LINN Energy

Linn Energy Turner B #8

CLOSURE REPORT

2RP-1110

API No. 30-015-05280

Release Date: 3/28/2012

Unit Letter B, Section 20, Township 17 South, Range 31 East

May 30, 2014

Prepared by:

Environmental Department
Diversified Field Service, Inc.
3412 N. Dal Paso
Hobbs, NM 88240
Phone: (575)964-8394
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Table of Contents

Diversified Field Service, Inc.
3412 N. Dal Paso
Hobbs, NM 88240
(575) 964-8394

Turner B #8

1 INTRODUCTION

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

The site is located southwest of Maljamar NM, Unit letter 'B', sec. 20, T17S R31E, in Eddy County. The impact to this site resulted from a compromise to the injection line at the collar due to corrosion around the threads. Linn Energy shut in the line at the header and repaired the line. Linn Energy took proactive measures by injecting fresh water combined with soap in order to force the fluids to surface. There was approximately 12,960 sq. ft. of impacted area. DFSI was retained to fully remediate the site. (Figure).
A form C-141 was submitted to the NMOCD on April 16, 2012 (RP-1110). (Appendix I)

2 SITE ACTIVITIES

On December 07, 2012 a former contractor began delineation, site assessment, partial delineation and excavation of this site.

On June 10, 2013 DFSI revisited the site to collect bottom, north wall and south wall representative samples for confirmation of the perimeter of the spill area. There were six sample points established for this purpose. All representative samples were sent to a commercial laboratory for confirmation. They were tested for chloride, BTEX, GRO, DRO, whereby all of the analyses returned acceptable limits, the chlorides were <384 mg/kg, BTEX <.300 mg/kg, and DRO, GRO were non-detect (Appendix IV).

On July 23, 2013 DFSI personnel revisited the site to establish eight (8) sample points, further delineate by 1ft. segments, and field tested soil samples until acceptable levels of chloride and BTEX could be ascertained. Personnel retrieved representative samples from SP2 and SP6 on this date, and sent to commercial laboratory for confirmation. Personnel retrieved a representative soil sample for SP2 at 16 ft. bgs., and of SP6 at 2ft. bgs., these were sent to the lab for confirmation. The results returned on SP2 for chloride were 992 mg/kg, BTEX, DRO and GRO were non-detect. The results returned for SP6 on chloride content were 48 mg/kg, BTEX <.300, GRO <10, and DRO 78.2 mg/kg.

On July 30, 2013 DFSI personnel returned to the site to simultaneously field test for SP1, SP5 and SP8 respectively. Again the above aforementioned protocol was followed for field testing by 1ft. intervals until acceptable soil chemical results could be attained. Representative samples were retrieved for SP1 at 7ft. bgs, SP5 at 2 ft. bgs, and SP8 at 5ft. bgs. These were sent to the commercial laboratory for confirmation analyses.

The chloride results for SP1 were 352 mg/kg, SP5 chlorides were 512 mg/kg, and for SP8 chlorides were 1390 mg/kg. The results for the above sample points regarding BTEX, DRO and GRO were all non-detect.

DFSI personnel delineated SP2 by 1ft. intervals and field tested for chloride, however at 17ft. bgs., auger refusal was encountered. Therefore, on February 17, 2014 a drill point (hereinafter referred to as SB2), was established and bored to a depth of 70 ft. bgs. This soil bore sample was sent to a commercial laboratory for confirmation, whereby the results returned were as follows for SB2: chloride content was 176 mg/kg, BTEX, DRO and GRO were non-detect.

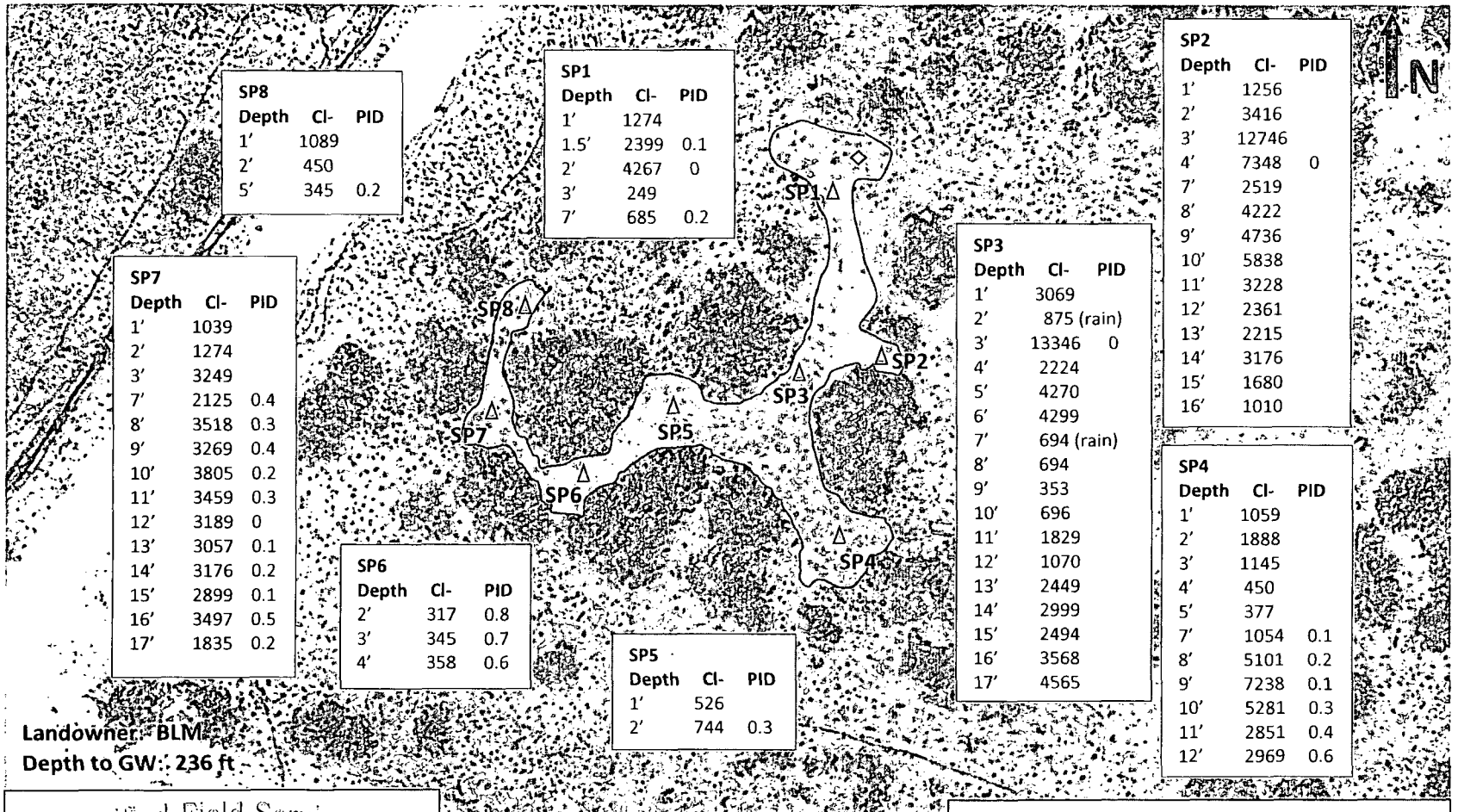
On February 27, 2014 DFSI submitted a proposed remediation plan for the above aforementioned site to the BLM, and NMOCD respectively, complete with a site excavation diagram (Figure). Whereby, it was noted that the site had been previously excavated to 6ft. bgs. DFSI proposed to backfill to 4ft. bgs., install a 20 mil liner, and backfilled with fresh topsoil. The plan was conditionally approved on February 27, 2014: liner key set on sides of excavation, and knocking sidewalls in on the liner in order to ensure enough ground cover to establish a sound root zone for vegetation (Appendix V).

