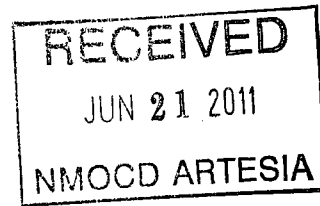




June 21, 2011



Mr. Mike Bratcher  
**NMOCD District 2**  
1301 West Grand Avenue  
Artesia, NM 88210

AMARILLO  
921 North Bivins  
Amarillo, Texas 79107  
Phone 806.467.0607  
Fax 806.467.0622

ARTESIA  
408 West Texas Ave.  
Artesia, New Mexico 88210  
Phone 575.746.8768  
Fax 575.746.8905

AUSTIN  
911 West Anderson Lane  
Suite 202  
Austin, Texas 78757  
Phone 512.989.3428  
Fax 512.989.3487

HOBBS  
318 East Taylor Street  
Hobbs, New Mexico 88240  
Phone 575.393.4261  
Fax 575.393.4658

MIDLAND  
2901 State Hwy 349  
Midland, Texas 79706  
Phone 432.522.2133  
Fax 432.522.2180

SAN ANTONIO  
11 Commercial Place  
Schertz, Texas 78154  
Phone 210.265.8025  
Fax 210.568.2191

TULSA  
525 South Main Street  
Suite 535  
Tulsa, Oklahoma 74103  
Phone 918.742.0871  
Fax 918.382.0232

Subject: **Remediation and Closure Report**  
Quantum Resources Management, LLC, New Mexico  
State 647 AC 711 Water Flood Station Release  
30-015-02056 -- **2RP-501**

Dear Mr. Bratcher,

Quantum Resources Management, LLC has contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the above referenced State 647 AC 711 Water Flood Station release. The incident description, soil assessment, remediation activities and closure request are submitted herein.

#### **Incident Date**

December 6, 2010

#### **Background Information**

The State 647 AC 711 Water Flood Station is located approximately nineteen (19) miles southeast of Artesia, New Mexico. The legal location for the site is Unit Letter M, Section 27, Township 18 South and Range 28 East in Eddy County, New Mexico. More Specifically the latitude and longitude for the release are 32.71420 North and -104.17128 West.

This site lies on undulating plains and low hills consisting of wind worked sandy deposits. Drainage courses in this area are normally dry. The local surface and shallow geology includes silty soils underlain by sand stone, limestone and caliche layers. The New Mexico State Engineer's web site indicates the nearest ground water data to be in S35-T18S-R28E. The ground water in Section 35 is reported to be at an average depth of 65' below ground surface (bgs).

The ranking for this site is 10 based on the as following:

Depth to ground water	50'-100'
Wellhead Protection Area	>1000'
Distance to surface water body	>1000'

ENVIRONMENTAL CONSULTING  
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DRILLING  
CONSTRUCTION  
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[www.talonlpe.com](http://www.talonlpe.com)

## **Incident Description**

On December 6, 2010 the flow line located at the State 647 AC 711 Water Flood Station ruptured. The flow line was subsequently taken out of service, repaired and placed back into service. Approximately twenty-five to thirty (25-30) barrels of produced water were released. A vacuum truck was brought to the location and twenty (20) barrels of produced water were recovered. The impacted area is located on the flow line right of way approximately fifty-four feet (54') south of the water flood station. The impacted area is estimated to be one hundred and eleven feet (111') long by one hundred fifty-five feet (155') wide. The impacted area was excavated to a depth of 1-foot (1') deep and the excavated soil was placed on a liner.

## **Actions Taken**

On January 11, 2011 Talon personnel mobilized to the site to begin soil sampling and site assessment activities. Grab soil samples were collected utilizing a split spoon auger drill rig. Soil samples were collected from one foot (1') below ground surface (bgs) to a depth of fourteen feet (14') bgs. A hard rock barrier was encountered at two feet (2') bgs and no sample return was available at that depth.

The grab soil samples were collected by Talon personnel wearing clean nitrile gloves. The samples were placed in laboratory provided glassware, iced and transported to Cardinal Laboratories in Hobbs, New Mexico for analysis chlorides using a Method SM4500CL-B.

## **Analytical Results**

Analytical results received from Cardinal Laboratories on January 25, 2011 are summarized below.

<u>Sample, Depth</u>	<u>Chlorides (mg/kg)</u>
S-1, 1-foot	8800 ppm
S-1, 4'	224
S-1, 6'	128
S-1, 8'	144
S-1, 14'	96

Analytical results received from Cardinal Laboratories on April 14, 2011, which are composite samples after excavation, are summarized below.

