

Bratcher, Mike, EMNRD

From: Amy Ruth <aruth@diversifiedfsi.com>
Sent: Tuesday, July 30, 2013 2:15 PM
To: Bratcher, Mike, EMNRD
Cc: gawink@linnenergy.com
Subject: Linn Energy H.E. West B #2 Battery
Attachments: Linn H.E#2 Battery Site Diagram.pdf; Linn H.E#2 Battery Photo Page.pdf; H301577 LINN exc bottom at 3 ft.pdf

Importance: High

Hi Mike,

This data is in reference to 2RP-1189 and 2RP-950 events at the battery (BLM #NU12136TG). The area within the firewall was previously excavated to about 1.5 ft bgs by Etech. DFSI deepened the excavation to near 3 ft bgs recently and the bottom lab data is attached. On behalf of Linn Energy, DFSI would like permission to backfill the battery for safety reasons, as the tanks are unsupported and the foundation soil beneath the caliche is sand. A study of groundwater through the USGS and NM Office of the State Engineer shows the nearest wells to be 5 miles away. According to the NMOCD groundwater trend map, depth to groundwater in this area is near 300 ft bgs. A report detailing plans for further investigation and future corrective action at the battery will follow. Please call me with any questions.

Thank you,

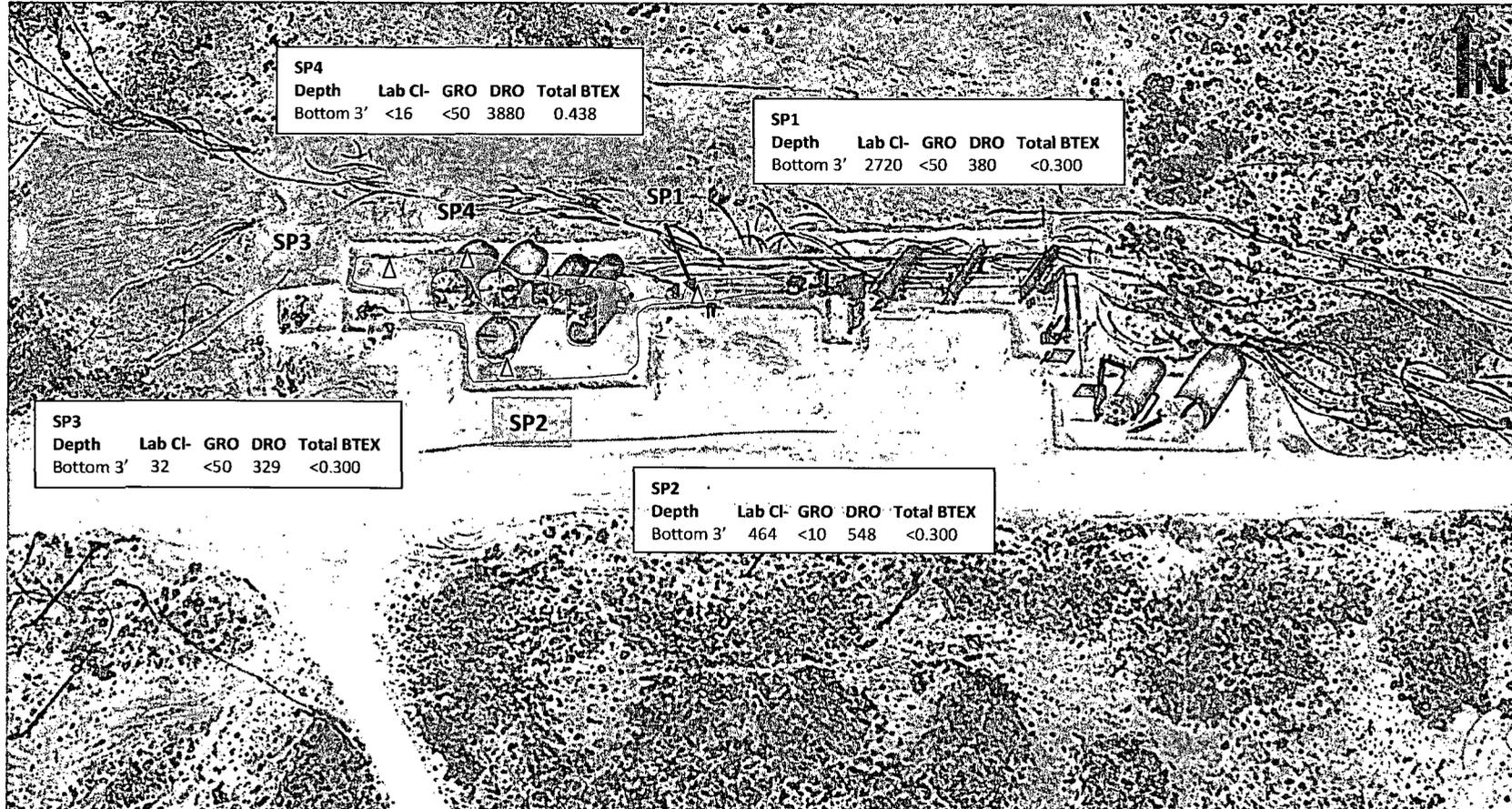
Amy C. Ruth

Diversified Field Services, Inc.
315 S. Leech St.
Hobbs, NM 88240
Office: (575)397-6437
Mobile: (575)390-5454
Fax: (575)393-2981

"Nothing will work unless you do." -Maya Angelou

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Site Sample Data

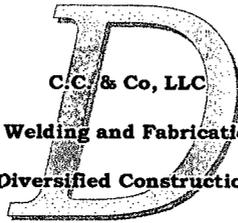


Diversified Field Services, Inc.

C.C. & Co, LLC

J & M Welding and Fabrication, Inc.

Diversified Construction



Legend

□ Stained Area (total 5,145 ft²)

△ Sample Point

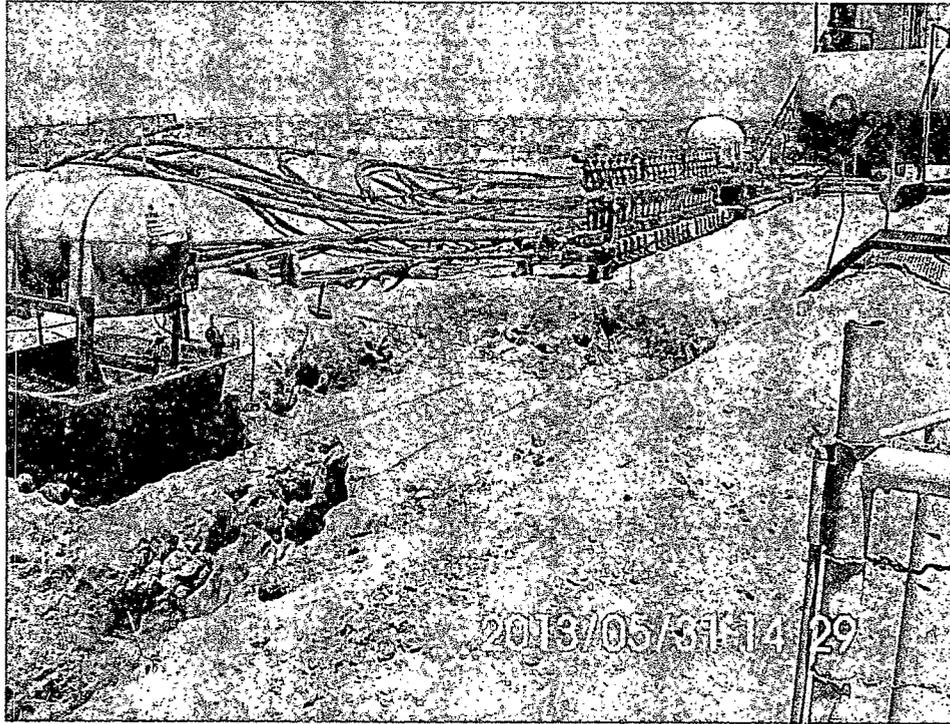
Landowner: BLM
Depth to GW: 236 ft

Linn H.E. West B #2 Battery

UL/G, Sec 8, T17S R31E
Eddy County, NM
Drafted By: A.C. Ruth, 7/25/13
Not to Scale