On March 11, 2014 DFSI personnel revisited the site to establish nine (9) sample points for sidewall confirmation. The representative soil samples were sent to a commercial laboratory for analyses. The results returned chloride results of <768 mg/kg for all samples. SP3, SP5, and SP7 returned the highest levels of chloride for the above sidewall samples. Therefore, on March 11, 2014 DFSI personnel returned to the site to excavate out an additional foot off of the sidewalls for SP3, SP5, and SP7. Representative samples were once again field sampled and sent to a commercial laboratory for confirmation. The analyses returned results of <208 mg/kg for chloride constituent (Appendix IV). Photographs of site activities can be viewed in Appendix II.

3 CONCLUSION

On March 14, 2014 the liner installation and backfill operation was complete. On March 26, 2014 the site was tilled and seeded with 150 lbs. of native seed mixture providing an infiltration barrier and restoring the site to its natural state. According to the U.S. Geological Survey and the NM Office of the State Engineer, there were no records of groundwater in the immediate vicinity, however depth to groundwater in the area averages greater than 220 ft. bgs (Appendix III). Thereby, presenting no imposed impact to groundwater or life forms as a result of this incident. Based on the removal of soils containing elevated chloride and visual staining at the site to an NMOCD approved facility, DFSI, on behalf of Linn, submits the final form C-141 (Appendix V), and respectfully requests the closure of the regulatory file for the Linn Energy Turner B #8 site.

Leak Area and Sample Points



Diversified Field Services, Inc

C.C. & Co, LLC

J & M Welding and Fabrication, Inc.

Diversified Construction

Legend

- Stained Area (total 12,960 ft²)
- ◇ Leak Source
- Δ Sample Point

Linn Turner B #8

UL/B, Sec 20, T17S R31E

Eddy County, NM

By: A.C. Ruth, 7/30/13

Not to Scale

Appendix I

INITIAL FORM C-141

Diversified Field Service, Inc.
3412 N. Dal Paso
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
APR 16 2012
NMOCD ARTESIA

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with 19.15.29 NMAC

API 30-015-05280

nMLB1211658784

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 B North #8	Facility Type: Injection

Surface Owner: Federal	Mineral Owner: Federal	API No.: 3001505280

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	20	17S	31E	660	North	1980	East	Eddy

Latitude: 32.825484253602 **Longitude:** -103.889812477226

NATURE OF RELEASE

Type of Release: Produced Water / Oil	Volume of Release: 145 / 5	Volume Recovered: 0 / 2
Source of Release: Pipeline-FG	Date and Hour of Occurrence: 3/28/2012 10:00am	Date and Hour of Discovery: 3/28/2012 10:30am
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 3/28/2012 4pm	
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.*: Injection line came apart at the collar. There was evidence of erosion around the threads. Shut in at header. Ru pump trks and pumped 800 bbl fresh water w/ soap to get leak to surface.

Describe Area Affected and Cleanup Action Taken.* : Leak surfaced between the TB#6-inj. and TB #8-inj leak traveled SE towards the TB #102-prod. Further remedial action pending...

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: 04/16/2012 Phone: 575-942-9492

OIL CONSERVATION DIVISION

Signed By Mike Bratcher

Approved by District Supervisor:

Approval Date: APR 25 2012 Expiration Date:

Conditions of Approval: Attached ☐

Remediation per OCD Rules & Guidelines. **SUBMIT REMEDIATION PROPOSAL NOT LATER THAN:** 5/25/2012

2RP1110

* Attach Additional Sheets If Necessary

Appendix II

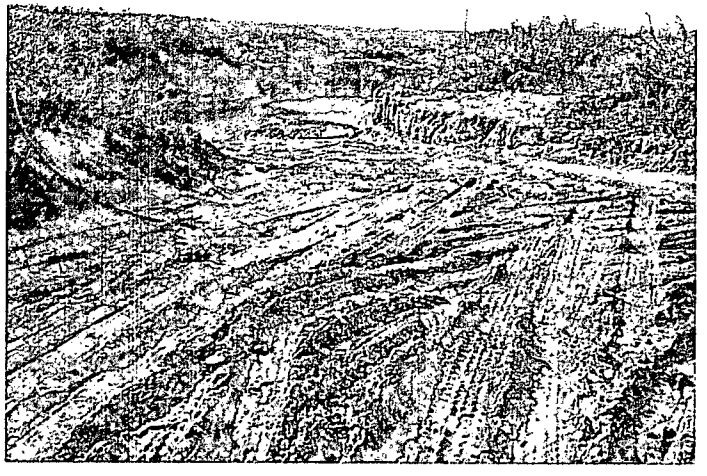
SITE PHOTOGRAPHS

Diversified Field Service, Inc.
3412 N. Dal Paso
Hobbs, NM 88240
(575) 964-8394

Linn Energy Turner B #8

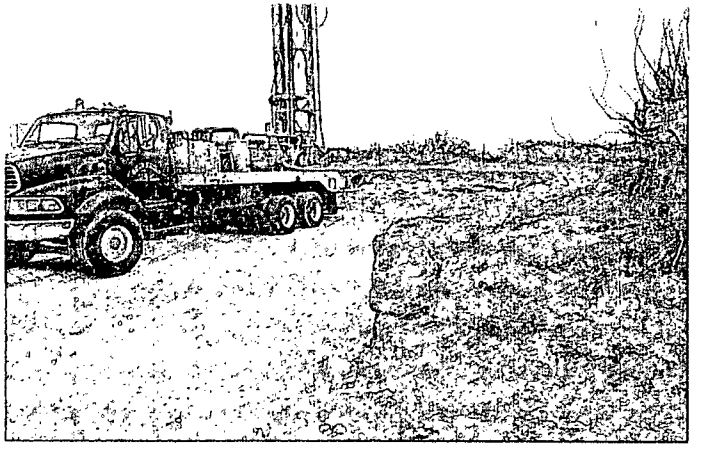
Unit Letter B, Section 20, T17S R31E

Sign marking location 6/11/12



Spill location SE of injection line 9/4/13

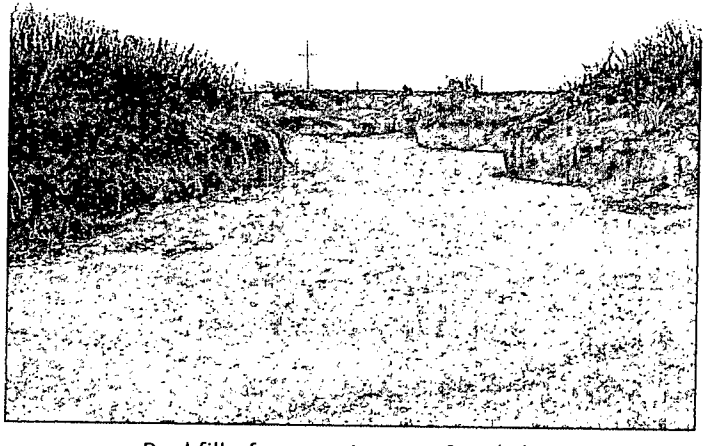
Leak surfacing SE and SW of injection line 9/4/13



