0.150	0.150	05/20/2014	ND	5.53	92.2	6.00	1.68	
Total BTEX	<0.300	0.300	05/20/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.1 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**608**	16.0	05/19/2014	ND	400	100	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	05/22/2014	ND	201	100	200	1.21	
DRO >C10-C28	**60.9**	10.0	05/22/2014	ND	220	110	200	1.57	

Surrogate: 1-Chlorooctane *117 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *120 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	05/15/2014	Sampling Date:	05/15/2014
Reported:	05/22/2014	Sampling Type:	Soil
Project Name:	TURNER A BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: SP. 4 @ 2' (H401479-04)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/20/2014	ND	1.83	91.7	2.00	1.37	
Toluene*	<0.050	0.050	05/20/2014	ND	1.83	91.6	2.00	1.43	
Ethylbenzene*	<0.050	0.050	05/20/2014	ND	1.76	88.2	2.00	1.56	
Total Xylenes*	<0.150	0.150	05/20/2014	ND	5.53	92.2	6.00	1.68	
Total BTEX	<0.300	0.300	05/20/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.9 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**320**	16.0	05/19/2014	ND	400	100	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	05/22/2014	ND	201	100	200	1.21	
DRO >C10-C28	<10.0	10.0	05/22/2014	ND	220	110	200	1.57	

Surrogate: 1-Chlorooctane *116 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *116 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	05/15/2014	Sampling Date:	05/15/2014
Reported:	05/22/2014	Sampling Type:	Soil
Project Name:	TURNER A BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: SP. 5 @ 4' (H401479-05)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/20/2014	ND	1.83	91.7	2.00	1.37	
Toluene*	<0.050	0.050	05/20/2014	ND	1.83	91.6	2.00	1.43	
Ethylbenzene*	<0.050	0.050	05/20/2014	ND	1.76	88.2	2.00	1.56	
Total Xylenes*	<0.150	0.150	05/20/2014	ND	5.53	92.2	6.00	1.68	
Total BTEX	<0.300	0.300	05/20/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.4 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**352**	16.0	05/19/2014	ND	400	100	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	05/22/2014	ND	201	100	200	1.21	
DRO >C10-C28	<10.0	10.0	05/22/2014	ND	220	110	200	1.57	

Surrogate: 1-Chlorooctane *114 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *114 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	05/15/2014	Sampling Date:	05/15/2014
Reported:	05/22/2014	Sampling Type:	Soil
Project Name:	TURNER A BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: SP. 6 @ 2' (H401479-06)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/20/2014	ND	1.83	91.7	2.00	1.37	
Toluene*	**0.054**	0.050	05/20/2014	ND	1.83	91.6	2.00	1.43	
Ethylbenzene*	<0.050	0.050	05/20/2014	ND	1.76	88.2	2.00	1.56	
Total Xylenes*	<0.150	0.150	05/20/2014	ND	5.53	92.2	6.00	1.68	
Total BTEX	<0.300	0.300	05/20/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.2 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	05/19/2014	ND	400	100	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	05/22/2014	ND	201	100	200	1.21	
DRO >C10-C28	<10.0	10.0	05/22/2014	ND	220	110	200	1.57	

Surrogate: 1-Chlorooctane *127 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *153 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

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

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Linn Energy
Project Manager: Brian Wall
Address:
City: State: Zip:
Phone #: Fax #:
Project #: Project Owner:
Project Name: - 2nd spill from WTP
Project Location: Turner A Battery Eddy NM
Sampler Name: Michael Alves

BILL TO

P.O. #:
Company: Linn Energy
Attn: Brian Wall
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	CL	TPH	BTEX
H4D1479																	
1	sp.1 @ 2'	G	1			X					X		5/15/14	9:34	X	X	X
2	sp.2 @ 2'	G	1			X					X		5/15/14	9:50	X	X	X
3	sp.3 @ 2'	G	1			X					X		5/15/14	10:05	X	X	X
4	sp.4 @ 2'	G	1			X					X		5/15/14	10:25	X	X	X
5	sp.5 @ 4'	G	1			X					X		5/15/14	11:20	X	X	X
6	sp.6 @ 2'	G	1			X					X		5/15/14	11:45	X	X	X

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: Date: 5/15/14 Time: 1:40
Received By: Jodi Henson
Relinquished By: Date: Time:
Received By:

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:
3.6°C
Sample Condition: Cool ☑ Yes ☐ No Intact ☑ Yes ☐ No
CHECKED BY: (Initials)

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:
E-mail Results To:
Ngladden@diversifiedfsi.com
Rpons@diversifiedfsi.com
Tjennings@diversifiedfsi.com

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

Appendix III

2014 Soil Delineation Laboratory Analysis (Non-Reportable Spill)

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

CARDINAL Laboratories

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

May 27, 2014

BRIAN WALL

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: TURNER A BATTERY

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

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	05/16/2014	Sampling Date:	05/16/2014
Reported:	05/27/2014	Sampling Type:	Soil
Project Name:	TURNER A BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: SP. 1 @ 10' (H401507-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/20/2014	ND	2.17	109	2.00	0.100	
Toluene*	<0.050	0.050	05/20/2014	ND	2.17	108	2.00	0.742	
Ethylbenzene*	<0.050	0.050	05/20/2014	ND	2.07	103	2.00	0.395	
Total Xylenes*	<0.150	0.150	05/20/2014	ND	6.48	108	6.00	0.119	
Total BTEX	<0.300	0.300	05/20/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.8 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**384**	16.0	05/21/2014	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	05/22/2014	ND	201	101	200	7.89	
DRO >C10-C28	<10.0	10.0	05/22/2014	ND	224	112	200	10.1	

Surrogate: 1-Chlorooctane *120 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *119 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	05/16/2014	Sampling Date:	05/16/2014
Reported:	05/27/2014	Sampling Type:	Soil
Project Name:	TURNER A BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: SP. 2 @ 2' (H401507-02)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/20/2014	ND	2.17	109	2.00	0.100	
Toluene*	<0.050	0.050	05/20/2014	ND	2.17	108	2.00	0.742	
Ethylbenzene*	<0.050	0.050	05/20/2014	ND	2.07	103	2.00	0.395	
Total Xylenes*	<0.150	0.150	05/20/2014	ND	6.48	108	6.00	0.119	
Total BTEX	<0.300	0.300	05/20/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.0 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**176**	16.0	05/21/2014	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	05/22/2014	ND	201	101	200	7.89	
DRO >C10-C28	<10.0	10.0	05/22/2014	ND	224	112	200	10.1	

Surrogate: 1-Chlorooctane *114 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *111 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Linn Energy
Project Manager: Brian Wall
Address:
City: State: Zip:
Phone #: Fax #:
Project #: Project Owner:
Project Name: Heater spill (Inside burm)
Project Location: Turner A Battery
Sampler Name: Michael Alves

BILL TO

P.O. #:
Company: Linn Energy
Attn: Brian Wall
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX	TPH	CL
H401507																	
1	Sp.1@10'	G	1			X					X		5/16/14	8:45	X	X	X
2	Sp.2@2'	G	1			X					X		5/16/14	9:30	X	X	X

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: Date: 5/16/14 Time: 1:15 Received By: Jodi Henson
Relinquished By: Date: Time: Received By:

Delivered By: (Circle One) Sampler - UPS - Bus - Other: 4.2°C

Sample Condition: Cool ☐ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials)

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:

E-mail Results To:
Ngladden@diversifiedfsi.com
Rpons@diversifiedfsi.com
Tjennings@diversifiedfsi.com

#54

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

Appendix IV

2016 Soil Delineation Laboratory Analysis

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

CARDINAL Laboratories

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

February 29, 2016

RICK RICKMAN

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: TURNER A BATTERY - TURNER A #51

Enclosed are the results of analyses for samples received by the laboratory on 02/19/16 15:05.