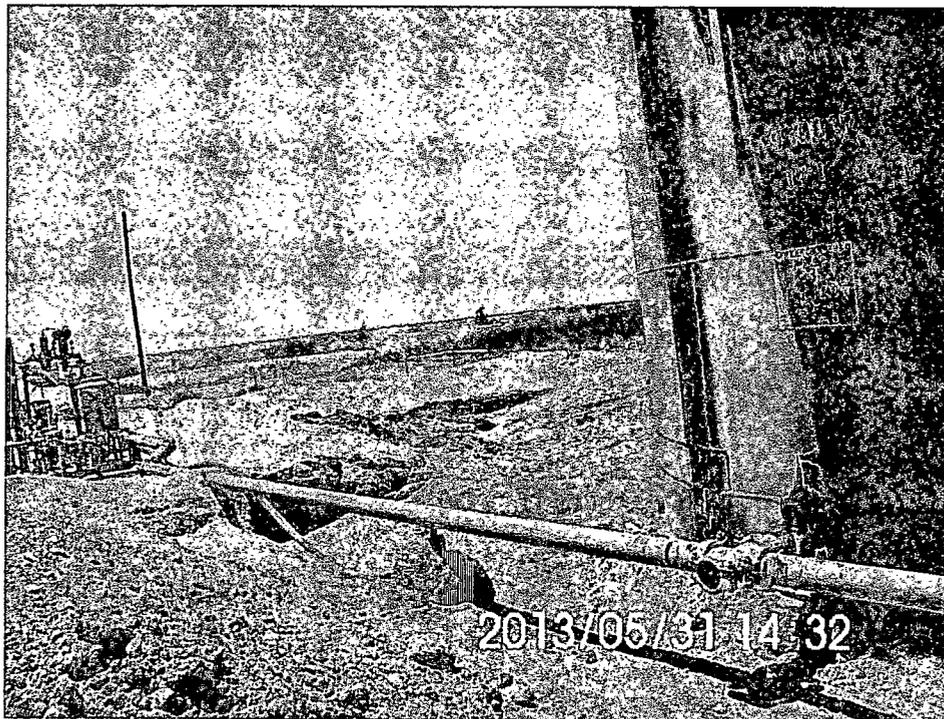
Linn Energy H.E. West B #2 Battery

Unit Letter D, Section 9, T17S R31E



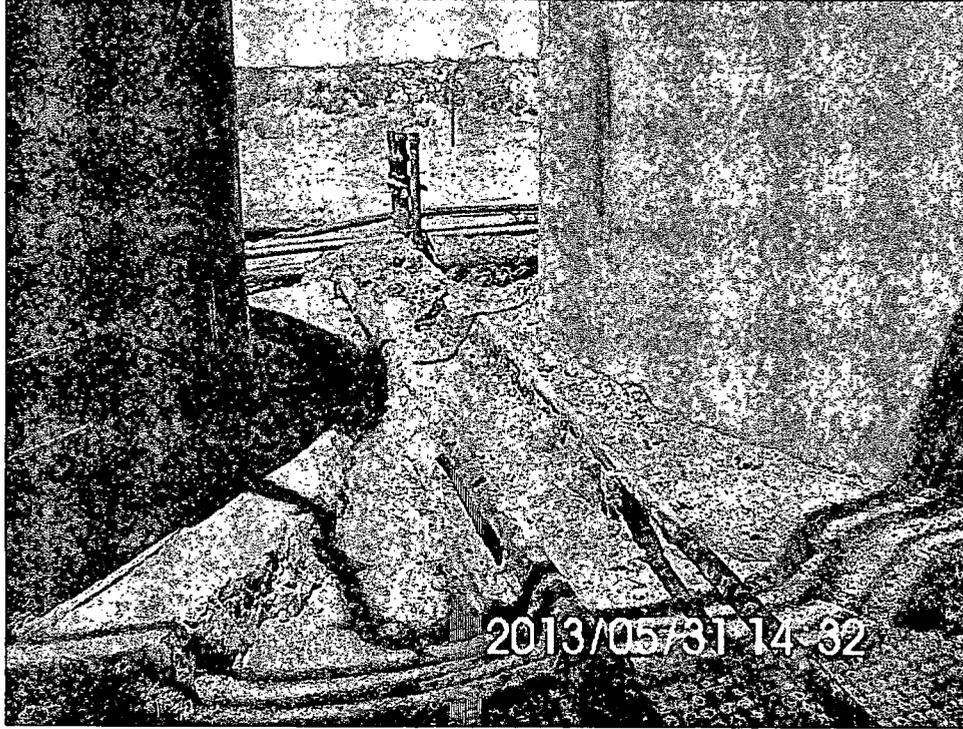
Existing excavation prior to new excavation, facing northeast