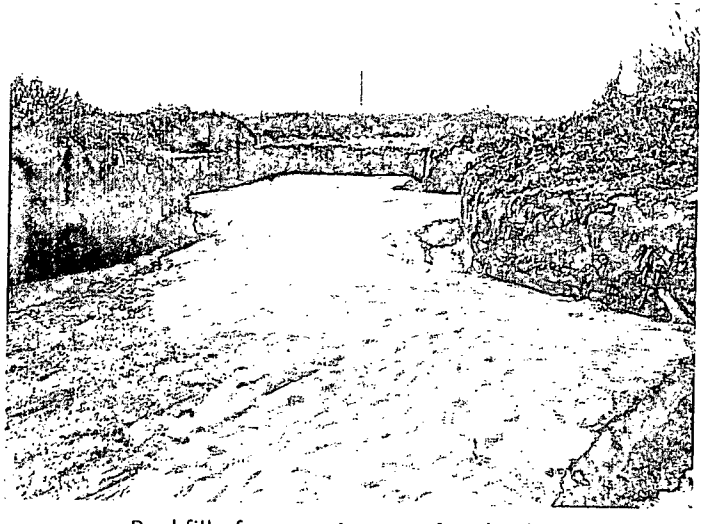
Drilling soil bore 2/18/14

Linn Energy Turner B #8

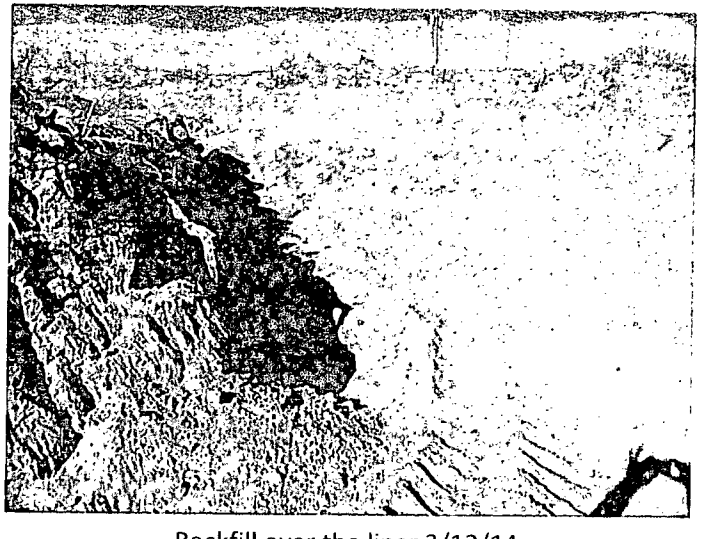
Unit Letter B, Section 20, T17S R31E



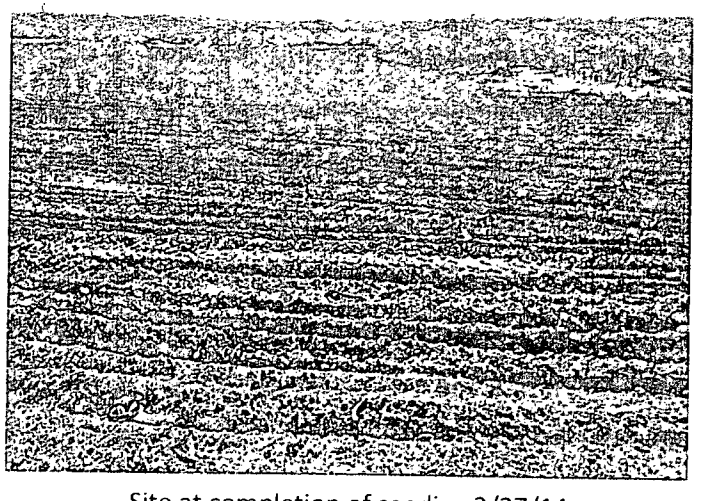
Backfill of excavation to 4 ft. 3/3/14



Backfill of excavation to 4 ft. 3/10/14



Backfill over the liner 3/12/14



Site at completion of seeding 3/27/14

Appendix III

GROUNDWATER DATA

Diversified Field Service, Inc.
3412 N. Dal Paso
Hobbs, NM 88240
(575) 964-8394

GROUND WATER SEARCH

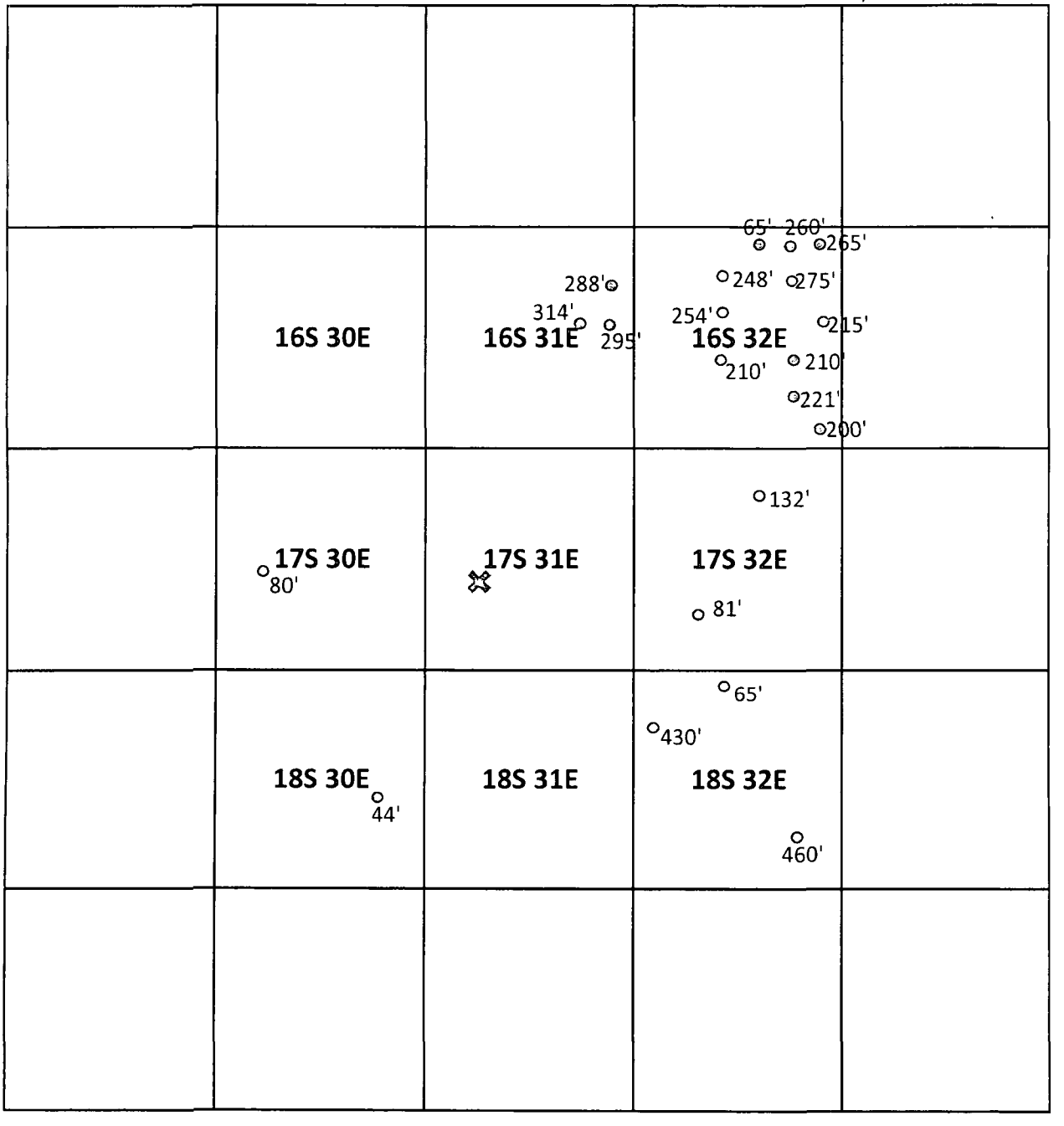
Linn Energy Turner B North #8

UL: B **Sec:** 20 **T:** 17S **R:** 31E

Groundwater Depth: 220~ ft.

o = NM Office of the State Engineer
⊙ = U.S. Geological Survey (unknown well)
⊠ = Site Location

Date: 05/29/2014
By: Rebecca Pons



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

No records found.

