

30-025-28685



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

March 08, 2014  
IKE TAVAREZ  
TETRA TECH  
1910 N. BIG SPRING STREET  
MIDLAND, TX 79705

HOBBS OCD

MAR 17 2014

RECEIVED

RE: SEVEN RIVERS QUEEN WELL #64

Enclosed are the results of analyses for samples received by the laboratory on 03/03/14 14:10.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Mike Snyder  
Organic Supervisor

READY FOR COMPLIANCE OFFICER  
INSPECTION

Environmental Specialist  
NMOC-DIST 1

3/17/14

**Analytical Results For:**

 TETRA TECH  
 IKE TAVAREZ  
 1910 N. BIG SPRING STREET  
 MIDLAND TX, 79705  
 Fax To: (432) 682-3946

Received:	03/03/2014	Sampling Date:	03/03/2014
Reported:	03/08/2014	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN WELL #64	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

**Sample ID: AH-1 0-1 (H400633-01)**

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	03/08/2014	ND	2.14	107	2.00	0.624		
Toluene*	<0.050	0.050	03/08/2014	ND	2.14	107	2.00	3.61		
Ethylbenzene*	<0.050	0.050	03/08/2014	ND	2.05	103	2.00	3.71		
Total Xylenes*	<0.150	0.150	03/08/2014	ND	6.26	104	6.00	3.84		
Total BTEX	<0.300	0.300	03/08/2014	ND						

<i>Surrogate: Dibromofluoromethane</i>	93.7 %	61.3-142
<i>Surrogate: Toluene-d8</i>	105 %	71.3-129
<i>Surrogate: 4-Bromofluorobenzene</i>	100 %	65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/07/2014	ND	432	108	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	03/05/2014	ND	208	104	200	5.02		
DRO >C10-C28	<10.0	10.0	03/05/2014	ND	209	105	200	3.45		
<b>EXT DRO &gt;C28-C35</b>	<b>15.2</b>	10.0	03/05/2014	ND						

<i>Surrogate: 1-Chlorooctane</i>	101 %	65.2-140
<i>Surrogate: 1-Chlorooctadecane</i>	104 %	63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder, Organic Supervisor

**Analytical Results For:**

 TETRA TECH  
 IKE TAVAREZ  
 1910 N. BIG SPRING STREET  
 MIDLAND TX, 79705  
 Fax To: (432) 682-3946

Received:	03/03/2014	Sampling Date:	03/03/2014
Reported:	03/08/2014	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN WELL #64	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

**Sample ID: AH-1 1-1.5 (H400633-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/07/2014	ND	432	108	400	0.00		

**Sample ID: AH-1 2-2.5 (H400633-03)**

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	03/07/2014	ND	432	108	400	0.00		

**Sample ID: AH-1 3-3.5 (H400633-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	03/07/2014	ND	432	108	400	0.00		

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 IKE TAVAREZ  
 1910 N. BIG SPRING STREET  
 MIDLAND TX, 79705  
 Fax To: (432) 682-3946

Received:	03/03/2014	Sampling Date:	03/03/2014
Reported:	03/08/2014	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN WELL #64	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

**Sample ID: AH-2 0-1 (H400633-05)**

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	03/08/2014	ND	2.14	107	2.00	0.624		
Toluene*	<0.050	0.050	03/08/2014	ND	2.14	107	2.00	3.61		
Ethylbenzene*	<0.050	0.050	03/08/2014	ND	2.05	103	2.00	3.71		
Total Xylenes*	<0.150	0.150	03/08/2014	ND	6.26	104	6.00	3.84		
Total BTEX	<0.300	0.300	03/08/2014	ND						

Surrogate: Dibromofluoromethane	95.5 %	61.3-142
Surrogate: Toluene-d8	104 %	71.3-129
Surrogate: 4-Bromofluorobenzene	102 %	65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/07/2014	ND	432	108	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	03/05/2014	ND	208	104	200	5.02		
DRO >C10-C28	<10.0	10.0	03/05/2014	ND	209	105	200	3.45		
EXT DRO >C28-C35	<10.0	10.0	03/05/2014	ND						

Surrogate: 1-Chlorooctane	97.0 %	65.2-140
Surrogate: 1-Chlorooctadecane	101 %	63.6-154

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Mike Snyder, Organic Supervisor