5/31/13



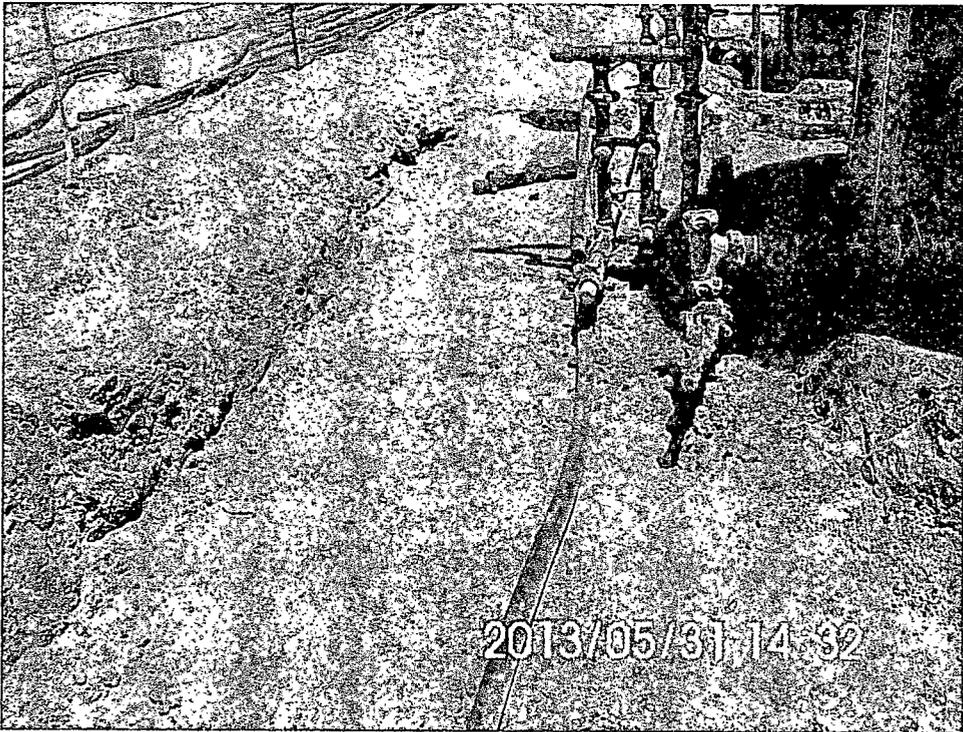
Existing excavation prior to new excavation, facing west

