

# SITE INFORMATION

2RP-1300

## Report Type: Work Plan

### General Site Information:

<b>Site:</b>	White City 14 Federal Com 10				
<b>Company:</b>	Cimarex				
<b>Section, Township and Range</b>	Unit	Sec 14	T25S	R26E	
<b>Lease Number:</b>	(API#) NM 19423				
<b>County:</b>	Eddy County				
<b>GPS:</b>	32.13640° N			104.26983° W	
<b>Surface Owner:</b>	Federal				
<b>Mineral Owner:</b>					
<b>Directions:</b>	From the intersection of US 62/180 (National Parks Hwy) and Hwy 396 (Black River Road) travel east for approx. 7 miles. Turn south on CR 748 and travel south for approx. 3.8 miles. Turn west on the lease road and travel south for approx. 4 miles. Turn east for approx. 1 mile and the location will be on the right.				

### Release Data:

<b>Date Released:</b>	8/6/2012	<b>RECEIVED</b>
<b>Type Release:</b>	Produced Fluids	
<b>Source of Contamination:</b>	Frack Tank	JUN 17 2013
<b>Fluid Released:</b>	10 bbls	<b>NMOCD ARTESIA</b>
<b>Fluids Recovered:</b>	0 bbls	

### Official Communication:

<b>Name:</b>	Terry D. Ainsworth	Tom Elliott
<b>Company:</b>	Cimarex	Tetra Tech
<b>Address:</b>	600 N Marienfeld Suite 600	1910 N. Big Spring
<b>City:</b>	Midland, Texas 79701	Midland, Texas
<b>Phone number:</b>	575-628-3447	(432) 682-4559
<b>Fax:</b>	575-628-3566	
<b>Email:</b>	<a href="mailto:tainsworth@cimarex.com">tainsworth@cimarex.com</a>	<a href="mailto:tom.elliott@tetrattech.com">tom.elliott@tetrattech.com</a>

### Ranking Criteria

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	10
>100 ft.	0	0
WellHead Protection:	Ranking Score	Site Data
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
<b>Total Ranking Score:</b>	<b>0</b>	

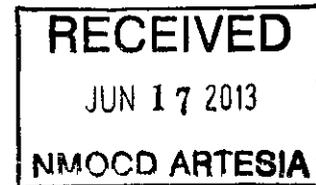
Acceptable Soil RRAL (mg/kg)		
Benzene	Total BTEX	TPH
10	50	5,000



**TETRA TECH**

June 12, 2013

Mr. Mike Bratcher  
Environmental Engineer Specialist  
Oil Conservation Division, District 2  
811 S. First Street  
Artesia, New Mexico 88210



**Re: Work Plan for the Cimarex Energy, White City 14 Fed Com #10, Section 14, Township 25 South, Range 26 East, Eddy County, New Mexico.**

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by Cimarex Energy (Cimarex) to assess a spill from the White City Federal Com #10, located in Section 14, Township 56 South, Range 26 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.13640°, W 104.26983°. The site location is shown on Figures 1 and 2.

### **Background**

According to the State of New Mexico C-141 Initial Report, the leak was discovered on August 6, 2012, and released approximately ten (10) barrels of acid from a frac tack. None of the released acid was recovered. The spill affected an area of approximately 75' x 135' in the pasture. The initial C-141 form is enclosed in Appendix A.

### **Groundwater**

The New Mexico State Engineer's Office database and USGS database did not show any wells in Section 14, however, the USGS database showed a well in Section 13 with a reported depth to water of 12 feet below ground surface (bgs) and a surface elevation of 3,240 feet. A water level measurement was also collected from a windmill located in Section 25, Township 25 South, Range 26 East and showed a depth to water of 18 feet bgs. The windmill had a surface elevation of 3,197 feet. In addition, a temporary monitor well (TMW) was drilled in Section 19, Township 25 South, Range 27 East to a total depth of 80 feet bgs and did not encounter groundwater. The TMW site has a surface elevation of 3,240 feet. The temporary well was installed by Highlander for another client to establish depth to groundwater on a reserve pit closure.

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 [www.tetrattech.com](http://www.tetrattech.com)



Based on the Site surface elevation of 3,350 feet, the projected water level at the Site should be greater than 100 feet bgs. In addition, it appears the majority of the shallow groundwater may be limited to the alluvial sand and gravel deposits in the vicinity of Cotton Wood Draw. A topographical map showing the surface elevations (Figure 5), The New Mexico State Engineer, and USGS water well reports are shown in Appendix B.

On May 22, 2013 Cimarex and Tetra Tech personnel met with the New Mexico Oil Conservation District (NMOCD) in Artesia, New Mexico to discuss the groundwater depth at the site. The groundwater data from the windmill, temporary well and USGS well were presented and based on the surface elevations of these wells and the Site, NMOCD personnel agreed that groundwater was greater than 100 feet bgs.

### **Regulatory**

A risk-based evaluation was performed for the Site in accordance with the NMOCD Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

### **Soil Assessment and Analytical Results**

On September 20, 2013, Safety and Environmental Solutions, Inc. out of Hobbs, New Mexico personnel inspected and sampled the spill area. Two (2) bore holes (BH-1 & BH-2) were installed using a hollow stem auger drilling rig to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 418.1 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The bore hole locations are shown on Figure 3.

Referring to Table 1, bore hole samples were below the RRAL for BTEX. A shallow TPH impact of 147 mg/kg was detected in BH-1 at 15' and 172 mg/kg in BH-2 at 5' below surface and declined to <100 in BH-1 at 20' and <100 in BH-2 at 10' below surface.

A chloride impact was detected in bore holes BH-1 and BH-2, which showed a maximum chloride concentration at the surface (0-1') of 30,800 mg/kg and 22,000 mg/kg, respectively. The chloride concentrations in BH-1 declined with depth showing 17,400 mg/kg at 10' and 464 mg/kg at 15' below surface. The chloride concentrations in BH-2 showed 5,860 mg/kg at 10' and 944 at 15' below surface.



**TETRA TECH**

### **Work Plan**

Cimarex proposes to remove impacted material as highlighted (green) in Table 1 and shown on Figure 4. The area of BH-1 and BH-2 will be excavated to a depth of approximately 4.0' to 5.0' below surface and a 40 mil liner will be installed. The excavated areas will be backfilled with clean backfilled material to grade. The excavated material will be transported to proper disposal.

The proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safety concerns for onsite personnel. As such, Tetra Tech will excavate the impacted soils to the maximum extent practicable. The remaining impact will be deferred until the abandonment of the facility.