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 accreditated through the State of Colorado Department of Public Health and Environment for:

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	02/19/2016	Sampling Date:	02/18/2016
Reported:	02/29/2016	Sampling Type:	Soil
Project Name:	TURNER A BATTERY - TURNER A #51	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SAMPLE PT. 1 @ 5' (H600393-01)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/24/2016	ND	2.03	102	2.00	1.57	
Toluene*	<0.050	0.050	02/24/2016	ND	2.00	100	2.00	1.45	
Ethylbenzene*	<0.050	0.050	02/24/2016	ND	1.83	91.7	2.00	1.74	
Total Xylenes*	<0.150	0.150	02/24/2016	ND	5.59	93.1	6.00	1.59	
Total BTEX	<0.300	0.300	02/24/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.7 %* *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	**512**	16.0	02/23/2016	ND	400	100	400	7.69	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/22/2016	ND	195	97.7	200	4.26	
DRO >C10-C28	<10.0	10.0	02/22/2016	ND	213	107	200	10.4	

Surrogate: 1-Chlorooctane *92.1 %* *35-147*

Surrogate: 1-Chlorooctadecane *96.7 %* *28-171*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	02/19/2016	Sampling Date:	02/18/2016
Reported:	02/29/2016	Sampling Type:	Soil
Project Name:	TURNER A BATTERY - TURNER A #51	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SAMPLE PT. 2 @ 4' (H600393-02)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/24/2016	ND	2.03	102	2.00	1.57	
Toluene*	<0.050	0.050	02/24/2016	ND	2.00	100	2.00	1.45	
Ethylbenzene*	<0.050	0.050	02/24/2016	ND	1.83	91.7	2.00	1.74	
Total Xylenes*	<0.150	0.150	02/24/2016	ND	5.59	93.1	6.00	1.59	
Total BTEX	<0.300	0.300	02/24/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.7 %* *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	02/23/2016	ND	400	100	400	7.69	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/22/2016	ND	195	97.7	200	4.26	
DRO >C10-C28	<10.0	10.0	02/22/2016	ND	213	107	200	10.4	

Surrogate: 1-Chlorooctane *91.8 %* *35-147*

Surrogate: 1-Chlorooctadecane *99.6 %* *28-171*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	02/19/2016	Sampling Date:	02/19/2016
Reported:	02/29/2016	Sampling Type:	Soil
Project Name:	TURNER A BATTERY - TURNER A #51	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SAMPLE PT. 4 @ 4' (H600393-03)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/24/2016	ND	1.97	98.4	2.00	5.85	
Toluene*	<0.050	0.050	02/24/2016	ND	1.93	96.5	2.00	6.07	
Ethylbenzene*	<0.050	0.050	02/24/2016	ND	1.76	88.1	2.00	5.87	
Total Xylenes*	<0.150	0.150	02/24/2016	ND	5.37	89.5	6.00	5.48	
Total BTEX	<0.300	0.300	02/24/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.7 %* *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	**560**	16.0	02/23/2016	ND	400	100	400	7.69	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/22/2016	ND	195	97.7	200	4.26	
DRO >C10-C28	<10.0	10.0	02/22/2016	ND	213	107	200	10.4	

Surrogate: 1-Chlorooctane *89.4 %* *35-147*

Surrogate: 1-Chlorooctadecane *92.0 %* *28-171*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	02/19/2016	Sampling Date:	02/19/2016
Reported:	02/29/2016	Sampling Type:	Soil
Project Name:	TURNER A BATTERY - TURNER A #51	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SAMPLE PT. 5 @ 4' (H600393-04)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/24/2016	ND	1.97	98.4	2.00	5.85	
Toluene*	<0.050	0.050	02/24/2016	ND	1.93	96.5	2.00	6.07	
Ethylbenzene*	<0.050	0.050	02/24/2016	ND	1.76	88.1	2.00	5.87	
Total Xylenes*	<0.150	0.150	02/24/2016	ND	5.37	89.5	6.00	5.48	
Total BTEX	<0.300	0.300	02/24/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.0 %* *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	<16.0	16.0	02/23/2016	ND	400	100	400	7.69	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/22/2016	ND	195	97.7	200	4.26	
DRO >C10-C28	<10.0	10.0	02/22/2016	ND	213	107	200	10.4	

Surrogate: 1-Chlorooctane *84.0 %* *35-147*

Surrogate: 1-Chlorooctadecane *91.1 %* *28-171*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	02/19/2016	Sampling Date:	02/19/2016
Reported:	02/29/2016	Sampling Type:	Soil
Project Name:	TURNER A BATTERY - TURNER A #51	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SAMPLE PT. 6 @ 5' (H600393-05)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/24/2016	ND	1.97	98.4	2.00	5.85	
Toluene*	<0.050	0.050	02/24/2016	ND	1.93	96.5	2.00	6.07	
Ethylbenzene*	<0.050	0.050	02/24/2016	ND	1.76	88.1	2.00	5.87	
Total Xylenes*	<0.150	0.150	02/24/2016	ND	5.37	89.5	6.00	5.48	
Total BTEX	<0.300	0.300	02/24/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.4 %* *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	**640**	16.0	02/23/2016	ND	400	100	400	7.69	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/22/2016	ND	195	97.7	200	4.26	
DRO >C10-C28	<10.0	10.0	02/22/2016	ND	213	107	200	10.4	