PLSS Search:

Township 16S **Range** 30E

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

No records found.

PLSS Search:

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	POD Code	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		L	LE		3	2	13	16S	31E	610238	3643427*	328	295	33
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: 9

PLSS Search

Township 16S Range 31E

*UTM location was derived from PLSS - see Help

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(acre ft per annum)

(NAD83 UTM in meters)

File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416	4	Sec	Tws	Rng	X	Y
3435	L	PRO	0	LOWE DRILLING COMPANY	LE	L 03435			Shallow	1	1	05	16S	31E	602954	3646955*

Record Count: 1

POD Search:

POD Number: L 03435

Sorted by: File Number

UTM location was derived from PLSS - see Help

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file. C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(acre ft per annum)

File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416 4	Sec	Tws	Rng	X	Y
3852	L	MUN	375	CITY OF CARLSBAD	LE	L 03852		R	Shallow	2 2 2	14	16S	31E	609126	3643913*
					LE	L 03852 POD4			Shallow	3 4 3	13	16S	31E	609744	3642516*
					LE	L 03852 POD5		R	Shallow	3 2	13	16S	31E	610238	3643427*
					LE	L 03852 POD6				3 2	13	16S	31E	610390	3643476
					LE	L 03852 X		R	Shallow	4 4 4	13	16S	31E	610749	3642526*
					LE	L 03852 X2			Shallow	3 2 2	13	16S	31E	610535	3643733*

:ord Count: 6

POD Search:

POD Number: L 03852

Sorted by: File Number

M location was derived from PLSS - see Help

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(acre ft per annum)

File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416	4	Sec	Tws	Rng	X	Y
671	L	PRO	0	JOHN H. TRIGG	LE	L 04671			Shallow	1	1 2	12	16S	31E	610114	3645538*

:ord Count: 1

POD Search:

POD Number: L 04671

Sorted by: File Number

M 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	Twns	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 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	3646413*	328	275	53
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 03631	L	LE		1	2	02	16S	32E	618240	3647126*	315	250	65
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 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
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		

*UTM location was derived from PLSS - see Help

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file. C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in mete

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416 4	Sec	Twn	Rng	X	
L 02381	L	PRO	0	GULF REFINING COMPANY	LE	L 02381			Shallow	3 1	13	16S	32E	619086	36435

Record Count: 1

POD Search:

POD Number: L 02381

Sorted by: File Number

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

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in me

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416 4	Sec	Twn	Rng	X	
L 02449	L	PRO	0	PLYMOUTH OIL COMPANY	LE	L 02449			Shallow		01	16S	32E	619661	3646

Record Count: 1

POD Search:

POD Number: L 02449

Sorted by: File Number

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

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE)

(acre ft per annum) (quarters are smallest to largest) (NAD83 UTM in met

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416	4	Sec	Twn	Rng	X	
L 02617	L	PRO	0	GULF OIL CORPORATION	LE	L 02617			Shallow		4 4	02	16S	32E	618656	3645

Record Count: 1

POD Search:

POD Number: L 02617

Sorted by: File Number

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

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file. C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in me

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 64 16 4	Sec	Twns	Rng	X	
L 02752	L	DOL	3	W W WILLIAMS	LE	L 02752			Shallow	1 3	26	16S	32E	617521	3639

Record Count: 1

POD Search:

POD Number: L 02752

Sorted by: File Number

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

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file. C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in me

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416	4	Sec	Tws	Rng	X	
L 02846	L	PRO	0	CONTINENTAL OIL COMPANY	LE	L 02846			Shallow	4	2 1	11	16S	32E	617956	3645

Record Count: 1

POD Search:

POD Number: L 02846

Sorted by: File Number

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

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in met

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416 4	Sec	Twn	Rng	X	
L 02954	L	PRO	0	SCHOENFELD-HUNTER-KITCH DRG CO	LE	L 02954			Shallow	2 4	03	16S	32E	617043	36463

Record Count: 1

POD Search:

POD Number: L 02954

Sorted by: File Number

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

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE)

(acre ft per annum) (quarters are smallest to largest) (NAD83 UTM in me

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416	4	Sec	Tws	Rng	X	
L 03631	L	PRO	0	MAGNOLIA PETROLEUM COMPANY	LE	L 03631			Shallow	1	2	02	16S	32E	618240	3647

Record Count: 1

POD Search:

POD Number: L 03631

Sorted by: File Number

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

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in me

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416	4	Sec	Tws	Rng	X	
L 04930	L	STK	3	JULIA WILLIAMS	LE	L 04930			Shallow		1	23	16S	32E	617698	3642(

Record Count: 1

POD Search:

POD Number: L 04930

Sorted by: File Number

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

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in me

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416 4	Sec	Tws	Rng	X	
L 05494	L	COM	165	CITY OF CARLSBAD	LE	L 05494			Shallow		36	16S	32E	619758	3638

Record Count: 1

POD Search:

POD Number: L 05494

Sorted by: File Number

*UTM location was derived from PLSS - see Help

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in me

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 64 16 4	Sec	Tws	Rng	X	
L 06557	L	STK	3	TAYLOR CATTLE COMPANY	LE	L 06557			Shallow	1 4	21	16S	32E	615089	3641

Record Count: 1

POD Search:

POD Number: L 06557

Sorted by: File Number

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

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in me

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416 4	Sec	Twn	Rng	X	
L 06807	L	PRO	0	SHARP DRILLING COMPANY	LE	L 06807			Shallow	1 4 4	09	16S	32E	615356	3644

Record Count: 1

POD Search:

POD Number: L 06807

Sorted by: File Number

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

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file. C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in met

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416	4	Sec	Tws	Rng	X	
L 07823	L	PRO	0	E R WEST ENGINEERING	LE	L 07823			Shallow	2	2	2	16	16S	32E	615561	36439

Record Count: 1

POD Search:

POD Number: L 07823

Sorted by: File Number

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

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in me

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416	4	Sec	Tws	Rng	X	
L 08084	L	COM	750	MOR-WEST CORPORATION	LE	L 08084			Shallow	1 1	1	16	16S	32E	614157	3643
					LE	L 08084 POD4			Shallow		2	26	16S	32E	618522	3640
					LE	L 08084 POD5			Shallow	4 1	4	26	16S	32E	618425	3639
					LE	L 08084 S		R	Shallow	2 1	1	36	16S	32E	619239	3639
					LE	L 08084 S2		R	Shallow	3 1	1	36	16S	32E	619039	3638
					LE	L 08084 S3			Shallow		2	26	16S	32E	618522	3640

Record Count: 6

POD Search:

POD Number: L 08084

Sorted by: File Number

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

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file. C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in met

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416	4	Sec	Tws	Rng	X	
L 08084	L	COM	750	MOR-WEST CORPORATION	LE	L 08084 S3			Shallow		2	26	16S	32E	618522	36404

Record Count: 1

POD Search:

POD Number: L 08084 S3

Sorted by: File Number

*UTM location was derived from PLSS - see Help

Average Depth to Water: 224 feet

Minimum Depth: 65 feet

Maximum Depth: 280 feet

Record Count: 22

PLSS Search:

Township: 16S Range: 32E

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

No records found.