5/31/13



Existing excavation prior to new excavation, facing north

5/31/13



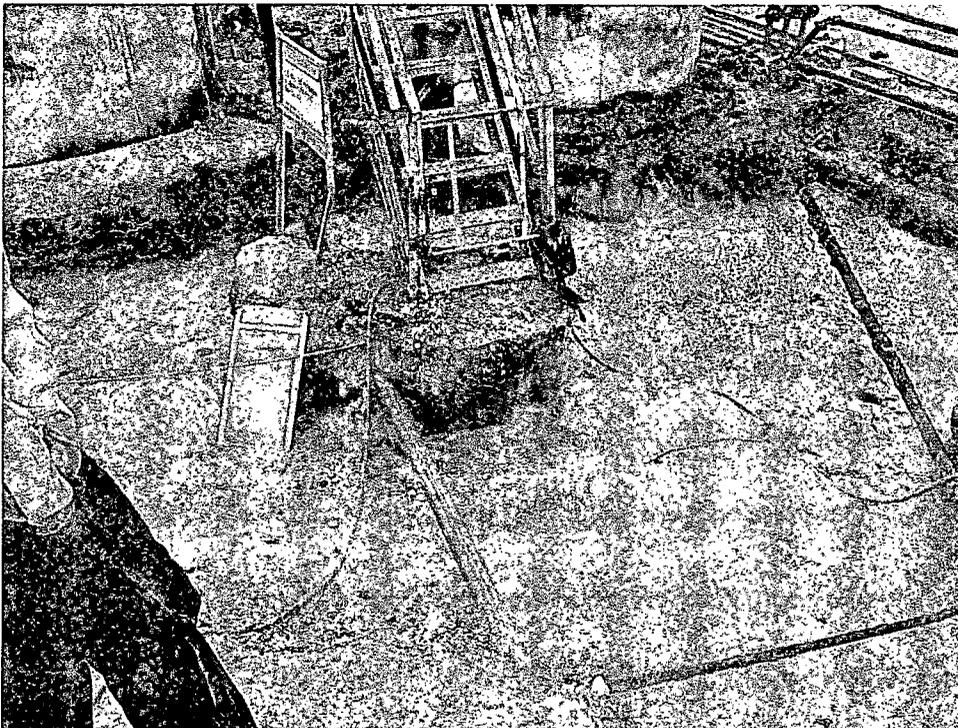
Existing excavation prior to new excavation, facing east

5/31/13



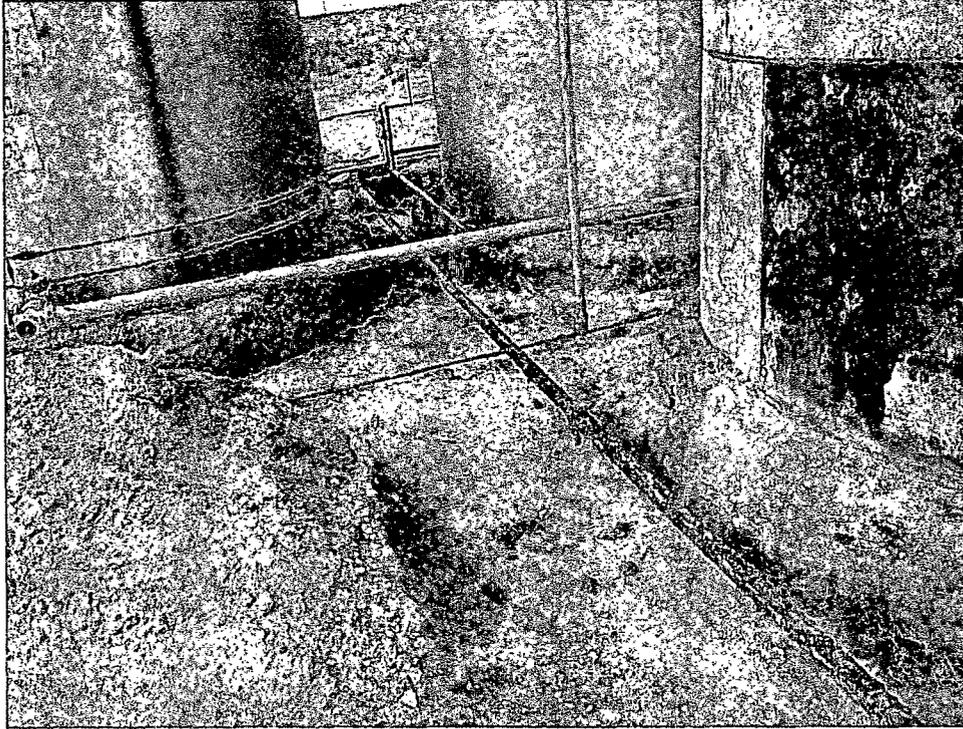
Existing excavation prior to new excavation, facing east