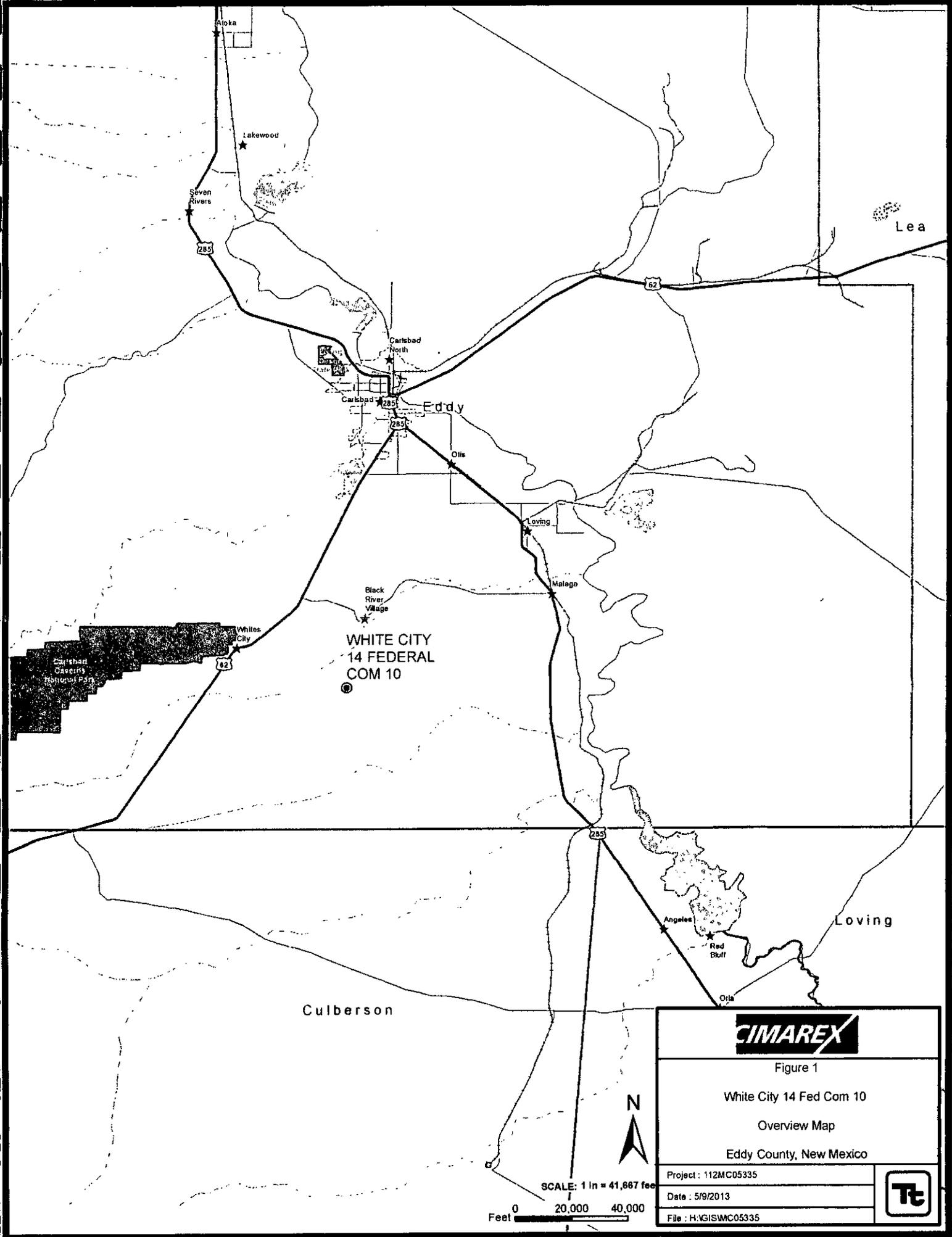
Upon completion, a final report will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,  
TETRA TECH

Tom Elliott  
Project Manager

cc: Terry Ainsworth - Cimarex  
Johnny Titsworth - Cimarex  
Christine Alderman - Cimarex  
Jim Amos - BLM