<u>Sample, Depth</u>	<u>Chlorides</u>	<u>BTEX</u>	<u>TPH</u>
S-1, Bottom Excavation	800 mg/kg	ND* mg/kg	ND mg/kg
S-2, S. Side Wall	288	ND	ND
S-3, N. Side Wall	1770**	ND	ND
S-4, W. Side Wall	432	ND	ND
S-5, E. Side Wall	2960***	ND	55.8

\*Not Detected within lab method detection limits

\*\*Historical impacted area

\*\*\*Flowline/utility line location

For this site's ranking, New Mexico Oil Conservation District action level criteria for BTEX is 50 mg/kg, Benzene is 10 mg/kg and TPH is 1,000 mg/kg. The chloride remediation standard is considered to be 1,000 mg/kg.

### **Remedial Actions**

On March 23, 2011 Talon personnel mobilized to the site to begin excavation of the impacted soil located south of the Water Flood Station. A total of 942.24 cubic yards of impacted soil was excavated to the depth of 4' and transported to Lea Land, LLC, an NMOCD approved solid waste disposal facility for disposal. The excavated area was left open until an approval for backfilling of the site was obtained from NMOCD. On April 19, 2011 NMOCD Environmental Specialist Mike Bratcher reviewed the analytical results from the open excavation. Mr. Bratcher granted approval to backfill the excavated area. He will note that at time of closure the contaminants were not fully defined to the North due to historical impacts in the area.

On April 26, 2011 Talon personnel returned to the site to begin backfilling the excavated area. The excavated area was backfilled back to grade with 917.61 cubic yards of new material transported from a local borrow pit. The backfill material was contoured to match the surrounding terrain and the area will be seeded with an approved seed mixture.

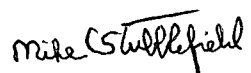
## Conclusions and Recommendations

- Ground water in the project vicinity is 65-feet below land surface per the New Mexico State Engineer Database.
- The impacted area has been excavated to a depth of 4-feet bgs.
- Based upon the results of the field and laboratory data obtained for this investigation, the vertical impacts for the chloride release have been defined above background levels to less than 4' bgs, as shown by the lab data on January 25, 2011, collected with the drill rig.
- Based on the depth to groundwater and the remaining chloride levels in the soil at this location, it is unlikely that the chloride impacts identified from this release will pose a threat to groundwater.
- Therefore, on behalf of Quantum Resources Management, LLC, we respectfully request that no further actions be required and that closure with respect to this release be granted.

Should you have any questions or if further information is required, please do not hesitate to contact us at 575.746.8768.

Respectfully submitted,

TALON/LPE



Mike Stubblefield  
Project Manager



David J. Adkins  
District Manager

**APPENDIX I**  
**GROUNDWATER DATA**

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# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

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

POD Number	Sub basin	Use	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 03348 APPRO	DOM	LE	4	3	4	35	18S	28E	580236	3618135*	105	65	40	
RA 09588	DOM	ED	1	2	33	18S	28E	576976	3619384*	300				
Average Depth to Water:													65 feet	
Minimum Depth:													65 feet	
Maximum Depth:													65 feet	

Record Count: 2

PLSS Search:

Township: 18S Range: 28E

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Sub basin	Use	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 09588	DOM	ED		1	2	33	18S	28E		576976	3619384*	757	300		
L 03348 APPRO	DOM	LE		4	3	4	35	18S	28E	580236	3618135*	3012	105	65	40
CP 00361	PRO	ED		1	3	09	19S	28E		576195	3615347*	4595	365	265	100
CP 00361 EXPL	EXP	ED		3	1	3	09	19S	28E	576094	3615246*	4724	365	265	100

Average Depth to Water: 198 feet

Minimum Depth: 65 feet

Maximum Depth: 265 feet

Record Count: 4

### UTM NAD83 Radius Search (in meters):

Easting (X): 577663

Northing (Y): 3619702

Radius: 5000

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

**APPENDIX II**

**LABORATORY REPORTS**





January 25, 2011

MIKE STUBBLEFIELD

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: STATE 647 AC 711 WATERFLOOD STATION

Enclosed are the results of analyses for samples received by the laboratory on 01/21/11 11:05.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydrocarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene  
Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
MIKE STUBBLEFIELD  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received:	01/21/2011	Sampling Date:	01/11/2011
Reported:	01/25/2011	Sampling Type:	Soil
Project Name:	STATE 647 AC 711 WATERFLOOD STATI	Sampling Condition:	Cool & Intact
Project Number:	701395.002.01	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: S.1 1' (H100154-01)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8800	16.0	01/24/2011	ND	432	108	400	0.00	