5/31/13

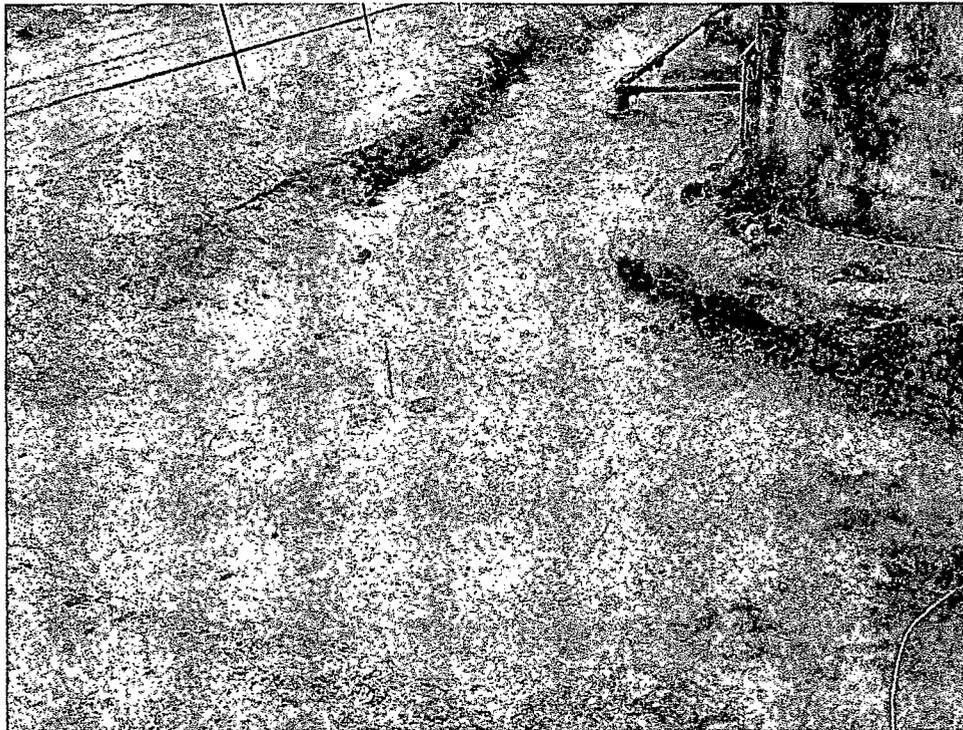


After recent excavation, facing northwest

7/25/13



After recent excavation, facing north 7/25/13



After recent excavation, facing northeast 7/25/13

July 12, 2013

GARY WINK

LINN ENERGY

RR1, BOX 24 B

KINGFISHER, OK 73750

RE: WEST B 2 BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 07/03/13 16:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 LINN ENERGY
 GARY WINK
 RR1, BOX 24 B
 KINGFISHER OK, 73750
 Fax To: (405) 375-6693

Received:	07/03/2013	Sampling Date:	07/01/2013
Reported:	07/12/2013	Sampling Type:	Soil
Project Name:	WEST B 2 BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 1 BOTTOM 3' (H301577-01)

BTEX 8021B		mg/kg		Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/11/2013	ND	2.51	126	2.00	7.67		
Toluene*	<0.050	0.050	07/11/2013	ND	2.43	122	2.00	8.28		
Ethylbenzene*	<0.050	0.050	07/11/2013	ND	2.50	125	2.00	9.23		
Total Xylenes*	<0.150	0.150	07/11/2013	ND	7.47	124	6.00	8.81		
Total BTEX	<0.300	0.300	07/11/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 104 % 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	2720	16.0	07/10/2013	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<50.0	50.0	07/10/2013	ND	202	101	200	7.87		
DRO >C10-C28	380	50.0	07/10/2013	ND	205	103	200	9.74		