PLSS Search:

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 Code	County	Q 64	Q 16	Q 4	Sec	Twn	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:

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	POD Code	Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twp	Rng	X	Y	Depth Well	Depth Water	Water Column
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	25	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		

Average Depth to Water: 132 feet

Minimum Depth: 132 feet

Maximum Depth: 132 feet

Record Count: 17

PLSS Search:

Township: 17S Range: 32E

*UTM location was derived from PLSS - see Help

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

No PODs found.

POD Search:

POD Number: L 13050 1

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	Twp	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		
L 01978	L	LE	1	3	23	18S	30E		598469	3621964*	65	44	21

Average Depth to Water: 44 feet

Minimum Depth: 44 feet

Maximum Depth: 44 feet

Record Count: 3

PLSS Search:

Township 18S Range 30E

*UTM location was derived from PLSS - see Help

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(acre ft per annum)

(NAD83 UTM in me

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416	4	Sec	Tws	Rng	X	
L 01978	L	DOM	3	L A JOHNSON	LE	L 01978			Shallow	1	3	23	18S	30E	598469	3621

Record Count: 1

POD Search:

POD Number: L 01978

Sorted by: File Number

***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 Code	Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twp	Rng	X	Y	Depth Well	Depth Water	Water Column
L 11092		L	LE	2	3	15	18S	31E		606849	3623669*	160	98	62

Average Depth to Water: 98 feet

Minimum Depth: 98 feet

Maximum Depth: 98 feet

Record Count: 1

PLSS Search:

Township 18S Range 31E

*UTM location was derived from PLSS - see Help

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in met

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416 4	Sec	Twn	Rng	X	
L 11092	L	DOM	3	NEW HOPE BAPTIST	LE	L 11092			Shallow	2 3	15	18S	31E	606849	3623(

Record Count: 1

POD Search:

POD Number: L 11092

Sorted by: File Number

***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	Twn	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	25	18S	32E	617750	3621373*	700		

Average Depth to Water: 318 feet

Minimum Depth: 65 feet

Maximum Depth: 460 feet

Record Count: 4

PLSS Search:

Township 18S **Range** 32E

*UTM location was derived from PLSS - see Help

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in met

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416	4	Sec	Tws	Rng	X	
CP 00566		DOM	3	B.E. FRIZZELL	LE	CP 00566			Shallow	4	4	1	04	18S	32E	614960	3627

Record Count: 1

POD Search:

POD Number: CP 00566

Sorted by: File Number

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

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in me

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416	4	Sec	Tws	Rng	X	
CP 00672		STK	3	VIRGIL LINAM ESTATE	LE	CP 00672			Shallow	4	4	07	18S	32E	612475	3624

Record Count: 1

POD Search:

POD Number: CP 00672

Sorted by: File Number

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

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

No PODs found.

POD Search:

POD Number: CP 00672 CLW475398

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in met

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416	4	Sec	Tws	Rng	X	
CP 00677		PRO	0	T X O PROD.	LE	CP 00677				1	1	26	18S	32E	617750	36213

Record Count: 1

POD Search:

POD Number: CP 00677

Sorted by: File Number

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

Appendix IV

LABORATORY ANALYSES

Diversified Field Service, Inc.
3412 N. Dal Paso
Hobbs, NM 88240
(575) 964-8394

CARDINAL Laboratories

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

June 21, 2013

GARY WINK

LINN ENERGY

RR1, BOX 24 B

KINGFISHER, OK 73750

RE: TURNER B #8

Enclosed are the results of analyses for samples received by the laboratory on 06/17/13 8:25.

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

Received:	06/17/2013	Sampling Date:	06/10/2013
Reported:	06/21/2013	Sampling Type:	Soil
Project Name:	TURNER B #8	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: BOTTOM N 3.5' (H301390-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2013	ND	2.12	106	2.00	4.61	
Toluene*	<0.050	0.050	06/21/2013	ND	2.24	112	2.00	4.54	
Ethylbenzene*	<0.050	0.050	06/21/2013	ND	2.43	122	2.00	4.76	
Total Xylenes*	<0.150	0.150	06/21/2013	ND	7.24	121	6.00	4.85	
Total BTEX	<0.300	0.300	06/21/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID *120 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: DW**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	06/20/2013	ND	416	104	400	3.77	

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	06/19/2013	ND	205	103	200	2.90	
DRO >C10-C28	<10.0	10.0	06/19/2013	ND	215	107	200	2.48	

Surrogate: 1-Chlorooctane *80.5 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *85.3 %* *63.6-154*

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

Received:	06/17/2013	Sampling Date:	06/10/2013
Reported:	06/21/2013	Sampling Type:	Soil
Project Name:	TURNER B #8	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: BOTTOM S 3.5' (H301390-02)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2013	ND	2.12	106	2.00	4.61	
Toluene*	<0.050	0.050	06/21/2013	ND	2.24	112	2.00	4.54	
Ethylbenzene*	<0.050	0.050	06/21/2013	ND	2.43	122	2.00	4.76	
Total Xylenes*	<0.150	0.150	06/21/2013	ND	7.24	121	6.00	4.85	
Total BTEX	<0.300	0.300	06/21/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID *109 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: DW**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**224**	16.0	06/20/2013	ND	416	104	400	3.77	

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	06/19/2013	ND	205	103	200	2.90	
DRO >C10-C28	<10.0	10.0	06/19/2013	ND	215	107	200	2.48	

Surrogate: 1-Chlorooctane *88.8 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *93.0 %* *63.6-154*

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

Received:	06/17/2013	Sampling Date:	06/10/2013
Reported:	06/21/2013	Sampling Type:	Soil
Project Name:	TURNER B #8	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: N WALL CENTER #1 (H301390-03)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2013	ND	2.12	106	2.00	4.61	
Toluene*	<0.050	0.050	06/21/2013	ND	2.24	112	2.00	4.54	
Ethylbenzene*	<0.050	0.050	06/21/2013	ND	2.43	122	2.00	4.76	
Total Xylenes*	<0.150	0.150	06/21/2013	ND	7.24	121	6.00	4.85	
Total BTEX	<0.300	0.300	06/21/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIL *108 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: DW**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	06/20/2013	ND	416	104	400	3.77	

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	06/19/2013	ND	205	103	200	2.90	
DRO >C10-C28	<10.0	10.0	06/19/2013	ND	215	107	200	2.48	

Surrogate: 1-Chlorooctane *89.1 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *95.1 %* *63.6-154*

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

Received:	06/17/2013	Sampling Date:	06/10/2013
Reported:	06/21/2013	Sampling Type:	Soil
Project Name:	TURNER B #8	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: N WALL CENTER #2 (H301390-04)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2013	ND	2.12	106	2.00	4.61	
Toluene*	<0.050	0.050	06/21/2013	ND	2.24	112	2.00	4.54	
Ethylbenzene*	<0.050	0.050	06/21/2013	ND	2.43	122	2.00	4.76	
Total Xylenes*	<0.150	0.150	06/21/2013	ND	7.24	121	6.00	4.85	
Total BTEX	<0.300	0.300	06/21/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIL *109 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: DW**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	06/20/2013	ND	416	104	400	3.77	