# FIGURES

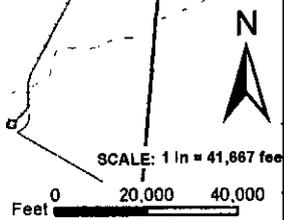


WHITE CITY  
14 FEDERAL  
COM 10



Figure 1  
White City 14 Fed Com 10  
Overview Map  
Eddy County, New Mexico

Project : 112MCD5335  
Date : 5/9/2013  
File : H:\GIS\WC05335



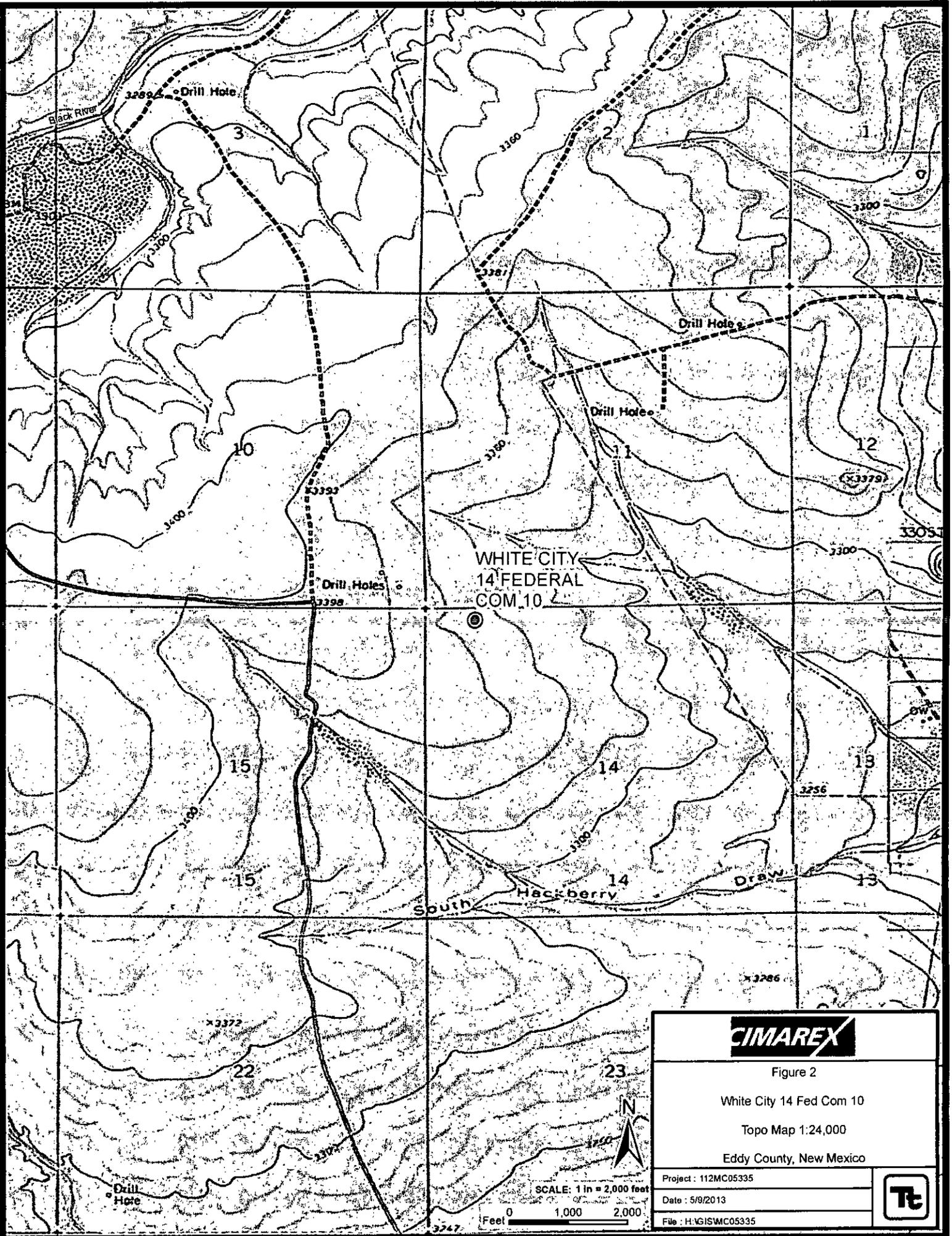


Figure 2

White City 14 Fed Com 10

Topo Map 1:24,000

Eddy County, New Mexico

Project : 112MC05335

Date : 5/9/2013

File : H:\GIS\MC05335



PASTURE



68'

PAD

LEASE ROAD

PASTURE

**EXPLANATION**

- BORE HOLE SAMPLE LOCATIONS
- ★ LEAK SOURCE
- ▨ SPILL AREA

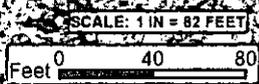


Figure 3

White City 14 Fed Com 10

Spill Assessment Map

Eddy County, New Mexico

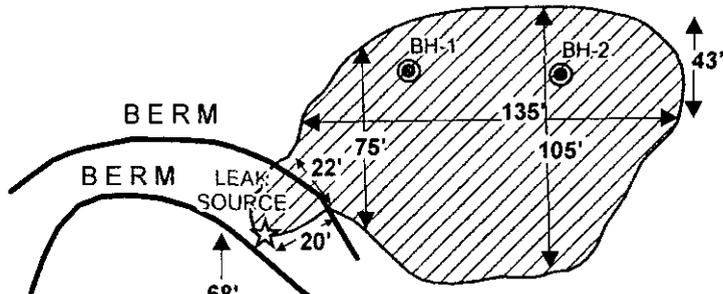
Project : 112MC05335

Date : 5/9/2013

File : H:\GIS\MC05335



PASTURE



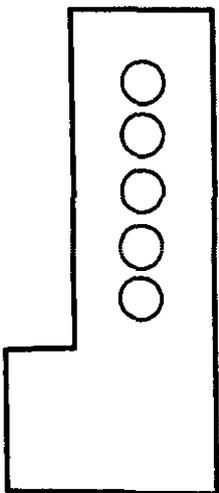
BERM  
BERM

LEAK SOURCE

BH-1

BH-2

68'



PAD

LEASE ROAD

PASTURE

**EXPLANATION**

- BORE HOLE SAMPLE LOCATIONS
- ☆ LEAK SOURCE
- ▨ SPILL AREA



SCALE: 1 IN = 82 FEET

Feet 0 40 80



Figure 3

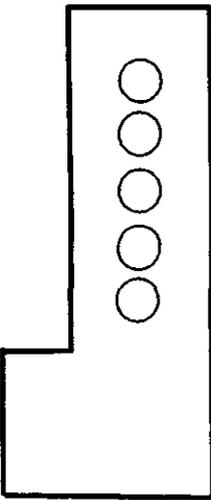
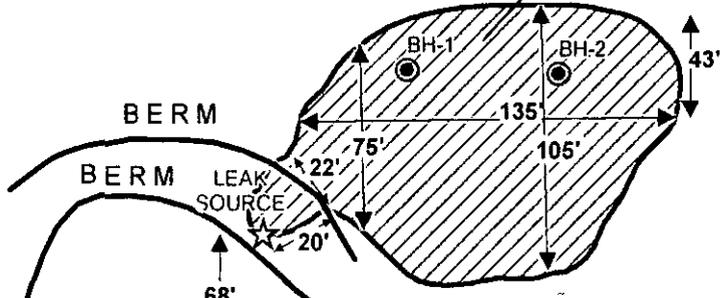
White City 14 Fed Com 10  
Spill Assessment Map  
Eddy County, New Mexico

Project : 112MC05335  
Date : 5/9/2013  
File : H:\GIS\WC05335



PASTURE

4' - 5' DEEP W/ LINER



PAD

LEASE ROAD

PASTURE

**EXPLANATION**

- BORE HOLE SAMPLE LOCATIONS
- ☆ LEAK SOURCE
- PROPOSED LINER
- ▨ PROPOSED EXCAVATION AREA



SCALE: 1 IN = 82 FEET

Feet 0 40 80



Figure 4

White City 14 Fed Com 10  
 Proposed Excavation Area & Depth Map  
 Eddy County, New Mexico