**Analytical Results For:**

 TETRA TECH  
 IKE TAVAREZ  
 1910 N. BIG SPRING STREET  
 MIDLAND TX, 79705  
 Fax To: (432) 682-3946

Received:	03/03/2014	Sampling Date:	03/03/2014
Reported:	03/08/2014	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN WELL #64	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

**Sample ID: AH-2 1-1.5 (H400633-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/07/2014	ND	432	108	400	0.00		

**Sample ID: AH-2 2-2.5 (H400633-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/07/2014	ND	432	108	400	0.00		

**Sample ID: AH-2 3-3.5 (H400633-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<b>16.0</b>	16.0	03/07/2014	ND	432	108	400	0.00		

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**Analytical Results For:**

 TETRA TECH  
 IKE TAVAREZ  
 1910 N. BIG SPRING STREET  
 MIDLAND TX, 79705  
 Fax To: (432) 682-3946

Received:	03/03/2014	Sampling Date:	03/03/2014
Reported:	03/08/2014	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN WELL #64	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

**Sample ID: AH-3 0-1 (H400633-09)**

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	03/08/2014	ND	2.14	107	2.00	0.624		
Toluene*	<0.050	0.050	03/08/2014	ND	2.14	107	2.00	3.61		
Ethylbenzene*	<0.050	0.050	03/08/2014	ND	2.05	103	2.00	3.71		
Total Xylenes*	<0.150	0.150	03/08/2014	ND	6.26	104	6.00	3.84		
Total BTEX	<0.300	0.300	03/08/2014	ND						

Surrogate: Dibromofluoromethane	97.2 %	61.3-142
Surrogate: Toluene-d8	104 %	71.3-129
Surrogate: 4-Bromofluorobenzene	101 %	65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	03/07/2014	ND	432	108	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	03/05/2014	ND	208	104	200	5.02		
DRO >C10-C28	<10.0	10.0	03/05/2014	ND	209	105	200	3.45		
EXT DRO >C28-C35	<10.0	10.0	03/05/2014	ND						

Surrogate: 1-Chlorooctane	98.3 %	65.2-140
Surrogate: 1-Chlorooctadecane	103 %	63.6-154

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Mike Snyder, Organic Supervisor

**Analytical Results For:**

 TETRA TECH  
 IKE TAVAREZ  
 1910 N. BIG SPRING STREET  
 MIDLAND TX, 79705  
 Fax To: (432) 682-3946

Received:	03/03/2014	Sampling Date:	03/03/2014
Reported:	03/08/2014	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN WELL #64	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

**Sample ID: AH-3 1-1.5 (H400633-10)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	03/07/2014	ND	432	108	400	0.00		

**Sample ID: AH-3 2-2.5 (H400633-11)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	03/07/2014	ND	432	108	400	0.00		

**Sample ID: AH-3 3-3.5 (H400633-12)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	03/07/2014	ND	416	104	400	3.77		

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**Analytical Results For:**

 TETRA TECH  
 IKE TAVAREZ  
 1910 N. BIG SPRING STREET  
 MIDLAND TX, 79705  
 Fax To: (432) 682-3946

Received:	03/03/2014	Sampling Date:	03/03/2014
Reported:	03/08/2014	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN WELL #64	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

**Sample ID: AH-4 0-1 (H400633-13)**

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	03/08/2014	ND	2.14	107	2.00	0.624		
Toluene*	<0.050	0.050	03/08/2014	ND	2.14	107	2.00	3.61		
Ethylbenzene*	<0.050	0.050	03/08/2014	ND	2.05	103	2.00	3.71		
Total Xylenes*	<0.150	0.150	03/08/2014	ND	6.26	104	6.00	3.84		
Total BTEX	<0.300	0.300	03/08/2014	ND						

Surrogate: Dibromofluoromethane	99.2 %	61.3-142
Surrogate: Toluene-d8	106 %	71.3-129
Surrogate: 4-Bromofluorobenzene	104 %	65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/07/2014	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	03/05/2014	ND	208	104	200	5.02		
DRO >C10-C28	<10.0	10.0	03/05/2014	ND	209	105	200	3.45		
EXT DRO >C28-C35	<10.0	10.0	03/05/2014	ND						

Surrogate: 1-Chlorooctane	94.9 %	65.2-140
Surrogate: 1-Chlorooctadecane	101 %	63.6-154

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Mike Snyder, Organic Supervisor