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	06/20/2013	ND	196	98.2	200	5.62	
DRO >C10-C28	<10.0	10.0	06/20/2013	ND	209	105	200	2.41	

Surrogate: 1-Chlorooctane *90.1 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *96.9 %* *63.6-154*

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

Received:	06/17/2013	Sampling Date:	06/10/2013
Reported:	06/21/2013	Sampling Type:	Soil
Project Name:	TURNER B #8	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: S WALL CENTER #1 (H301390-05)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2013	ND	2.12	106	2.00	4.61	
Toluene*	<0.050	0.050	06/21/2013	ND	2.24	112	2.00	4.54	
Ethylbenzene*	<0.050	0.050	06/21/2013	ND	2.43	122	2.00	4.76	
Total Xylenes*	<0.150	0.150	06/21/2013	ND	7.24	121	6.00	4.85	
Total BTEX	<0.300	0.300	06/21/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIL *122 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: DW**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	06/20/2013	ND	416	104	400	3.77	

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	06/20/2013	ND	196	98.2	200	5.62	
DRO >C10-C28	<10.0	10.0	06/20/2013	ND	209	105	200	2.41	

Surrogate: 1-Chlorooctane *81.7 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *85.8 %* *63.6-154*

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

Received:	06/17/2013	Sampling Date:	06/10/2013
Reported:	06/21/2013	Sampling Type:	Soil
Project Name:	TURNER B #8	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: S WALL CENTER #2 (H301390-06)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2013	ND	2.12	106	2.00	4.61	
Toluene*	<0.050	0.050	06/21/2013	ND	2.24	112	2.00	4.54	
Ethylbenzene*	<0.050	0.050	06/21/2013	ND	2.43	122	2.00	4.76	
Total Xylenes*	<0.150	0.150	06/21/2013	ND	7.24	121	6.00	4.85	
Total BTEX	<0.300	0.300	06/21/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID *109 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: DW**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**384**	16.0	06/20/2013	ND	416	104	400	3.77	

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	06/20/2013	ND	196	98.2	200	5.62	
DRO >C10-C28	<10.0	10.0	06/20/2013	ND	209	105	200	2.41	

Surrogate: 1-Chlorooctane *83.0 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *84.3 %* *63.6-154*

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*=Accredited Analyte

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, 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	BILL TO
Project Manager: Gary Wink	P.O. #:
Address:	Company:
City: State: Zip:	Attn:
Phone #: Fax #:	Address: Same
Project #: Project Owner:	City:
Project Name:	State: Zip:
Project Location: Turner B #8	Phone #:
Sampler Name: L. Gonzalez	Fax #:

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chloride	TPH 8015	BTEX
H3D1390																	
1	Bottom N 7.5'	✓	1			✓					✓		6/10	748	✓	✓	✓
2	Bottom S 7.5'	✓	1			✓					✓		6/10	825	✓	✓	✓
3	N Wall Center #1	✓	1			✓					✓		6/10	9:00	✓	✓	✓
4	N Wall Center #2	✓	1			✓					✓		6/10	9 35	✓	✓	✓
5	S Wall Center #1	✓	1			✓					✓		6/10	1000	✓	✓	✓
6	S Wall Center #2	✓	1			✓					✓		6/10	1035	✓	✓	✓

Relinquished By: Luis Gonzalez	Date: 6/12/13 Time: 4 pm	Received By:	
Relinquished By:	Date: 6-17-13 Time: 825	Received By: Jodi Henson	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	1.4°C	Sample Condition Cool: Yes / Intact: Yes	CHECKED BY: (Initials)

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:
Email
gawink@linnenergy.com
aruth@diversifiedfsi.com

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

CARDINAL Laboratories

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

August 05, 2013

GARY WINK

LINN ENERGY

RR1, BOX 24 B

KINGFISHER, OK 73750

RE: TURNER B #8

Enclosed are the results of analyses for samples received by the laboratory on 07/29/13 17:03.

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

Received:	07/29/2013	Sampling Date:	07/23/2013
Reported:	08/05/2013	Sampling Type:	Soil
Project Name:	TURNER B #8	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	MALJAMAR		

Sample ID: SP 2 @ 16' (H301782-01)

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	08/01/2013	ND	2.04	102	2.00	2.20	
Toluene*	<0.050	0.050	08/01/2013	ND	2.05	102	2.00	1.43	
Ethylbenzene*	<0.050	0.050	08/01/2013	ND	2.15	108	2.00	0.897	
Total Xylenes*	<0.150	0.150	08/01/2013	ND	6.63	110	6.00	1.41	
Total BTEX	<0.300	0.300	08/01/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID *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	**992**	16.0	07/30/2013	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	07/31/2013	ND	185	92.3	200	2.16	
DRO >C10-C28	<10.0	10.0	07/31/2013	ND	199	99.3	200	3.94	

Surrogate: 1-Chlorooctane *77.9 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *103 %* *63.6-154*

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

Received:	07/29/2013	Sampling Date:	07/29/2013
Reported:	08/05/2013	Sampling Type:	Soil
Project Name:	TURNER B #8	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	MALJAMAR		

Sample ID: SP 6 @ 2' (H301782-02)

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	08/01/2013	ND	2.04	102	2.00	2.20	
Toluene*	<0.050	0.050	08/01/2013	ND	2.05	102	2.00	1.43	
Ethylbenzene*	<0.050	0.050	08/01/2013	ND	2.15	108	2.00	0.897	
Total Xylenes*	<0.150	0.150	08/01/2013	ND	6.63	110	6.00	1.41	
Total BTEX	<0.300	0.300	08/01/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *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	**48.0**	16.0	07/30/2013	ND	400	100	400	7.69	

TPH 8015M mg/kg **Analyzed By: MS** **S-04**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/31/2013	ND	185	92.3	200	2.16	
DRO >C10-C28	**78.2**	10.0	07/31/2013	ND	199	99.3	200	3.94	

Surrogate: 1-Chlorooctane *60.9 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *79.0 %* *63.6-154*

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 Energy	BILL TO
Project Manager: Gary Wink	P.O. #:
Address:	Company:
City: State: Zip:	Attn: SAME
Phone #: Fax #:	Address:
Project #: Project Owner:	City:
Project Name: Turner B #8	State: Zip:
Project Location: Maljamar	Phone #:
Sampler Name: Daniel Lockhart	Fax #:

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	BTex	Chloride	TPH 8015m
H301782																	
1	SP2@16'	G	1			✓					✓		7-23-13	9:35	✓	✓	✓
2	SP6@2'	G	1			✓					✓		7-29-13	7:51	✓	✓	✓

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: Daniel Lockhart	Date: 7/29/13 Time: 5:03	Received By: Jodi Henson	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	Fax Result: ☐ Yes ☐ No Add'l Fax #:
			REMARKS: Email: gawink@linnenergy.com aruth@diversifiedfsi.com
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	3.2°C	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials)

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

#8

CARDINAL Laboratories

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

August 05, 2013

GARY WINK

LINN ENERGY

RR1, BOX 24 B

KINGFISHER, OK 73750

RE: TURNER B #8

Enclosed are the results of analyses for samples received by the laboratory on 07/30/13 16:30.