**Sample ID: S.1 4' (H100154-02)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	01/24/2011	ND	432	108	400	0.00	

**Sample ID: S.1 6' (H100154-03)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	01/24/2011	ND	432	108	400	0.00	

**Sample ID: S.1 8' (H100154-04)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	01/24/2011	ND	432	108	400	0.00	

**Sample ID: S.1 14' (H100154-05)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	01/24/2011	ND	432	108	400	0.00	

Cardinal Laboratories

\* = Accredited Analyte

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Celay D. Keene, Lab Director/Quality Manager

**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

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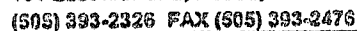
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**Celey D. Keene, Lab Director/Quality Manager**



## ANALYSIS REQUEST

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



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

---

April 14, 2011

MIKE STUBBLEFIELD

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: STATE 647 AC 711 WATERFLOOD STATION RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 04/11/11 8:53.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydrocarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
MIKE STUBBLEFIELD  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received:	04/11/2011	Sampling Date:	04/06/2011
Reported:	04/14/2011	Sampling Type:	Soil
Project Name:	STATE 647 AC 711 WATERFLOOD STATI	Sampling Condition:	Cool & Intact
Project Number:	701407.007.01	Sample Received By:	Jodi Henson
Project Location:	SEC. 27 - T18S - R28E		

**Sample ID: S - 1 BOTTOM EXC AREA (H100719-01)**

BTEX 8260B			mg/kg							Analyzed By: CMS
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/12/2011	ND	1.82	91.1	2.00	1.20		
Toluene*	<0.050	0.050	04/12/2011	ND	1.90	95.1	2.00	1.70		
Ethylbenzene*	<0.050	0.050	04/12/2011	ND	1.85	92.3	2.00	1.89		
Total Xylenes*	<0.150	0.150	04/12/2011	ND	5.72	95.4	6.00	1.96		

Surrogate: Dibromofluoromethane 75.2 % 80-120

Surrogate: Toluene-d8 95.7 % 80-120

Surrogate: 4-Bromofluorobenzene 78.9 % 80-120

Chloride, SM4500Cl-B			mg/kg							Analyzed By: HM
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	880	16.0	04/11/2011	ND	416	104	400	0.00		

TPH 8015M			mg/kg							Analyzed By: AB
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	04/12/2011	ND	223	111	200	3.99		
DRO >C10-C28	<10.0	10.0	04/12/2011	ND	227	113	200	8.14		

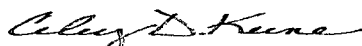
Surrogate: 1-Chlorooctane 113 % 70-130

Surrogate: 1-Chlorooctadecane 124 % 70-130

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\*=Accredited Analyte

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Celest D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 TALON LPE  
 MIKE STUBBLEFIELD  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

Received:	04/11/2011	Sampling Date:	04/06/2011
Reported:	04/14/2011	Sampling Type:	Soil
Project Name:	STATE 647 AC 711 WATERFLOOD STATI	Sampling Condition:	Cool & Intact
Project Number:	701407.007.01	Sample Received By:	Jodi Henson
Project Location:	SEC. 27 - T18S - R28E		

**Sample ID: S - 2 S SIDE WALL EXC (H100719-02)**

BTX 8260B		mg/kg		Analyzed By: CMS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/12/2011	ND	1.82	91.1	2.00	1.20		
Toluene*	<0.050	0.050	04/12/2011	ND	1.90	95.1	2.00	1.70		
Ethylbenzene*	<0.050	0.050	04/12/2011	ND	1.85	92.3	2.00	1.89		
Total Xylenes*	<0.150	0.150	04/12/2011	ND	5.72	95.4	6.00	1.96		

Surrogate: Dibromofluoromethane 74.0 % 80-120

Surrogate: Toluene-d8 93.1 % 80-120

Surrogate: 4-Bromofluorobenzene 97.0 % 80-120

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	04/11/2011	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/12/2011	ND	223	111	200	3.99	
DRO >C10-C28	<10.0	10.0	04/12/2011	ND	227	113	200	8.14	