Surrogate: 1-Chlorooctane *90.7 %* *35-147*

Surrogate: 1-Chlorooctadecane *95.4 %* *28-171*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	LINN
Project Manager:	Rick Rickman
Address:	
City:	State: Zip:
Phone #:	Fax #:
Project #:	Project Owner:
Project Name:	LINN
Project Location:	Turner A Battery - Turner A #51
Sampler Name:	Chris Flores

BILL TO

P.O. #:	
Company:	
Attn:	
Address:	
City:	
State: Zip:	
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	Chloride	BTEX	TPH
H600393																	
1	Sample Point 1 @ 5'	G	1			✓					✓		2/18/2016	11:05AM	X	X	X
2	Sample Point 2 @ 4'	G	1			✓					✓		〃	12:10PM	X	X	X
3	Sample Point 4 @ 4'	G	1			✓					✓		2/19/2016	10:30AM	X	X	X
4	Sample Point 5 @ 4'	G	1			✓					✓		〃	11:50AM	X	X	X
5	Sample Point 6 @ 5'	G	1			✓					✓		〃	1:30 PM	X	X	X

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: Chris Flores	Date: 2/19/2016 Time: 3:05	Received By: Jodi Henson	
Relinquished By:	Date: Time:	Received By:	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	5.2°C	Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials)

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:
email to: malves@diversifiedfsi.com
mburton@
mpatterson@
cflores@

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

#54

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

April 05, 2016

Dennis Potter

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

RE: Turner A Battery OrderNo.: 1603D55

Dear Dennis Potter:

Hall Environmental Analysis Laboratory received 1 sample(s) on 3/29/2016 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.

CLIENT: Diversified Field Services, Inc
Client Sample ID: Sample Point 3 @ 6'
Project: Turner A Battery
Collection Date: 3/28/2016 12:50:00 PM
Lab ID: 1603D55-001 **Matrix:** SOIL **Received Date:** 3/29/2016 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	1100	75		mg/Kg	50	4/1/2016 2:11:42 PM	24568
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/30/2016 10:06:55 AM	24462
Surr: DNOP	87.3	70-130		%Rec	1	3/30/2016 10:06:55 AM	24462
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/30/2016 10:45:26 AM	24489
Surr: BFB	113	66.2-112	S	%Rec	1	3/30/2016 10:45:26 AM	24489
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	3/30/2016 10:45:26 AM	24489
Toluene	ND	0.048		mg/Kg	1	3/30/2016 10:45:26 AM	24489
Ethylbenzene	ND	0.048		mg/Kg	1	3/30/2016 10:45:26 AM	24489
Xylenes, Total	ND	0.096		mg/Kg	1	3/30/2016 10:45:26 AM	24489
Surr: 4-Bromofluorobenzene	116	80-120		%Rec	1	3/30/2016 10:45:26 AM	24489

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#: **1603D55**

05-Apr-16

Client: Diversified Field Services, Inc

Project: Turner A Battery

Sample ID	**MB-24568**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**24568**	RunNo:	**33236**					
Prep Date:	**3/31/2016**	Analysis Date:	**3/31/2016**	SeqNo:	**1020845**	Units:	**mg/Kg**			

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

Sample ID	**LCS-24568**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**24568**	RunNo:	**33236**					
Prep Date:	**3/31/2016**	Analysis Date:	**3/31/2016**	SeqNo:	**1020846**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.8	90	110			

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#: **1603D55**

05-Apr-16

Client: Diversified Field Services, Inc

Project: Turner A Battery

Sample ID	**LCS-24510**	SampType: **LCS**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**LCSS**	Batch ID: **24510**			RunNo: **33126**					
Prep Date:	**3/30/2016**	Analysis Date: **3/30/2016**			SeqNo: **1017929**	Units: **%Rec**				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		5.3		5.000		106	70	130			

