Quantum Resources

Artesia Unit #007

CLOSURE REPORT

API No. 30-015-10080

Release Date: 02/06/2014

Unit Letter D, Section 36, Township 17 South, Range 28 East

March 13, 2014

Prepared by:

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

Table of Contents

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

Artesia Unit #007

1 INTRODUCTION

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

The site is located west of Loco Hills NM, in Eddy County. The site resulted from an alleged equipment operator from Apache striking a produced water injection line. The line rupture released produced water onto approximately 2560 square feet of the well pad. The volume of release was 30 bbls., whereby all leakage remained on the pad area that is shared with the Apache Corporations D State #104. A vacuum truck recovered approximately 25 bbls. of fluid, and the line was repaired. An initial form C-141 was submitted to the NMOCD on February 14, 2014 (Appendix I).

2 SITE ACTIVITIES

On February 19, 2014 DFSI personnel collected surface soil samples from the site (Figure). The samples were field screened for chloride and showed elevated levels in all 5 of the surface sample points. The samples were submitted to a commercial laboratory for chloride, TPH, and BTEX analyses (Appendix IV).
Simultaneous soil field testing to 1ft. bgs revealed low chloride and hydrocarbon levels at 1 ft. below ground surface (bgs) (Figure). Soil samples were collected from the excavation floor and submitted to a laboratory for confirmation (Appendix IV). Chlorides were significantly reduced to levels of 32mg/kg to 144 mg/kg respectively. TPH totaled less than 10.0 mg/kg GRO and less than 10.0 mg/kg DRO, and BTEX totaled less than 0.300 mg/kg in all samples. Photographs of site activities can be viewed in Appendix II.

The excavated area on the well pad was not backfilled. Excavation was left open per Quantum Resources Management, as this is to be Apache corporations' responsibility due to location and circumstances of the spill.

3 CONCLUSION

According to the U.S. Geological Survey and the NM Office of the State Engineer, depth to groundwater in the area averages greater than 104 ft. bgs (Appendix III). Based on the removal of soils containing elevated chloride and visual staining at the site to an NMOCD approved facility, DFSI, on behalf of Quantum, submits the final form C-141 (Appendix V) and respectfully requests the closure of the regulatory file for the site.

Excavation Plat

Quantum, Artesia #7

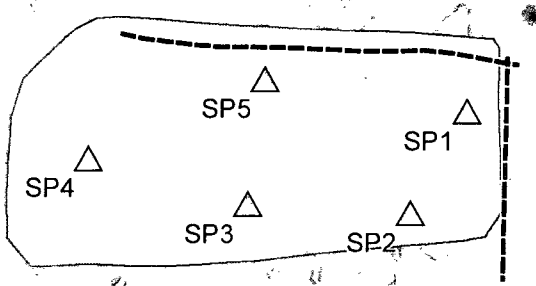
UL/D, Sec. 36, T17S R28E

Eddy, NM

Drafted By: Lance Crenshaw 3-4-14

0 10 20 40 Ft

From SP1 through SP5, south of the line, excavation is complete at 1'. Field samples were clean at all five sample points at 1'.



(Landowner: State)

Legend

- Sample Points
- Above Ground Line
- Buried Line
- Spill

N

Lance Crenshaw
GIS Technician

Soil Remediation and Ground Water Remediation
Environmental Assessments
Regulatory Compliance

Environmental DFSI Services

Office: 575-964-8394
Fax: 575-964-8396
Cell: 575-441-2359
Email: lcrenshaw@diversifiedfsi.com

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
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

HOBBS OCD
MAR 25 2014
RECEIVED

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 Quantum Resources Management, LLC	Contact Dee Fryar
Address 4000 N Big Spring St. Midland TX 79705	Telephone No. 432-517-0496
Facility Name Artesia Unit #007	Facility Type Injection Well

Surface Owner State of New Mexico	Mineral Owner State of New Mexico	API No. 30-015-10080

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	36	17S	28E	480'	FNL	330'	FWL	Eddy

Latitude_____ **Longitude**_____

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 30bbls	Volume Recovered 25bbls
Source of Release Line Strike	Date and Hour of Occurrence 02/06/2014	Date and Hour of Discovery 02/06/14
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher	
By Whom? Dee Fryer	Date and Hour 02/06/14 – unknown time	
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.

During electrical trenching procedures, Apache Corporation struck the Artesia Unit #007 injection line causing the release of the produced water. The leak was repaired and a vacuum truck was called to recover the standing fluid. All of the fluid remained on the caliche pad that is shared with Apache Corporations D State #104.

Describe Area Affected and Cleanup Action Taken.*

The initial assessment of the release has been completed. Surface samples have been taken to an approved laboratory for confirmation. The NMOCD Spills and Remediation Guideline will be followed to closure of this release.

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: Natalie Gladden	OIL CONSERVATION DIVISION	
Printed Name: Natalie Gladden	Approved by Environmental Specialist:	
Title: Environmental Consultant	Approval Date:	Expiration Date:
E-mail Address: ngladden@diversifiedfsi.com	Conditions of Approval:	Attached ☐
Date: 02/14/2014 Phone: 575-602-1786		