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

Received:	07/30/2013	Sampling Date:	07/30/2013
Reported:	08/05/2013	Sampling Type:	Soil
Project Name:	TURNER B #8	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	MALJAMAR		

Sample ID: SP 1 @ 7' (H301797-01)

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	08/01/2013	ND	1.99	99.6	2.00	0.870	
Toluene*	<0.050	0.050	08/01/2013	ND	1.94	97.1	2.00	0.758	
Ethylbenzene*	<0.050	0.050	08/01/2013	ND	2.02	101	2.00	1.31	
Total Xylenes*	<0.150	0.150	08/01/2013	ND	6.10	102	6.00	1.72	
Total BTEX	<0.300	0.300	08/01/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIL *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	**352**	16.0	08/01/2013	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	08/01/2013	ND	183	91.5	200	10.9	
DRO >C10-C28	<10.0	10.0	08/01/2013	ND	190	95.0	200	10.7	

Surrogate: 1-Chlorooctane *89.8 %* *65.2-140*

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

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

Received:	07/30/2013	Sampling Date:	07/30/2013
Reported:	08/05/2013	Sampling Type:	Soil
Project Name:	TURNER B #8	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	MALJAMAR		

Sample ID: SP 8 @ 5' (H301797-02)

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	08/01/2013	ND	1.99	99.6	2.00	0.870	
Toluene*	<0.050	0.050	08/01/2013	ND	1.94	97.1	2.00	0.758	
Ethylbenzene*	<0.050	0.050	08/01/2013	ND	2.02	101	2.00	1.31	
Total Xylenes*	<0.150	0.150	08/01/2013	ND	6.10	102	6.00	1.72	
Total BTEX	<0.300	0.300	08/01/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIL *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	**1390**	16.0	08/01/2013	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	08/01/2013	ND	183	91.5	200	10.9	
DRO >C10-C28	<10.0	10.0	08/01/2013	ND	190	95.0	200	10.7	

Surrogate: 1-Chlorooctane *91.0 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *115 %* *63.6-154*

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

Received:	07/30/2013	Sampling Date:	07/30/2013
Reported:	08/05/2013	Sampling Type:	Soil
Project Name:	TURNER B #8	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	MALJAMAR		

Sample ID: SP 5 @ 2' (H301797-03)

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	08/01/2013	ND	1.99	99.6	2.00	0.870	
Toluene*	<0.050	0.050	08/01/2013	ND	1.94	97.1	2.00	0.758	
Ethylbenzene*	<0.050	0.050	08/01/2013	ND	2.02	101	2.00	1.31	
Total Xylenes*	<0.150	0.150	08/01/2013	ND	6.10	102	6.00	1.72	
Total BTEX	<0.300	0.300	08/01/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIL *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	**512**	16.0	08/01/2013	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	08/01/2013	ND	183	91.5	200	10.9	
DRO >C10-C28	<10.0	10.0	08/01/2013	ND	190	95.0	200	10.7	

Surrogate: 1-Chlorooctane *102 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *131 %* *63.6-154*

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

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, 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	BILL TO
Project Manager: Gary Wink	P.O. #:
Address:	Company:
City: State: Zip:	Attn: SAME
Phone #: Fax #:	Address:
Project #: Project Owner:	City:
Project Name: Turner B #8	State: Zip:
Project Location: Maljamar	Phone #:
Sampler Name: Daniel Lockhart	Fax #:

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 8015m	Cl-(Chloride)
H301797																	
1	SP1 @ 7'	G				✓					✓		7-30-13	7:59	✓	✓	✓
2	SP8 @ 5'	G				✓					✓		7-30-13	8:44	✓	✓	✓
3	SP5 @ 2'	G				✓					✓		7-30-13	9:54	✓	✓	✓

Relinquished By: Daniel Lockhart	Date: 7/30/13 Time: 4:30	Received By: Jodi Henson	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other: 3.4°C	Sample Condition: Cool ☑ Yes ☐ No, Intact ☑ Yes ☐ No	CHECKED BY (Initials):	REMARKS: Email: gawink@linnenergy.com aruth@diversifiedPsi.com

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

H.S.

CARDINAL Laboratories

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

February 21, 2014

BRIAN WALL

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: TURNER B #8

Enclosed are the results of analyses for samples received by the laboratory on 02/17/14 15:30.

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:	02/17/2014	Sampling Date:	02/17/2014
Reported:	02/21/2014	Sampling Type:	Soil
Project Name:	TURNER B #8	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 2 @ 65' (H400472-01)

BTEX 8260B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/20/2014	ND	2.46	123	2.00	2.42	
Toluene*	<0.050	0.050	02/20/2014	ND	2.17	108	2.00	2.14	
Ethylbenzene*	<0.050	0.050	02/20/2014	ND	2.18	109	2.00	3.74	
Total Xylenes*	<0.150	0.150	02/20/2014	ND	6.35	106	6.00	3.42	
Total BTEX	<0.300	0.300	02/20/2014	ND					

Surrogate: Dibromofluoromethane	*104 %*	*61.3-142*
Surrogate: Toluene-d8	*97.1 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*102 %*	*65.7-141*

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**208**	16.0	02/20/2014	ND	416	104	400	3.77	

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	02/19/2014	ND	200	100	200	5.07	
DRO >C10-C28	<10.0	10.0	02/19/2014	ND	192	96.2	200	7.57	

Surrogate: 1-Chlorooctane	*91.9 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*95.1 %*	*63.6-154*

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

Received:	02/17/2014	Sampling Date:	02/17/2014
Reported:	02/21/2014	Sampling Type:	Soil
Project Name:	TURNER B #8	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 2 @ 70' (H400472-02)

BTEX 8260B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/21/2014	ND	2.46	123	2.00	2.42	
Toluene*	<0.050	0.050	02/21/2014	ND	2.17	108	2.00	2.14	
Ethylbenzene*	<0.050	0.050	02/21/2014	ND	2.18	109	2.00	3.74	
Total Xylenes*	<0.150	0.150	02/21/2014	ND	6.35	106	6.00	3.42	
Total BTEX	<0.300	0.300	02/21/2014	ND					

Surrogate: Dibromofluoromethane	*109 %*	*61.3-142*
Surrogate: Toluene-d8	*97.3 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*102 %*	*65.7-141*

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**176**	16.0	02/20/2014	ND	416	104	400	3.77	

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	02/19/2014	ND	200	100	200	5.07	
DRO >C10-C28	<10.0	10.0	02/19/2014	ND	192	96.2	200	7.57	

Surrogate: 1-Chlorooctane	*104 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*107 %*	*63.6-154*

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

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, 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	BILL TO	
Project Manager:	Brian Wall	P.O. #:	
Address:		Company:	Linn
City:	State: Zip:	Attn:	Brian Wall
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:	Turner B8	State: Zip:	
Project Location:		Phone #:	
Sampler Name:	Lance Crenshaw	Fax #:	

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST: GRO	BTEX	CL
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME			
H400472																	
1	SB2 @ 65'	G	1			V					V		2-17	10.00	V	V	V
2	SB2 @ 70'	G	1			V					V		2-17	10:30	V	V	V

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 consequental 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: 2/17/14	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Lance Crenshaw	Time: 5:30	Jodi Henson	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: Bwall@Linnenergy.com
	Time:		aruppe@diversifiedfsi.com

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 5.2°C

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

CHECKED BY: (Initials) JH

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2811

CARDINAL Laboratories

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

March 11, 2014

BRIAN WALL

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: TURNER B #8

Enclosed are the results of analyses for samples received by the laboratory on 03/06/14 16:55.

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO — ANALYSIS REQUEST

P.O. #:

Company: Linn Energy

Attn: Brian Wall

Address:

City:

State: Zip:

Phone #:

Fax #:

PRESERV / SAMPLING

ACID/BASE:

ICE / COOL

OTHER :

DATE	TIME
3/5/14	1:15
	1:25
	1:45
	2:00
	2:10
	2:50
	2:57
	3:00
	3:15

72

shall be limited to the amount paid by the client for the d by Cardinal within 30 days after completion of the applicable se, or loss of profits incurred by client, its subsidiaries, upon any of the above stated reasons or otherwise.