Sample ID	**MB-24510**	SampType: **MBLK**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**PBS**	Batch ID: **24510**			RunNo: **33126**					
Prep Date:	**3/30/2016**	Analysis Date: **3/30/2016**			SeqNo: **1017930**	Units: **%Rec**				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		9.6		10.00		96.4	70	130			

Sample ID	**LCS-24462**	SampType: **LCS**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**LCSS**	Batch ID: **24462**			RunNo: **33161**					
Prep Date:	**3/28/2016**	Analysis Date: **3/30/2016**			SeqNo: **1018311**	Units: **mg/Kg**				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)		45	10	50.00	0	90.1	65.8	136			
Surr: DNOP		4.6		5.000		92.9	70	130			

Sample ID	**MB-24462**	SampType: **MBLK**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**PBS**	Batch ID: **24462**			RunNo: **33161**					
Prep Date:	**3/28/2016**	Analysis Date: **3/30/2016**			SeqNo: **1018312**	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		9.1		10.00		91.5	70	130			

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#: **1603D55**

05-Apr-16

Client: Diversified Field Services, Inc

Project: Turner A Battery

Sample ID **MB-24489**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **24489**	RunNo: **33165**
Prep Date: **3/29/2016**	Analysis Date: **3/30/2016**	SeqNo: **1019143** 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	1100		1000		108	66.2	112			

Sample ID **LCS-24489**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **24489**	RunNo: **33165**
Prep Date: **3/29/2016**	Analysis Date: **3/30/2016**	SeqNo: **1019144** 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	96.0	80	120			
Surr: BFB	1100		1000		114	66.2	112			S

Sample ID **1603D55-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **Sample Point 3 @ 6'**	Batch ID: **24489**	RunNo: **33165**
Prep Date: **3/29/2016**	Analysis Date: **3/30/2016**	SeqNo: **1019146** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	24.93	0	116	59.3	143			
Surr: BFB	1200		997.0		120	66.2	112			S

Sample ID **1603D55-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **Sample Point 3 @ 6'**	Batch ID: **24489**	RunNo: **33165**
Prep Date: **3/29/2016**	Analysis Date: **3/30/2016**	SeqNo: **1019147** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	24.85	0	105	59.3	143	9.69	20	
Surr: BFB	1200		994.0		118	66.2	112	0	0	S

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#: **1603D55**

05-Apr-16

Client: Diversified Field Services, Inc

Project: Turner A Battery

Sample ID **MB-24489**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **24489**	RunNo: **33165**
Prep Date: **3/29/2016**	Analysis Date: **3/30/2016**	SeqNo: **1019162** 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		112	80	120			

Sample ID **LCS-24489**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **24489**	RunNo: **33165**
Prep Date: **3/29/2016**	Analysis Date: **3/30/2016**	SeqNo: **1019163** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	91.5	75.3	123			
Toluene	0.95	0.050	1.000	0	94.6	80	124			
Ethylbenzene	0.98	0.050	1.000	0	98.2	82.8	121			
Xylenes, Total	2.9	0.10	3.000	0	97.2	83.9	122			
Surr: 4-Bromofluorobenzene	1.2		1.000		118	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: 1603D55 RcptNo: 1

Received by/date: 03/29/16

Logged By: **Lindsay Mangin** 3/29/2016 9:10:00 AM

Completed By: **Lindsay Mangin** 3/29/2016 9:16:20 AM

Reviewed By: ID 03/29/16

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?	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° 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	4.4	Good	Not Present			

Chain-of-Custody Record

Client: Diversified Environmental

Mailing Address: 206 W. Snyder St. Hobbs, NM 88240

Phone #: (575) 631-4661

Email or Fax#: mbarton@diversifiedfsi.com

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

Accreditation: ☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 day Turn please
☑ Standard ☐ Rush

Project Name: Turner A Battery

Project #:

Project Manager: Dennis Potter

Sampler: Chris Flores

On Ice: ☑ Yes ☐ No

Sample Temperature: 4.9-0.5=4.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1603D55	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)
3/2016	12:50pm	Soil	Sample Point 3 @ 6'	4oz jar	Ice	-001	X		X					X				

Date: 3/2016 Time: 2:41pm Relinquished by:

Received by: Date Time 3/2/16 2:41pm

Date: 3/8/16 Time: 1600 Relinquished by:

Received by: Date Time 03/9/16 0910

Remarks: email to: lflores@diversifiedfsi.com malves@diversifiedfsi.com 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 V

GROUNDWATER 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

No records found.