* Attach Additional Sheets If Necessary

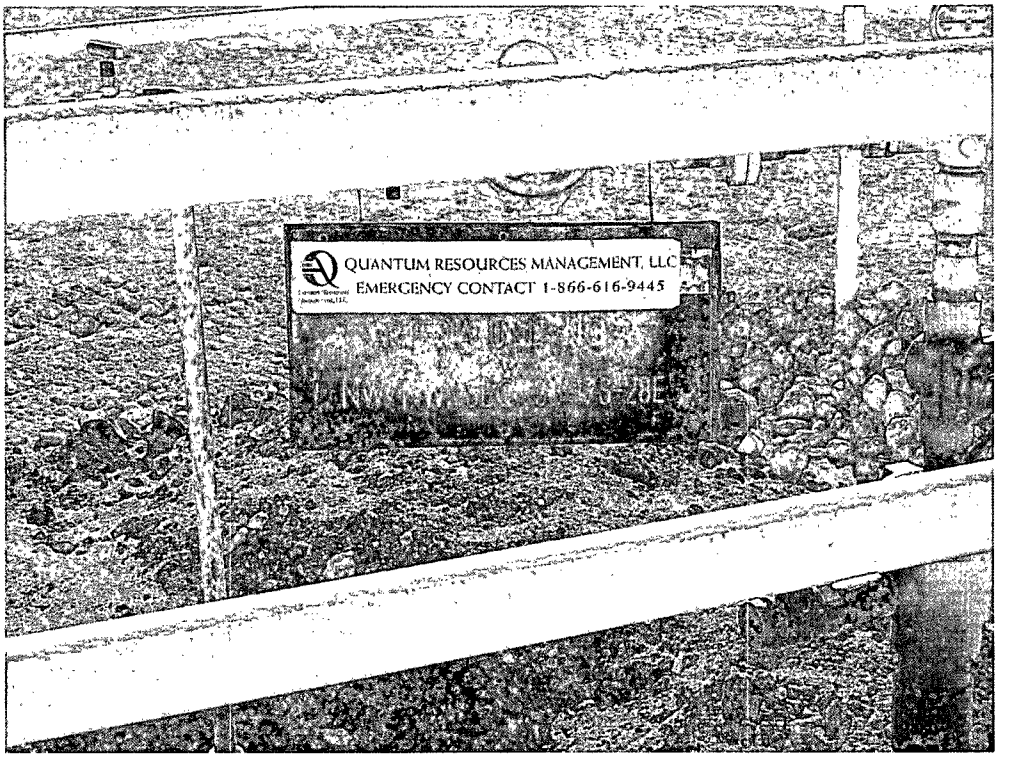
Appendix II

SITE PHOTOGRAPHS

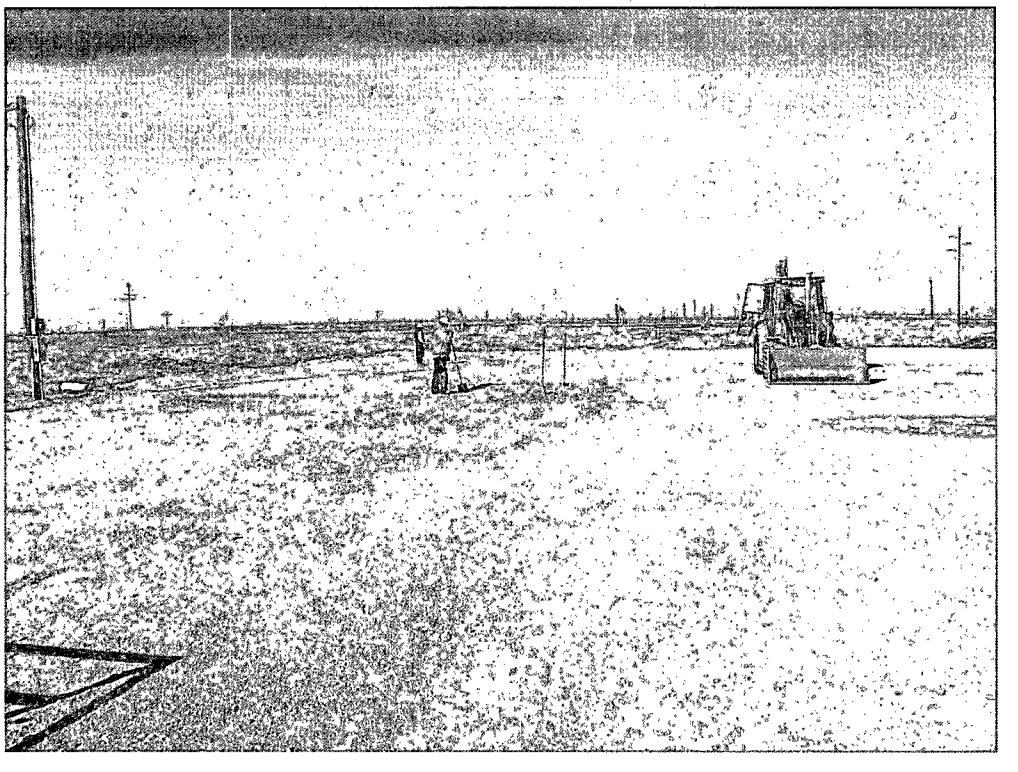
Diversified Field Service, Inc.
3412 N. Dal Paso
Hobbs, NM 88240
(575) 964-8394