Surrogate: 1-Chlorooctane 90.9 % 65.2-140

Surrogate: 1-Chlorooctadecane 129 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 LINN ENERGY
 GARY WINK
 RR1, BOX 24 B
 KINGFISHER OK, 73750
 Fax To: (405) 375-6693

 Received: 07/03/2013
 Reported: 07/12/2013
 Project Name: WEST B 2 BATTERY
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 07/01/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 2 BOTTOM 3' (H301577-02)

BTEX 8021B		mg/kg		Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/09/2013	ND	2.51	126	2.00	7.67		
Toluene*	<0.050	0.050	07/09/2013	ND	2.43	122	2.00	8.28		
Ethylbenzene*	<0.050	0.050	07/09/2013	ND	2.50	125	2.00	9.23		
Total Xylenes*	<0.150	0.150	07/09/2013	ND	7.47	124	6.00	8.81		
Total BTEX	<0.300	0.300	07/09/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 105 % 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	464	16.0	07/10/2013	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/10/2013	ND	202	101	200	7.87		
DRO >C10-C28	548	10.0	07/10/2013	ND	205	103	200	9.74		

Surrogate: 1-Chlorooctane 93.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 104 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 LINN ENERGY
 GARY WINK
 RR1, BOX 24 B
 KINGFISHER OK, 73750
 Fax To: (405) 375-6693

Received:	07/03/2013	Sampling Date:	07/01/2013
Reported:	07/12/2013	Sampling Type:	Soil
Project Name:	WEST B 2 BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 3 BOTTOM 3' (H301577-03)

BTEX 8021B		mg/kg		Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/09/2013	ND	2.51	126	2.00	7.67		
Toluene*	<0.050	0.050	07/09/2013	ND	2.43	122	2.00	8.28		
Ethylbenzene*	<0.050	0.050	07/09/2013	ND	2.50	125	2.00	9.23		
Total Xylenes*	<0.150	0.150	07/09/2013	ND	7.47	124	6.00	8.81		
Total BTEX	<0.300	0.300	07/09/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 103 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	07/10/2013	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<50.0	50.0	07/10/2013	ND	202	101	200	7.87		
DRO >C10-C28	329	50.0	07/10/2013	ND	205	103	200	9.74		

Surrogate: 1-Chlorooctane 87.6 % 65.2-140

Surrogate: 1-Chlorooctadecane 117 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 LINN ENERGY
 GARY WINK
 RR1, BOX 24 B
 KINGFISHER OK, 73750
 Fax To: (405) 375-6693

 Received: 07/03/2013
 Reported: 07/12/2013
 Project Name: WEST B 2 BATTERY
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 07/01/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 4 BOTTOM 3' (H301577-04)

BTEX 8021B		mg/kg		Analyzed By: DW				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/09/2013	ND	2.51	126	2.00	7.67		
Toluene*	<0.050	0.050	07/09/2013	ND	2.43	122	2.00	8.28		
Ethylbenzene*	0.438	0.050	07/09/2013	ND	2.50	125	2.00	9.23		
Total Xylenes*	<0.150	0.150	07/09/2013	ND	7.47	124	6.00	8.81		
Total BTEX	0.438	0.300	07/09/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 156 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP				S-06		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	07/10/2013	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-06		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<50.0	50.0	07/10/2013	ND	202	101	200	7.87		
DRO >C10-C28	3880	50.0	07/10/2013	ND	205	103	200	9.74		

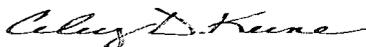
Surrogate: 1-Chlorooctane 93.2 % 65.2-140

Surrogate: 1-Chlorooctadecane 162 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

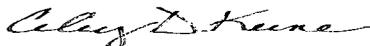
Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