PLSS Search:

Section(s): 1-36 **Township:** 16S **Range:** 30E

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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 03435		L	LE		1	1	05	16S	31E	602954	3646955*			
L 03852	R	L	LE	2	2	2	14	16S	31E	609126	3643913*	370	314	56
L 03852 POD4		L	LE	3	4	3	13	16S	31E	609744	3642516*	333	299	34
L 03852 POD5	R	L	LE	2	3	2	13	16S	31E	610387	3643470	328	295	33
L 03852 POD6		L	LE		3	2	13	16S	31E	610391	3643476	336		
L 03852 X	R	L	LE	4	4	4	13	16S	31E	610749	3642526*	333	299	34
L 03852 X2		L	LE	3	2	2	13	16S	31E	610535	3643733*	330	287	43
L 04671		L	LE	1	1	2	12	16S	31E	610114	3645538*	340	288	52
L 10203		L	LE	4	4	3	14	16S	31E	608334	3642495*	310		
L 10206		L	LE		2	2	23	16S	31E	609045	3642204*	280		

Average Depth to Water: **297 feet**

Minimum Depth: **287 feet**

Maximum Depth: **314 feet**

Record Count: 10

PLSS Search:

Section(s): 1-36 **Township:** 16S **Range:** 31E

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

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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 02381		L	LE		3	1	13	16S	32E	619086	3643515*	308	215	93
L 02434		L	LE				01	16S	32E	619661	3646531*	337		
L 02449		L	LE				01	16S	32E	619661	3646531*	330	265	65
L 02467		L	LE		1	4	02	16S	32E	618250	3646322*	328	275	53
L 02617		L	LE		4	4	02	16S	32E	618656	3645924*	322	270	52
L 02752		L	LE		1	3	26	16S	32E	617521	3639880*	324	280	44
L 02846		L	LE	4	2	1	11	16S	32E	617956	3645413*	328	275	53
L 02846	R	L	LE	4	2	1	11	16S	32E	617956	3645413*	328	275	53
L 02847		L	LE	1	4	2	11	16S	32E	618564	3645219*	317	220	97
L 02847	R	L	LE	1	4	2	11	16S	32E	618564	3645219*	317	220	97
L 02954		L	LE		2	4	03	16S	32E	617043	3646310*	120	65	55
L 02993		L	LE	3	3	2	15	16S	32E	616572	3643391*	100		
L 03405		L	LE	1	1	2	25	16S	32E	619824	3640790	298	190	108
L 03587		L	LE	1	2	4	35	16S	32E	618647	3638383*	282	210	72
L 03587 S		L	LE	3	4	2	35	16S	32E	618642	3638586*	269	215	54
L 03587 S2		L	LE		2	2	35	16S	32E	618738	3639089*	299	192	107
L 03587 S4		L	LE	1	4	4	26	16S	32E	618632	3639590*	289	220	69
L 03631		L	LE		1	2	02	16S	32E	618240	3647126*	315	250	65
L 04737 POD3		L	LE		3	3	36	16S	32E	619048	3637777	304	214	90
L 04930		L	LE			1	23	16S	32E	617698	3642092*	307	210	97
L 05494		L	LE				36	16S	32E	619758	3638489*	303	200	103
L 06400		L	LE	1	3	3	36	16S	32E	619054	3637985*	330		
L 06557		L	LE		1	4	21	16S	32E	615089	3641466*	295	210	85
L 06807		L	LE	1	4	4	09	16S	32E	615356	3644383*	290	248	42
L 07823		L	LE	2	2	2	16	16S	32E	615561	3643981*	269	247	22
L 08084		L	LE	1	1	1	16	16S	32E	614157	3643970*	317	260	57