Project : 112MC05335  
 Date : 5/8/2013  
 File : H:\GIS\MC05335



# TABLES

Table 1  
Cimarex

White City 14 Federal Commingle 10  
Eddy County, New Mexico

Sample ID	Sample Date	Sample 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							
*BH-1	9/20/2012	Surface	X		<100	<0.050	<0.050	<0.050	<0.150	<0.150	30,800
	"	5	X		<100	<0.050	<0.050	<0.050	<0.150	<0.150	21,200
	"	10	X		<100	<0.050	<0.050	<0.050	<0.150	<0.150	17,400
	"	15	X		147	<0.050	<0.050	<0.050	<0.150	<0.150	464
	"	20	X		<100	<0.050	<0.050	<0.050	<0.150	<0.150	256
	"	25	X		<100	<0.050	<0.050	<0.050	<0.150	<0.150	480
"	30	X		<100	<0.050	<0.050	<0.050	<0.150	<0.150	128	
*BH-2	9/20/2012	Surface	X		<100	<0.050	<0.050	<0.050	<0.150	<0.150	22,000
	"	5	X		172	<0.050	<0.050	<0.050	<0.150	<0.150	19,200
	"	10	X		<100	<0.050	<0.050	<0.050	<0.150	<0.150	5,860
	"	15	X		<100	<0.050	<0.050	<0.050	<0.150	<0.150	944
	"	20	X		<100	<0.050	<0.050	<0.050	<0.150	<0.150	992
	"	25	X		<100	<0.050	<0.050	<0.050	<0.150	<0.150	144
"	30	X		<100	<0.050	<0.050	<0.050	<0.150	<0.150	192	

(\*) Sampled by Safety & Environmental Solutions, Inc. for Cimarex

(\*\*) TPH Method 418.1

Proposed Excavation Depths

Proposed 40 Mil Liner

**PHOTOGRAPHS**

Cimarex Energy  
White City 14 Fed Com #10  
Eddy County, New Mexico



TETRA TECH



View Northeast – Spill area in pasture.

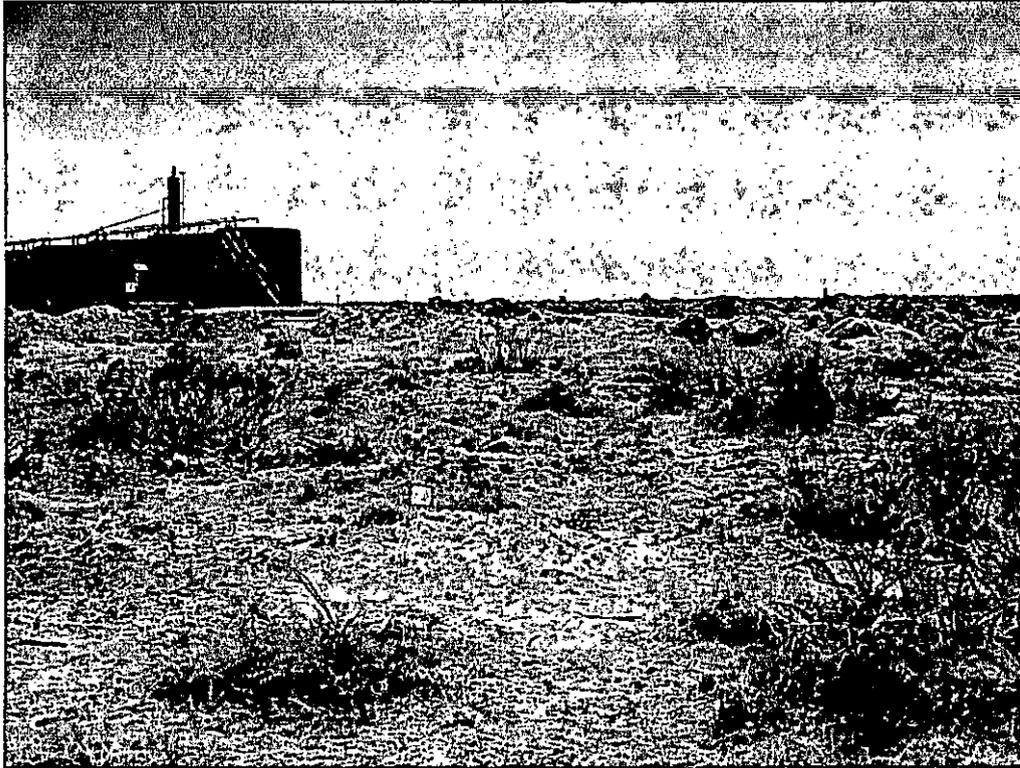


View Southwest– Area of BH-1.

Cimarex Energy  
White City 14 Fed Com #10  
Eddy County, New Mexico



TETRA TECH



View Southwest – Area of BH-2.

**APPENDIX A**

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	Cimarex Energy	Contact	Terry D. Ainsworth
Address	600 Marienfeld Midland, TX 79701	Telephone No.	(575) 390-1388
Facility Name	White City 14 Fed Com 10	Facility Type	Gas Well
Surface Owner	Mineral Owner	Lease No.	NM 19423

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	14	25S	26E	500	North	800	West	Eddy

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

**NATURE OF RELEASE**

Type of Release	some percentage of acid	Volume of Release + or - 10 bbls	Volume Recovered	0	
Source of Release	acid tanks	Date and Hour of Occurrence	?	Date and Hour of Discovery	8/6/2012
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?			
By Whom?		Date and Hour			
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*  
SESI will be out with an auger to see how deep the spill went and to catch samples to see if we can tell for sure what was spilled

Describe Area Affected and Cleanup Action Taken.\*  
After we figure out how deep the spill goes and what it was, SESI will put together a Delineation Report and Work Plan