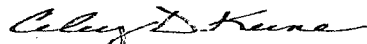
Surrogate: 1-Chlorooctane 125 % 70-130

Surrogate: 1-Chlorooctadecane 141 % 70-130

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
MIKE STUBBLEFIELD  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received:	04/11/2011	Sampling Date:	04/06/2011
Reported:	04/14/2011	Sampling Type:	Soil
Project Name:	STATE 647 AC 711 WATERFLOOD STATI	Sampling Condition:	Cool & Intact
Project Number:	701407.007.01	Sample Received By:	Jodi Henson
Project Location:	SEC. 27 - T18S - R28E		

**Sample ID: S - 3 N SIDE WALL EXC (H100719-03)**

BTX 8260B		mg/kg		Analyzed By: CMS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/13/2011	ND	1.82	91.1	2.00	1.20		
Toluene*	<0.050	0.050	04/13/2011	ND	1.90	95.1	2.00	1.70		
Ethylbenzene*	<0.050	0.050	04/13/2011	ND	1.85	92.3	2.00	1.89		
Total Xylenes*	<0.150	0.150	04/13/2011	ND	5.72	95.4	6.00	1.96		

Surrogate: Dibromofluoromethane 76.5 % 80-120

Surrogate: Toluene-d8 93.2 % 80-120

Surrogate: 4-Bromofluorobenzene 83.6 % 80-120

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1770	16.0	04/11/2011	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: AB						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	04/12/2011	ND	223	111	200	3.99		
DRO >C10-C28	<10.0	10.0	04/12/2011	ND	227	113	200	8.14		

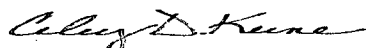
Surrogate: 1-Chlorooctane 105 % 70-130

Surrogate: 1-Chlorooctadecane 110 % 70-130

Cardinal Laboratories

\*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 TALON LPE  
 MIKE STUBBLEFIELD  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

Received:	04/11/2011	Sampling Date:	04/06/2011
Reported:	04/14/2011	Sampling Type:	Soil
Project Name:	STATE 647 AC 711 WATERFLOOD STATI	Sampling Condition:	Cool & Intact
Project Number:	701407.007.01	Sample Received By:	Jodi Henson
Project Location:	SEC. 27 - T18S - R28E		

**Sample ID: S - 4 W SIDE WALL EXC (H100719-04)**

BTEX 8260B		mg/kg		Analyzed By: CMS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/12/2011	ND	1.82	91.1	2.00	1.20	
Toluene*	<0.050	0.050	04/12/2011	ND	1.90	95.1	2.00	1.70	
Ethylbenzene*	<0.050	0.050	04/12/2011	ND	1.85	92.3	2.00	1.89	
Total Xylenes*	<0.150	0.150	04/12/2011	ND	5.72	95.4	6.00	1.96	

Surrogate: Dibromofluoromethane 74.7 % 80-120

Surrogate: Toluene-d8 94.2 % 80-120

Surrogate: 4-Bromofluorobenzene 89.7 % 80-120

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	04/11/2011	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/12/2011	ND	223	111	200	3.99	
DRO >C10-C28	<10.0	10.0	04/12/2011	ND	227	113	200	8.14	

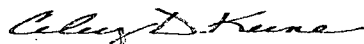
Surrogate: 1-Chlorooctane 131 % 70-130

Surrogate: 1-Chlorooctadecane 131 % 70-130

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
MIKE STUBBLEFIELD  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received:	04/11/2011	Sampling Date:	04/06/2011
Reported:	04/14/2011	Sampling Type:	Soil
Project Name:	STATE 647 AC 711 WATERFLOOD STATI	Sampling Condition:	Cool & Intact
Project Number:	701407.007.01	Sample Received By:	Jodi Henson
Project Location:	SEC. 27 - T18S - R28E		

**Sample ID: S - 5 E SIDE WALL EXC (H100719-05)**

BTX 8260B		mg/kg		Analyzed By: CMS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/12/2011	ND	1.82	91.1	2.00	1.20		
Toluene*	<0.050	0.050	04/12/2011	ND	1.90	95.1	2.00	1.70		
Ethylbenzene*	<0.050	0.050	04/12/2011	ND	1.85	92.3	2.00	1.89		
Total Xylenes*	<0.150	0.150	04/12/2011	ND	5.72	95.4	6.00	1.96		

Surrogate: Dibromofluoromethane 73.4 % 80-120

Surrogate: Toluene-d8 93.3 % 80-120

Surrogate: 4-Bromofluorobenzene 80.6 % 80-120

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2960	16.0	04/11/2011	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: AB						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	04/12/2011	ND	223	111	200	3.99		
DRO >C10-C28	55.8	10.0	04/12/2011	ND	227	113	200	8.14		