Quantum Resources Artesia Unit #007

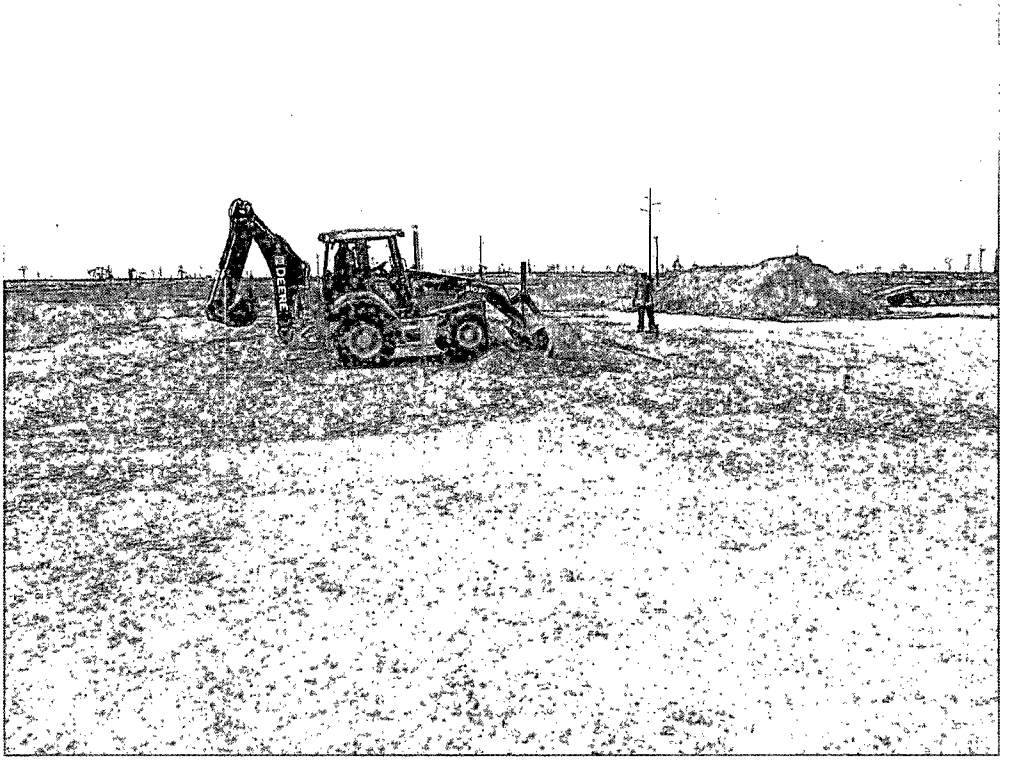
Unit Letter D, Section 36, T17S R28E



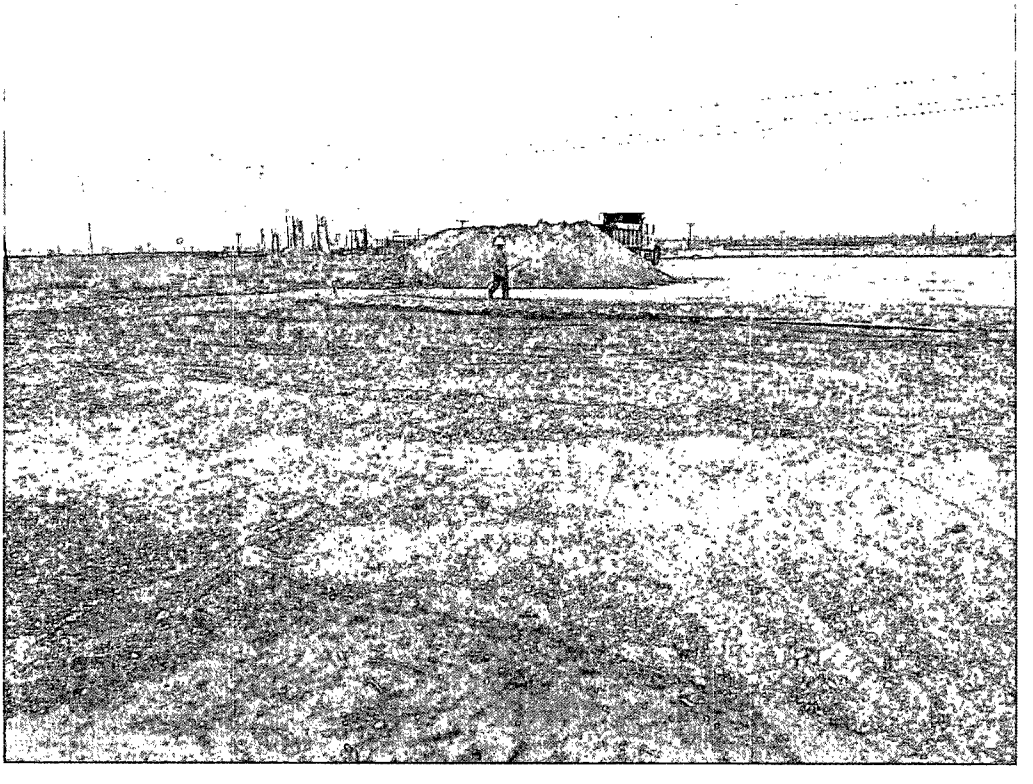
Sign marking location 3/03/14



Spill location 03/03/14



Excavation of spill area 3/04/14



Excavated area 3/04/14

Appendix III

GROUNDWATER DATA

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

GROUND WATER SEARCH

Quantum Artesia #007

UL: D **Sec:** 36 **T:** 17S **R:** 28E

Groundwater Depth: 104~ ft.

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

Date: 03/13/14
By: Rebecca Pons

	16S 27E o 70' Horner	**16S 28E**	**16S 29E** o 110' Van Curen	
	o 14' o 50' o 180' o 60' o 260' 12' o 111' o 90' o 260' **17S 27E** o 40' o 140'	**17S 28E** ⊠	o 76' **17S 29E**	
	18S 27E o 90' 65' o o 49'	**18S 28E** o 300'	**18S 29E** o unknown	

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

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

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

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

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

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
RA 00399		ED		2	3	31	16S	27E	563583	3637879*			
RA 02550		ED	3	3	1	27	16S	27E	567884	3639835*	83		
RA 02550 REPAR		ED	3	3	1	27	16S	27E	567884	3639835*	180	70	110
RA 04176		XX	3	4	1	23	16S	27E	569885	3641470*	300		

Average Depth to Water: **70 feet**

Minimum Depth: **70 feet**

Maximum Depth: **70 feet**

Record Count: 4

PLSS Search:

Township: 16S **Range:** 27E

***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
2550 REPAR		DOM	3	R.B. HORNER	ED	RA 02550 REPAR		Shallow	3	3 1	27	16S	27E	567884	3639835*

ord Count: 1

POD Search:

POD Number: RA 02550 REPAR

Sorted by: File Number

l location was derived from PLSS - see Help

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

No records found.