**Analytical Results For:**

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 IKE TAVAREZ  
 1910 N. BIG SPRING STREET  
 MIDLAND TX, 79705  
 Fax To: (432) 682-3946

Received:	03/03/2014	Sampling Date:	03/03/2014
Reported:	03/08/2014	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN WELL #64	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

**Sample ID: AH-4 1-1.5 (H400633-14)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/07/2014	ND	416	104	400	3.77		

**Sample ID: AH-4 2-2.5 (H400633-15)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/07/2014	ND	416	104	400	3.77		

**Sample ID: AH-4 3-3.5 (H400633-16)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/07/2014	ND	416	104	400	3.77		

**Sample ID: AH-4 4-4.5 (H400633-17)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/07/2014	ND	416	104	400	3.77		

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**Analytical Results For:**

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 1910 N. BIG SPRING STREET  
 MIDLAND TX, 79705  
 Fax To: (432) 682-3946

Received:	03/03/2014	Sampling Date:	03/03/2014
Reported:	03/08/2014	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN WELL #64	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

**Sample ID: AH-5 0-1 (H400633-18)**

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	03/08/2014	ND	2.14	107	2.00	0.624		
Toluene*	<0.050	0.050	03/08/2014	ND	2.14	107	2.00	3.61		
Ethylbenzene*	<0.050	0.050	03/08/2014	ND	2.05	103	2.00	3.71		
Total Xylenes*	<0.150	0.150	03/08/2014	ND	6.26	104	6.00	3.84		
Total BTEX	<0.300	0.300	03/08/2014	ND						

Surrogate: Dibromofluoromethane	99.9 %	61.3-142
Surrogate: Toluene-d8	105 %	71.3-129
Surrogate: 4-Bromofluorobenzene	99.5 %	65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/07/2014	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	03/05/2014	ND	208	104	200	5.02		
DRO >C10-C28	<10.0	10.0	03/05/2014	ND	209	105	200	3.45		
EXT DRO >C28-C35	<10.0	10.0	03/05/2014	ND						

Surrogate: 1-Chlorooctane	91.3 %	65.2-140
Surrogate: 1-Chlorooctadecane	95.4 %	63.6-154

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\*=Accredited Analyte

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Mike Snyder, Organic Supervisor

**Analytical Results For:**

 TETRA TECH  
 IKE TAVAREZ  
 1910 N. BIG SPRING STREET  
 MIDLAND TX, 79705  
 Fax To: (432) 682-3946

Received:	03/03/2014	Sampling Date:	03/03/2014
Reported:	03/08/2014	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN WELL #64	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

**Sample ID: AH-5 1-1.5 (H400633-19)**

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/07/2014	ND	416	104	400	3.77	

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Mike Snyder, Organic Supervisor

### 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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Mike Snyder, Organic Supervisor



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

ANALYSIS REQUEST

Company Name: **Tetra Tech** P.O. #: **BILL TO**

Project Manager: **Ike Tavaraz** Company: \_\_\_\_\_

Address: **4006 N. Big Springs, Suite 401** Attn: \_\_\_\_\_

City: **Midland** State: **TX** zip: **79705** Address: \_\_\_\_\_

Phone #: \_\_\_\_\_ Fax #: \_\_\_\_\_ City: \_\_\_\_\_

Project #: \_\_\_\_\_ Project Owner: **Linn Energy** State: \_\_\_\_\_ Zip: \_\_\_\_\_

Project Name: **Seven Rivers Queen well # 64** Phone #: \_\_\_\_\_

Project Location: **Lee Co.** Fax #: \_\_\_\_\_

Sampler Name: **Alvin Garcia/Marcus K.** PRESERV/ SAMPLING

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX							DATE	TIME	TPH	BTEX	Chlorides
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:					
H400633	AH 3 (2-2.5)		5			X					2014	3/3			
	12 AH 4 (3-3.5)		1			X							X		
	13 AH 4 (0-1)		1			X							X		
	14 <del>(2-2.5)</del> (1-1.5)		1			X							X		
	15 (2-2.5)		1			X							X		
	16 (3-3.5)		1			X							X		
	17 (4-4.5)		1			X							X		
	18 AH 5 (0-1)		1			X							X		
	19 (1-1.5)		1			X							X		

PLEASE NOTE: Liability and Damages. Cardinal's liability and clients exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analysis. 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: **Alvin Davis** Date: **3/3/14** Received By: **Alvin Henderson**