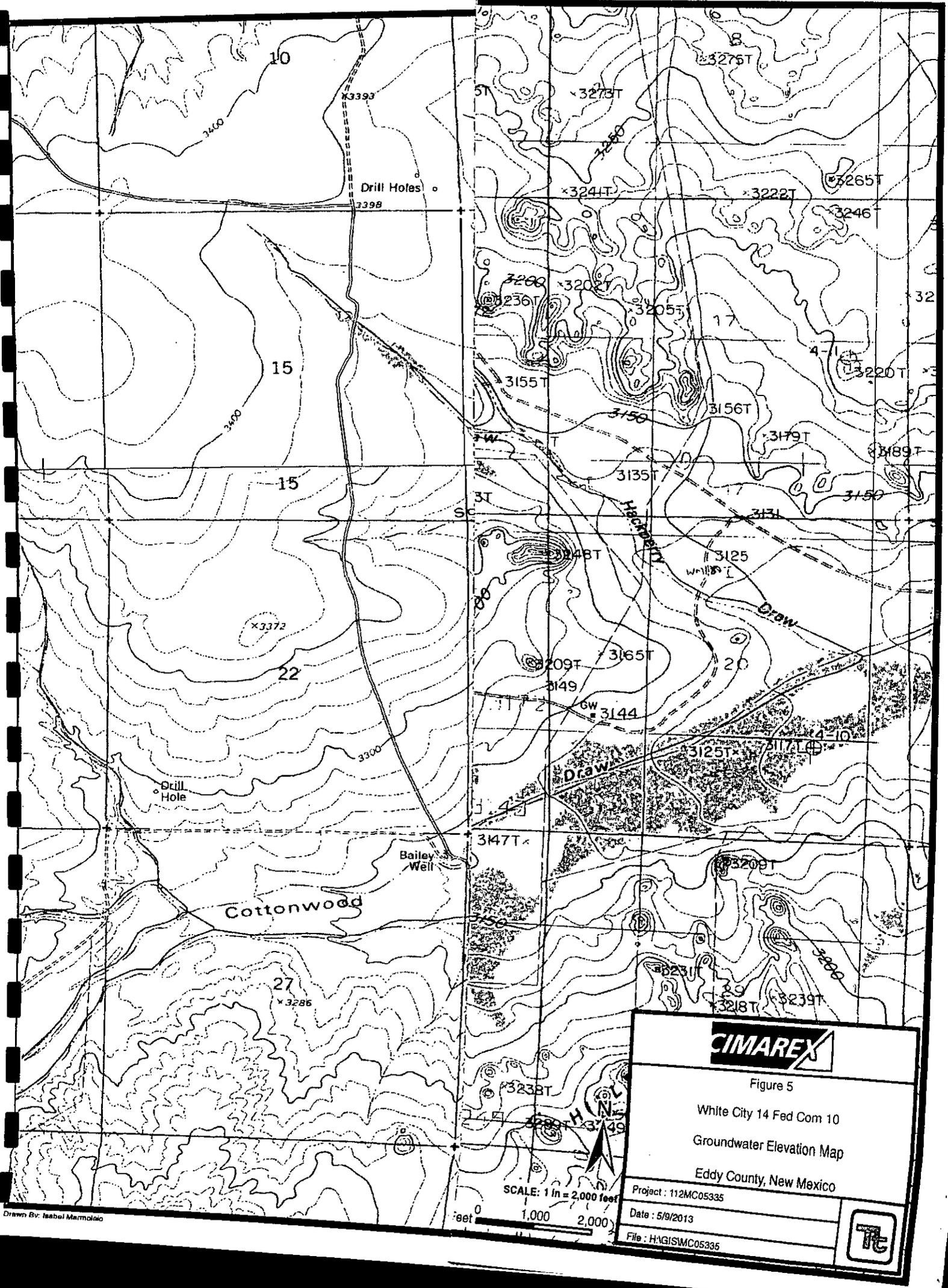
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger 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.

**OIL CONSERVATION DIVISION**

Signature:	Approved by District Supervisor:		
Printed Name: Terry D. Ainsworth	Approval Date:	Expiration Date:	
Title: Production Foreman	Conditions of Approval:		Attached <input type="checkbox"/>
E-mail Address: tainsworth@cimarex.com			
Date:	Phone: 575-390-1388		

\* Attach Additional Sheets If Necessary

**APPENDIX B**



Drawn By: Isabel Marmolejo

<b>CIMAREX</b>	
Figure 5	
White City 14 Fed Com 10	
Groundwater Elevation Map	
Eddy County, New Mexico	
Project : 112MC05335	
Date : 5/9/2013	
File : H:\GIS\MC05335	

**Water Well Data**  
**Average Depth to Groundwater (ft)**  
**White City 14 Fed Com #10**  
**Eddy County, New Mexico**

**24 South 26 East**

6	5	4	3	2	1
	14	440			
7	8	9	10	11	12
					27
18	17	16	15	14	13
					163
19	20	21	22	23	24
30	29	28	27	26	25
					540
31	32	33	34	35	36
			150	600	

**24 South 26 East**

6	5	4	3	2	1
	83				
7	8	9	10	11	12
	260	460			
18	17	16	15	14	13
					30
19	20	21	22	23	24
				38	28
30	29	28	27	26	25
		46		30	
31	32	33	34	35	36
		109			

**24 South 27 East**

6	5	4	3	2	1
7	8	9	10	11	12
		28			
18	17	16	15	14	13
					27
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

**26 South 26 East**

6	5	4	3	2	1
	30	46			
7	8	9	10	11	12
			20		
18	17	16	15	14	13
					43
19	20	21	22	23	24
					38
30	29	28	27	26	25
31	32	33	34	35	36

**26 South 26 East**

6	5	4	3	2	1
7	8	9	10	11	12
			45		
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

**26 South 27 East**

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
					92
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

**26 South 25 East**

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
					160
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

**26 South 26 East**

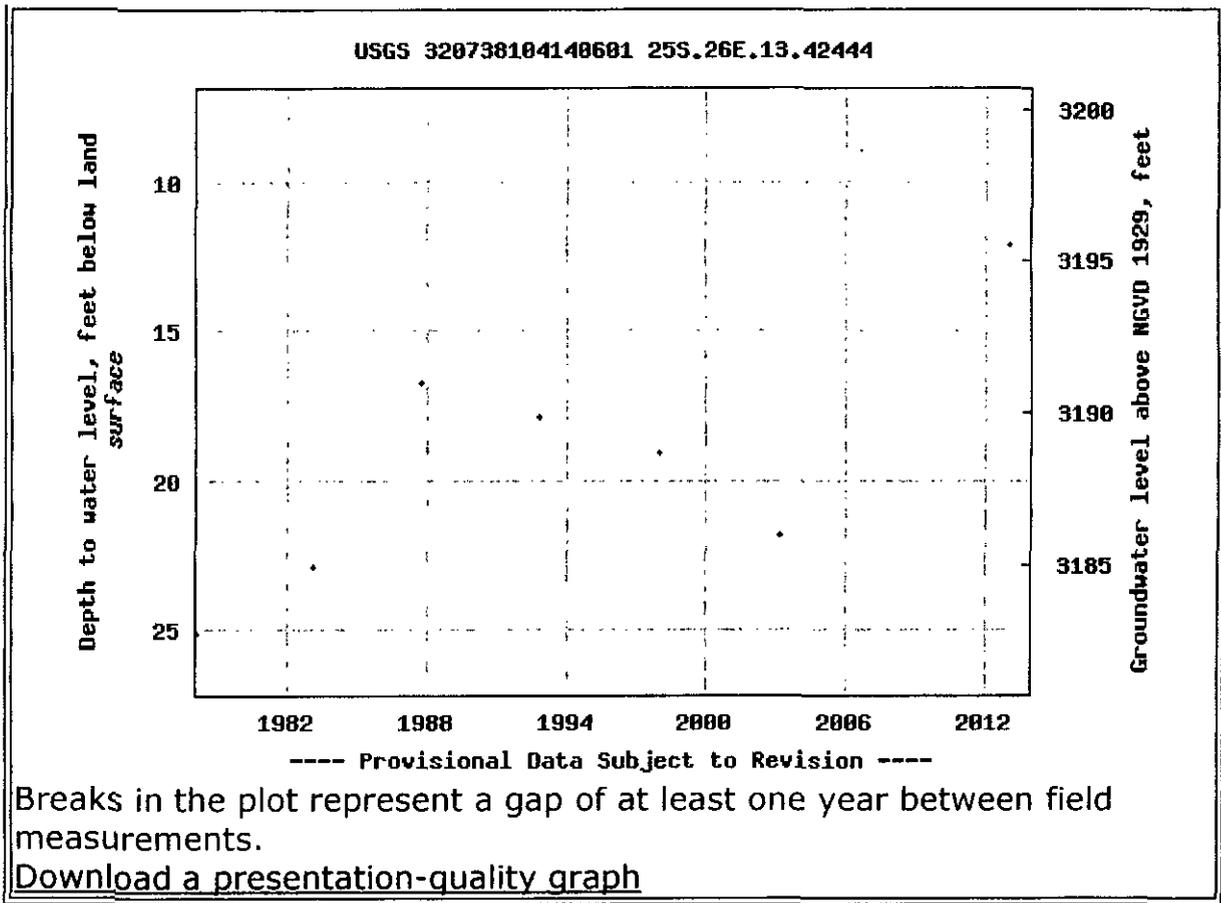
6	5	4	3	2	1
7	8	9	10	11	12
		22			
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