PLSS Search:

Township: 16S **Range:** 28E

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
8226		STK	1.34	BOGLE FARMS	ED	RA 08226				1	2	12	16S	28E	581557	3645357*
8227		STK	1.47	BOGLE FARMS	ED	RA 08227				2	2	24	16S	28E	581971	3642110*
8228		STK	1.46	BOGLE FARMS	ED	RA 08228				3	3	25	16S	28E	580793	3639270*

ord Count: 3

POD Search:

POD Basin: Roswell Artesian

PLSS Search:

Township: 16S **Range:** 28E

Sorted by: File Number

l location was derived from PLSS - see Help

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

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

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

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

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
RA 09342		ED	4	4	3	19	16S	29E	582737	3640640*	220	110	110

Average Depth to Water: **110 feet**

Minimum Depth: **110 feet**

Maximum Depth: **110 feet**

Record Count: 1

PLSS Search:

Township: 16S **Range:** 29E

***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
9342		DOM	3	RUSTY AND JOSIE VAN CUREN	ED	RA 09342		Shallow	4 4	3	19	16S	29E	582737	3640640*

ord Count: 1

POD Search:

POD Number: RA 09342

Sorted by: File Number

l 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	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
RA 01493			ED		2	1	27	17S	27E	568468	3630529*	876		
RA 01716 (D)	O		ED	4	4	3	16	17S	27E	566953	3632420*	1220	175	1045
RA 01716 S			ED	4	4	3	16	17S	27E	566953	3632420*	1200		
RA 02966			ED	4	4	4	05	17S	27E	566117	3635707*	80	30	50
RA 03279			ED		3	2	07	17S	27E	564020	3635011*	250	14	236
RA 03661			ED	3	2	3	32	17S	27E	565186	3628038*	330	140	190
RA 03664			CH	3	2	3	32	17S	27E	565186	3628038*	400	100	300
RA 03694			ED			4	17	17S	27E	565854	3632721*	300	90	210
RA 03816			CH			4	17	17S	27E	565854	3632721*	945	931	14
RA 04114			LE	4	4	3	16	17S	27E	566953	3632420*	1042	260	782
RA 04153			CH	4	4	3	16	17S	27E	566953	3632420*	1220	175	1045
RA 04320			ED			3	17	17S	27E	565053	3632719*	120	50	70
RA 04554			ED			1	23	17S	27E	569859	3631947*	220	40	180
RA 04561			ED		4	2	26	17S	27E	570871	3630142*	250		
RA 04786			ED	4	3	2	18	17S	27E	564133	3633277*	138	111	27
RA 06531			ED	4	1	4	17	17S	27E	565747	3632821*	200		
RA 06560			CH	2	1	2	20	17S	27E	565757	3632217*	133	80	53
RA 06635			ED	2	2	2	18	17S	27E	564531	3633852*	325	60	265
RA 07774			ED	3	2	1	11	17S	27E	569933	3635251*	100	50	50
RA 07844			ED	3	4	3	16	17S	27E	566753	3632420*	1300	180	1120
RA 07844 EXPL			ED		4	3	16	17S	27E	566854	3632521*	1300	180	1120
RA 08823			ED	1	1	3	17	17S	27E	564745	3633019*	348	60	288
RA 11691 POD1			ED	2	1	4	17	17S	27E	565800	3633029	150	0	150
RA 11926 POD6			ED	4	1	1	18	17S	27E	563316	3633803	20	12	8

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

Average Depth to Water: **136 feet**

Minimum Depth: **0 feet**

Maximum Depth: **931 feet**

Record Count: 24

PLSS Search:

Township: 17S **Range:** 27E

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

No PODs found.

POD Search:

POD Number: RA 01716 (D)

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
2966		DOM	3	JIM HOOTEN	ED	RA 02966		Shallow	4 4	4	05	17S	27E	566117	3635707*

ord Count: 1

POD Search:

POD Number: RA 02966

Sorted by: File Number

l 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
3279		DOM	3	EMIL P. BACH	ED	RA 03279				3 2	07	17S	27E	564020	3635011*

ord Count: 1

POD Search:

POD Number: RA 03279

Sorted by: File Number

l 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 meters)

File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code Grant	Source	q q q 6416 4	Sec	Tws	Rng	X	Y
3661		PRO	0	HUMBLE OIL & REFINING	ED	RA 03661		Shallow	3 2 3	32	17S	27E	565186	3628038*

ord Count: 1

POD Search:

POD Number: RA 03661

Sorted by: File Number

A 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
3694		DOM	3	C. M. BERRY	ED	RA 03694			Shallow		4	17	17S	27E	565854	3632721*

ord Count: 1

POD Search:

POD Number: RA 03694

Sorted by: *File Number*

***l* 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 meters)

File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 6416 4	Sec	Tws	Rng	X	Y
4320		DOM	3	C.V. BROWN	ED	RA 04320			Artesian	3	17	17S	27E	565053	3632719*

ord Count: 1

POD Search:

POD Number: RA 04320

Sorted by: File Number

** 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
4554		PRO	0	LOWE DRILLING COMPANY	ED	RA 04554		Artesian	1	23	17S	27E	569859	3631947*

ord Count: 1

POD Search:

POD Number: RA 04554

Sorted by: File Number

l 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
4561		PRO	0	LOWE DRILLING CO	ED	RA 04561				4 2	26	17S	27E	570871	3630142*

ord Count: 1

POD Search:

POD Number: RA 04561

Sorted by: File Number

l 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
4786		DOM	3	DAVE COLLIER	ED	RA 04786		Artesian	4	3	2	18	17S	27E	564133	3633277*

ord Count: 1

POD Search:

POD Number: RA 04786

Sorted by: File Number

l 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
6531		DOM	0	CHARLES C. POWELL	ED	RA 06531				4 1 4	17	17S	27E	565747	3632821*

ord Count: 1

POD Search:

POD Number: RA 06531

Sorted by: File Number

1 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
6635		DOM	3	RANGER C. KARR	ED	RA 06635			Shallow	2	2	18	17S	27E	564531	3633852*

ord Count: 1

POD Search:

POD Number: RA 06635

Sorted by: File Number

l 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
7774		STK	3	BOGLE FARMS	ED	RA 07774			Shallow	3	2 1	11	17S	27E	569933	3635251*

ord Count: 1

POD Search:

POD Number: RA 07774

Sorted by: File Number

1 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
7844		EXP		RIVERSIDE WATER USERS ASSOC.	ED	RA 07844		Shallow	3 4	3	16	17S	27E	566753	3632420*
7844 EXPL		EXP	0	RIVERSIDE WATER USERS ASSOC.	ED	RA 07844 EXPL		Artesian	4	3	16	17S	27E	566854	3632521*

ord Count: 2

POD Search:

POD Number: RA 07844

Sorted by: File Number

1 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
7844 EXPL		EXP	0	RIVERSIDE WATER USERS ASSOC.	ED	RA 07844 EXPL		Artesian	4 3	16	17S	27E	566854	3632521*

ord Count: 1

POD Search:

POD Number: RA 07844 EXPL

Sorted by: File Number

l 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
3823		DOM	3	HAMMOND PHILLIP J	ED	RA 08823		Shallow	1	1 3	17	17S	27E	564745	3633019*

ord Count: 1

POD Search:

POD Number: RA 08823

Sorted by: File Number

l 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
1691		MON	0	INTEGRATED WATER SERVIES	ED	RA 11691 POD1				2 1 4	17	17S	27E	565800	3633029

ord Count: 1

POD Search:

POD Number: RA 11691 POD1

Sorted by: File Number

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
1926		MON	0	NAVAJO REFINING COMPANY, LLC	ED	RA 11926 POD6			Shallow	4 1 1	18	17S	27E	563316	3633803

Record Count: 1

POD Search:

POD Number: RA 11926 POD6

Sorted by: File Number

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

No records found.

PLSS Search:

Township: 17S **Range:** 28E

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

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

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

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

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
RA 11807 POD1		ED	1	2	3	22	17S	29E	587360	3631585	131	76	55

Average Depth to Water: **76 feet**

Minimum Depth: **76 feet**

Maximum Depth: **76 feet**

Record Count: 1

PLSS Search:

Township: 17S **Range:** 29E

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 64 16 4	Sec	Tws	Rng	X	Y
11807		SAN	1	MITCHEL JOHNSON	ED	RA 11807 POD1		Shallow	1 2 3	22	17S	29E	587359	3631585

ord Count: 1

POD Search:

POD Number: RA 11807 POD1

Sorted by: File Number

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

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

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

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

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
RA 03714		CH	4	4	2	08	18S	27E	566212	3625253*	381		
RA 03917		LE	4	1	2	10	18S	27E	569019	3625660*	130	50	80
RA 04048		LE	1	4	4	14	18S	27E	570841	3623030*	2096		
RA 04211		CH		3	1	28	18S	27E	566512	3620562*	120	100	20
RA 04298		ED		1	2	19	18S	27E	564082	3622523*	92		
RA 05524		ED		2	4	33	18S	27E	567721	3618532*	90	49	41
RA 05660		ED		3	4	31	18S	27E	564094	3618090*	305	65	240
RA 05664		ED		4	1	33	18S	27E	566914	3618936*		145	
RA 06091		ED	1	2	3	29	18S	27E	565211	3620222*	90	17	73

Average Depth to Water: **71 feet**

Minimum Depth: **17 feet**

Maximum Depth: **145 feet**

Record Count: 9

PLSS Search:

Township: 18S **Range:** 27E

***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 64 16 4	Sec	Tws	Rng	X	Y
4298		OBS	0	LEE DRILLING CO	ED	RA 04298			Shallow	1 2	19	18S	27E	564082	3622523*

ord Count: 1

POD Search:

POD Number: RA 04298

Sorted by: File Number

1 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 64 16 4	Sec	Tws	Rng	X	Y
5524		STK	3	RAYMOND NETHERLIN	ED	RA 05524		Shallow	2 4	33	18S	27E	567721	3618532*

ord Count: 1

POD Search:

POD Number: RA 05524

Sorted by: File Number

l 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
5660		PRO	0	INC. READ & STEVENS	ED	RA 05660			Shallow	3	4	31	18S	27E	564094	3618090*

ord Count: 1

POD Search:

POD Number: RA 05660

Sorted by: File Number

l 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
3091		PRO	0	YATES PETROLEUM CORPORATION	ED	RA 06091			Shallow	1 2 3	29	18S	27E	565211	3620222*

ord Count: 1

POD Search:

POD Number: RA 06091

Sorted by: File Number

l location was derived from PLSS - see Help

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

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

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

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

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

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Depth Well	Depth Water	Water Column
L 01142 POD1	L	LE		2	4	15	18S	28E	578921	3623453*	80		
L 01150 POD1	L	LE		1	1	35	18S	28E	579344	3619433*	135	65	70
L 06915	L	LE	1	1	3	02	18S	28E	579195	3626784*	125	55	70
L 07641	L	LE		3	4	15	18S	28E	578529	3623041*	130	80	50
RA 09588		ED		1	2	33	18S	28E	576976	3619384*	300		