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

(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	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 08084 POD4	L	LE			2	26	16S	32E	618522	3640492*	303	233	70
L 08084 POD5	L	LE	4	1	4	26	16S	32E	618425	3639788*	296	165	131
L 08084 S3	L	LE			2	26	16S	32E	618522	3640492*	305	205	100
L 08241	L	LE		4	4	02	16S	32E	618656	3645924*	316		
L 10204	L	LE	4	2	2	04	16S	32E	615524	3646993*	319		
L 10205	L	LE		4	1	08	16S	32E	613038	3645066*	330		
L 11189	L	LE	1	1	4	04	16S	32E	614932	3646391*	350		

Average Depth to Water: **224 feet**

Minimum Depth: **65 feet**

Maximum Depth: **280 feet**

Record Count: 33

PLSS Search:

Section(s): 1-36 **Township:** 16S **Range:** 32E

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

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	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
RA 11914 POD1		ED	2	4	2	20	17S	30E	594801	3632002	85	80	5

Average Depth to Water: **80 feet**

Minimum Depth: **80 feet**

Maximum Depth: **80 feet**

Record Count: 1

PLSS Search:

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

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	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
RA 11590 POD1		ED	2	1	3	32	17S	31E	603315	3628545	158		
RA 11590 POD3		ED	3	1	2	32	17S	31E	603932	3629260	60		
RA 11590 POD4		ED	4	1	1	32	17S	31E	603308	3629253	55		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 3

PLSS Search:

Section(s): 1-36 **Township:** 17S **Range:** 31E

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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 03980		L	LE	2	2	2	01	17S	32E	620466	3637594*	270	200	70
L 03980 S		L	LE	4	4	4	02	17S	32E	618870	3636170*	255	179	76
L 03980 S2		L	LE	3	2	3	01	17S	32E	619470	3636581*	225	175	50
L 04019		L	LE	4	3	4	02	17S	32E	618468	3636166*	182		
L 04020		L	LE	3	3	4	02	17S	32E	618268	3636166*	200		
L 04021	R	L	LE	3	4	4	02	17S	32E	618670	3636170*	190		
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 13047 POD1		L	LE				11	17S	32E	618187	3635254*	140		
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 10175			LE		2	1	28	17S	32E	614814	3631005*	158		
RA 11684 POD1			LE	1	1	4	11	17S	32E	618216	3635124	275		
RA 11684 POD2			LE	1	1	4	11	17S	32E	618313	3635248	275		
RA 11684 POD3			LE	3	3	1	11	17S	32E	618262	3635371	275		
RA 11684 POD4			LE	1	3	2	11	17S	32E	618334	3635521	275		
RA 11684 POD5			LE	3	1	4	11	17S	32E	618353	3635047	275		
RA 11734 POD1			LE	2	2	1	10	17S	32E	616556	3635929	165		
RA 11911 POD1			LE	1	3	1	24	17S	32E	619192	3632296	35		
RA 12020 POD1			LE	2	2	1	28	17S	32E	614828	3630954	120	81	39
RA 12042 POD1			LE	2	2	1	28	17S	32E	614891	3631181	400		

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

Average Depth to Water: **153 feet**

Minimum Depth: **81 feet**

Maximum Depth: **200 feet**

Record Count: 23

PLSS Search:

Section(s): 1-36 **Township:** 17S **Range:** 32E

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	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
CP 00818		LE	1	4		26	18S	30E	599289	3620364*	240		
CP 00819		LE	2	4		32	18S	30E	594878	3618720*	150		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 2

PLSS Search:

Section(s): 1-36 **Township:** 18S **Range:** 30E

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

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
CP 00849		LE	3	1	3	35	18S	31E	608012	3618757*	300		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 1

PLSS Search:

Section(s): 1-36 **Township:** 18S **Range:** 31E

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

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-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
CP 00566			LE	4	4	1	04	18S	32E	614960	3627280*	133	65	68
CP 00672			LE		4	4	07	18S	32E	612475	3624947*	524	430	94
CP 00672 CLW475398	O		LE		4	4	07	18S	32E	612475	3624947*	540	460	80
CP 00677			LE		1	1	26	18S	32E	617750	3621373*	700		
CP 00808			LE		4	4	26	18S	32E	618973	3620178*	400		
CP 00814			LE		2	2	08	18S	32E	614074	3626168*	480		

Average Depth to Water: **318 feet**

Minimum Depth: **65 feet**

Maximum Depth: **460 feet**

Record Count: 6

PLSS Search:

Section(s): 1-36 **Township:** 18S **Range:** 32E

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