**26 South 27 East**

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

-  New Mexico State Engineers Well Reports
-  USGS Well Reports
-  Geology and Groundwater Conditions in Southern Eddy, County, NM
-  NMOCD - Groundwater Data
-  Field water level
-  New Mexico Water and Infrastructure Data System
-  Measured Windmill 18'
-  TMW TD 80' DRY





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[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

**Title: Groundwater for USA: Water Levels**

**URL: <http://nwis.waterdata.usgs.gov/nwis/gwlevels?>**



Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2013-05-02 17:08:49 EDT

0.34 0.32 nadww01



*New Mexico Office of the State Engineer*  
**Wells with Well Log Information**

SS Search:

Section(s): 14

Township: 25S

Range: 26E

No wells found.

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

3 9:27 AM

Page 1 of 1

WELLS WITH WELL LOG INFORMATION

**APPENDIX C**

September 28, 2012

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: CIM-12-017

Enclosed are the results of analyses for samples received by the laboratory on 09/21/12 7:55.

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

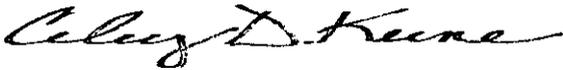
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received:	09/21/2012	Sampling Date:	09/20/2012
Reported:	09/28/2012	Sampling Type:	Soil
Project Name:	CIM-12-017	Sampling Condition:	Cool & Intact
Project Number:	WHITE CITY 14 FED. COM 10	Sample Received By:	Jodi Henson
Project Location:	CARLSBAD, NEW MEXICO		

**Sample ID: BH #1 SURFACE (H202306-01)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2012	ND	2.14	107	2.00	12.1		
Toluene*	<0.050	0.050	09/25/2012	ND	2.39	119	2.00	13.4		
Ethylbenzene*	<0.050	0.050	09/25/2012	ND	2.37	119	2.00	14.1		
Total Xylenes*	<0.150	0.150	09/25/2012	ND	7.18	120	6.00	13.7		

*Surrogate: 4-Bromofluorobenzene (PIE) 103 % 89.+126*

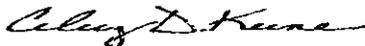
Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	30800	16.0	09/26/2012	ND	416	104	400	0.00		

TPH 418.1		mg/kg		Analyzed By: AM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	<100	100	09/27/2012	ND	2930	117	2500	2.04		

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Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received:	09/21/2012	Sampling Date:	09/20/2012
Reported:	09/28/2012	Sampling Type:	Soil
Project Name:	CIM-12-017	Sampling Condition:	Cool & Intact
Project Number:	WHITE CITY 14 FED. COM 10	Sample Received By:	Jodi Henson
Project Location:	CARLSBAD, NEW MEXICO		

**Sample ID: BH #1 5' (H202306-02)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2012	ND	2.14	107	2.00	12.1		
Toluene*	<0.050	0.050	09/25/2012	ND	2.39	119	2.00	13.4		
Ethylbenzene*	<0.050	0.050	09/25/2012	ND	2.37	119	2.00	14.1		
Total Xylenes*	<0.150	0.150	09/25/2012	ND	7.18	120	6.00	13.7		

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

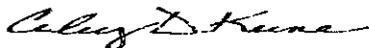
Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	21200	16.0	09/26/2012	ND	416	104	400	0.00		

TPH 418.1		mg/kg		Analyzed By: AM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	<100	100	09/27/2012	ND	2930	117	2500	2.04		

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**Analytical Results For:**

 Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received:	09/21/2012	Sampling Date:	09/20/2012
Reported:	09/28/2012	Sampling Type:	Soil
Project Name:	CIM-12-017	Sampling Condition:	Cool & Intact
Project Number:	WHITE CITY 14 FED. COM 10	Sample Received By:	Jodi Henson
Project Location:	CARLSBAD, NEW MEXICO		

**Sample ID: BH #1 10' (H202306-03)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2012	ND	2.14	107	2.00	12.1		
Toluene*	<0.050	0.050	09/25/2012	ND	2.39	119	2.00	13.4		
Ethylbenzene*	<0.050	0.050	09/25/2012	ND	2.37	119	2.00	14.1		
Total Xylenes*	<0.150	0.150	09/25/2012	ND	7.18	120	6.00	13.7		

Surrogate: 4-Bromofluorobenzene (PIL) 102 % 89.-126

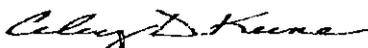
Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	17400	16.0	09/26/2012	ND	416	104	400	0.00		

TPH 418.1		mg/kg		Analyzed By: AM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	<100	100	09/27/2012	ND	2930	117	2500	2.04		