Average Depth to Water: **66 feet**

Minimum Depth: **55 feet**

Maximum Depth: **80 feet**

Record Count: 5

PLSS Search:

Township: 18S **Range:** 28E

***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
09588		DOM	0	MARATHON OIL COMPANY	ED	RA 09588				1	2	33	18S	28E	576976	3619384*

ord Count: 1

POD Search:

POD Number: RA 09588

Sorted by: File Number

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

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

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
CP 00863		ED	1	4	2	27	18S	29E	588341	3620768*	320		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 1

PLSS Search:

Township: 18S **Range:** 29E

***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: RA 00863

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

February 28, 2014

NATALILE GLADDEN

QUANTUM RESOURCES

4000 N. BIG SPRING

MIDLAND, TX 79705

RE: ARTESIA #7

Enclosed are the results of analyses for samples received by the laboratory on 02/19/14 14:30.

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:

QUANTUM RESOURCES
NATALILE GLADDEN
4000 N. BIG SPRING
MIDLAND TX, 79705
Fax To: UNK-NOWN

Received:	02/19/2014	Sampling Date:	02/19/2014
Reported:	02/28/2014	Sampling Type:	Soil
Project Name:	ARTESIA #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 1 @ SURFACE (H400499-01)

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	02/27/2014	ND	1.81	90.6	2.00	4.38	
Toluene*	<0.050	0.050	02/27/2014	ND	1.87	93.3	2.00	5.57	
Ethylbenzene*	<0.050	0.050	02/27/2014	ND	1.73	86.4	2.00	4.47	
Total Xylenes*	<0.150	0.150	02/27/2014	ND	5.19	86.5	6.00	4.68	
Total BTEX	<0.300	0.300	02/27/2014	ND					

Surrogate: Dibromofluoromethane	*98.0 %*	*61.3-142*
Surrogate: Toluene-d8	*97.6 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*102 %*	*65.7-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**21600**	16.0	02/24/2014	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	02/24/2014	ND	188	93.9	200	5.40	
DRO >C10-C28	**1010**	50.0	02/24/2014	ND	183	91.3	200	4.69	

Surrogate: 1-Chlorooctane	*87.7 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*114 %*	*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:

QUANTUM RESOURCES
NATALILE GLADDEN
4000 N. BIG SPRING
MIDLAND TX, 79705
Fax To: UNK-NOWN

Received:	02/19/2014	Sampling Date:	02/19/2014
Reported:	02/28/2014	Sampling Type:	Soil
Project Name:	ARTESIA #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 1 @ 1' (H400499-02)

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	02/27/2014	ND	1.81	90.6	2.00	4.38	
Toluene*	<0.050	0.050	02/27/2014	ND	1.87	93.3	2.00	5.57	
Ethylbenzene*	<0.050	0.050	02/27/2014	ND	1.73	86.4	2.00	4.47	
Total Xylenes*	<0.150	0.150	02/27/2014	ND	5.19	86.5	6.00	4.68	
Total BTEX	<0.300	0.300	02/27/2014	ND					

Surrogate: Dibromofluoromethane	*97.8 %*	*61.3-142*
Surrogate: Toluene-d8	*101 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*104 %*	*65.7-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	02/24/2014	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	02/24/2014	ND	188	93.9	200	5.40	
DRO >C10-C28	<10.0	10.0	02/24/2014	ND	183	91.3	200	4.69	

Surrogate: 1-Chlorooctane	*95.9 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*106 %*	*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:

QUANTUM RESOURCES
NATALILE GLADDEN
4000 N. BIG SPRING
MIDLAND TX, 79705
Fax To: UNK-NOWN

Received:	02/19/2014	Sampling Date:	02/19/2014
Reported:	02/28/2014	Sampling Type:	Soil
Project Name:	ARTESIA #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 2 @ SURFACE (H400499-03)

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	02/27/2014	ND	1.81	90.6	2.00	4.38	
Toluene*	<0.050	0.050	02/27/2014	ND	1.87	93.3	2.00	5.57	
Ethylbenzene*	<0.050	0.050	02/27/2014	ND	1.73	86.4	2.00	4.47	
Total Xylenes*	<0.150	0.150	02/27/2014	ND	5.19	86.5	6.00	4.68	
Total BTEX	<0.300	0.300	02/27/2014	ND					

Surrogate: Dibromofluoromethane	*96.9 %*	*61.3-142*
Surrogate: Toluene-d8	*101 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*102 %*	*65.7-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**12400**	16.0	02/24/2014	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	02/24/2014	ND	211	105	200	1.44	
DRO >C10-C28	**40.5**	10.0	02/24/2014	ND	209	105	200	1.86	

Surrogate: 1-Chlorooctane	*102 %*	*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:

QUANTUM RESOURCES
NATALILE GLADDEN
4000 N. BIG SPRING
MIDLAND TX, 79705
Fax To: UNK-NOWN

Received:	02/19/2014	Sampling Date:	02/19/2014
Reported:	02/28/2014	Sampling Type:	Soil
Project Name:	ARTESIA #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 2 @ 1' (H400499-04)

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	02/27/2014	ND	1.81	90.6	2.00	4.38	
Toluene*	<0.050	0.050	02/27/2014	ND	1.87	93.3	2.00	5.57	
Ethylbenzene*	<0.050	0.050	02/27/2014	ND	1.73	86.4	2.00	4.47	
Total Xylenes*	<0.150	0.150	02/27/2014	ND	5.19	86.5	6.00	4.68	
Total BTEX	<0.300	0.300	02/27/2014	ND					