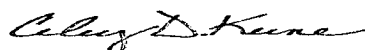
Surrogate: 1-Chlorooctane 115 % 70-130

Surrogate: 1-Chlorooctadecane 113 % 70-130

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

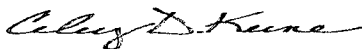
Z-01	One or more surrogates above historical limits.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

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

Company Name: Talon/LPE		Project Manager: Mike Sullivan	
Address: 408 W. Texas Ave.		City: Alticia	
State: N.M. ZIP: 88210		Phone #: 505-441-7255	
Fax #: 505-246-8768		Project #: 701407.007.01	
Address: Project Owner: Quantum Resources		City: State: ZIP:	
Project Location: SEC. 27-T185-R205		Project Name: State 647 AC 211 Water Flood Station Relic	
Sample Name: Mike Sullivan		Sampler Name:	

Lab ID.	Sample ID.	(GRAB OR COMPOSITE) # CONTAINERS	GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER: ACID/BASE: ICE / COOL OTHER:	DATE	TIME	8015 M	8021 D	Total chloride	SAMPLING																	
									MATRIX	PRESERV	ANALYSIS REQUEST						ANALYSIS RESULTS									
Alt 19-1	5-1 Down excavated area	C				4/6/2011	9:25 A																			
2	5-2 Southside wall excavation	C				4/6/2011	9:33 A																			
3	5-3 Northside wall excavation	C				4/6/2011	9:33 A																			
4	5-4 Westside wall excavation	C				4/6/2011	9:54 A																			
5	5-5 Eastside wall excavation	C				4/6/2011	10:02 A																			

PLEASE NOTE: Using and clients liability and safety are the responsibility of the client. Cardinal Laboratories is not responsible for any damage or loss of property or equipment. The client is responsible for the safe handling and storage of all samples. The client is responsible for the safe handling and storage of all samples. The client is responsible for the safe handling and storage of all samples.

Received By: [Signature]	Date: 4/6/2011	Time: 4:00 PM
Received By: [Signature]	Date: 4/6/2011	Time: 4:00 PM
Delivered By: (Circle One)	U.S. EPA	U.S. EPA
Sample - UPS - [Signature]	U.S. EPA	U.S. EPA

Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

**APPENDIX III**

**C-141 FINAL**

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

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

## Release Notification and Corrective Action

### OPERATOR

☐ Initial Report    ☒ Final Report

Name of Company Quantum Resources Management, LLC	Contact Garrett Newton	
Address 1905 West Sears Ave., Artesia, New Mexico 88210	Telephone No. 575-513-0230	
Facility Name State 647 AC 711 Water Flood Station #86	Facility Type WIW	
Surface Owner	Mineral Owner	Lease No. API # 30-015-02056

### LOCATION OF RELEASE

Unit Letter M	Section 27	Township 18S	Range 28E	Feet from the 990'	North/South Line South	Feet from the 330'	East/West Line West	County EDDY
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Latitude 32.71420      Longitude -104.17128

### NATURE OF RELEASE

Type of Release Produced Waters	Volume of Release 25-30 bbls	Volume Recovered 20
Source of Release Flow line	Date and Hour of Occurrence 12/06/2010 AM	Date and Hour of Discovery 12/06/2010 AM
Was Immediate Notice Given? X Yes <input type="checkbox"/> No    Not Required	If YES, To Whom? NMOCD/Mike Bratcher	
By Whom?	Date and Hour 12/06/2010 am	
Was a Watercourse Reached? <input type="checkbox"/> Yes    X No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.* The flow line at the State 647 AC 711 Water Flood Station ruptured. The flow line was taken out of service and then repaired. A vacuum truck was brought to the site and 20 bbls of produced water was recovered.		
Describe Area Affected and Cleanup Action Taken.* The affected area was one hundred eleven feet (111') long by one hundred fifty-five feet (155') wide. Talon/LPE excavated the saturated soil from the impacted area to a depth of four feet (4') and transported to and NMOCD approved Solid Waste disposal facility. Talon/LPE backfilled the area with soil to match the surrounding terrain and the area seeded with an approved seed mixture.		
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: 		<b>OIL CONSERVATION DIVISION</b>
Printed Name: Garrett Newton		Approved by District Supervisor:
Title: Field Supervisor	Approval Date:	Expiration Date:
E-mail Address: gnewton@pvtnetworks.net	Conditions of Approval:	
Date: 5/18/2011      Phone: 575-513-0230	Attached <input type="checkbox"/>	

\* Attach Additional Sheets If Necessary