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**Analytical Results For:**

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 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received:	09/21/2012	Sampling Date:	09/20/2012
Reported:	09/28/2012	Sampling Type:	Soil
Project Name:	CIM-12-017	Sampling Condition:	Cool & Intact
Project Number:	WHITE CITY 14 FED. COM 10	Sample Received By:	Jodi Henson
Project Location:	CARLSBAD, NEW MEXICO		

**Sample ID: BH #1 15' (H202306-04)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2012	ND	2.14	107	2.00	12.1		
Toluene*	<0.050	0.050	09/25/2012	ND	2.39	119	2.00	13.4		
Ethylbenzene*	<0.050	0.050	09/25/2012	ND	2.37	119	2.00	14.1		
Total Xylenes*	<0.150	0.150	09/25/2012	ND	7.18	120	6.00	13.7		

*Surrogate: 4-Bromofluorobenzene (PIL) 99.5% 89.4-126*

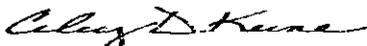
Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	464	16.0	09/26/2012	ND	416	104	400	0.00		

TPH 418.1		mg/kg		Analyzed By: AM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	147	100	09/27/2012	ND	2930	117	2500	2.04		

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 703 East Clinton  
 Hobbs NM, 88240  
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Received:	09/21/2012	Sampling Date:	09/20/2012
Reported:	09/28/2012	Sampling Type:	Soil
Project Name:	CIM-12-017	Sampling Condition:	Cool & Intact
Project Number:	WHITE CITY 14 FED. COM 10	Sample Received By:	Jodi Henson
Project Location:	CARLSBAD, NEW MEXICO		

**Sample ID: BH #1 20' (H202306-05)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2012	ND	2.14	107	2.00	12.1		
Toluene*	<0.050	0.050	09/25/2012	ND	2.39	119	2.00	13.4		
Ethylbenzene*	<0.050	0.050	09/25/2012	ND	2.37	119	2.00	14.1		
Total Xylenes*	<0.150	0.150	09/25/2012	ND	7.18	120	6.00	13.7		

*Surrogate: 4-Bromofluorobenzene (PIE) 101 % 89.4-126*

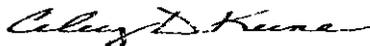
Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	09/26/2012	ND	416	104	400	0.00		

TPH 418.1		mg/kg		Analyzed By: AM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	<100	100	09/27/2012	ND	2930	117	2500	2.04		

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Received:	09/21/2012	Sampling Date:	09/20/2012
Reported:	09/28/2012	Sampling Type:	Soil
Project Name:	CIM-12-017	Sampling Condition:	Cool & Intact
Project Number:	WHITE CITY 14 FED. COM 10	Sample Received By:	Jodi Henson
Project Location:	CARLSBAD, NEW MEXICO		

**Sample ID: BH #1 25' (H202306-06)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2012	ND	2.14	107	2.00	12.1		
Toluene*	<0.050	0.050	09/25/2012	ND	2.39	119	2.00	13.4		
Ethylbenzene*	<0.050	0.050	09/25/2012	ND	2.37	119	2.00	14.1		
Total Xylenes*	<0.150	0.150	09/25/2012	ND	7.18	120	6.00	13.7		

Surrogate: 4-Bromofluorobenzene (P/E) 99.2 % 89.4-126

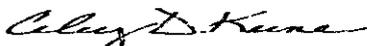
Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	09/26/2012	ND	416	104	400	0.00		

TPH 418.1		mg/kg		Analyzed By: AM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	<100	100	09/27/2012	ND	2930	117	2500	2.04		

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 Fax To: (575) 393-4388

Received:	09/21/2012	Sampling Date:	09/20/2012
Reported:	09/28/2012	Sampling Type:	Soil
Project Name:	CIM-12-017	Sampling Condition:	Cool & Intact
Project Number:	WHITE CITY 14 FED. COM 10	Sample Received By:	Jodi Henson
Project Location:	CARLSBAD, NEW MEXICO		

**Sample ID: BH #1 30' (H202306-07)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2012	ND	2.14	107	2.00	12.1		
Toluene*	<0.050	0.050	09/25/2012	ND	2.39	119	2.00	13.4		
Ethylbenzene*	<0.050	0.050	09/25/2012	ND	2.37	119	2.00	14.1		
Total Xylenes*	<0.150	0.150	09/25/2012	ND	7.18	120	6.00	13.7		

Surrogate: 4-Bromofluorobenzene (PHE) 100 % 89.4-126

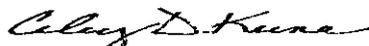
Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	09/26/2012	ND	416	104	400	0.00		

TPH 418.1		mg/kg		Analyzed By: AM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	<100	100	09/27/2012	ND	2930	117	2500	2.04		

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 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received:	09/21/2012	Sampling Date:	09/20/2012
Reported:	09/28/2012	Sampling Type:	Soil
Project Name:	CIM-12-017	Sampling Condition:	Cool & Intact
Project Number:	WHITE CITY 14 FED. COM 10	Sample Received By:	Jodi Henson
Project Location:	CARLSBAD, NEW MEXICO		

**Sample ID: BH #2 SURFACE (H202306-08)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2012	ND	2.14	107	2.00	12.1		
Toluene*	<0.050	0.050	09/25/2012	ND	2.39	119	2.00	13.4		
Ethylbenzene*	<0.050	0.050	09/25/2012	ND	2.37	119	2.00	14.1		
Total Xylenes*	<0.150	0.150	09/25/2012	ND	7.18	120	6.00	13.7		

Surrogate: 4-Bromofluorobenzene (PHE) 99.3 % 89.4-126

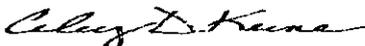
Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	22000	16.0	09/26/2012	ND	416	104	400	0.00		

TPH 418.1		mg/kg		Analyzed By: AM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	<100	100	09/27/2012	ND	2930	117	2500	2.04		

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Received:	09/21/2012	Sampling Date:	09/20/2012
Reported:	09/28/2012	Sampling Type:	Soil
Project Name:	CIM-12-017	Sampling Condition:	Cool & Intact
Project Number:	WHITE CITY 14 FED. COM 10	Sample Received By:	Jodi Henson
Project Location:	CARLSBAD, NEW MEXICO		

**Sample ID: BH #2 5' (H202306-09)**

BTEX B021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2012	ND	2.14	107	2.00	12.1		
Toluene*	<0.050	0.050	09/25/2012	ND	2.39	119	2.00	13.4		
Ethylbenzene*	<0.050	0.050	09/25/2012	ND	2.37	119	2.00	14.1		
Total Xylenes*	<0.150	0.150	09/25/2012	ND	7.18	120	6.00	13.7		