Surrogate: Dibromofluoromethane	*95.9 %*	*61.3-142*
Surrogate: Toluene-d8	*102 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*102 %*	*65.7-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	02/24/2014	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	02/24/2014	ND	211	105	200	1.44	
DRO >C10-C28	<10.0	10.0	02/24/2014	ND	209	105	200	1.86	

Surrogate: 1-Chlorooctane	*97.6 %*	*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

Analytical Results For:

QUANTUM RESOURCES
NATALILE GLADDEN
4000 N. BIG SPRING
MIDLAND TX, 79705
Fax To: UNK-NOWN

Received:	02/19/2014	Sampling Date:	02/19/2014
Reported:	02/28/2014	Sampling Type:	Soil
Project Name:	ARTESIA #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 3 @ SURFACE (H400499-05)

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	02/27/2014	ND	1.81	90.6	2.00	4.38	
Toluene*	<0.050	0.050	02/27/2014	ND	1.87	93.3	2.00	5.57	
Ethylbenzene*	<0.050	0.050	02/27/2014	ND	1.73	86.4	2.00	4.47	
Total Xylenes*	<0.150	0.150	02/27/2014	ND	5.19	86.5	6.00	4.68	
Total BTEX	<0.300	0.300	02/27/2014	ND					

Surrogate: Dibromofluoromethane	*94.6 %*	*61.3-142*
Surrogate: Toluene-d8	*99.9 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*101 %*	*65.7-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**14400**	16.0	02/24/2014	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	02/24/2014	ND	211	105	200	1.44	
DRO >C10-C28	**88.5**	10.0	02/24/2014	ND	209	105	200	1.86	

Surrogate: 1-Chlorooctane	*108 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*132 %*	*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:

QUANTUM RESOURCES
NATALILE GLADDEN
4000 N. BIG SPRING
MIDLAND TX, 79705
Fax To: UNK-NOWN

Received:	02/19/2014	Sampling Date:	02/19/2014
Reported:	02/28/2014	Sampling Type:	Soil
Project Name:	ARTESIA #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 3 @ 1' (H400499-06)

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	02/27/2014	ND	1.81	90.6	2.00	4.38	
Toluene*	<0.050	0.050	02/27/2014	ND	1.87	93.3	2.00	5.57	
Ethylbenzene*	<0.050	0.050	02/27/2014	ND	1.73	86.4	2.00	4.47	
Total Xylenes*	<0.150	0.150	02/27/2014	ND	5.19	86.5	6.00	4.68	
Total BTEX	<0.300	0.300	02/27/2014	ND					

Surrogate: Dibromofluoromethane	*96.0 %*	*61.3-142*
Surrogate: Toluene-d8	*101 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*101 %*	*65.7-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	02/24/2014	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	02/24/2014	ND	211	105	200	1.44	
DRO >C10-C28	<10.0	10.0	02/24/2014	ND	209	105	200	1.86	

Surrogate: 1-Chlorooctane	*110 %*	*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:

QUANTUM RESOURCES
NATALILE GLADDEN
4000 N. BIG SPRING
MIDLAND TX, 79705
Fax To: UNK-NOWN

Received:	02/19/2014	Sampling Date:	02/19/2014
Reported:	02/28/2014	Sampling Type:	Soil
Project Name:	ARTESIA #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 4 @ SURFACE (H400499-07)

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	02/27/2014	ND	1.81	90.6	2.00	4.38	
Toluene*	<0.050	0.050	02/27/2014	ND	1.87	93.3	2.00	5.57	
Ethylbenzene*	<0.050	0.050	02/27/2014	ND	1.73	86.4	2.00	4.47	
Total Xylenes*	<0.150	0.150	02/27/2014	ND	5.19	86.5	6.00	4.68	
Total BTEX	<0.300	0.300	02/27/2014	ND					

Surrogate: Dibromofluoromethane	*96.3 %*	*61.3-142*
Surrogate: Toluene-d8	*98.4 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*101 %*	*65.7-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**23600**	16.0	02/24/2014	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	02/24/2014	ND	211	105	200	1.44	
DRO >C10-C28	**411**	10.0	02/24/2014	ND	209	105	200	1.86	

Surrogate: 1-Chlorooctane	*105 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*134 %*	*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:

QUANTUM RESOURCES
NATALILE GLADDEN
4000 N. BIG SPRING
MIDLAND TX, 79705
Fax To: UNK-NOWN

Received:	02/19/2014	Sampling Date:	02/19/2014
Reported:	02/28/2014	Sampling Type:	Soil
Project Name:	ARTESIA #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 4 @ 1' (H400499-08)

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	02/27/2014	ND	1.92	95.8	2.00	2.11	
Toluene*	<0.050	0.050	02/27/2014	ND	1.99	99.5	2.00	1.91	
Ethylbenzene*	<0.050	0.050	02/27/2014	ND	1.86	93.0	2.00	2.50	
Total Xylenes*	<0.150	0.150	02/27/2014	ND	5.63	93.8	6.00	2.40	
Total BTEX	<0.300	0.300	02/27/2014	ND					

Surrogate: Dibromofluoromethane	*97.8 %*	*61.3-142*
Surrogate: Toluene-d8	*101 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*100 %*	*65.7-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	02/24/2014	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	02/24/2014	ND	211	105	200	1.44	
DRO >C10-C28	<10.0	10.0	02/24/2014	ND	209	105	200	1.86	

Surrogate: 1-Chlorooctane	*103 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*114 %*	*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:

QUANTUM RESOURCES
NATALILE GLADDEN
4000 N. BIG SPRING
MIDLAND TX, 79705
Fax To: UNK-NOWN

Received:	02/19/2014	Sampling Date:	02/19/2014
Reported:	02/28/2014	Sampling Type:	Soil
Project Name:	ARTESIA #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 5 @ SURFACE (H400499-09)

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	02/27/2014	ND	1.92	95.8	2.00	2.11	
Toluene*	<0.050	0.050	02/27/2014	ND	1.99	99.5	2.00	1.91	
Ethylbenzene*	<0.050	0.050	02/27/2014	ND	1.86	93.0	2.00	2.50	
Total Xylenes*	<0.150	0.150	02/27/2014	ND	5.63	93.8	6.00	2.40	
Total BTEX	<0.300	0.300	02/27/2014	ND					

Surrogate: Dibromofluoromethane	*96.8 %*	*61.3-142*
Surrogate: Toluene-d8	*99.6 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*103 %*	*65.7-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**14800**	16.0	02/24/2014	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	02/24/2014	ND	211	105	200	1.44	
DRO >C10-C28	**85.8**	10.0	02/24/2014	ND	209	105	200	1.86	

Surrogate: 1-Chlorooctane	*91.5 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*112 %*	*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:

QUANTUM RESOURCES
NATALILE GLADDEN
4000 N. BIG SPRING
MIDLAND TX, 79705
Fax To: UNK-NOWN

Received:	02/19/2014	Sampling Date:	02/19/2014
Reported:	02/28/2014	Sampling Type:	Soil
Project Name:	ARTESIA #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 5 @ 1' (H400499-10)

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	02/27/2014	ND	1.92	95.8	2.00	2.11	
Toluene*	<0.050	0.050	02/27/2014	ND	1.99	99.5	2.00	1.91	
Ethylbenzene*	<0.050	0.050	02/27/2014	ND	1.86	93.0	2.00	2.50	
Total Xylenes*	<0.150	0.150	02/27/2014	ND	5.63	93.8	6.00	2.40	
Total BTEX	<0.300	0.300	02/27/2014	ND					

Surrogate: Dibromofluoromethane	*96.9 %*	*61.3-142*
Surrogate: Toluene-d8	*101 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*103 %*	*65.7-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	02/24/2014	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	02/24/2014	ND	211	105	200	1.44	
DRO >C10-C28	<10.0	10.0	02/24/2014	ND	209	105	200	1.86	

Surrogate: 1-Chlorooctane	*104 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*113 %*	*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

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: Quantum	BILL TO
Project Manager: Natalie Gladden	P.O. #:
Address:	Company: Quantum
City: State: Zip:	Attn:
Phone #: Fax #:	Address:
Project #: Project Owner:	City:
Project Name: Artesia #7	State: Zip:
Project Location:	Phone #:
Sampler Name:	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	TPH 8015M	CL
H4D0498																	
1	SP1@surf	G	1			✓					✓		2-19	10:00	✓	✓	✓
2	SP1@1'	G	1			✓					✓		2-19	10:00	✓	✓	✓
3	SP2@surf	G	1			✓					✓		2-19	10:00	✓	✓	✓
4	SP2@1'	G	1			✓					✓		2-19	10:00	✓	✓	✓
5	SP3@surf	G	1			✓					✓		2-19	10:00	✓	✓	✓
6	SP3@1'	G	1			✓					✓		2-19	10:00	✓	✓	✓
7	SP4@surf	G	1			✓					✓		2-19	10:00	✓	✓	✓
8	SP4@1'	G	1			✓					✓		2-19	10:00	✓	✓	✓
9	SP5@surf	G	1			✓					✓		2-19	10:00	✓	✓	✓
10	SP5@1'	G	1			✓					✓		2-19	10:00	✓	✓	✓

Relinquished By: Jane Crenshaw	Date: 2/19/14 Time: 1:30	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: 5.7°C	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials) JN	REMARKS: noladden@diversifiedfsi.com

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

Appendix V

FINAL 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
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 Quantum Resources Management, LLC	Contact: Dee Fryer
Address 4000 N Big Spring St. Midland, TX 79705	Telephone No. 432-517-0496
Facility Name Artesia Unit #007	Facility Type Injection Well

Surface Owner State of New Mexico	Mineral Owner State of New Mexico	API No. 30-015-10080

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	36	17S	28E	480	NL	330	WL	Eddy

Latitude 32.7979205926636 **Longitude** -104.137448428759

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 30 bbls	Volume Recovered 25bbls
Source of Release Line Strike	Date and Hour of Occurrence 02/06/14	Date and Hour of Discovery PM 02/06/14
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher NMOCD	
By Whom? Dee Fryer	Date and Hour 02/06/14 time unknown	
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.*
During electrical trenching procedures, Apache Corporation struck the Artesia Unit #007 injection line causing the release for the produced water. The leak Was repaired and a vacuum truck was called to recover the standing fluid. All of the fluid remained on the caliche pad that is shared with the Apache Corporation D State #104.

Describe Area Affected and Cleanup Action Taken.*
Spill affected area approximately 2560 sq. ft. of area. The spill was delineated by Diversified Field Services, Inc. Impacted soils were removed to a NMOCD approved disposal facility. Confirmation samples were then submitted to a commercial lab for analyses. DFSI respectfully submits this final C-141 for closure.

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: Natalie Gladden	OIL CONSERVATION DIVISION	
Printed Name: Natalie Gladden	Approved by Environmental Specialist:	
Title: Environmental Consultant	Approval Date:	Expiration Date:
E-mail Address: ngaldden@diversifiedfsi.com	Conditions of Approval:	Attached ☐
Date: 3/13/2014 Phone: 575-602-1786		

* Attach Additional Sheets If Necessary