Time: **8:10** Date: \_\_\_\_\_

Delivered By: (Circle One) **UPS** **5.20c** Sample Condition:  Cool  Intact

Sampler - UPS - Bus - Other: \_\_\_\_\_ Pres No  No  Pres No  No

CHECKED BY: **[Signature]** (initials)

REMARKS: Run deeper sample if Benzene is greater than 100mg/kg or total BTEX is greater than 500mg/kg or TPH is greater than 1000mg/kg or TPH is greater than 1000mg/kg

email results to ike.tavaraz@tetratech.com

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

HOBBS OCD

MAR 13 2014

RECEIVED

Table 1  
Linn Energy  
Seven Rivers Queen #64  
Lea County, New Mexico

HOBBS OCD

MAR 13 2014

RECEIVED

Sample ID	Sample Date	Sample Depth (ft)	BEB Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-1	3/3/2014	0-1	-	X		<10.0	15.2	15.2	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	<16.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	48.0
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	192
AH-2	3/3/2014	0-1	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	<16.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	<16.0
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	16.0
AH-3	3/3/2014	0-1	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	16.0
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	16.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	16.0
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	16.0
AH-4	3/3/2014	0-1	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	<16.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	<16.0
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	<16.0
AH-5	3/3/2014	0-1	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	<16.0

( - ) Not Analyzed

(BEB) Below Excavation Bottom



TETRA TECH

CLIENT Lynn Energy

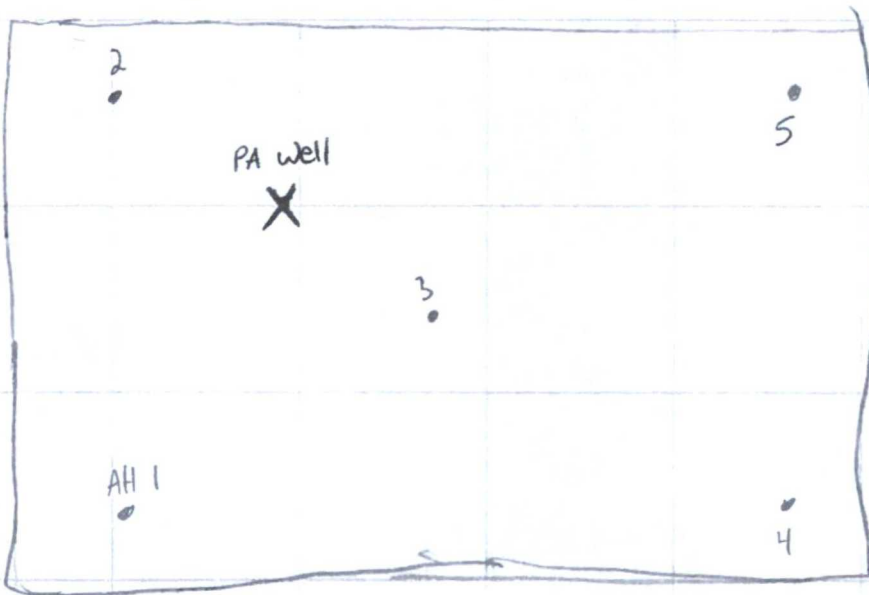
DATE 3/3/14

JOB TITLE Lynn - Seven Rivers Queen Well #64

JOB NUMBER Lea Co

SUBJECT Injection Well

BY \_\_\_\_\_ SHEET \_\_\_\_\_ of \_\_\_\_\_



AH 1 32.33485		103.24252	AH 5 32.33491	103.24211	
0-1	SANDY SOIL	NO STAIN/NO ODOR	0-1	SANDY SOIL	NO STAIN/NO ODOR
1-1.5	"	"	1-1.5	"	"
2-2.5	"	"	2-2.5	"	refusal
3-3.5	"	"	3-3.5	"	"
refusal					
AH-2 32.33495		103.24253			
0-1	SANDY SOIL	NO STAIN/NO ODOR			
1-1.5	"	"			
2-2.5	"	"			
3-3.5	"	"			
refusal					
AH-3 32.33467		103.24232			
0-1	SANDY SOIL	NO STAIN/NO ODOR			
1-1.5	"	"			
2-2.5	"	"			
3-3.5	"	"			
refusal					
AH-4 32.33443		103.24215			
0-1	SANDY SOIL	NO STAIN/NO ODOR			
1-1.5	"	"			
2-2.5	"	"			
3-3.5	"	"			
4-4.5	"	"			
refusal					