*Surrogate: 4-Bromofluorobenzene (PIL) 99.5 % 89.4-126*

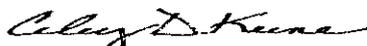
Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	19200	16.0	09/26/2012	ND	416	104	400	0.00		

TPH 418.1		mg/kg		Analyzed By: AM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	172	100	09/27/2012	ND	2930	117	2500	2.04		

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Received:	09/21/2012	Sampling Date:	09/20/2012
Reported:	09/28/2012	Sampling Type:	Soil
Project Name:	CIM-12-017	Sampling Condition:	Cool & Intact
Project Number:	WHITE CITY 14 FED. COM 10	Sample Received By:	Jodi Henson
Project Location:	CARLSBAD, NEW MEXICO		

**Sample ID: BH #2 10' (H202306-10)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2012	ND	2.14	107	2.00	12.1		
Toluene*	<0.050	0.050	09/25/2012	ND	2.39	119	2.00	13.4		
Ethylbenzene*	<0.050	0.050	09/25/2012	ND	2.37	119	2.00	14.1		
Total Xylenes*	<0.150	0.150	09/25/2012	ND	7.18	120	6.00	13.7		

*Surrogate: 4-Bromofluorobenzene (PIE) 99.9% 89.4-126*

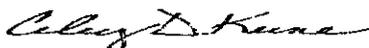
Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5860	16.0	09/26/2012	ND	416	104	400	0.00		

TPH 418.1		mg/kg		Analyzed By: AM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	<100	100	09/27/2012	ND	2930	117	2500	2.04		

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 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received:	09/21/2012	Sampling Date:	09/20/2012
Reported:	09/28/2012	Sampling Type:	Soil
Project Name:	CIM-12-017	Sampling Condition:	Cool & Intact
Project Number:	WHITE CITY 14 FED. COM 10	Sample Received By:	Jodi Henson
Project Location:	CARLSBAD, NEW MEXICO		

**Sample ID: BH #2 15' (H202306-11)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2012	ND	2.14	107	2.00	12.1		
Toluene*	<0.050	0.050	09/25/2012	ND	2.39	119	2.00	13.4		
Ethylbenzene*	<0.050	0.050	09/25/2012	ND	2.37	119	2.00	14.1		
Total Xylenes*	<0.150	0.150	09/25/2012	ND	7.18	120	6.00	13.7		

Surrogate: 4-Bromofluorobenzene (PIE) 100 % 89.4-126

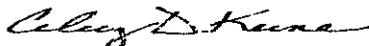
Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	944	16.0	09/26/2012	ND	416	104	400	0.00		

TPH 418.1		mg/kg		Analyzed By: AM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	<100	100	09/27/2012	ND	2930	117	2500	2.04		

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

 Received: 09/21/2012  
 Reported: 09/28/2012  
 Project Name: CIM-12-017  
 Project Number: WHITE CITY 14 FED. COM 10  
 Project Location: CARLSBAD, NEW MEXICO

 Sampling Date: 09/20/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH #2 20' (H202306-12)**

<b>BTEX 8021B</b>		<b>mg/kg</b>		<b>Analyzed By: AP</b>						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2012	ND	2.14	107	2.00	12.1		
Toluene*	<0.050	0.050	09/25/2012	ND	2.39	119	2.00	13.4		
Ethylbenzene*	<0.050	0.050	09/25/2012	ND	2.37	119	2.00	14.1		
Total Xylenes*	<0.150	0.150	09/25/2012	ND	7.18	120	6.00	13.7		

*Surrogate: 4-Bromofluorobenzene (PH)* 99.2% 89.4-126

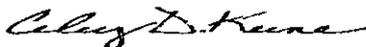
<b>Chloride, SM4500Cl-B</b>		<b>mg/kg</b>		<b>Analyzed By: AP</b>						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>992</b>	16.0	09/26/2012	ND	416	104	400	0.00		

<b>TPH 418.1</b>		<b>mg/kg</b>		<b>Analyzed By: AM</b>						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	<100	100	09/27/2012	ND	2930	117	2500	2.04		

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received:	09/21/2012	Sampling Date:	09/20/2012
Reported:	09/28/2012	Sampling Type:	Soil
Project Name:	CIM-12-017	Sampling Condition:	Cool & Intact
Project Number:	WHITE CITY 14 FED. COM 10	Sample Received By:	Jodi Henson
Project Location:	CARLSBAD, NEW MEXICO		

**Sample ID: BH #2 25' (H202306-13)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2012	ND	2.14	107	2.00	12.1		
Toluene*	<0.050	0.050	09/25/2012	ND	2.39	119	2.00	13.4		
Ethylbenzene*	<0.050	0.050	09/25/2012	ND	2.37	119	2.00	14.1		
Total Xylenes*	<0.150	0.150	09/25/2012	ND	7.18	120	6.00	13.7		

Surrogate: 4-Bromofluorobenzene (PHL) 102 % 89.4-126

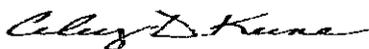
Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	09/26/2012	ND	416	104	400	0.00		

TPH 418.1		mg/kg		Analyzed By: AM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	<100	100	09/27/2012	ND	2930	117	2500	2.04		

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received:	09/21/2012	Sampling Date:	09/20/2012
Reported:	09/28/2012	Sampling Type:	Soil
Project Name:	CIM-12-017	Sampling Condition:	Cool & Intact
Project Number:	WHITE CITY 14 FED. COM 10	Sample Received By:	Jodi Henson
Project Location:	CARLSBAD, NEW MEXICO		

**Sample ID: BH #2 30' (H202306-14)**

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2012	ND	2.14	107	2.00	12.1		
Toluene*	<0.050	0.050	09/25/2012	ND	2.39	119	2.00	13.4		
Ethylbenzene*	<0.050	0.050	09/25/2012	ND	2.37	119	2.00	14.1		
Total Xylenes*	<0.150	0.150	09/25/2012	ND	7.18	120	6.00	13.7		

Surrogate: 4-Bromofluorobenzene (PIL) 98.8 % 89.4-126

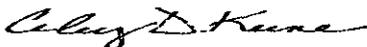
Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	09/26/2012	ND	416	104	400	0.00		

TPH 418.1		mg/kg		Analyzed By: AM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	<100	100	09/27/2012	ND	2930	117	2500	2.04		

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

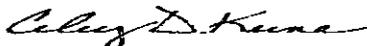
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported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

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Celey D. Keene, Lab Director/Quality Manager