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

Fax Result: ☐ Yes ☐ No Add'l Fax #:

REMARKS:

bwall@linnenergy.com

mjcodden@diversified.com

CHECKED BY:

393-2326

DIVERSIFIED FIELD SERVICES, INC.

RECLAMATION FORM

SITE: Turner B 8

Start Date: 3-26-14

Completion Date: 3-26-14

Step 1 Remove caliche and/or all discolored material (soil, caliche, et al) for disposal.

Step 2 Look for any discolored material under pad. Sample and perform field tests. If above limits, remove 1' and resample and test. If sample is still above limits, contact Environmental Director before proceeding further.

Step 3 Grid clean area and establish between 2 and 5 sample points.

Step 4 Take appropriate samples and run field tests on samples.

Note: If any samples come back higher than allowed limit or are close to limit, contact Environmental Director before proceeding.

Step 5 When field sample tests are shown to be acceptable, backfill and contour soil to depth as required.

Step 6 Re-seed reclaimed area with seed required by landowner (BLM) and give seed tag to Envrionmental Office upon completion.

Note: Record the amount of seed used on tag.

Seed Type: LPC

Lbs. Used: 150 #

Step 7 Ensure samples are taken to the appropriate Scientific Lab for analyses and **this form** is returned to the Environmental Office upon job completion.

NOTES: Remediation Site

Supervisor: Stephen McCain

Natalie Gladden

From: Natalie Gladden
Sent: Friday, February 28, 2014 1:04 PM
To: Mike Burton (mburton@blm.gov)
Cc: Michael Patterson; Rebecca Pons; Stephen McGhee (smcghee@diversifiedfsi.com); 'mike.bratcher@state.nm.us'
Subject: Turner B #008

Mike,

Thank you, we will keep you posted.

Natalie Gladden
ENVIRONMENTAL CONSULTANT
DFSI ENVIRONMENTAL SERVICES
CELL: 575-602-1786
OFFICE: 575-964-8394
FAX: 575-964-8396
EMAIL: ngladden@diversifiedfsi.com

From: Burton, Michael [mailto:mburton@blm.gov]
Sent: Friday, February 28, 2014 12:55 PM
To: Natalie Gladden
Subject: Re: Re:

Yes ma'am.

Mike Burton
BLM-CFO
Environmental Protection Specialist
575-234-2226 office
575-361-3574 cell
mburton@blm.gov

On Fri, Feb 28, 2014 at 12:53 PM, Natalie Gladden <ngladden@diversifiedfsi.com> wrote:

This is on the Turner B #008 correct?

contained herein, is prohibited. If you have received this email in error, please immediately notify the sender by return email and delete this email from your system. Thank you.

On Fri, Feb 28, 2014 at 11:56 AM, Natalie Gladden <ngladden@diversifiedfsi.com> wrote:

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

Thursday February 27, 2014

Sent 2-27-14

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

RE: **Turner B North #08 – Work Plan Remediation**
UL/B, Section 20, T17S, R31E
API No. 30-015-05280

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 west of Maljamar NM, in Eddy County. The site resulted from a separation at the collar in an injection line. There was approximately 150 bbls of produced water and oil leakage onto pasture area. The line was shut in at the header to stop the leak, and repair the line. Vacuum trucks pumped 800 bbls of fresh water with soap in order to force leak to surface ground. The leak surfaced south of injection line between Turner B #06 and Turner B #08 injections. The leak traveled southeast towards the Turner B #102 production lines. A form C-141 was submitted to the NMOCD on April 16, 2012.

Site Delineation

DFSI personnel used a hand auger to vertically delineate the leak area at several sample points. Soil samples were field screened for chloride and sent to a commercial lab for confirmation. Headspace measurements were also performed using a Mini RAE Photoionization Detector (PID). Samples were collected at surface and in 1 ft. intervals until two consecutive samples show chloride well below 1,000 mg/kg. Surface and bottom samples were submitted to a commercial laboratory for chloride, TPH, and BTEX analyses. On September 16, 2013 a soil bore was conducted to 75ft. bgs., and was submitted to a commercial lab for analysis. The lab results confirmed reduced Chlorides at 880 mg/kg.

On February 17, 2014 the site was revisited for an additional sore bore at the SP1 area (referred to as SB2). SB2 site was bored to a depth of 70ft bgs whereby the Chlorides were reduced to 176 mg/kg.

Environmental Department
3412 N. Dal Paso
Hobbs, NM 88240 Phone: (575)964-8394 Fax: (575)964-8396

Conclusion

Site was previously excavated to 6ft bgs. DFSI is proposing to backfill with Caliche to 4ft. bgs., and install a 20mil. Liner. After installation of the liner; DFSI is requesting permission to backfill with topsoil. DFSI will remove any impacted soil to an NMOCD approved facility, seeded and restored to its natural state. DFSI will then submit all proper closure documentation to NMOCD and BLM in accordance with regulatory compliance.

Please contact me with any questions and/or concerns. Thank you.

Sincerely,

Natalie Gladden

Natalie Gladden
Environmental Consultant
Diversified Field Service, Inc.
315 S. Leech
Hobbs, NM 88240
Office: (575)397-6437
Mobile: (575)390-5454
Fax: (575)393-2981

cc Mike Burton
NM Bureau of Land Management

Attachments:
C-141
Photo Page
Site Diagram with Proposed excavation

Appendix VII

FINAL C-141

Diversified Field Service, Inc.
3412 N. Dal Paso
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: Brian Wall
Address: 2130 W. Bender Hobbs, NM 88240	Telephone No. 575-738-1739
Facility Name: Turner B North #8	Facility Type: Injection

Surface Owner Federal	Mineral Owner Federal	API No. 30-015-05280

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from	East/West Line	County Eddy
B	20	17S	31E	660	North	1980	East	

Latitude: 32.825484253602 Longitude -103.8812477226

NATURE OF RELEASE

Type of Release: Produced water/oil	Volume of Release 145bbls/5bbls	Volume Recovered 0/2
Source of Release: Pipeline PG	Date and Hour of Occurrence 13/28/2012 10:00 A.M.	Date and Hour of Discovery 03/28/2012 10:30 A.M.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher NMOCD – Terry Gregston BLM	
By Whom? Joe Hernandez	Date and Hour: 03/28/2012 4PM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
NA

Describe Cause of Problem and Remedial Action Taken.*
The injection line came apart at the collar. There was evidence of erosion around the threads. The injection line was shut in at the header, Pump trucks were utilized to pump 800 bbls of fresh water with detergent forcing the leak to surface.

Describe Area Affected and Cleanup Action Taken.*
The leak surfaced between the Turner B 6 Injection and the Turner B * Injection the fluids travelled SE towards the Turner B 102 Production. There was approximately 12,950 sq. ft. of impacted area. DFSI was retained to remediate the site according to NMCOD and BLM guidelines.

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: Fred B Wall	OIL CONSERVATION DIVISION	
Printed Name: Brian Wall	Approved by Environmental Specialist:	
Title: Construction Foreman II	Approval Date:	Expiration Date:
E-mail Address: bwall@linnenergy.com	Conditions of Approval:	Attached ☐
Date: 05/28/14 Phone: 806-367-0645		

* Attach Additional Sheets If Necessary

NM OIL CONSERVATION
ARTESIA DISTRICT
JUN 04 2014
RECEIVED