HOBBS OCD

MAR 13 2014

RECEIVED



MAR 13 2014

RECEIVED

Lea County, New Mexico

Table 1  
Linn Energy  
Well #910 Unit A

Sample ID	Sample Date	Sample Depth (ft)	BEB Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-1	3/3/2014	0-1	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48.0
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	16.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	576
AH-2	3/3/2014	0-1	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	<16.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	<16.0
AH-3	3/3/2014	0-1	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	64.0
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	64.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	80.0
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	480
AH-4	3/3/2014	0-1	-	X		<10.0	2,790	2,790	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
	"	1-1.5	-	X		<10.0	148	148	-	-	-	-	-	<16.0
AH-5	3/3/2014	0-1	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	<16.0

(-) Not Analyzed

(BEB) Below Excavation Bottom



CLIENT Sweett

DATE 3-5-14

JOB TITLE Lin Well #910 Unit A

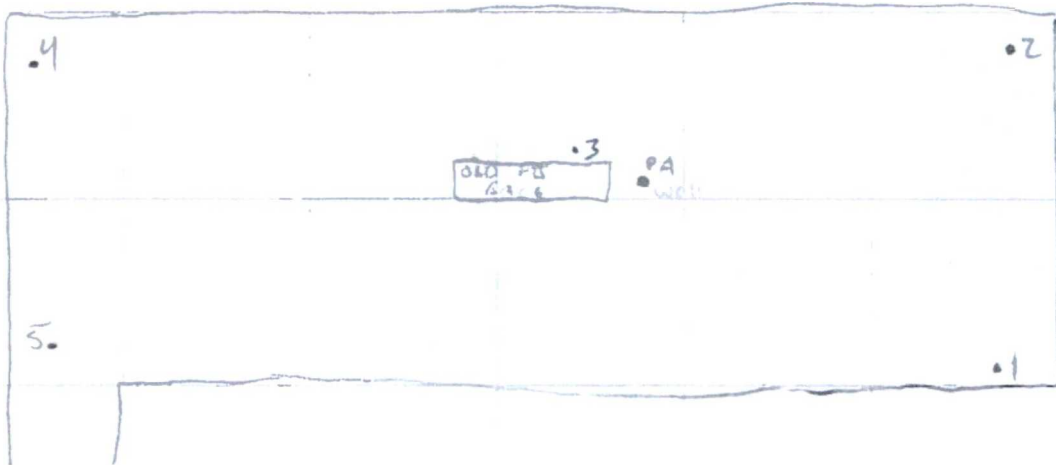
JOB NUMBER \_\_\_\_\_

SUBJECT \_\_\_\_\_

BY \_\_\_\_\_

SHEET \_\_\_\_\_

of \_\_\_\_\_



AH-1 32.71012 103.07705

0-1 SANDY SOIL NO STAIN/NO ODOR

1-1.5 " " "

2-2.5 " " "

refusal

AH-2 32.71028 103.07702

0-1 SANDY SOIL NO STAIN/NO ODOR

1-1.5 " " "

2-2.5 " " "

refusal

HOBBS OCD

MAR 13 2014

RECEIVED

AH-3 32.71025 103.07713

0-1 SANDY SOIL Yellow stain/NO ODOR

1-1.5 SANDY SOIL NO STAIN/NO ODOR

2-2.5 " " "

3-3.5 " " "

refusal

AH-4 32.71026 103.07712

0-1 sandy soil NO STAIN/NO ODOR

1-1.5 " " "

2-2.5 " " "

refusal

AH-5 32.71023 103.07735

0-1 sandy soil NO STAIN/NO ODOR

1-1.5 " " "

refusal

**Table 1**  
**Linn Energy**  
**Seven Rivers Queen #32**  
**Lea County, New Mexico**

HOBBS OCD  
 MAR 13 2014  
 RECEIVED

Sample ID	Sample Date	Sample Depth (ft)	BEB Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-1	3/3/2014	0-1	-	X		<10.0	257	257	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	96.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	624
AH-2	3/3/2014	0-1	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	<16.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	<16.0
AH-3	3/3/2014	0-1	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	<16.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	144
AH-4	3/3/2014	0-1	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	<16.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	192
AH-5	3/3/2014	0-1	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	16.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	160
AH-6	3/3/2014	0-1	-	X		<10.0	6,270	6,270	<0.050	<0.050	<0.050	<0.150	<0.300	64.0
	"	1-1.5	-	X		<10.0	69.9	69.9	-	-	-	-	-	80.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	96.0

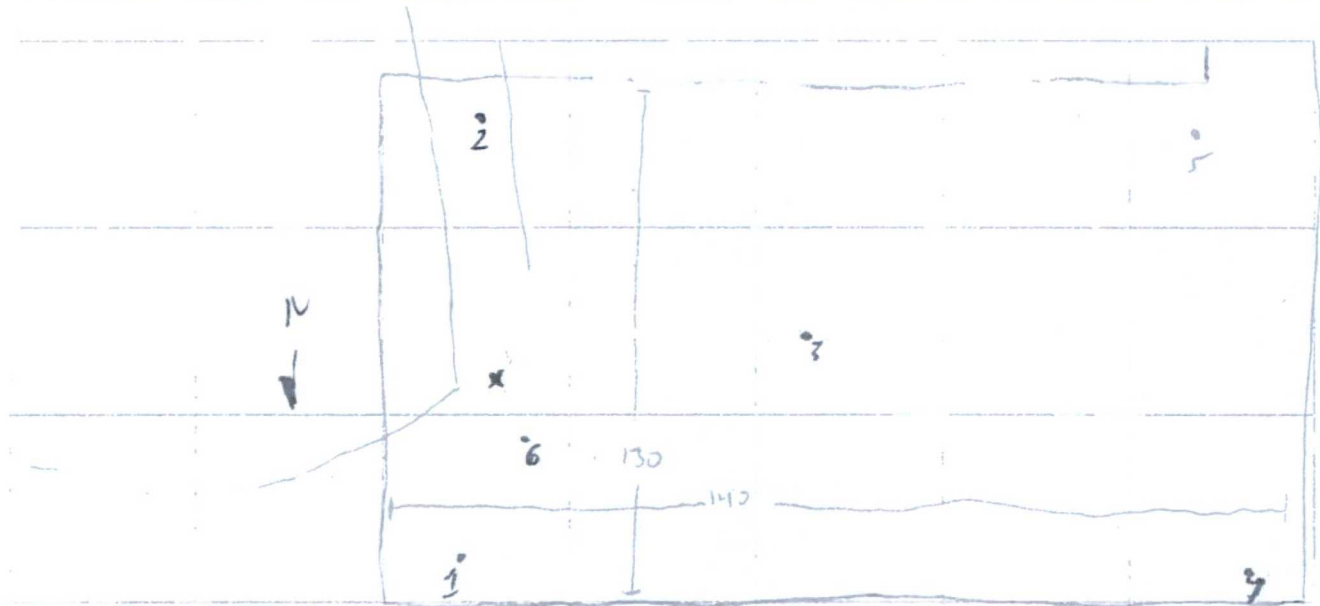
( - ) Not Analyzed  
 (BEB) Below Excavation Bottom



CLIENT \_\_\_\_\_ DATE 3-7-14

JOB TITLE 7 rivers Queen Unit 101 #2 Trj JOB NUMBER Doug

SUBJECT \_\_\_\_\_ BY \_\_\_\_\_ SHEET \_\_\_\_\_ of \_\_\_\_\_



AH-1 32.4751 103.25200  
 0-1 sandy soil no stain/no odor  
 1-1.5 " " " "  
 2-2.5 " " " "  
 refusal

AH-5 32.34721 103.25229  
 0-1 sandy soil no stain/no odor  
 1-1.5 " " " "  
 2-2.5 " " " "  
 refusal

AH-2 32.4725 103.25199  
 0-1 sandy soil no stain/no odor  
 1-1.5 " " " "  
 2-2.5 sandy soil w/ rocks " " "

AH-6 32.34743 103.25209  
 0-1 sandy soil w/ rocks no stain/no odor  
 1-1.5 " " " "  
 2-2.5 " " " "

AH-3 32.34731 103.25216  
 0-1 sandy soil no stain/no odor  
 1-1.5 " " " "  
 2-2.5 " " " "  
 refusal

HOBBS OCD  
 MAR 13 2014

AH-4 32.32748 103.25233  
 0-1 sandy soil no stain/no odor  
 1-1.5 " " " "  
 2-2.5 " " " "  
 3-3.5 " " " "  
 refusal

RECEIVED